

Study of the Economic Impacts of the Canadian Film Centre

December 2012

For:



Prepared by:



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Executive Summary

Founded in 1988, the Canadian Film Centre (CFC) has become one of the pillars in the development of Canada's creative and entrepreneurial talent in the screen-based industries sector. Many of the CFC's more than 1,500 graduates have gone on to become leaders within Canada's screen-based industry – developing innovative and ground-breaking content, and winning national and international accolades for their work. With the introduction of new programs and initiatives in step with industry needs, CFC programs and initiatives today fit into one of five streams: Film, Television, Digital Media, Actors Conservatory, and Music (launched in 2012).

The CFC offers career-ready screen-based training that, according to its alumni, is unparalleled in Canada. Given technological advances and major changes in how audiences consume screen-based content, it has become well-recognized that training and skills development for the screen-based industries must continuously evolve and innovate.

In 2005, in the context of this changing landscape, the Government of Ontario committed \$10 million over five years to support the CFC's training programs and the development of new initiatives to build capacity in the creative cluster. This investment was renewed for an additional \$9 million over three years (2010 to 2013).

Investments from the Province of Ontario have helped the CFC to deliver training opportunities that nurture creative talent, forming the foundation of the next generation of culture and media. Ontario funding has helped the CFC leverage other sources of revenue – including municipal, federal, and private – at a ratio of 3:1. For example, in 2012, the CFC secured new funding commitments from Bell Media, The Slaight Family Foundation, Ernst & Young, and the Federal Economic Development Agency for Southern Ontario, worth a combined \$6 million.

As it approaches its 25th anniversary, the CFC, in partnership with the Ontario Ministry of Tourism, Culture and Sport (MTCS), engaged Nordicity to measure the economic impact of CFC graduates since 2005-06 – the first year of MTCS support. This study represents the first time the economic impact of the CFC's graduates since 2005-06 has been assessed, and provides a baseline for future economic impact assessments.

Evidence-based economic analysis

The analytical framework and methodology used in this analysis comprised of several key elements:

1. Design and deployment of a detailed survey to CFC alumni from 2005-06;
2. Secondary research using the Internet Movie Database (IMDb);
3. Economic impact analysis that determined, direct, indirect and spinoff effects;

4. Assessment of the fiscal impact, i.e. the ROI for the Province on its investment;
5. Qualitative analysis of the CFC's less tangible career impact through interviews with alumni.

The analytical framework posits that a training hub such as CFC makes a contribution to the economy primarily in two ways: (i) the **human capital** effect and (ii) the **intellectual property** (IP) effect.

The human capital effect arises from the increased employment opportunities and income earned by CFC graduates resident in Ontario in comparison to their likely earnings in the absence of CFC training. The IP effect arises from the economic impacts associated with the screen-based content – i.e. intellectual property – created by companies founded by CFC graduates.

In both cases, Nordicity was able to assess the incremental effect of the CFC training, i.e. the part that the CFC played in the ultimate success of the graduates. To measure the economic impact of the **human capital effect**, Nordicity analyzed data from the survey related to CFC graduates' income and employment performance before and after attending the CFC. To measure the **IP effect** of the CFC, Nordicity used the survey data to estimate the incremental production activity and commercialization revenue associated with films, TV programs and digital media products developed by CFC's above-the-line graduates.

The results of the measurement of the human capital and IP effects were translated into the **direct economic impact** - the household income, GDP and jobs generated within the screen-based industry itself – and the **spin-off economic impact**, which includes both the indirect and induced impacts.

On the basis of these estimates of the total economic impact, Nordicity also prepared a **fiscal impact** analysis. This fiscal impact analysis provides estimates of the incremental Ontario tax revenue generated by the human capital IP effects of CFC alumni. It then compares this incremental tax revenue to the total value of the Ontario government's contribution to the CFC in order to determine the net fiscal benefit (or cost) generated for the Province.

Key Performance Indicators – earning more, working more

Work and the flow of new projects in the screen-based industry can be both unpredictable and seasonal. However, the CFC has had a very positive impact on its graduates. For example:

- After attending a CFC film or TV program, the **average number of TV and digital media projects** produced by CFC graduates **increased**.¹

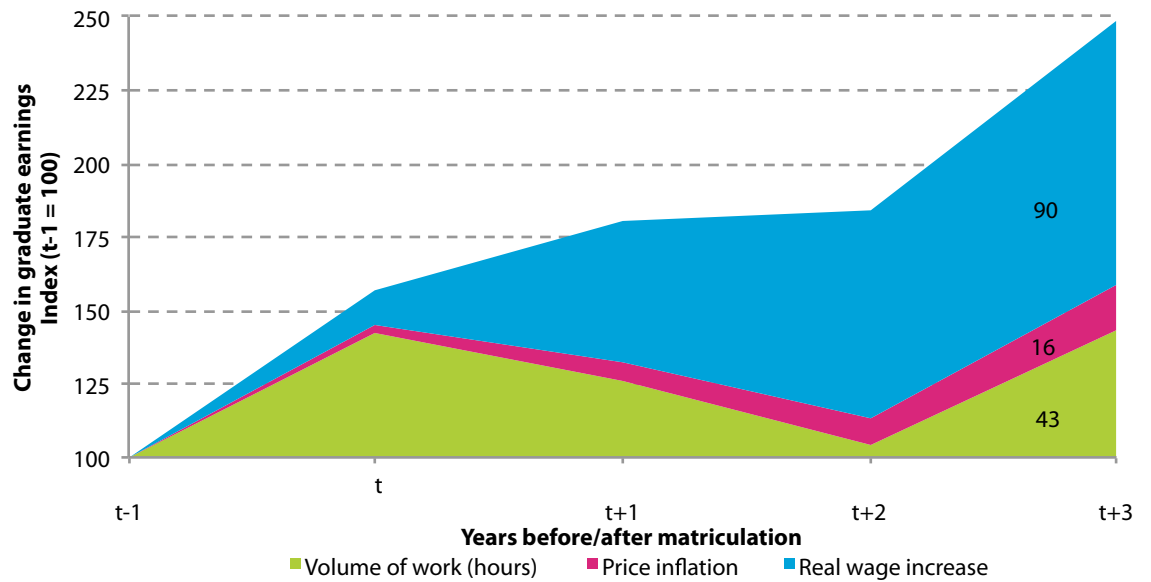
¹ Though the number of film projects remains, on average, equal before and after attending the CFC, in the case of feature films the number of projects is not itself the most telling indicator success. It is possible that the size and average budgets of film projects worked on by CFC alumni are greater post-graduation, though the actual number of projects remains roughly the same.

- Digital media program graduates report **156% growth** in the average number of projects they work on per year.
- The number of **weeks worked** in the media industry per year increased across all types of production (other than commercials).
 - Graduates increased their work in **TV production** from **10 weeks to 19 weeks per year**.
 - Graduates increased their work in **digital media** from **9 weeks to 22 weeks per year**.

As the chart below indicates, three years after attending the CFC graduates are working more in film and television, and earning more from their work in film and television than they were prior to their enrollment in the CFC:

Figure A - Index of change in graduate earnings (year prior to matriculation = 100)

Source: Nordicity calculations based on IMDb data



- Graduates are involved in **3.2 times the number of production minutes** as they were prior to attending their first CFC program.
- Graduates **earn** an average of **2.5 times more** from film and TV work three years after attending the CFC (for the first time) than they did in the year immediately prior to entering their first CFC program.

- Of the 149% total growth (see chart above), 90 percentage points can be attributed to increases in **real wages** (i.e. graduates working in higher paid positions), 43 percentage points are linked to the increase in **volume of work**, while the remaining 16 percentage points can be attributed to economy-wide **inflation**.
- Those students who graduated from their first program in 2006 have seen their income rise by an average of almost **\$20,000** in the five years since graduation.

Human capital– overall economic impact

By providing training and hands-on experience to workers in the screen-based industries, the CFC enhances its graduates' skills or human capital. With this enhanced human capital as shown above CFC graduates can earn higher incomes, either through a higher rate of pay or longer duration of employment. Either way, CFC graduates can experience higher incomes, which, in turn, provide economic benefits to the province.

- Nordicity estimates that CFC graduates (since 2006) earned a **cumulative income differential of \$34.9 million** between 2006 and 2012.
 - This cumulative outcome takes into account that the CFC was only partly (on average) responsible for the income increase.
 - This amount includes the present value of their income premium over the next 20 years – which is a conservative figure as their working life should be longer than that timeframe.
- This income differential also directly created **\$34.9 million in GDP** for the Ontario economy as well as **640 FTEs** of employment.
- After taking into the account the **spin-off impact** of this increased household income and GDP, we estimate that the human capital effect of the CFC added \$38.9 million in household income and **\$41.5 million in GDP** to the Ontario economy between 2006 and 2012.
- This increased household income and GDP yielded the equivalent of **720 full-time jobs** in the provincial economy between 2006 and 2012.

Intellectual property (firm level) – overall economic impact

When CFC graduates launch media companies, they not only gain an opportunity to improve their employment prospects and income, they also create intellectual property in the form of rights to the content they create. As these rights are exploited in the marketplace, they bring a much wider economic impact than simply the wages earned by the graduates. Thus, these entrepreneurial

graduates are not only generating benefits for themselves, but also developing the IP that creates jobs and incomes for dozens of cast and crew when production takes place.

- Since 2006, 137 graduates of the CFC have gone on to establish media companies in Ontario. Following graduation, these 137 graduates increased their annual productivity by 153 projects.
- Graduates indicated that approximately one-third of those projects (**53 projects**) can be **attributed** to their CFC training – thus the total figure was discounted to take into account the other factors contributing to their companies' success.
- These 53 projects translated into **\$80.3 million in production volume** (i.e. budgets) between 2006 and 2012.
- This level of production volume ultimately generated \$59.2 million in household income for Ontario residents and contributed **\$73.2 million in GDP** to the Ontario economy.
- The economic impact of this production volume also supported **1,280 FTEs** of employment between 2006 and 2012.

The creation and production of IP by graduates also attracted additional financing from outside the province.

- The IP effect production of \$80.3 million attracted an estimated **\$10.3 million in international financing** and further **\$35.9 million in financing from other provinces**.
- The total inward financing for CFC's IP effect production amounted to \$46.5 million between 2006 and 2012.

Total economic impact summary and fiscal impact

The combined economic impact arising from both the human capital and IP effects is an estimate of the overall economic impact of CFC programming between 2006 and 2011.

- In total, the CFC generated \$98.0 million in incremental household income for Ontario residents and **\$114.7 million in GDP** for the Ontario economy.
- This incremental economic activity generated **2,000 FTEs** of employment within the Ontario economy.

Nordicity then utilized tax ratios from Statistics Canada to estimate the provincial tax revenue generated by the combined economic impact:

- The household income generated by CFC's economic impact led to an estimated **\$8.4 million in Ontario personal income tax** between 2006 and 2012.

- The economic activity generated by CFC’s economic impact led to additional \$11.4 million of incremental revenues to the Province, namely:
 - \$1.8 million in provincial corporation income,
 - \$4.9 million in provincial consumption taxes, and
 - \$4.7 million in local taxes and fees.
- In total, the economic impact of the CFC led to an estimated **\$19.8 million in incremental tax** revenue for the Ontario government.
- Thus, the Ontario government’s contribution of \$16.0 million to the CFC between 2005/06 and 2011/12 generated a **net fiscal benefit of \$3.8 million** for the Province between 2006 and 2012.

Qualitative feedback supports the evident career boost for CFC grads

Underpinning this economic analysis is the finding that alumni surveyed perceive the CFC as having multiple positive influences:

- On their careers,
- On the development of their networks and contacts, and
- On their ability to work successfully in their chosen field.

In short, these answers convey the sense that the CFC was as a unique launch pad for a career in the screen-based industries. As no one attributed all their success to the CFC, the financial outcomes from the quantitative questions were discounted substantially – guided by their answers to the qualitative questions. Thus, the economic analysis is based on solid and conservative assumptions as to attribution of their success in the workplace.

The quality of CFC's graduates responds to industry's need to outperform global competitors

The role of the CFC in Canada's screen-based infrastructure is becoming more vital as a generator of talent to fuel the increasing sophistication of the screen-based sector. To make sure Ontario continues to climb in the global pecking order of media clusters, the competitive advantage is shifting to those with the best talent – talent to innovate in a content production/distribution environment undergoing rapid change; talent to develop or adopt the latest content and interactive technology; and talent to manage larger budgets and complex global projects.

The support that the CFC is receiving from top Canadian industry stakeholders in broadcasting, distribution, and production attests directly to its success. The CFC boasts more than 100 creative cluster partnerships and collaborates with top entertainment brands globally. The joint ventures with the likes of Corus (broadcasting and production), Bell-TV (broadcasting and distribution), Cineplex-Odeon (exhibition), and Ernst & Young (finance/business) are tangible illustrations that industry leaders want a connection to the CFC. They look at the CFC to connect partners domestically and internationally with top, up-and-coming Canadian talent, enriching their skills and knowledge and contributing to and celebrating their success.

The results of this report appear to validate Ontario's investment in the CFC in terms of MTCS's objective to create jobs, develop new skilled-workers and build the capacity of the creative cluster in Ontario.

1. Introduction and Background

In this section, Nordicity presents the study's mandate and describes the analytical and methodological framework adopted to deliver the project's findings. Highlights of the Canadian Film Centre's (CFC) history and programming streams follow.

1.1 Mandate

Since 1988, the CFC has been one of the pillars of the development of Canada's creative and technical talent in the screen-based sector. Many of the CFC's approximately 1,500 graduates have gone on to become leaders within Canada's screen-based industry – developing innovative and ground-breaking content and winning national and international accolades for their work.

As it approaches its 25th anniversary, the CFC, in partnership with the Ministry of Tourism, Culture and Sport (MTCS), engaged Nordicity to measure the economic impact of the CFC's programs and graduates since 2005-06.² This study represents the first time the economic impact of the CFC's graduates since 2005 have been analyzed and will, ideally, provide the baseline for future economic impact analyses of this nature.³

1.2 Analytical framework and methodology

This study was conducted in three stages. Stage one involved the design and deployment of a detailed survey to CFC alumni and subsequent secondary research using the Internet Movie Database (IMDb); the economic impact analysis constituted the second stage, and the final stage involved researching the CFC's intangible career impacts through interviews with alumni.

