MASSIVE OPEN ONLINE COURSES (MOOC) DISRUPTIVE IMPACT ON HIGHER EDUCATION

by

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Executive Summary

This paper presents a strategic analysis of online education, in particular, massive open online courses (MOOCs), and the disruptive impact of MOOCs on traditional face-to-face higher educational instructional models.

In 2012, MOOCs expanded on a grand scale. Backed by tens of millions of dollars in funding, provided mainly by elite universities such as Harvard, Stanford and the Massachusetts Institute of Technology (MIT), and enabled by advances in technology, MOOCs made adult learning, for the first time, free to anyone worldwide. The MOOCs phenomenon continues to grow with institutions such as the Futurelearn consortium in the U.K. and the Berlin-based start-up "iversity".

Using the concept of disruptive innovation, this paper will show how the landscape is changing in higher education and why Simon Fraser University (SFU) should be concerned about the effect that MOOCs are having, and the threat they pose to institutions reliant solely on traditional instructional, face-to-face, delivery models.

The internal and external industry analysis presented in this paper reveals that it is important to look for new educational and instructional business models. Some of the reasons cited are: rising student debt, stagnant student funding from government, increasing administrative and overhead costs, changing demographics, and the potential decline in international student enrolment - currently a significant revenue source for higher educational institutions in British Columbia.

The finding in this analysis is that MOOCs are disruptive and challenge the traditional educational model. Universities are being asked to account for the value and actual quality that they provide to students and society and provide greater access to education for less cost. The rapid rise of MOOCs worldwide in the last year, tells us that the status quo is no longer sustainable. MOOCs are compelling many universities to react, to re-think and re-engineer current instructional models with the goal of creating a more effective and efficient system of learning, one that is more student-centric.

This paper identifies three strategic alternatives and reviews each to determine which model best improves SFU's value proposition. They are:

- Maintain current business model
- Develop Online courses and MOOCs to increase delivery options
- Hybrid model

In conclusion, this paper recommends that SFU develop and implement a hybrid instructional learning model, one that incorporates online learning technology and learning analytics with face-to-face instruction to transform the student's overall learning experience. This model, with its student-centric approach, will help SFU achieve its expected learning outcomes, strengthen its value proposition and improve its competitive position by increasing customer utility or willingness to pay. More importantly, it will prepare students for life by equipping them with knowledge, skills and transformational experiences. It will help them achieve their educational and professional goals.

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Table of Contents

Approval ii

Executive Summary iii

Acknowledgements v

Table of Contents vi

List of Figures ix

List of Tables x

Glossary xi

1: Introduction 1

2: Organization's Current Position 4

2.1 Organization Overview - Simon Fraser University 4

2.2 Current Strategic Position 5

2.2.1 Goals 5

2.2.2 Product Market Focus – Customer and Product Segments 7

2.2.3 Value Proposition (Benefits) 8

2.2.4 Core Activities 9

2.2.5 Strategy Statement 9

2.3 Differentiation versus Cost 9

2.3.1 Brand - University Rankings 10

2.3.2 Brand - Accreditation 10

2.4 Organizational Structure & Current Performance 11

2.4.1 Performance – Financial 13

2.4.2 Performance - Domestic and International Student Enrolment 14

2.4.3 Performance – Online 16

2.4.4 Performance - Research 17

2.4.5 Performance – Endowment 17

2.5 Current Strategic Issues 18

2.6 Internal Analysis Summary & Conclusion 20

3: External Analysis 21

3.1 Industry Definition 22

3.2 Value Chain 23

3.3 Competitors – Industry Structure and Types of Competitors 25

3.4 Customers - Segments 27

3.4.1 Why the distinction matters 27

3.5 Five Forces Framework 29

3.5.1 Rivalry among Existing Competition 31

3.5.2 Threat of Entry ... 33
3.5.3 Threat of Substitutes ... 34
3.5.4 Bargaining Power of Buyers ... 36
3.5.5 Bargaining Power of Suppliers ... 37
3.6 PEST ... 39
3.6.1 Political ... 39
3.6.2 Economical ... 40
3.6.3 Social ... 40
3.6.4 Technological ... 42
3.7 Sources of Advantage (SoA) – Cost Advantage ... 43
3.7.1 Cost-Operating Expenditures per WFTE Student ... 44
3.7.2 Scale and Scope Economies ... 45
3.7.3 Bargaining Power ... 45
3.7.4 Operational Efficiencies ... 46
3.8 Sources of Advantage (SoA) - Customer Utility Advantage ... 47
3.8.1 Cost ... 50
3.8.2 Location & Convenience ... 50
3.8.3 Brand/Prestige/Reputation ... 50
3.8.4 Range of Product ... 51
3.8.5 Student Experience ... 51
3.9 Relative Competitive Analysis – UG ... 52
3.9.1 Cost of Tuition ... 54
3.9.2 Location and Convenience ... 55
3.9.3 Brand/Prestige/Reputation ... 55
3.9.4 Range of Product and Student Experience ... 57
3.9.5 Relative Competitive Analysis Summary and Conclusion ... 60
3.10 S.W.O.T. Summary ... 61
3.11 External Analysis Summary & Conclusion ... 63