1.2.1 Analytical framework

This section provides an overview of the framework for the economic impact analysis. The analytical framework recognizes that a training hub such as the CFC makes a contribution to the economy primarily through two channels: (i) the **human capital** effect and the (ii) **intellectual property** (IP) effect. The human capital effect arises from the increased employment opportunities and income earned by CFC graduates resident in Ontario in comparison to their likely earnings in the absence of CFC training. The IP effect arises from the economic impact associated with the screen-based content

2 The Ministry's funding for The Canadian Film Centre (CFC) began in 2005.

3 A further objective of this project is to construct a research model that allows the CFC to gather, assess and report program and policy economic indicators on an ongoing basis. This aspect of the project mandate is referred to as the "Knowledge Transfer." While this report is an integral component of the "Knowledge Transfer" process, the majority will take place during an in-person session conducted by Nordicity at the CFC.

– i.e. intellectual property – created by companies founded by CFC graduates. The IP effect can either lead to incremental company revenues from the sale or licensing of content or applications, or new film, television, or new media production projects that employ numerous Ontarians and often attract foreign financing (inward investment). Our methodology will quantify both of these effects.

Human capital effect: CFC’s primary impact on the Ontario economy is through the enhancement of human capital of Ontario residents. CFC’s training programs enhance the skills of its graduates. These graduates can then improve the productivity of the projects and companies that employ them. Part of this improved productivity is captured by CFC graduates in the form of increased employment opportunities (more frequent project work, higher likelihood of full-time employment) and higher incomes (higher average annual full-time compensation). The higher incomes experienced by CFC graduates in Ontario translates directly into higher GDP and GDP per capita within the Ontario economy (all other things being equal).

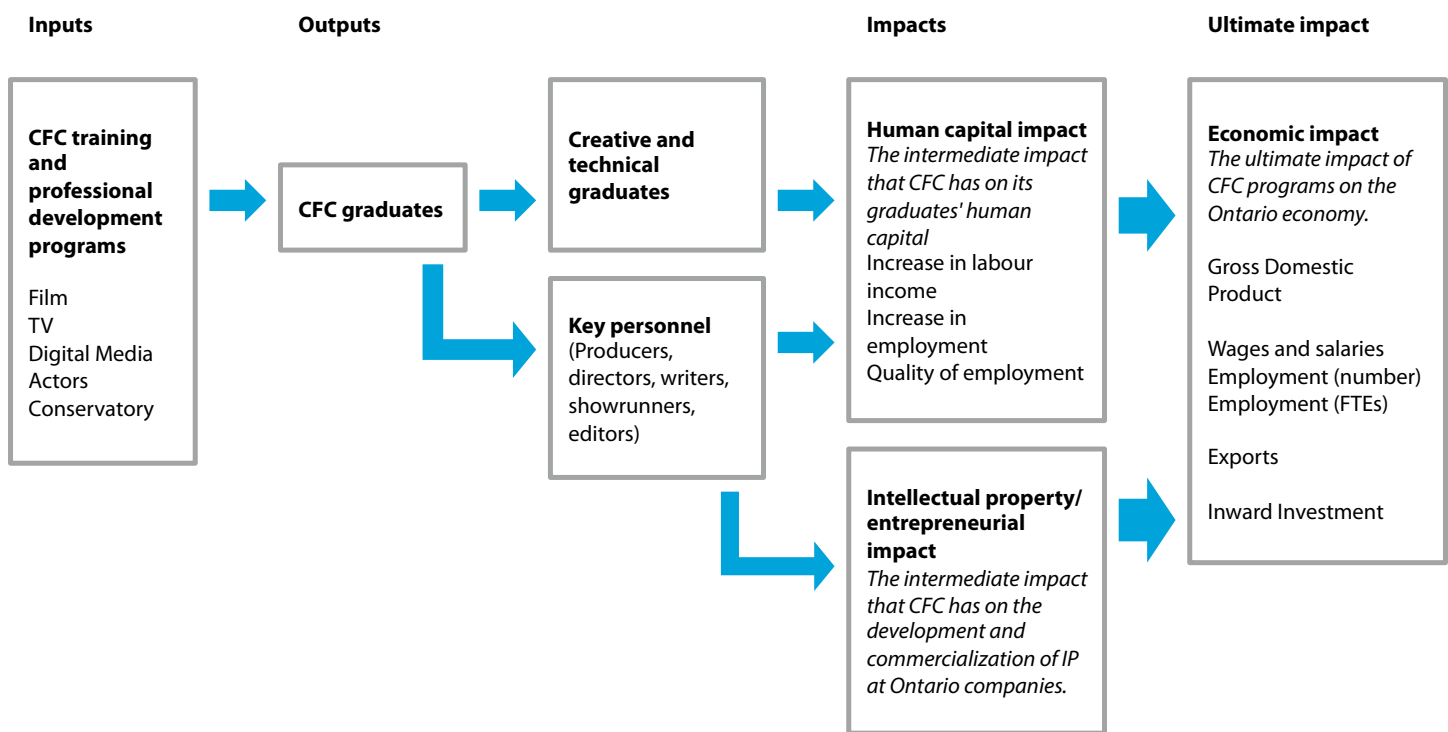
IP effect: The economic impact of CFC programs does not stop at the positive employment effects experienced by CFC graduates. Many CFC graduates will go on to establish media companies. These media companies employ non-CFC graduates in Ontario, and develop and produce IP (i.e. the production and commercialization of film and television and digital media content). In many respects the IP effect could also be defined as the entrepreneurial effect of the CFC. As with other entrepreneurial endeavours, the creation and production of screen-based content essentially entails the organization and deployment of resources so as to create economic value.

Figure 1 provides a simplified logic diagram that depicts how the CFC’s programs translate into ultimate impacts on the Ontario economy via both the human capital and IP effects. The various training and professional development programs offered by the CFC may be considered inputs to the economic impact process. CFC graduates are the key outputs of the hub. CFC graduates can be grouped into two categories: (i) creative and technical and (ii) key personnel.

Both groups experience a human capital effect. That is, they experience higher labour income, increased employment opportunities, and even improved quality of employment. Those CFC graduates that also establish media companies generate an additional impact: the IP effect. By virtue of their CFC training, these graduates are able to improve their ability to generate ideas and stories that can be developed into commercialized screen-based content.

Both of the human capital and IP effects contribute to the ultimate impact of the CFC: that is, its contribution to the Ontario economy. This ultimate impact includes gross domestic product (GDP), wages and salaries (i.e. household income), employment, exports and inward investment.

Figure 1 – Analytical framework for economic impact analysis



1.2.2 Methodology

Stage 1 – Data Collection

For this study, there were two main sources of data: an online survey and subsequent secondary research using the Internet Movie Database (IMDb).

Nordicity deployed an online survey using the Canadian-based online survey provider, fluidsurveys.com. The survey questionnaire was distributed to CFC Alumni via an email from the CFC, was accessible on the CFC website, and was promoted using the CFC's social media presence. The survey was open to alumni from May through July 2012 and garnered 266 viable responses over that period.

For this survey, Nordicity was interested in two groups of CFC alumni: 1) those who graduated since the 2005-2006 academic year, and 2) the entire universe of alumni. There have been approximately 577 graduates since 2005-2006. The Nordicity survey collected a total of 163 responses, or roughly 28% of all CFC graduates, amongst this group. For the second group (all graduates), the best estimate available is that a total of 1,500 students have graduated from the CFC since it opened. Of this universe, the

Nordicity survey collected 266 viable responses, or roughly 18% of the total universe. In other words, in both cases, Nordicity worked with a sample of the total universe of alumni and was confident that the sample was a reliable representation of the total, with no particular biases.

Most of the survey questions were posed so that alumni could respond with average or percentage-based responses while other questions requested specific counts of various aspects of a respondent's career (i.e. absolute values). For example, respondents were asked to provide the average number of projects they worked upon before and after their time at the CFC. These questions required Nordicity to extend the sample data to reflect the entire universe of potential respondents. On the assumptions stated above (that the sample was reliable and unbiased), Nordicity "grossed-up" the absolute responses to the universe on a mathematical basis. This "gross-up" factor was, in turn, based on the response rate in each group of graduates. For those alumni that graduated since the 2005-2006 academic year, the gross-up factor is 3.81, while for all graduates the gross-up factor is 5.97. As such, when absolute numbers are presented for graduates since 2005-2006, they have been multiplied by 3.81, and by 5.97 if for all graduates.

Following the survey, Nordicity undertook to determine how the careers of survey respondents had developed since participation in the CFC.⁴ To that end, Nordicity gathered the screen credits for each survey respondent for each year between 2006 and 2012. These credits were organized by production role to highlight "above-the-line" and "non-above-the-line" roles and were translated into minutes of production. For example, one graduate may have worked in 2008 on a 120 minute film as writer and on a 6-episode television series (6 x 46 minutes) as a producer. When summed, these IMDb data allowed Nordicity to determine the number of minutes per year that CFC graduates worked in each production role.

To determine the income impact of this work, Nordicity assumed that an average of 100 minutes of actual effort is required to produce one minute of screen-based content in order to calculate the number of hours worked in a given role (per year). We then applied average hourly salaries (based on National Occupation Code data from Statistics Canada) to each role. The result of this operation is a database of the annual activity of CFC graduates per year in each production role. This database then allowed us to analyze changes in the number of minutes worked, and resulting changes in income in the years following a graduate's participation in their first CFC program.

A copy of the online survey questionnaire is provided in Appendix 1.

4 We should note that IMDb data excludes graduates' work on digital media projects, which are not captured by the online database.

Stage 2 - Economic Impact Analysis

We prepared the economic impact analysis on the basis of the survey data, as well as secondary data from the CMPA Profile 2011 and other industry reports.

To measure the economic impact of the human capital effect, we analyzed data from the survey related to CFC graduates' income and employment performance before and after attending the CFC. From this analysis, we were able to estimate the incremental income earned by CFC graduates.

To measure the IP effect of CFC programs, we used the survey data to estimate the incremental production activity and commercialization revenue associated with films, TV programs and digital media products developed by CFC's ATL graduates.

For both the human capital and IP effects, we used Statistics Canada's Input-Output tables and other economic data to prepare estimates of the direct and spin-off economic impacts.

The **direct economic impact** refers to the household income, GDP and jobs generated within the screen-based industry itself. This economic impact is largely in the form of wages and salaries paid to workers in the screen-based industry, but it also includes the operating surplus (i.e. operating profits and sole proprietors' income) earned by production companies. To estimate the direct economic impact we reviewed statistics on budget expenditures of film, TV and digital media projects to provide us with reliable breakdowns of the components of household income and GDP. We used average salary data from the CMPA Profile 2011 to estimate the jobs impact.

The **spin-off economic impact** includes both the indirect and induced impacts.

- The **indirect economic impact** refers to the increase in economic activity that occurs when productions purchase goods and services from suppliers. These purchases of goods and services increase income and employment at the supplier companies; they also, in turn, increase demand for other upstream suppliers – i.e. the suppliers' suppliers. Given the nature of the human capital effect, there is no indirect economic impact, per se. As such, we only estimated the indirect impact for the IP effect. To estimate the indirect economic impact of the IP effect, we used Statistics Canada's Input-Output (I-O) tables for the Ontario economy to construct a model that we could use to estimate the household income, GDP and jobs created by increased demand in the supplier industries.
- The **induced economic impact** refers to the increase in household income, GDP and jobs that can be attributed to the re-spending of income by Ontario households that earned income at both the direct and indirect stages of the economic impact. We estimated induced economic impacts for both the human capital and IP effects. To estimate the induced economic impact, Nordicity applied its own induced impact economic multiplier. This multiplier is based on Nordicity's estimates of the marginal propensity to consume (MPC) and marginal propensity to import (MPM). The derivation

of the MPC and MPM are based on data for provincial-level consumption activity and inter-provincial trade available from Statistics Canada.

We summed our estimates of the direct and spin-off economic impacts to arrive at estimates of the total economic impact of both the human capital and IP effects.

On the basis of these estimates of the total economic impact, we also prepared a fiscal impact analysis. This fiscal impact analysis provides estimates of the incremental Ontario tax revenue generated by the human capital IP effects of CFC alumni. It then compares this incremental tax revenue to the total value of the Ontario government's contribution to the CFC in order to determine the net fiscal benefit (or cost) generated for the Province.

Stage 3 – The Intangible Impacts of the CFC

The survey contains a number of questions which ask alumni to describe various non-economic aspects of their pre- and post-CFC careers. As a result, in Section 5, Nordicity was able to observe the impact the CFC may have had on career indicators such as job stability, artistic development as well as barriers to employment.

Nordicity also conducted interviews with five CFC alumni from the film, television and digital media programs, and reviewed dozens of alumni testimonials to further develop its understanding of the non-economic value the CFC creates for its alumni. During this process, common themes and shared perceptions emerged almost immediately. Of course, many of the non-economic benefits described by alumni, such as enhanced professional networks and increased access to mentors are themselves (directly or indirectly) related to career success. In this way, one can begin to see how the CFC as an institution not only creates a fiscal impact on the creative economy, but also strengthens the ability of content producers to succeed critically and commercially in the marketplace, with eventual economic rewards.

1.3 History of the CFC

In 2013, the CFC will celebrate its 25th anniversary. Founded as “The Canadian Centre for Advanced Film Studies” in 1988 by Norman Jewison to promote and invest in Canada’s diverse talent, the CFC was modeled loosely after other national training programs such as the American Film Institute and the British Film Institute. The site then, as today, was an Ontario heritage estate in north Toronto. In the early years, the Centre received financial support primarily from the federal and Ontario governments and private foundations. In the years that followed, as the Canadian production industry grew, the CFC forged strong funding relationships with these businesses.

In 1988 enrolment at the CFC was targeted primarily at producers, writers and directors. Eventually, more programs were added, including the CFC Features program (then known as the Feature Film Project) which offered up to \$250,000 in financing to first time, theatrical feature film producers.

Over the years, the CFC has continued to grow at a steady and sustainable pace, introducing new programs and initiatives in step with industry needs.

The CFC is described by alumni as offering career-ready training that is unparalleled in Canada. Many of the CFC's over 1,500 graduates have enjoyed creative and critical success, at home and in international markets. Against a backdrop of technological advances and major changes in how audiences consume screen-based content, it has become well-recognized that training and skills development for the screen-based industries must continuously evolve and innovate. In 2005, in the context of this changing landscape, the Government of Ontario committed \$10 million over five years to support the CFC's core training programs and the development of new initiatives to build capacity in the creative cluster. This investment was renewed for an additional \$9 million over three years (2010 to 2013). Investments from the Province of Ontario have helped the CFC to deliver training opportunities to nurture creative talent, forming the foundation of the next generation of culture and media. Ontario funding has helped the CFC leverage other sources of revenue - including municipal, federal, and private - at a ratio of 3:1. For example, in 2012, the CFC secured new funding commitments from Bell Media, The Slight Family Foundation, Ernst & Young, and the Federal Economic Development Agency for Southern Ontario, worth a combined \$6 million.

1.4 CFC programs

CFC programs and initiatives can be thought of as fitting into one of the five streams listed below:

- Film;
- Television;
- Digital Media;
- Actors Conservatory; and
- Music (launched in 2012 and therefore not covered in this report).

The CFC training philosophy and approach is consistent throughout all five streams - the experience is full-time, intensive, practical, team-oriented and has an emphasis on content development. However, each stream contains numerous programs and initiatives, with varied specializations and durations.

Based on responses to the online survey, the following chart indicates the programs CFC graduates have taken since 2006, keeping in mind that an individual graduate may have participated in more than one CFC program over this period. While CFC delivers its programs and services to hundreds of individuals each year, only participants of the programs listed in the chart below are acknowledged as alumni.

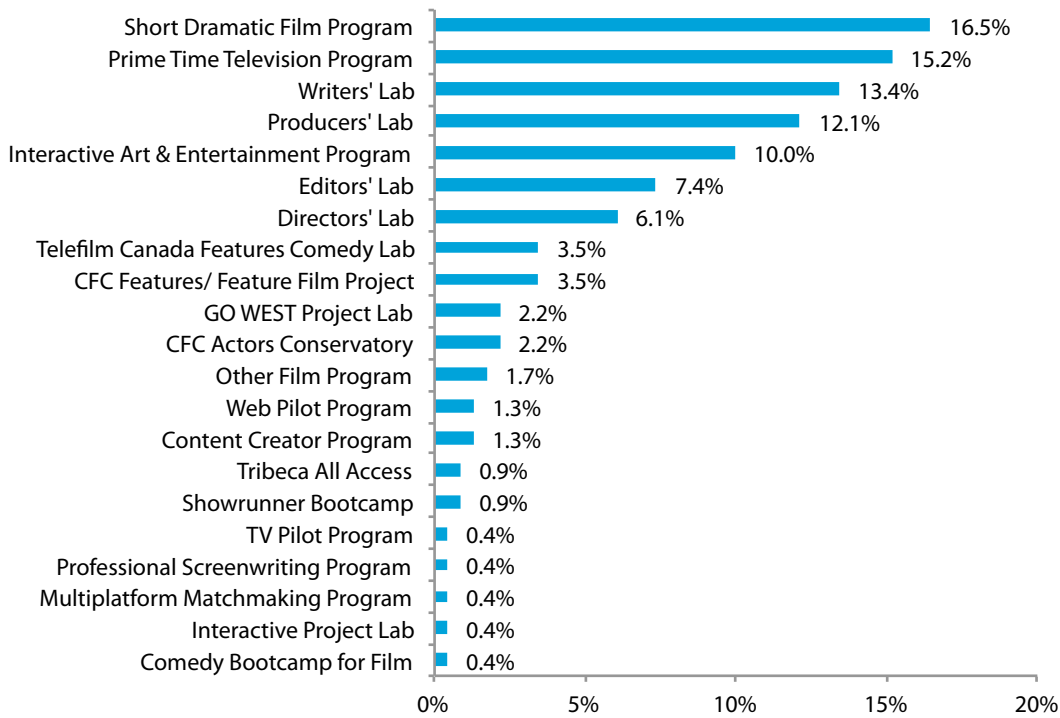


Figure 2 - CFC program attended as a % of graduates

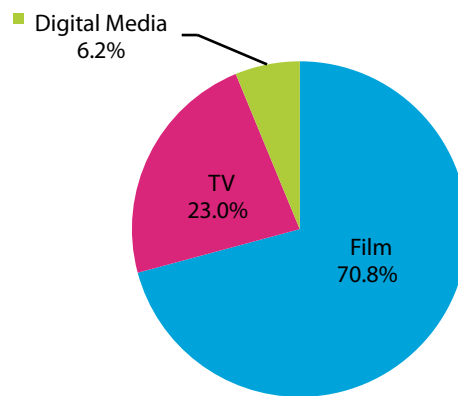
Source: Nordicity survey to CFC alumni, 2012

The most-attended program among survey respondents since 2006 was the “Short Dramatic Film Program” (16.5%) - a five-month intensive that covers the development, production and post-production filmmaking experience. The next most-attended program is the “Prime Time Television Program” (15.2%), which creates real exposure to the issues and environment faced by creators in story departments in the television marketplace. In terms of representation amongst the five streams, 67.7% of respondents participated in a **CFC Film** program, 19.1% of respondents participated in a **CFCTV** program, 10.8% of respondents participated in a **CFC Media Lab** program, and 2.2% of respondents participated in the **CFC Actors Conservatory**.

However, not all CFC programs have equal impacts on the careers of their participants. One typical indicator of the impact that a given training or academic program is likely to have on attendees is the number of minutes of class-time instruction. With that in mind, the following chart shows the program stream distribution of our sample of graduates since 2006:

Figure 3 - Percentage of minutes of instruction by stream for survey respondents

Source: Nordicity survey to CFC alumni, 2012



As the chart clearly shows, CFC film programs accounted for the lion's share (71%) of graduates' instruction time, with CFC TV programs accounting for 23% of instruction time for our sample. The remaining 6% of instruction time was in one of CFC's digital media programs.

2. Human Capital Effect

In the following section, we analyze CFC’s human capital effect. By providing training and hands-on experience to workers in the screen-based industry, the CFC enhances its graduates’ skills. This outcome is the human capital effect, and the economic benefits that ensue, flow from the improved creative skills that CFC graduates possess after they complete their program. These improved creative skills typically lead to higher incomes for graduates who are Ontario residents. This income differential, then, is the basis of economic benefit calculation for the province.⁵

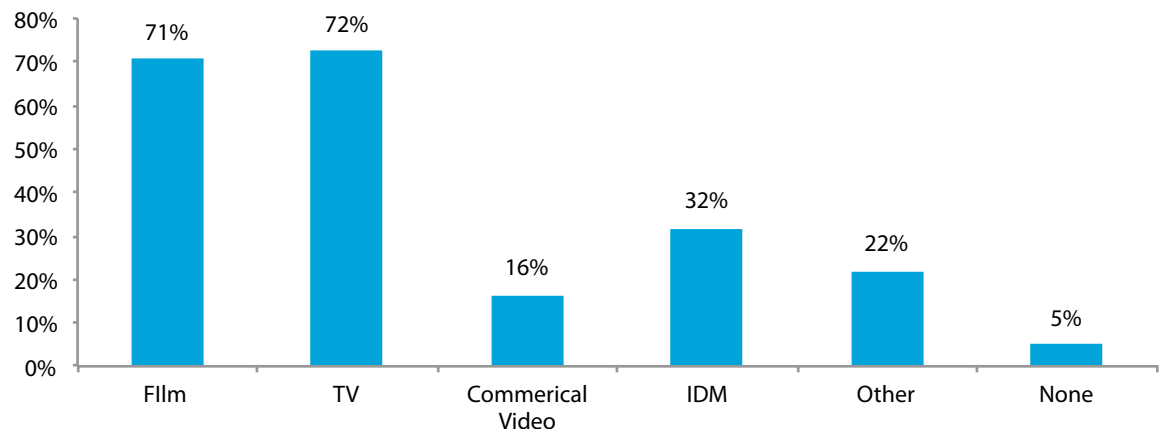
We begin with a presentation and analysis of various key performance indicators (KPIs) for CFC graduates’ employment and income – before and after graduation. This KPI analysis is followed by the economic impact analysis which utilizes these human capital KPIs and other industry data to derive the income differential experienced by CFC graduates and the wider economic benefit that this income differential has for the Ontario economy.

2.1 Key performance indicators

In this section Nordicity provides a baseline understanding of key career performance indicators for CFC graduates. In so doing, we outline the CFC’s impact on graduates’ employment, their workflow, and their income level.

Figure 4 - Current employment of graduates

Source: Nordicity survey to CFC alumni, 2012



5 N.b. Unless survey data is reported with “all graduates” in the caption, the charts represent data and analysis based on survey responses from CFC alumni between the 2005-2006 and 2012 academic years.

As the Figure 4 illustrates, the majority of CFC graduates are currently employed in the film (71%) and/or TV (72%) industries while 32% are employed in interactive digital media.⁶ Approximately 5% of graduates no longer work strictly in the screen-based industries.

In terms of the type of employment, as the following chart illustrates, attending the CFC does not appear to have a material impact on whether a graduate moves from part-time to full-time employment or from freelance positions to company ownership. The work status of graduates' type of employment remains basically the same before and after attending the CFC.

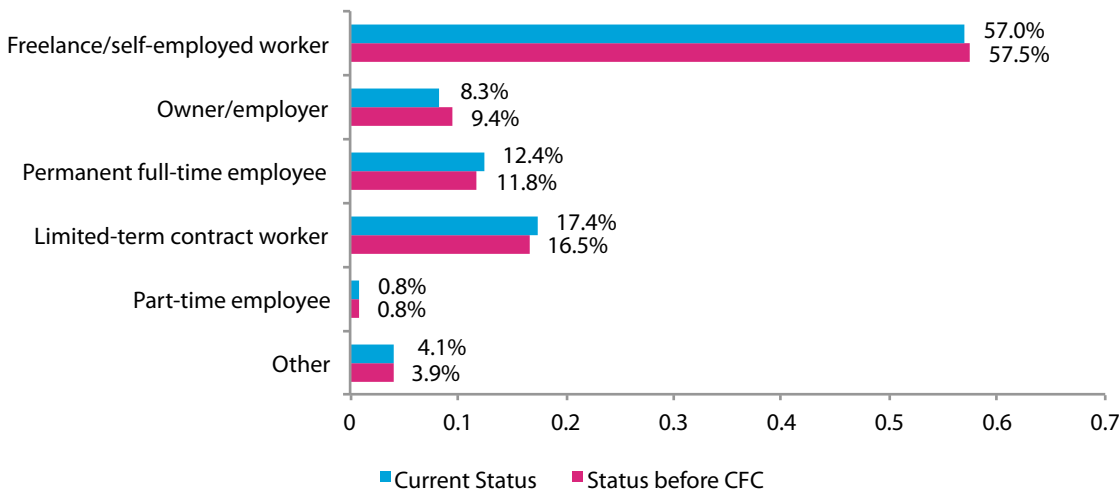


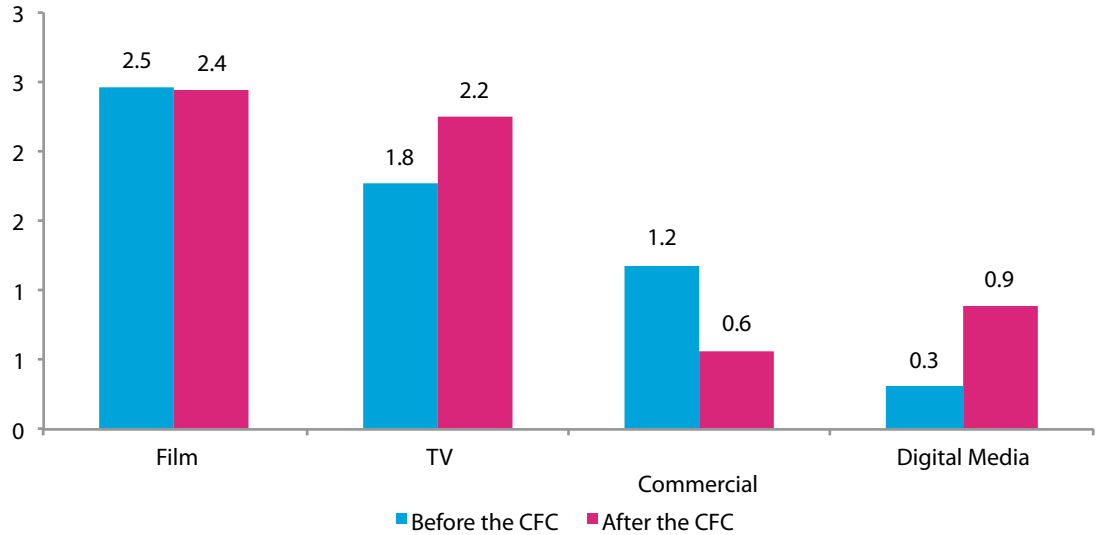
Figure 5 - Type of employment

Source: Nordicity survey to CFC alumni, 2012

Work and the flow of new projects in the screen-based industry can be both unpredictable and seasonal. The following chart indicates that attending the CFC's film and/or TV programs have had a positive impact on the number of projects produced for TV and digital media projects. Though the number of film projects remains, on average, equal before and after attending the CFC, in the case of feature films the number of projects is not itself the most telling indicator success. It is possible that the size and average budgets of film projects worked on by CFC alumni are greater post-graduation, though the actual number of projects remains roughly the same.

6 N.b. While 10.8% of survey respondents since 2006 attended the CFC Media Lab, this chart represents all respondents, or all graduates. Further, it is possible that Film and TV alumni have worked on IDM projects despite not attending the CFC Media Lab.

Figure 6 – Average # of projects per year (film and/or TV program graduates)

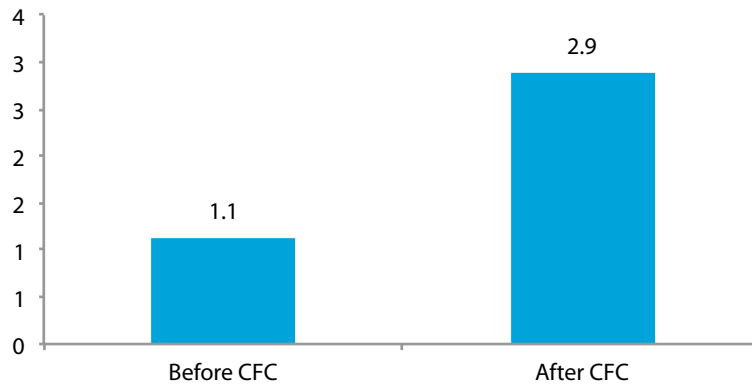


Source: Nordicity survey to CFC alumni, 2012⁷

For graduates of the CFC’s digital media programs, the effects are similarly positive, as depicted in the following chart. After graduation, survey respondents report a 156% growth in the average number of projects they work on per year.