4: Disruptive Innovation – Online & MOOCs ... 65
4.1 Mainstream versus Disruptive Innovation Defined ... 65
4.1.1 Mainstream versus Disruptive Innovation - Value Networks ... 66
4.1.2 Disruptive Innovation Enablers or Elements ... 68
4.1.2.1 Disruptive Innovation – Technology Enabler ... 68
4.1.2.2 Disruptive Innovation – Business Model Innovation ... 71
4.2 Online Learning & Massive Open Online Courses (MOOCs) ... 72
4.2.1 Online Learning ... 73
4.2.1.1 Online Advantages and Disadvantages ... 76
4.2.1.2 Is Online Disruptive? ... 78
4.2.2 Massive Open Online Courses (MOOCs) ... 79
4.2.2.1 Why MOOCs? ... 85
4.2.2.2 MOOCs Possible Business Model ... 86
4.2.2.3 Are MOOCs Disruptive? ... 88
4.2.2.4 Are MOOCs a Threat? ... 88
4.3 Disruptive Innovation – Online & MOOCs – Summary & Conclusion ... 91

5: Blue Ocean Strategy Explained ... 93
5.1 Value Innovation ... 94
5.2 Four Action Framework ... 96

5.3 Six Principles of Blue Ocean Strategy 97
5.4 Blue Ocean Strategy Summary & Conclusion 99

6: Strategic Alternatives 100
6.1 Maintain Current Business Model 101
6.2 Develop Online and MOOCs to Increase Delivery Options 103
6.3 Hybrid Model 106
6.4 Strategic Cooperation 110
6.5 Strategic Alternatives Summary 111

7: Recommendation 113

8: Conclusion 116

9: Appendix A – EMBA Analysis 119
9.1 EMBA Industry Analysis 119
9.1.1 Maclean's EMBA Rankings 120

10: References 125

List of Figures

FIGURE 1. SFU INTEGRATED PLANNING FRAMEWORK 6
FIGURE 2. SFU SENIOR ADMINISTRATIVE STRUCTURE 12
FIGURE 3. ACADEMIC VALUE CHAIN 24
FIGURE 4. COURSE DEVELOPMENT VALUE CHAIN 25
FIGURE 5. PORTER'S FIVE FORCES FRAMEWORK FOR INDUSTRY ANALYSIS 30
FIGURE 6. PORTER'S FIVE FORCES – POST-SECONDARY EDUCATIONAL INDUSTRY 31
FIGURE 7. THE PROGRESS OF DISRUPTIVE INNOVATION 70
FIGURE 8. ONLINE EDUCATION TIMELINE 74
FIGURE 9. EDUCATIONAL DELIVERY MODELS, 2012 76
FIGURE 10. MACLEAN'S EMBA RANKINGS – 2012 PROFESSIONAL SCHOOL RANKINGS 121

List of Tables

Table: 1. Customer and Product Segments 7
Table: 2. Customer Segments (by percentage) 7
Table: 3. Publically-Funded Educational Institutions 26
Table: 4. Public Instructional Groups 27
Table: 5. Undergraduate and Graduate EMBA Professional Segments 29
Table: 6. Rivalry Criteria 33
Table: 7. Threat of New Entrants Criteria 34
Table: 8. Threat of Substitutes 35
Table: 9. Bargaining Power of Buyers Criteria 37
Table: 10. Bargaining Power of Suppliers Criteria 39
Table: 11. Cost Advantages 44
Table: 12. 2013 MacLean's University Rankings – Operating Exp. Per WFTE 45
Table: 13. Operational Efficiencies 46
Table: 14. Sources of Advantage (SoA) – Customer Utility 49
Table: 15. Relative Competitive Analysis 53
Table: 16. Cost of Tuition 54
Table: 17. Maclean's University 2010 Rankings Tuition and Ancillary Fees 54
Table: 18. Observed Strengths & Weaknesses 62
Table: 19. Observed Opportunities & Threats 63
Table: 20. Disruptive vs. Mainstream Value Networks 67
Table: 21. Multiple Business Models and Value Propositions 71
Table: 22. What is Online Learning? 73
Table: 23. Types of Online Delivery Models 75
Table: 24. cMOOCs vs. xMOOCs 80
Table: 25. Envisioning the Current MOOC Market 81
Table: 26. The "Unbundling" of Faculty Roles 91
Table: 27. Conventional vs. Value Innovation Logic 95
Table: 28. Four Action Framework & SFU 97
Table: 29. From Head-to-Head Competition to Blue Ocean Creation 98
Table: 30. Incentivizing Pedagogical Change 109
Table: 31. EMBA Competitors 123

Glossary

AUCC	Association of Universities and Colleges of Canada
AVED	Ministry of Advanced Education, Innovation & Technology
Domestic	Canadian Students
EMBA	Executive Masters of Business Administration
FTE	Full-Time Equivalent
International	Non-Canadian Students
K-12	Kindergarten to Grade 12
MOOC	Massive Open Online Courses
MOT	Masters of Technology
NCAA	National Collegiate Athletic Association
NWCCU	Northwest Commission on Colleges and Universities
SFU	Simon Fraser University
SoA	Sources of Advantage
SWOT	Strengths, Weaknesses, Opportunities & Threats
TA	Teaching Assistant
UBC	University of British Columbia
UG	Undergraduate
UNBC	University of Northern British Columbia
UVIC	University of Victoria
WFTE	Weighted Full-Time Equivalent
WTP	Willingness to Pay

1: Introduction

> *"Revolution Hits the Universities - Nothing has more potential to lift more people out of poverty – by providing them an affordable education to get a job or improve the job they have. Nothing has more potential to unlock a billion more brains to solve the world's biggest problems. And nothing has more potential to enable us to re-imagine higher education than the massive open online course, or MOOC, platforms that are being developed by the likes of Stanford and the Massachusetts Institute of Technology and companies like Coursera and Udacity." (Friedman, Thomas L - The New York Times, 2013, p. 1)*

This paper will explore online education, in particular, the rise of massive open online courses (MOOCs) and the disruptive impact that MOOCs are having on traditional (i.e. face-to-face) instructional models at Simon Fraser University (SFU). Today, with the rapid advances in technology, universities have to rethink how they do business. Disruptive technologies in the area of online learning are challenging the long-term sustainability of the traditional university business model. In addition, there are now mounting questions surrounding the actual quality and value that universities provide to students and the society as a whole. Government, parents and students are calling for universities to provide more skills-based programs that better prepare students for jobs available in the economy. Students are also looking for more interactive and engaging learning experiences and improved options for course accessibility and availability so that they can complete their programs on time.

This analysis will focus specifically on MOOCs, the threat that MOOCs may have on the traditional (bricks and mortar) business model, and why the status quo is no longer

possible. It will show that the higher educational landscape is changing in the area of online course delivery (i.e. MOOCs) and that traditional face-to-face instructional models will be impacted as technology advances. This paper will address the following points:

- Understanding the MOOC trend, is there a business case?
- What can SFU learn from MOOCs (i.e. "Coursera", edX, Udacity) so not to become obsolete?
- What are the implications for SFU?
- Are blended models an alternative?
- How does SFU respond to changing delivery modes?

The following strategic analysis of post-secondary higher education will focus on SFU. SFU's vision is to be "the leading engaged university defined by its dynamic integration of innovative education, cutting-edge research, and far-reaching community engagement." (SFU, 2013) The scope of this paper covers undergraduate and graduate, domestic and international post-secondary students in B.C., with a focus on teaching, but not the research conducted at the universities reviewed.

The analysis will review SFU's current position; the markets it competes in; and what strategic option(s) are available to SFU to better achieve its expected learning outcomes (as specified in its Academic Plan) and improve its value proposition.

The internal and external analyses are presented in different sections of this paper. The internal analysis provides a background of SFU's current strategic position, identifying areas of strength and vulnerably. Next, an industry analysis of the post-secondary educational sector is performed, using Porter's five forces framework and identifying the political, environmental, social and technological factors affecting the

higher educational landscape in B.C. The analysis continues with a review of SFU's sources of competitive advantage and uses the identified criteria to rate SFU against its competitors such as University of British Columbia (UBC), University of Victoria (UVIC), University of Northern British Columbia (UNBC) and the University Colleges.