Figure 7 - Average # of projects per year (digital media program graduates)

Source: Nordicity survey to CFC alumni, 2012



7 N.b. “After the CFC” does not indicate the first year after graduation, rather a present day average of the years following graduation.

While the number of projects per year may be a useful indicator, it does not tell the whole story. Indeed, projects vary greatly in terms of time and effort. As such, the weeks worked per year provides another glimpse into the effects of attending the CFC. As the following chart shows, attending the CFC's film and TV programs have a positive impact on the number of weeks worked in the media industry per year across all types of production other than commercials. Once again, TV production experienced the largest degree of growth - from approximately 10 weeks to an average of 19 weeks per year. The decline in commercial work may indicate the ability of CFC film and/or TV graduates to rely less on commercials and more heavily on larger scale productions in the years after departing the CFC.

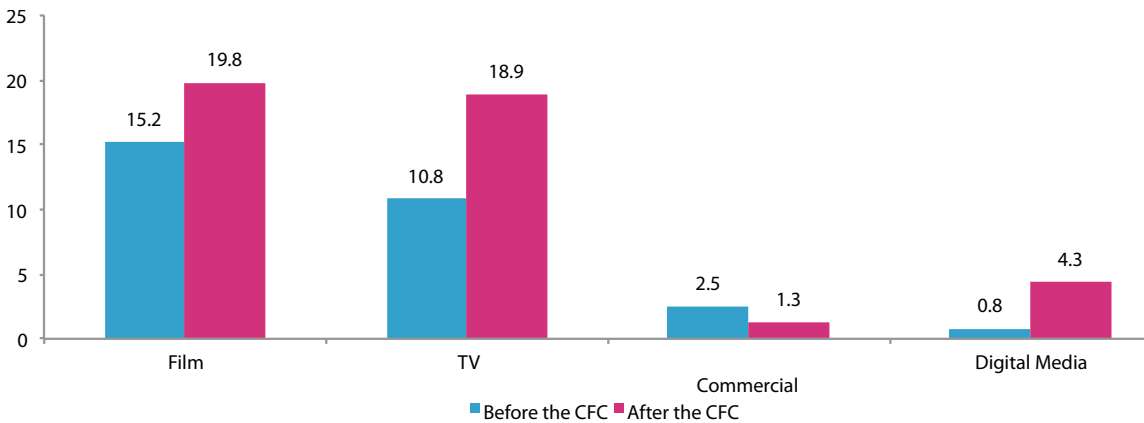


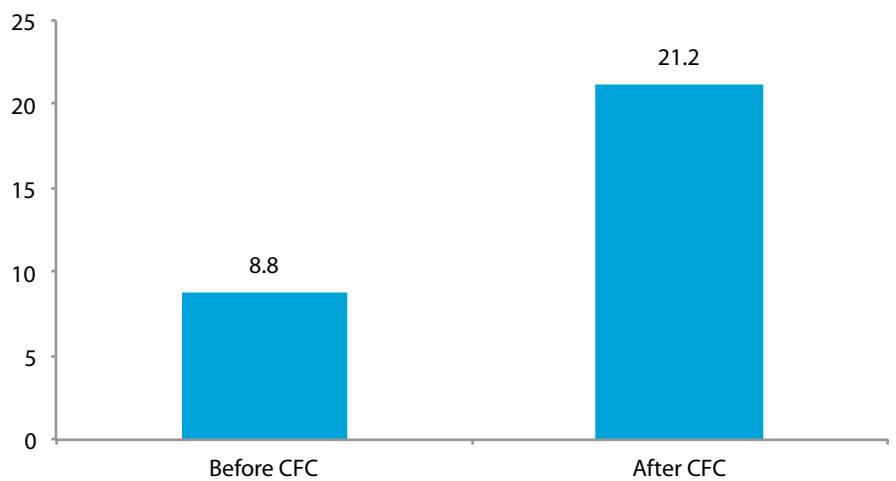
Figure 8 - Average # of weeks worked per year (film and/or TV graduates)

Source: Nordicity survey to CFC alumni, 2012

CFC’s digital media programs have an even larger positive effect on the average number of weeks worked per year, as shown below. Digital media graduates work, on average, 22 weeks per year after graduation as compared to an average of just below 9 weeks before they attended the CFC.

Figure 9 - Average # of weeks worked per year (digital media graduates)

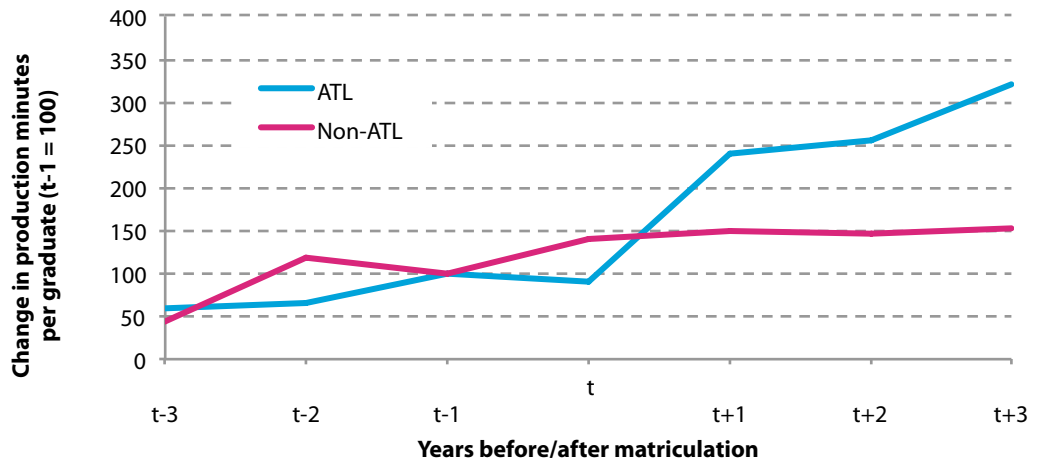
Source: Nordicity survey to CFC alumni, 2012



Another way to view the impact that attending the CFC has had on graduates is to look to graduates level of industry activity, as reported by IMDb, a commonly-used source of film and TV credits. To that end, the following chart presents the impact of attending the CFC, highlighting growth in so-called “above-the-line” (ATL) positions.

Figure 10 – Index of change in production minutes post-CFC (year prior to matriculation = 100)

Source: Nordicity calculations based on IMDb data



As Figure 10 shows, three years after graduating from a CFC program, graduates are involved in 3.2 times the number of production minutes as they were prior to attending their first CFC program. At the same time, there was a 54% increase in non above-the-line positions in that same three year period, suggesting that graduates are working both on more productions and also in higher value positions. This finding is confirmed when one estimates the effect of this higher volume (and quality) of work on the graduates' earnings.

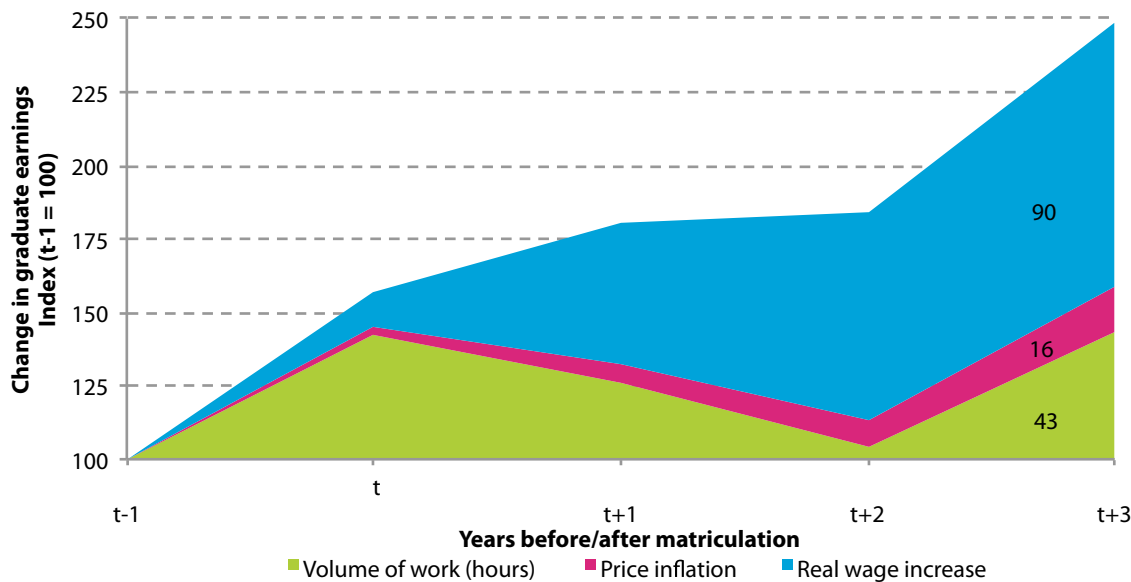


Figure 11 - Index of change in graduate earnings (year prior to matriculation = 100)

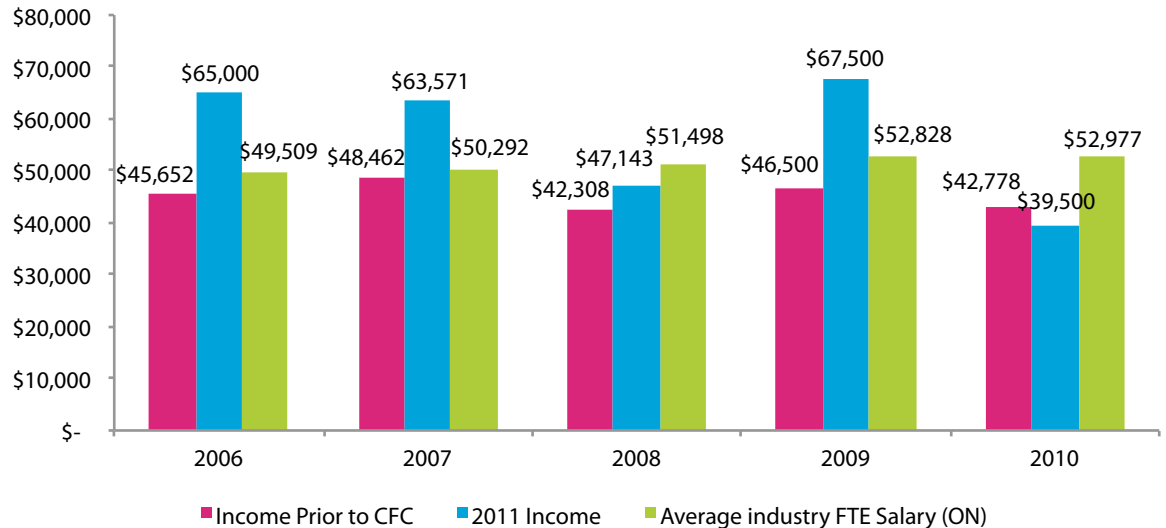
Source: Nordicity calculations based on IMDb data

As the preceding chart indicates, graduates earn an average of 2.5 times more from film and TV work three years after attending the CFC (for the first time) than they did in the year immediately prior to entering their first CFC program. Of that 149% growth, 90 percentage points can be attributed to increases in real wages (i.e. graduates working in higher paid positions), 43 percentage points are linked to the increase in volume of work, while the remaining 16 percentage points can be attributed to economy-wide inflation.

While participation in one or more CFC programs has a profound impact on the development of workers in the screen-based industries, the effect appears to vary for each graduating class. As the following chart shows, those that graduated from their first program in 2006 have seen their income rise by an average of almost \$20,000 in the five years that follow graduation.

Figure 12 - Income change by graduation year.

Source: Nordicity survey to CFC alumni, 2012 and CMPA, Profile 2011.



Predictably, the impact of CFC participation increases as time passes, i.e. the earlier they graduated, the more they would be earning today. The exception is the 2009 graduating class who appear to have had remarkable success since graduation. For 2010 one would expect a slight dip in income immediately prior to and during enrolment in the CFC, as they have not been in the workforce long enough to reap the benefits of their work with the CFC. Excluding 2010 and 2008, CFC graduates reported earnings above the average FTE salaries for screen-based workers (adjusted for Ontario) as reported in Profile 2011 and based on Statistics Canada Census data.

2.2 Economic impact analysis

In this section we present the results of the analysis of the economic impact of the human capital effect. First, we calculate the direct economic impact, including the income differential experienced by CFC graduates. Along with the estimates of direct household income, GDP and employment, we also estimate the spin-off economic impact of the human capital effect and the total economic impact.

2.2.1 Direct economic impact

In Section 2.1, we presented findings that indicate the impact that CFC programs had on the employment profile and prospects of CFC graduates. The results of that analysis indicate that CFC graduates experienced significant increases in both their employability and their average annual earnings following their graduation. While graduates from 2011 did not report any increase in their

annual earnings as of summer 2012, graduates from 2006 through 2010 displayed an average increase in annual earnings of \$11,402.

The 2011 graduates actually reported a decrease in their annual earnings in 2011 – from \$43,636 to \$29,600. This drop in annual earnings is expected, however, given that the 2011 CFC graduates would have likely reduced their workload while enrolled in a CFC program. The graduates from 2006 through 2010 reported average annual earnings of \$45,140; this cohort of graduates also reported that their 2011 earnings were \$56,543. Thus, this five-year cohort of graduates experienced an average increase of \$11,403 following CFC graduation. This average increase in annual earnings (i.e. an “income premium”) provided the basis for calculating the direct economic impact.

Table 1 – Change in annual income of CFC graduates, by year of graduation (\$).

Source: Nordicity calculations based on data from survey of CFC graduates.

* Average excludes 2011, since graduates likely experienced a decrease in income due to enrolment in CFC training program, and therefore, the change in annual income would not be indicative of the impact of CFC program on employment prospects.

Year of graduation	Annual income prior to CFC	2011 Income	Change in annual income
2006	45,652	65,000	19,348
2007	48,462	63,571	15,109
2008	42,308	47,143	4,835
2009	46,500	67,500	21,000
2010	42,778	39,500	(3,278)
2011	43,636	29,600	(14,306)
Average 2006 to 2010*	45,140	56,643	11,403

The direct economic impact of CFC is comprised of the incremental household income (i.e. wages and benefits) earned by CFC graduates following their graduation. To estimate this incremental household income, we multiply the average change in annual income for graduates since 2006 by the number of graduates. Before making this calculation, however, we assessed the attribution to CFC.

Attribution

While CFC graduates reported that, on average, their income increased following graduation, it is important to keep in mind that factors other than CFC may have played a role in causing these

increases in income. To arrive at an adjustment for attribution we consulted the results of the online survey.