Following the internal and external analyses, the next section discusses and describes fully disruptive innovation and the impact that technology is having on online education. The discussion covers online education, in particular the rise of MOOCs, and why MOOCs are disruptive and a threat.

The Blue Ocean Strategy is then introduced as a model to implement the recommended changes. The Blue Ocean strategy represents an analytical framework for firms to use when searching for new and untapped markets. Use of the model will help to stimulate people into action and for that reason is the recommended model for developing and implementing the strategic option in this paper.

In the strategic analysis section of this paper, three strategic alternatives are presented and reviewed with the objective of selecting the model that best helps improve SFU's overall strategic position. The analysis will conclude with a recommendation (a strategic option) that will improve SFU's value proposition and address the mounting questions surrounding the actual quality and value that universities provide to students and the society.

2: Organization's Current Position

This section provides an overview of SFU, specifically who it is and what it does followed by SFU's current strategic position. SFU's goals, product market focus, value proposition, and core activities are identified, and how SFU enhances its position through brand recognition and differentiation strategy is explained. Next, the discussion highlights SFU's current performance in the areas of finance, enrolment, research, endowment and online education to identify possible issues of relevance. Finally, the section ends by identifying the key issues that could significantly influence SFU's current operations.

2.1 Organization Overview - Simon Fraser University

Founded in 1965 with its first campus located atop Burnaby Mountain near Vancouver, B.C., SFU is one of Canada's leading post-secondary comprehensive universities. SFU has grown from its charter class of 2,500 to over 35,000 students in 2011/12 (roughly 86% undergraduate and 14% graduate), and presently offers more than 100 undergraduate and graduate degree programs. In addition, through its Lifelong Learning Area, SFU also provides adult education and non-credit programs.

SFU has three campuses, all located in the Lower Mainland. The Burnaby campus is the largest, and is home to seven of the eight academic faculties, as well as offices for Graduate Studies and Student Services, SFU's senior executives, administrative support units (such as Finance, HR, IT and Facilities) and ancillary

services (such as Residences and Housing, and Food Services). SFU's downtown Vancouver campus houses the Faculty of Contemporary Arts, Communication and Technology and the Lifelong Learning Area. The Surrey campus offers undergraduate and graduate programs in Applied Sciences, Arts and Social Sciences, Business Administration, Communication, Art and Technology, Education, and Science, and a variety of Continuing Studies programs.

The Beedie School of Business, known for its innovative approaches and delivery of meaningful research and teaching, offers undergraduate and professional graduate programs. The school has placed well in various business school rankings, including the IS Research Ranking (Venkatesh, 2012) and the UTD Top 100 World Rankings of Business Schools Based on Research Contribution 2008-2012. (Naveen School of Managment, University of Texas at Dallas, 2013)