The online survey provided three separate questions that could be used to assess attribution. One question asked respondents attribute a percentage of their media production income to jobs for which they trained at CFC. The responses to this question indicate that CFC graduates attributed 29% of their 2009 income, 35% of 2010 income and 50% of 2011 income to jobs for which they trained at CFC (Table 2).

Table 2 – Attribution of media production income.

Source: Nordicity calculations based on data from survey of CFC graduates.

Of your annual media production income, what percentage would you estimate came from a job (or jobs) for which you trained at the CFC?	2009	2010	2011
	Share of responses	Share of responses	Share of responses
100%	18.6%	23.5%	29.4%
81% to 99%	1.0%	0.0%	2.9%
61% to 80%	2.9%	2.9%	5.9%
41% to 60%	3.9%	2.9%	6.9%
21% to 40%	1.0%	1.0%	2.0%
1% to 20%	3.9%	5.9%	4.9%
0%	52.9%	46.1%	29.4%
No response	15.7%	17.6%	18.6%
Total	100.0%	100.0%	100.0%
Weighted average	29%	35%	50%

A second question asked graduates to qualitatively assess the contribution of their CFC training to their employment stability and artistic development. By applying percentages to each category of qualitative rating, we can convert the responses into overall attribution rates (Table 3). On the basis of

this approach we found that 33% of graduates' employment stability could be attributed to the CFC, while 47% of artistic development could be attributed to the CFC.

Table 3 – Impact of CFC training on employment stability and artistic development.

Source: Nordicity calculations based on data from survey of CFC graduates.

† Attribution rates assigned by Nordicity.

To what degree has the CFC helped you achieve your employment stability, professional and artistic development goals?	Attribution rate†	Employment stability	Artistic development
	Share of responses	Share of responses	Share of responses
The CFC was the main/only contributor	100%	7.8%	13.7%
The CFC was a significant contributor among others	45%	35.3%	51.0%
The CFC contributed, but was not crucial	20%	16.7%	14.7%
The CFC contributed to a minor degree	5%	9.8%	4.9%
The CFC did not contribute at all	0%	14.7%	1.0%
No response		15.7%	14.7%
Total		100.0	100.0
Weighted average		33%	47%

A third question asked graduates to qualitatively assess the importance of professional training, in general, to their career development. Again, by applying percentages to each category of qualitative rating, we converted the responses into overall attribution rates. On the basis of this approach we found that graduates attributed 35% of their career development to professional training.

Table 4 – Importance of professional training to career development.

Source: Nordicity calculations based on data from survey of CFC graduates.

Professional training is...	Attribution rate	Share of responses
Of paramount importance	100%	7.8%
Very important	50%	28.4%
Important	25%	29.4%
Not very important	5%	12.7%
Not at all important	0%	4.9%
No response		16.7%
Total		100.0%
Weighted average		36%

While these three survey questions do not necessarily provide a definitive quantification of the attribution of any increase in income to CFC training, they do provide useful guidance as to an attribution rate. The results across these three questions suggest that an attribution rate in the range of 29% to 50%; however, most of the results cluster around 29% to 36%. As such, we use an attribution rate of 33%. In other words, based on the results from the online survey, we assign 33% of the increase in annual income to CFC training. Based on this approach, we conclude that CFC graduates experienced an annual increase in income of \$3,763 ($33\% \times \$11,403$) directly as a result of CFC training.

Household income and GDP

To estimate the total annual household income attributable to the CFC, we multiplied the average increase in annual income experienced by CFC graduates (\$3,763) by the number of full-time equivalent CFC graduates resident in Ontario (462). In aggregate, therefore, the CFC generated just over \$1.7 million in additional household income in the Ontario economy in 2011 (Table 5).

In estimating household income, we also took into account the fact that graduates from 2006 would have likely been earning six years of income premium, that graduates from 2007 would likely been earning five years of income premium, and so on. After taking into account all six years of graduates – 2006 through 2011 – we arrived at the cumulative income effect (2007-2012).

We estimate that cumulative income effect was over \$6.1 million. In other words, CFC graduates (since 2006) earned \$6.1 million in incremental income, following graduation. This \$6.1 million in incremental income (i.e. the income premium) forms the foundation of the direct economic impact. This increase in household income of \$6.1 million also represents the increase in GDP for the province since 2006.

Table 5 – Calculation of human capital effect on household income.

Source: Nordicity calculations based on data from survey of CFC graduates.

† Cumulative income effect calculated using a multiplier that reflects a scenario in which graduates from 2006 experience six years of incremental income, graduates from 2007 experience five years of incremental incomes, graduates from 2008 experience four years of incremental income, graduates from 2009 experience three years of incremental income, graduates from 2010 experience two years of incremental income and graduates of 2011 experience one year of incremental income.

	Amount
A. Attributed increase in annual income (\$)	\$3,763
B. Number of CFC graduates since 2006	577
C. Share of graduates resident in Ontario	80%
D. Number of CFC graduates since 2006 who are resident in Ontario [=B×C]	462
E. Aggregate incremental annual income (\$) [=A×D]	\$1,737,718
F. Cumulative income effect, 2006-2011 (\$)†	\$6,082,014

Long-term impact

The economic impact of education and training not only manifests itself in historical and current periods; for a graduate, the effects of education and training often persist into future periods. For that reason, we also model the present value of the income premium experienced by graduates over the span of their career.

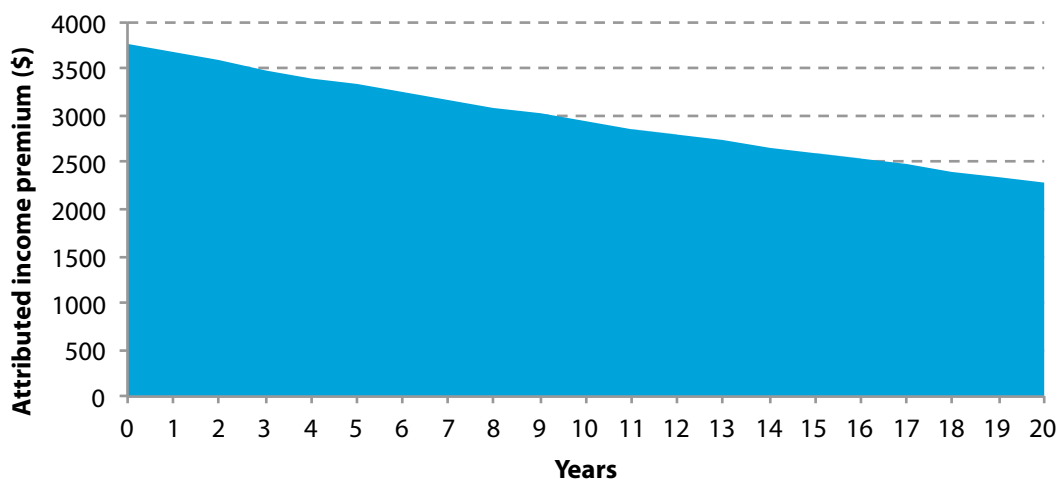
To model the present value of the future income premium, we assumed that each graduate has a 20-year career.⁸ We also applied a 2.5% discount rate to convert the future income premiums into present value.

The application of these assumptions to the attributed annual income premium of \$3,763 is depicted in Figure 13. The sum of the present values of income premium for each year (i.e. the area under the curve in Figure 13) can be added to the historical impact (Table 5) to arrive at an estimate of the long-term impact of CFC training on household income (Table 6).

8 A 20-year career post-graduation from the CFC is a conservative estimate which takes into account both longer-term careers as well as graduates that may exit from the industry altogether.

Figure 13 – Forecast present value of attributed CFC income premium

Source: Nordicity calculations based on data from survey of CFC graduates.



Based on the approach described above, the present value of the forecast income premium is equal to \$28.8 million (Table 6). We add this amount to the value of cumulative income effect for 2006-2011 (\$6.1 million) to arrive at an estimate of the total long-term impact of CFC training on household income in Ontario. We find that all 462 CFC graduates resident in Ontario would earn a combined income premium totalling \$34.9 million over their careers. That is, household income in Ontario would be \$34.9 million greater as a result of the CFC. Since household income is the only component of direct GDP in the human capital effect, we can also conclude that Ontario’s GDP would be \$34.9 million higher as a result of the CFC.

Table 6 – Calculation of human capital effect on household income (\$)

Source: Nordicity calculations based on data from survey of CFC graduates.

	Amount
A. Cumulative income effect, 2006-2011	6,082,014
B. Present value of the forecast income premium	28,827,291
C. Total long-term impact on household income	34,909,305

Employment

To estimate the incremental impact on employment we divided the total long-term impact on household income (\$34.9 million) by the average FTE salary for a film and TV production worker in Ontario (\$54,631).⁹ Based on this approach, the incremental household income of \$34.9 million yields a total of 640 FTEs of employment in Ontario over the career of a CFC graduate.

Table 7 – Calculation of human capital effect on jobs

Source: Nordicity calculations based on data from survey of CFC graduates and CMPA, Profile 2011.

	Amount
A. Total long-term impact on household income (\$)	34,909,305
B. FTE salary (\$)	54,631
C. Total number of FTEs [=A÷B]	640

Summary

In summary, the human capital effect associated with CFC programs led to \$34.9 million in incremental household income for Ontario workers in the screen-based industries. This increase in household income included the present value of the income premium that would persist into the future. This increase in household income, in turn, led to the creation of 640 FTEs of employment within Ontario's screen-based industries. Note that these results do not pertain to a single year, but rather, reflect the incremental economic benefits over the career of a CFC graduate.

2.2.1 Spin-off and total economic impact

The increased household income earned by CFC graduates also yields a spin-off economic impact in other industries in the province as CFC graduates re-spend their incremental household income throughout the province. This spin-off income is entirely in the form of the induced economic impact that arises from the re-spending of household income.

Nordicity's induced-impact model indicates that the \$34.9 million in incremental household income associated with CFC programs led to an additional \$3.9 million in spin-off household income and \$6.6

⁹ CMPA, Profile 2011, pp. 93-94.

million in spinoff GDP within the Ontario economy. This spin-off impact also generated an additional 80 FTEs in the province.

Table 8 – Human capital effect, spin-off and total economic impact

Source: Nordicity calculations based on data from survey of CFC graduates and CMPA, Profile 2011.

	Direct Impact	Spin Off Impact	Total Impact
Household income (\$M)	34.9	3.9	38.9
GDP (\$M)	34.9	6.6	41.5
Jobs (FTEs)	640	80	720

Summing the direct and spin-off impacts, we arrive at the total economic impact of the human capital effects of the CFC program. In total, since 2006, the CFC program has led to an increase of \$38.9 million in household income for Ontario residents. The bulk of this increase was experienced by CFC graduates, who work in the screen-based industries. The human capital effects of the CFC program also contributed over \$41.5 million in GDP to the Ontario economic between 2007 and 2012. The bulk of this GDP increase was comprised of increased household income.

The CFC program also generated the equivalent of 720 full-time jobs in Ontario between 2007 and 2012. Again, most of this employment (640 FTEs) was occupied by CFC graduates working in the screen-based industries.

2.3 Summary

By providing training and hands-on experience to workers in the screen-based industries, the CFC enhances its graduates' skills, or human capital. With this enhanced human capital CFC graduates can earn higher incomes through either higher rate of pay or longer duration of employment. Either way, CFC graduates can experience higher incomes, which, in turn, provide economic benefits for the province.

The analysis of KPIs for CFC graduates clearly shows that they earn significantly higher incomes following graduation from the CFC program. The survey data indicate that approximately one-third of the income premium earned by CFC graduates can be attributed back to CFC programs. We estimate that CFC graduates (since 2006) earned a cumulative income differential of \$34.9 million between 2006 and 2012, including the present value of their future income premium. This income differential also directly created \$34.9 million in GDP for the Ontario economy as well as 640 FTEs of employment.

After taking into account the spin-off impact of this increased household income and GDP, we estimate that the human capital effect of the CFC added \$38.9 million in household income and \$41.5 million in GDP to the Ontario economy between 2006 and 2012. This increased household income and GDP yielded the equivalent of 720 full-time jobs in the provincial economy between 2006 and 2012.

3. The Intellectual Property Impact of the CFC

In Section 2, we analyzed the effect that CFC has on its graduates' human capital. This effect on human capital manifested itself in terms of improved employment performance for graduates and higher employment income. This higher employment income also had a wider impact on the Ontario economy.

CFC programs also help some graduates transition into key creative roles (producer, writer, director). Many of these production “entrepreneurs and key creatives” go on to form their own production companies, and develop, produce and commercialize film and TV projects in Ontario. These projects generate employment and economic benefits for the province, which go well beyond the graduate's own personal income benefits. Because this type of economic benefit is associated with the creation of intellectual property, we refer to it as the IP effect.¹⁰ This process, whereby the CFC graduate transitions from a creator or technician to an entrepreneur can have a significant economic leverage effect, as it creates additional employment in Ontario.

In this section, we analyze the economic impact of the IP effect. This is followed by a look at the export value and inward investment associated with CFC's IP effect. We also examine the overall value of commercialized content/products developed by CFC graduates.

3.1 Economic impact analysis

In this section, we present the results of the analysis of the economic impact of CFC's IP effect. First, we calculate the direct economic impact, specifically the incremental volume of production that can be attributed to graduates. Along with the estimates of direct household income, GDP and employment, we also estimate the spin-off economic impact of the IP effect and the total economic impact.

3.1.1 Direct economic impact

To estimate the direct economic impact associated with CFC's IP effect, we first determined the extent to which CFC programs contributed to the commercialization of screen-based projects. In the context of the survey and this analysis, the commercialization of screen-based projects includes any type of pre-sale, licensing, or bringing-to-market of film, TV or digital media content. From the survey data, we isolated the CFC graduates who founded media companies. We then compared the pre-CFC and post-CFC levels of project commercialization at these companies.¹¹

¹⁰ The IP effect refers to the economic impact associated with both the development and commercialization of IP. However, that does not necessarily mean that graduates or their companies actually control the IP of the screen-based content.

¹¹ For digital media projects, we analyzed the annual number of prototypes or proofs of concept that were developed into commercially viable products.

Through our sampling process, we estimated that out of the 577 persons who graduated from the CFC since 2006, 137 went on to establish media companies.¹² Across these 137 graduates, the annual average number of commercialized projects across all types of content increased from 10 (pre-CFC) to 75 (post-CFC), following graduation from the CFC program (Table 9). In other words, before entering the CFC program, this group of 137 graduates generated, on average, 10 commercialized projects annually. Following graduation, this group started to generate, on average, 50 commercialized projects annually. From these results, it would appear that this group of graduates increased their productivity in terms of IP creation by a factor of five, following graduation from the CFC program.

Table 9 - Annual average number of projects produced per year by CFC graduates' production companies

Source: Nordicity survey to CFC alumni, 2012

	Average number of projects per year	
	Pre-CFC	Post-CFC
Film	7	10
TV	1	4
Commercial video	2	26
Digital media	0	9
Other media	0	1
Total	10	50

These raw amounts from the survey were grossed-up in order to represent production activity across all CFC graduates. The grossed-up data indicate that in the film segment, the annual average number of commercialized projects increased from 27 per year to 38 per year (Table 10). In the TV segment, the increase was from 4 to 15 per year, and in commercial video, the increase was from 8 to 99 per year. In the digital media and other media segments, the annual average number of commercialized projects went from zero to 34 and 4, respectively.

¹² These 137 companies are not necessarily mutually exclusive and may include some personal services firms.

Table 10 - Average annual number of projects (gross-up amounts)

Source: Nordicity survey to CFC alumni, 2012

	Pre-CFC	Post-CFC	Increment
Film	27	38	11
TV	4	15	11
Commercial video	8	99	92
Digital media	0	34	34
Other media	0	4	4
Total	38	191	153

Attribution

As in the case of the human capital impact, we also took into account that not all of the increase in project commercialization could be attributed to CFC training. To assess the level of attribution we relied upon data from the survey. Respondents who reported that they established a media company were also asked to qualitatively assess the contribution that their CFC training made to their company's performance and success. The results for this particular question are summarized in Table 11.

To determine an overall attribution rate, we assigned individual attribution rates to each qualitative response. When these assigned attribution rates were weighted by the share of survey responses to each qualitative response we arrived at an overall attribution rate of 33%. In other words, one-third of company performance could be attributed to the CFC. We applied this attribution rate to the incremental change in the number of commercialized projects.

Table 11 – Qualitative assessment of CFC contribution to company performance

Source: Nordicity calculations based on data from survey of CFC graduates.

Response	Attribution rate	Share of Responses
The CFC is entirely responsible for our success	100%	2.1%
The CFC programming was one (of several) critical elements	45%	25.5%
The CFC was quite helpful, but not critical	20%	4.3%
The CFC was positive, but not directly helpful	5%	6.4%
The CFC did not contribute to our success	0%	6.4%
No response		55.3%
Total		100.0%
Weighted average attribution rate	33%	

After making the adjustment for attribution, we found that the incremental change in graduates' number of commercial projects was 53. That is, across, the 137 graduates that established media companies, aggregate productivity improved by 53 projects per annum, or 0.4 projects per graduate.

Table 12 – Calculation of incremental increase in number of projects for which CFC graduates were principals

Source: Nordicity calculations based on data from survey of CFC graduates

	A. Pre-CFC Average annual number of commercialized projects	B. Post-CFC Average annual number of commercialized projects	C. Incremental change (=A-B)	D. Attributed impact (=C × 33%)
Film	27	38	11	4
TV	4	15	11	4
Commercial video	8	99	92	31
Digital media	0	34	34	12
Other	0	4	4	2
Total	38	191	153	53

We converted our estimates of attributed impact to estimates of production volume (i.e. to dollar values of production budgets) by multiplying the number of projects by the corresponding average project size. For the film and TV projects, we obtained data for the average project sizes from the survey. For digital media projects, we used data from the CMF for the average budget size of convergent digital media projects that receive CMF support. We did not have specific data for the commercial video segment; so we used an assumption of \$100,000 for the average budget.

Based on this approach, we estimate that the annualized value of the incremental production associated with graduates was \$22.9 million (Table 13). After adjusting for the composition of the CFC graduate pool since 2006,¹³ we estimate that the cumulative impact in terms of production volume was \$80.3 million. In other words, between 2006 and 2012, graduates' media companies commercialised \$80.3 million worth of screen-based production. This total included \$21.0 million in film production, \$42.0 million in TV production, \$10.9 million in commercial video production, \$5.7 million in digital media production and \$700,000 in other types of screen-based production.

13 Column C represents the increased production associated with a single year of work of graduates; whereas column D represents the commensurate level of increased production after taking into account that graduates from 2006 have had six years' worth of production activity.

Table 13 – Estimation of incremental production volume

Source: Nordicity calculations based on data from survey of CFC graduates; CMPA, Profile 2011; and Nordicity, Development of Economic Indicators of Interactive Digital Media Convergent Production in Canada.

† Cumulative impact calculated using a multiplier that reflects a scenario in which graduates from 2006 experience six years of incremental activity, graduates from 2007 experience five years of incremental activity, graduates from 2008 experience four years of incremental activity, graduates from 2009 experience three years of incremental activity, graduates from 2010 experience two years of incremental activity and graduates of 2011 experience one year of incremental activity.

	A. Attributed impact (number of greenlit development projects)	B. Average production budget per project (\$)	C. Production volume (\$ value of budgets) (=A×B)	D. Cumulative impact† (\$)
Film	4	1,500,000	6,000,000	21,000,000
TV	4	3,000,000	12,000,000	42,000,000
Commercial video	31	100,000	3,100,000	10,850,000
Digital media	43	136,000	1,632,000	5,712,000
Other	2	100,000	200,000	700,000
Total	84		22,932,000	80,262,000

To estimate the direct economic impact of incremental production activity, Nordicity determined the household income, GDP and employment generated by this level of production volume. The total production volume of \$80.3 million generated \$41.6 million in household income for the cast and crews working on these productions (Table 6). This household income, combined with the operating surplus (i.e. operating profits and sole proprietors' income) earned by film, TV and digital media companies generated \$43.9 million in GDP. This level of production also supported 890 jobs, including 830 cast and crew jobs in film and TV production, and 60 jobs in the digital media industry.

Table 14 – Intellectual property effect, direct economic impact

Source: Nordicity calculations based on data from survey of CFC graduates; CMPA, Profile 2011; Nordicity, Development of Economic Indicators of Interactive Digital Media Convergent Production in Canada; and Statistics Canada.

	Film and TV	Digital Media	Total
Production volume (\$M)	74.6	5.7	80.3
Household income (\$M)	37.3	4.3	41.6
GDP (\$M)	39.4	4.5	43.9
Jobs (FTEs)	830	60	890

3.1.2 Spin-off economic impact

The creation and commercialization of IP also has a spin-off economic impact in Ontario, as production companies purchase supplies and services from other Ontario businesses (“indirect impact”) and the household income generated at both the direct and indirect stages of the economic impact is re-spent throughout the Ontario economy (“induced impact”).

On the basis of Statistics Canada’s Input-Output tables, we prepared estimates of the spin-off impact (indirect and induced economic impacts) generated by the production of film, TV and digital media projects commercialized by graduates. The IP effect generated by graduates led to spin-off household income of \$17.6 million for Ontario residents between 2006 and 2012 (Table 7). It also contributed \$29.3 million in spin-off GDP to the Ontario economy and led to the creation of 390 spin-off jobs for Ontarians.

Table 15 – Intellectual property effect, spin-off economic impact

Source: Nordicity calculations based on data from survey of CFC graduates; CMPA, Profile 2011; Nordicity, Development of Economic Indicators of Interactive Digital Media Convergent Production in Canada; and Statistics Canada.

	Film and TV	Digital Media	Total
Household income (\$M)	15.1	2.6	17.6
GDP (\$M)	24.2	5.1	29.3
Jobs (FTEs)	320	70	390

3.1.3 Total economic impact

We sum the direct and spin-off economic impacts to arrive at an estimate of the total economic impact on the Ontario economy of the IP effect. Overall, the film, TV and digital media productions commercialized by graduates generated \$59.2 million in household income for Ontario residents, contributed \$73.2 million in GDP to the provincial economy, and supported 1,280 jobs for Ontarians.

Table 16 – Intellectual property effect, total economic impact

Source: Nordicity calculations based on data from survey of CFC graduates; CMPA, Profile 2011; Nordicity, Development of Economic Indicators of Interactive Digital Media Convergent Production in Canada; and Statistics Canada.

	Direct Impact	Spin-off Impact	Total Impact
Household income (\$)	52.3	6.9	59.2
GDP (\$)	63.6	9.7	73.2
Jobs (FTEs)	1,150	130	1,280

3.2 Value of inward investment

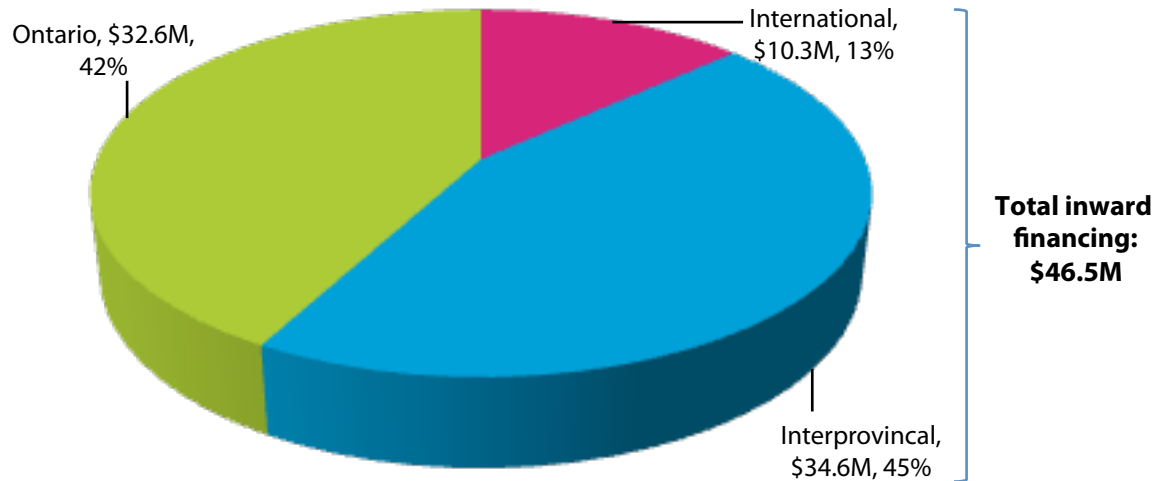
Thus far we have analyzed CFC's economic impact in terms of the household income, GDP and jobs it generates for the Ontario economy. It is also important to recognize that a large portion of the economic impact of CFC's IP effect is due to the attraction of financing from outside Ontario and Canada.

On the basis of average financing structures for Canadian production we prepared an estimate of the export value of production associated with CFC's IP effect. Out of the total production volume of \$80.3 million, an estimated \$10.6 million (13%) originated from outside Canada in terms of pre-sales to foreign broadcasters or advances from foreign distributors or other financiers (Figure 14).

The incremental production associated with CFC's IP effect also attracted \$35.9 million in financing from other provinces. This interprovincial financing, which accounted for 45% of the total financing of CFC IP effect production, included other provinces' pro-rated shares of various national and federal sources of financing, such as Canadian broadcaster licences, federal tax credits, and funding from CMF and Telefilm Canada. All told, CFC's IP effect production attracted \$46.5 million in inward financing to Ontario's production industry between 2006 and 2012. This inward financing accounted for 58% of the total financing of CFC's IP effect production.

Figure 14 – Export value of CFC IP effect production

Source: Nordicity calculations based on data from survey of CFC graduates; CMPA, Profile 2011; Nordicity, Development of Economic Indicators of Interactive Digital Media Convergent Production in Canada; and Statistics Canada.

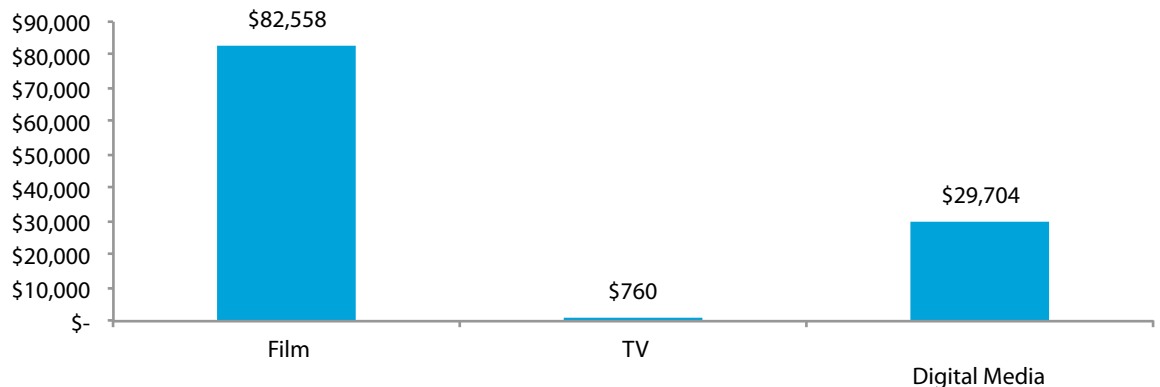


3.3 Value of export sales

CFC’s IP effect projects also generate export sales through the distribution or licensing of content after their production is complete. As the following chart indicates, film projects commercialized by companies whose principals attended a CFC program generated the most export sales of any type of media product. That said, for all types of projects, export sales accounted for only 2.5% of project-related revenue between 2006 and 2011).¹⁴

Figure 15 - Export sales

Source: Nordicity survey to CFC alumni, 2012



14 This low export figure may be due in part to how different financial structures are set, for example whether export is treated as international distribution and accounted for in pre-sale or whether additional export revenue may be derived at a later stage. In addition, export sales reporting may be slightly depressed due to the early career segment we have captured for graduates between 2006 and 2011.

3.4 Value of commercialized content/products

The screen-based industries are typically seen as high-risk and as having significant barriers to entry. Experts have observed that today’s market dynamics can appear to favour “blockbuster” content that is typically created by the giant corporations (which are, in turn, significantly American-controlled). The capacity of Canada’s screen-based storytellers to create and retain their own intellectual property is enormously important to ensure the robust future of the creative economy. While it is difficult to correlate the volume or flow of future commercialization directly back to attending the CFC, it is nonetheless instructive to examine a before-and-after picture of a company’s capacity to commercialize content.

Survey respondents who also started a company (at any time) were asked the total number of projects they commercialized before and after their time at the CFC. The chart below suggests that attending CFC programs had a positive impact on the ability of company principals to commercialize all types of media products. The most striking impact is on the commercialization of digital media products. That being said, the chart below represents a cumulative “after CFC total”. As a result, it is logical that respondents with very short careers prior to attending the CFC will commercialize a greater number of products in the years since graduation.

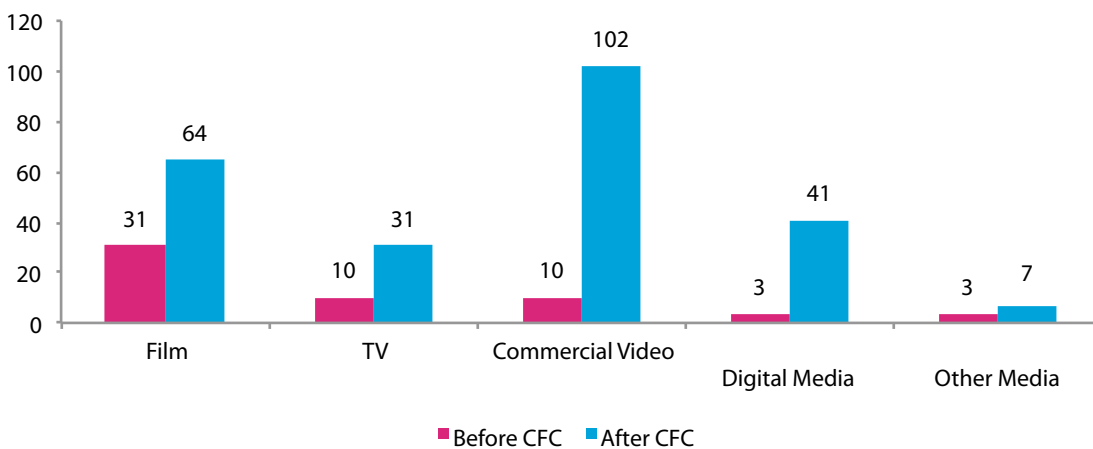


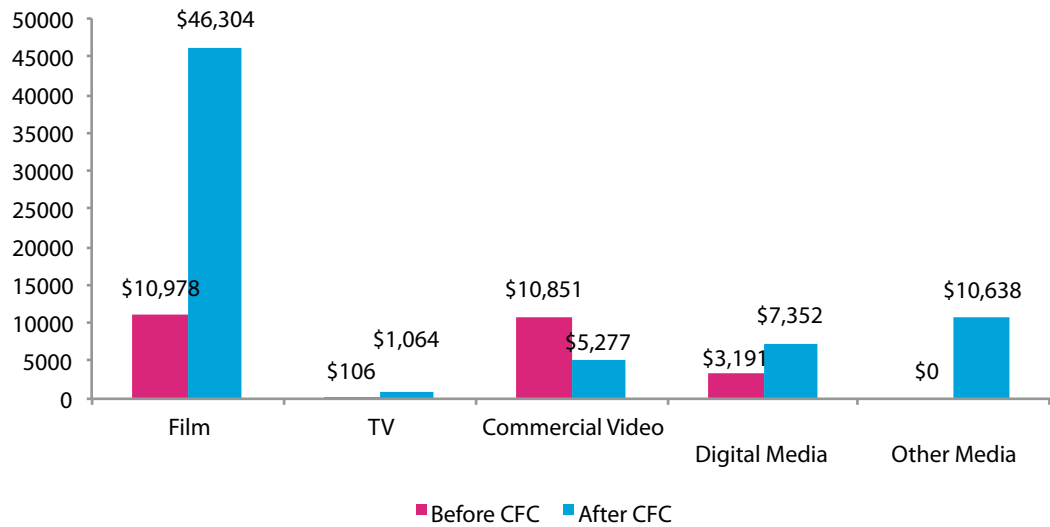
Figure 16 - Products commercialized

Source: Nordicity survey to CFC alumni, 2012

In addition, the average project revenue for those products created by CFC graduates is also increased for most types of media projects, as shown in the following chart. Indeed, while respondents indicated a decrease in the average revenue per commercial video project, the revenue derived from film projects grew substantially (by 422%).

Figure 17 - Average project revenue

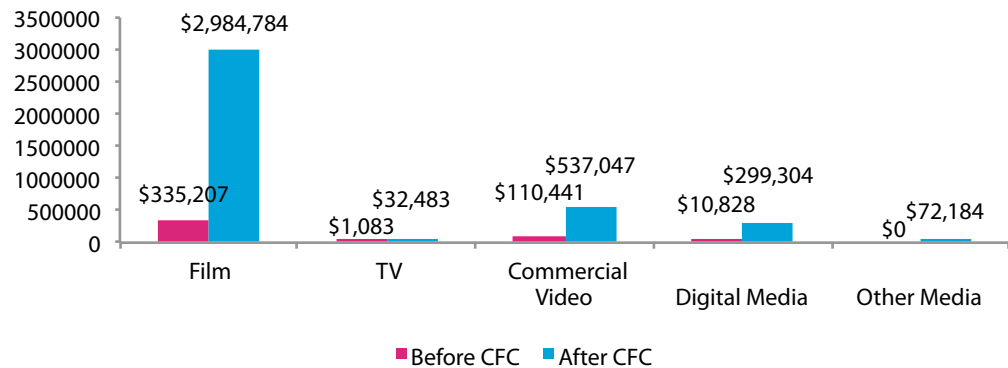
Source: Nordicity survey to CFC alumni, 2012



Given an increase in the number and revenue of commercialized projects, one would expect an increase in the total value of commercialized projects. Indeed, all types of commercialized production seem to benefit from company principals attending CFC programs. On a percentage basis Film, Commercial Video and Digital Media production seem to benefit the most from CFC participation.

Figure 18 - Value of commercialized projects

Source: Nordicity survey to CFC alumni, 2012



3.5 Summary

When CFC graduates launch media companies, they not only gain an opportunity to improve their employment prospects and income, they also create IP, which can have much wider economic impact. Through the creation of IP, entrepreneurial graduates introduce an element of economic leverage into the benefits equation. They are not only generating benefits for themselves, but also developing the IP that will create jobs and incomes for dozens of cast and crew, when production takes place.

Since 2006, 137 graduates of the CFC program have gone on to establish media companies in Ontario.¹⁵ Following graduation, these 137 graduates increased their annual productivity by 153 projects. Graduates indicated that approximately one-third of those projects (53 projects) can be attributed to their CFC training. These 53 projects translated into \$80.3 million in production volume (i.e. budgets) between 2006 and 2012. This level of production volume ultimately generated \$59.2 million in household income for Ontario residents and contributed \$73.2 million in GDP to the Ontario economy. The economic impact of this production volume also supported 1,280 FTEs of employment between 2006 and 2012.

The creation and production of IP by graduates also attracted considerable financing from outside the province and country. The IP effect production of \$80.3 million attracted an estimated \$10.3 million in international financing and further \$34.6 million in interprovincial financing. The total inward financing for CFC's IP effect production amounted to \$46.5 million between 2006 and 2012.

¹⁵ These 137 companies are not necessarily mutually exclusive and may include some personal services firms.

4. Summary of Economic Impact and Analysis of Fiscal Impact

In this section we summarize the combined economic impact arising from both the human capital and IP effects and then utilize tax ratios from Statistics Canada to estimate the provincial tax revenue generated by the combined economic impact.

4.1 Summary of combined economic impact

We can sum the total economic impacts from both the human capital and IP effects to arrive at an estimate of the overall economic impact of the CFC program between 2006 and 2011. In total, the CFC program generated \$98.0 million in incremental household income for Ontario residents and \$114.7 million in GDP for the Ontario economy (Table 17). This incremental economic activity generated 2,000 FTEs of employment within the Ontario economy.

Table 17 – Summary of total economic impact

Source: Nordicity calculations based on data from survey of CFC graduates; CMPA, Profile 2011; Nordicity, Development of Economic Indicators of Interactive Digital Media Convergent Production in Canada; and Statistics Canada.

	Direct Impact	Spin-off Impact	Total Impact
Human Capital Effect			
Household income (\$)	34.9	3.9	38.9
GDP (\$)	34.9	6.6	41.5
Jobs (FTEs)	640	80	720
IP effect			
Household income (\$)	41.6	17.6	59.2
GDP (\$)	43.9	29.3	73.2
Jobs (FTEs)	890	390	1,280
Total economic impact			
Household income (\$)	76.5	21.6	98.0
GDP (\$)	78.8	35.9	114.7
Jobs (FTEs)	1,530	470	2,000

4.2 Fiscal impact

To derive a tax ratio for Ontario personal income tax, we compared the amount of personal income tax collected by the Ontario government to the total value of wages in the Ontario economy. To calculate tax ratios for provincial corporation income tax, consumption tax (e.g., sales tax and fuel tax), and property tax, we compared the amounts collected by the Province to the Province's total GDP. The data used to calculate these tax ratios can be found in Table 18.

Table 18 - Calculation of Ontario tax ratios for fiscal impact analysis

Source: Nordicity calculations based on data from Statistics Canada CANSIM matrices 384-0001, 384-0002, and 385-0002. See Appendix for additional data.

* 2006 to 2009 average

† Total wages in the Ontario economy

†† Total GDP in the Ontario economy

	Ontario Tax Revenue	Base Amount (\$M)*	Tax Ratio
Personal income tax	27,441	318,766†	8.6%
Corporate income tax	8,983	578,303††	1.6%
Consumption tax	24,486	578,303††	4.2%
Property taxes and user fees	23,918	578,303††	4.1%

To estimate the provincial tax revenues attributable to CFC's economic impact, we multiplied the tax ratios by the appropriate base amount. For personal income tax, we multiplied the tax ratio by the total amount of household income generated by CFC's economic impact. For the corporation, consumption, and property taxes and user fees, we multiplied the tax ratios by the total GDP generated by CFC's economic impact. The results are summarized in Table 19.

The household income generated by CFC's economic impact led to an estimated \$8.4 million in Ontario personal income tax between 2006 and 2012. The economic activity generated by CFC's economic impact also led to an estimated \$1.8 million in provincial corporation income, \$4.9 million in provincial consumption taxes, and \$4.7 million in local taxes and fees.

Table 19 - Estimate of Ontario government tax revenues, 2006-2012

Source: Nordicity calculations based on data from Statistics Canada CANSIM matrices 384-0001, 384-0002, and 385-0002. See Appendix for additional data.

† Total household income impact

†† Total GDP impact

	Tax Ratio	Base Amount (\$M)	Provincial and local government tax revenue (\$M)
Personal income tax	8.6%	98.0†	8.4
Corporation income tax	1.6%	114.7††	1.8
Consumption taxes	4.2%	114.7††	4.9
Local taxes and fees	4.1%	114.7††	4.7
Total tax revenue			19.8
Government of Ontario's contribution to CFC (2005-2012)			(16.0)
Net fiscal benefit/(cost)			3.8

In total, the economic impact of CFC led to an estimated \$19.8 million in incremental tax revenue for the Ontario government, including the present value of future income premiums earned by CFC graduates. When compared to the Ontario government's contribution of \$16.0 million to CFC between 2005/06 and 2011/12, we find that the CFC generated a net fiscal benefit of \$3.8 million for the Province between 2006 and 2012.

5. The Intangible Impact of the CFC

Over the past two and a half decades, the CFC has trained and launched some of Canada’s most talented and respected screen-based storytellers through its award-winning programming. As such, the impact of the CFC extends beyond what can be captured by the economic contribution of its alumni’s increased productivity and success. In this sub-section Nordicity draws on survey data, interviews with CFC alumni and alumni testimonials to describe the non-economic or, in some respects, intangible benefits experienced by CFC graduates in terms of their careers. Such non-economic value might include expanded professional and personal networks, skills acquisition, increased access to experienced mentors, and new approaches to generating and incubating ideas; all of which contribute to more successful and more productive careers.

First we will review the intangible impacts of the CFC, from the perspective of the alumni. Next we will discuss the CFC’s role as a career launch-pad in the screen-based industries.

5.1 Intangible contributions of the CFC

In the online survey, CFC graduates were asked about certain intangible aspects of their pre- and post-CFC career. These questions are highly subjective but offer insight into the experience of CFC alumni.¹⁶

In the survey, graduates were asked to rank their agreement with the question “How strongly do you feel that the productions you have contributed to have...”based on a number of statements related to non-economic impacts. As the following chart indicates, while CFC attendance may not often transform its graduates into recognizable celebrities, enrollment and attendance does help to ensure that graduates produce projects that offer them creative and artistic satisfaction and that are of high quality. Further, CFC graduates agree that they are working on projects in which they (the graduates) themselves, have an influence on the creative direction.

16 N.b., This data draws on survey responses from all graduates, and is not limited to the 2006-2012 cohort.

“How strongly do you feel that the productions you have contributed to have...?”

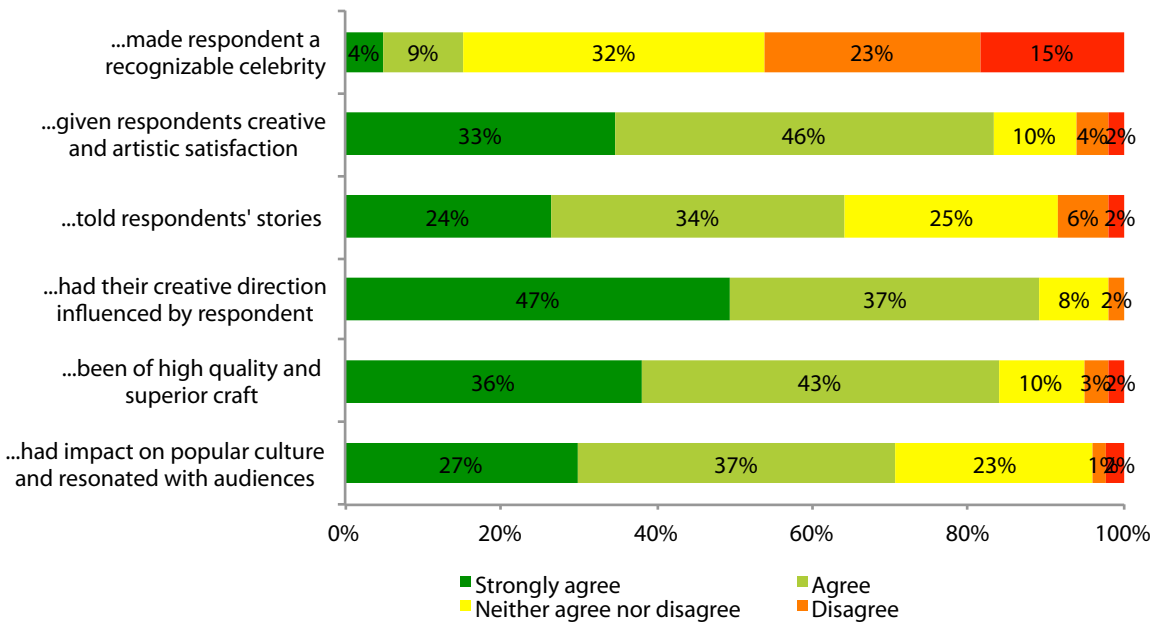


Figure 19 - CFC impact on graduates' career (all graduates)

Source: Nordicity survey to CFC alumni, 2012

N.b. Does not tally to 100% as "Not applicable" responses have been omitted from chart

CFC alumni were also asked to what degree the CFC helped them achieve employment stability, in addition to their artistic development goals. As the following chart illustrates, respondents indicated that their participation in the CFC contributed to a significant degree to their artistic development and to their job security. More than half (55.1%) of graduates who responded to the survey, indicated that the CFC was either the main or a significant contributor to their artistic development. A similar proportion (55.9%) described the CFC as the main or significant contributor to their job stability.

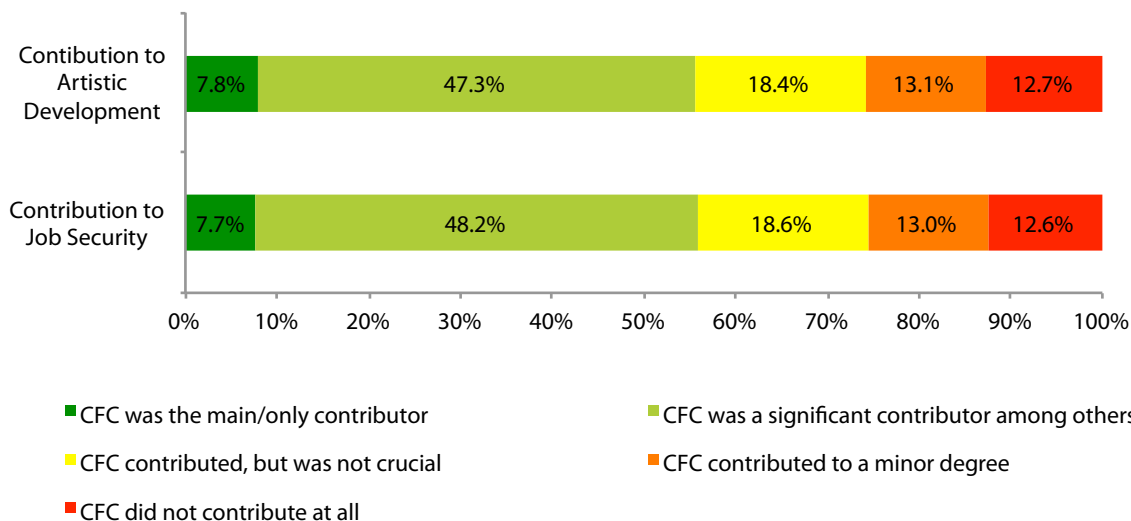


Figure 20 - CFC contribution to job stability and artistic development (all graduates)

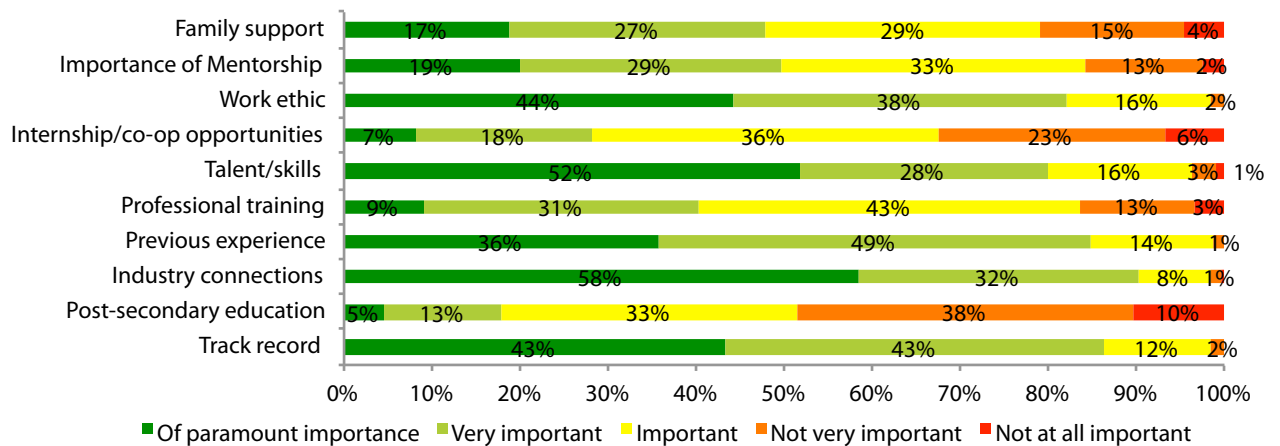
Source: Nordicity survey to CFC alumni, 2012

Graduates were also asked to rank the importance of a range of factors that could have an impact on their ability to “obtain desirable work in your field.” The following chart illustrates how the respondents ranked various factors in terms of the effect on hiring. Some 90% of CFC graduates described “industry connections” as “of paramount importance” or “very important.” Indeed, the importance of a robust professional network surfaces again and again amongst success factors in the screen-based industry. “Track record” and “previous experience” followed with 86% and 85% respectively. Perhaps surprisingly low-ranked were the importance of “internship and co-op opportunities” and “post-secondary education.”

Figure 21 - Factor affecting hiring (all graduates)

Source: Nordicity survey to CFC alumni, 2012

N.b. Does not tally to 100% as “Not applicable” responses have been omitted from chart



The survey also asked graduates to rank potential barriers to employment. The following chart shows that, while there are few insurmountable barriers or challenges to employment, among CFC graduates, “not knowing the right people” (again, the networking challenge) and gender discrimination are important obstacles for CFC graduates to overcome.

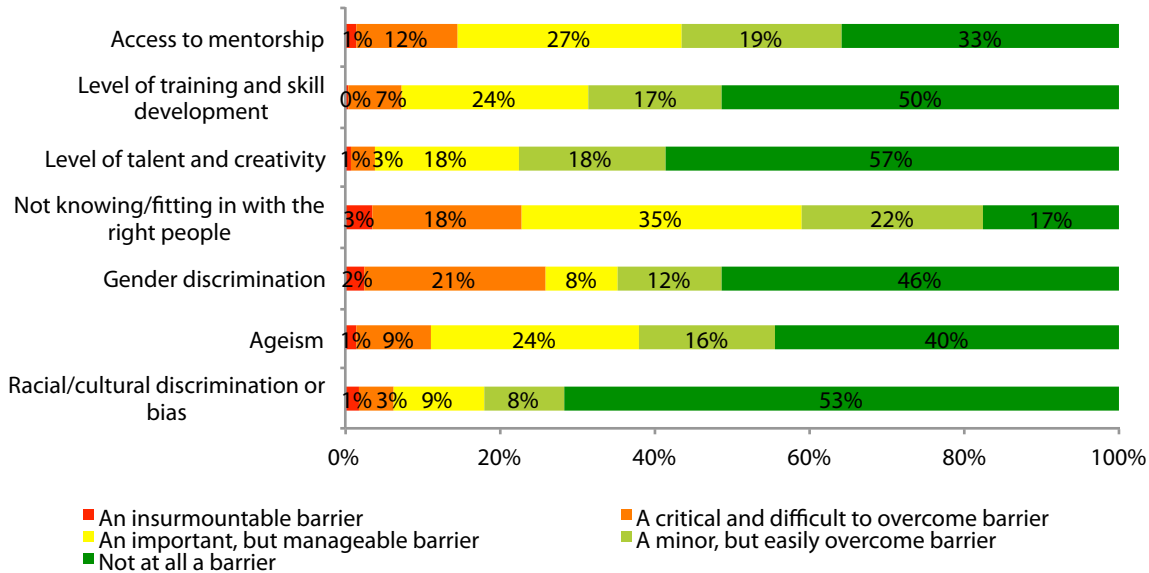


Figure 22 – Barriers to employment (all graduates)

Source: Nordicity survey to CFC alumni, 2012

N.b. Does not tally to 100% as “Not applicable” responses have been omitted from the chart.

5.2 The CFC as a career launch pad

The decision to enroll at the CFC was not taken lightly by its graduates. Many applied with some solid experience under their belt, but enrollment at the CFC represented a substantial investment of time and effort, and in turn, risk. For many graduates, however, it was a risk that paid off - many of them described the “transformative” impact the CFC has had on their careers.

In interviews with a handful of CFC alumni, three areas of career influence rose most prominently to the fore:

1. The “real-world” preparation cultivated by the CFC;
2. The expanded networks and access to mentors offered through the CFC, and;
3. The new skills and approaches to content creation developed at the CFC.

“Real world” preparation

Graduates expressed a sense that upon graduation from the CFC, they perceived themselves, and were perceived in the eyes of industry, as ready to work in any professional setting. Interviewees pointed to the degree of professionalism instilled at the CFC, and the nuances of working in the industry that they might otherwise have taken years to understand (e.g., pitching or how to “take a meeting”). One interviewee observed “there is no production program in Canada [that I know of] that has the same level of respect as the CFC. There is an understanding and an expectation in the

television industry that if you have attended the CFC, you are ready to work. You are prepared. This value is fundamental when you consider how difficult an industry [Film and Television] is to break into." Another interviewee described the CFC experience as representing "a threshold of confidence" in the eyes of potential partners and collaborators. For many alumni, this "real-world preparation" aspect of the CFC outweighed the benefits of the creative instruction that occurred during their enrollment. That being said, the business side of the programs was also described as needing constant attention and refinement in an increasingly competitive and global landscape.

Graduate, Directors' Lab (2011)

"The greatest thing about the Cineplex Entertainment Film Program is their success in simulating the realities of film production in the 'real world.' As a person who entered the CFC with a fair bit of experience, it was useful to get exposure to the development side of the process – learning how to talk about and present your project, shaping an idea into something that is clear and compelling."

Expanded networks and access to mentors

One graduate explained that in such a social business, there is no greater asset than one's network, saying "The CFC gave me access to a network that grows every year." Graduates found that connecting with CFC students, whether their peers in the classroom or graduates of years ahead and behind them, has been extremely beneficial to their careers. These connections have the potential to become future collaborators and supporters. One graduate described the CFC as "the ultimate ice-breaker," explaining that 90% of the contacts he meets have a connection to the CFC in one way or another. In fact, noting how strong the potential of the alumni is, some interviewees lamented that there are not even stronger ties among them or more opportunities to connect back with, and give input to, the CFC years after graduation.

Graduate, CBC Prime Time Television Program (2007)

“At the CFC, I met people who I consider to be my mentors. These experienced mentors have been a great benefit to my career, not just because of the jobs they connected me to, but also the advice they gave me along my career. They are people I will still turn to when I am facing very difficult questions and situations.”

New skills and approaches to content

While the two primary non-economic benefits described by CFC alumni (“real world” preparation and expanded networks) tie back fairly directly to the business sphere, the third impact is more closely linked to the creative benefits of the CFC. One interviewee described the CFC as an open and experimental landscape that offered her “new ways of thinking about the audience and about storytelling.” Another explained that even as techniques and technology has evolved, the approaches and tenets she learned at the Media Lab still have an impact on her creative choices today.

The common refrain amongst alumni interviewed was that the effort and time students invested in the CFC were directly correlated to the benefits they enjoyed after. As one interviewee put it, “The CFC gives you tools and access. You will be successful as you want to be and as hard as you work. [The CFC] are not going to hold your hand.” While no alumni suggested they owed all their success to the CFC, many described their first or second post-CFC project as directly (if not entirely) correlated to their time at the centre.

6. Conclusion

Since 2006, the CFC has generated a positive human capital, IP and fiscal impact on Ontario's economy, and contributed to the strength of its creative economy. From job creation and GDP to intellectual property development, CFC graduates are leading the future generation of Canada's content creators.

In terms of the total economic impact arising from both the human capital and IP effects between 2006 and 2011, as well as the provincial tax revenue generated by the combined economic impact, Nordicity estimates the household income generated by CFC's economic impact led to an estimated **\$19.8 million** in incremental tax revenue for the Ontario government, including the present value of future income premiums earned by CFC graduates. When compared to the Ontario government's contribution of **\$16.0 million** to CFC between 2005/06 and the 2011/12, Nordicity finds that the CFC generated a net fiscal benefit of **\$3.8 million** for the Province between 2006 and 2012.

Qualitative feedback supports the evident career boost for CFC grads

Underpinning this economic analysis is the finding that alumni surveyed perceive the CFC as having multiple positive influences on their careers, on the development of their networks and contacts, and on their ability to work successfully in their chosen field.

In short, these answers convey the sense that the CFC was as a unique launch pad for a career in the screen-based industries. As no one attributed all their success to the CFC, the financial outcomes from the quantitative questions were discounted substantially – guided by their answers to the qualitative questions. Thus, the economic analysis is based on solid and conservative assumptions as to attribution of their success in the workplace.

The quality of CFC's graduates responds to industry's need to outperform global competitors

The role of the CFC in Canada's screen-based infrastructure is becoming more vital as a generator of talent to fuel the increasing sophistication of the screen-based sector. To make sure Ontario continues to climb in the global pecking order of media clusters, the competitive advantage is shifting to those with the best talent – talent to innovate in a content production/distribution environment undergoing rapid change; talent to develop or adopt the latest content and interactive technology; and talent to manage larger budgets and complex global projects.

The support that the CFC is receiving from top Canadian industry stakeholders in broadcasting, distribution, and production attests directly to its success. The CFC boasts more than 100 creative cluster partnerships and collaborates with top entertainment brands globally. The joint ventures with the likes of Corus (broadcasting and production), Bell-TV (broadcasting and distribution), Cineplex-Odeon (exhibition), and Ernst & Young (finance/business) are tangible illustrations that industry leaders want a connection to the CFC. They look at the CFC to connect partners domestically and internationally with top, up-and-coming Canadian talent, enriching their skills and knowledge and contributing to and celebrating their success.

The results of this report appear to validate Ontario's investment in the CFC in terms of MTCS's objective to create jobs, develop new skilled-workers and build the capacity of the creative cluster in Ontario.