2.2 Current Strategic Position

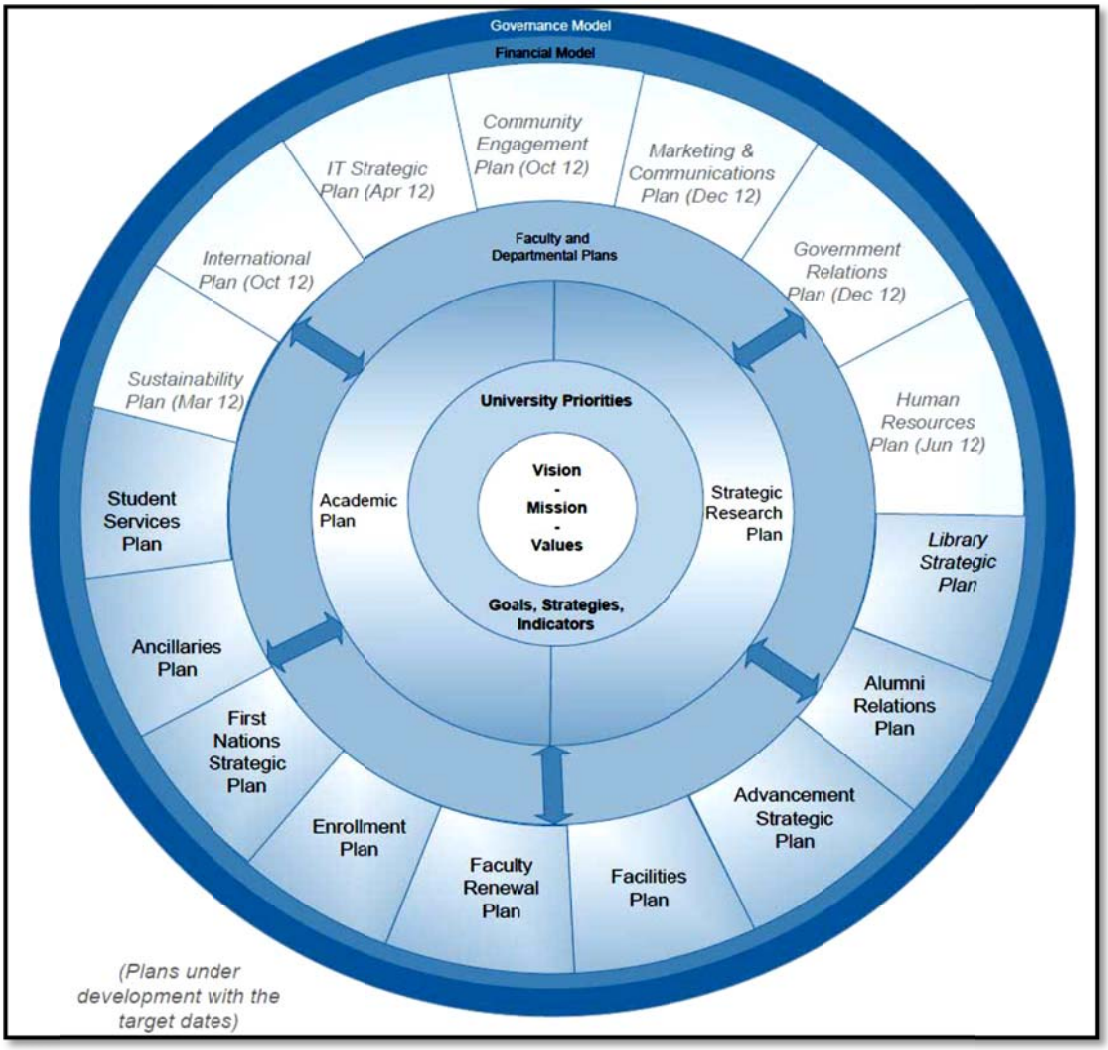
A practical model described in Chapter 2, eighth edition of the book, Strategic Analysis and Action (Crossan, Rouse, Fry, & Killing, 2013), identifies four related components when developing a strategy - Goals, Product Market Focus, Value Proposition and Core Activities. These four components will demonstrate SFU's current strategic position.

2.2.1 Goals

SFU's strategic vision statement is one that reflects its strengths and enhances its reputation as an institution that is student-centred, research-driven and community-engaged. SFU's vision is "to be the leading engaged university, defined by its dynamic

integration of innovative education, cutting edge research, and far-reaching engagement" (SFU, 2013) and all its major plans align with this vision. This vision is focused around three core themes: engaging students, engaging researchers and engaging communities. The figure below shows SFU's Integrated Planning Framework.

Figure 1. SFU Integrated Planning Framework



Source: 2012 University Planning Framework document (SFU - UPF, 2012, p. 5)

2.2.2 Product Market Focus – Customer and Product Segments

SFU provides undergraduate and graduate education to domestic Canadian and international students and non-credit education to those seeking continuing education or lifelong learning. The table below identifies SFU's customer and product segments.

Table: 1. Customer and Product Segments

Products and/or Services	Specific Markets - Customers
Undergraduate Degree Programs	Postsecondary domestic & international students
Graduate Master Degree Programs	Graduate domestic & international students
PhD Degree Programs	Domestic and international students seeking Masters and PhD degrees
Professional Graduate Programs	Lifelong mature adult learners
Non-Credit Programs	For people looking for professional development, general interest or to improve their 2nd language skills
Certificate & Diploma Programs (i.e. SFU offers 27 certificate and diploma programs)	Lifelong mature adult learners. For people looking for professional development or continuing education

According to the table below, SFU students (customers) come from a number of sources. Seventy-two percent of SFU customers come from Grade 12 of B.C. public schools (40%) or transfer from other B.C. colleges (32%).

Table: 2. Customer Segments (by percentage)

Customer Segments	Percentage
Grade 12	40%
College Transfer	32%
Non High School	10%
Degree Holder	8%
University Transfer	5%
Mature	1%
Other	4%

Source: Adapted from Spring 2012 UG Enrolment report ST-11 (2011/12 New Undergraduate Headcount by Basis of Admission (total 6,807) (SFU - Student Services, 2012)

2.2.3 Value Proposition (Benefits)

SFU's value proposition is based on Choice, Experience and Community (Dalton, 2012).

At SFU students have the choice of distinctive programs, such as criminology, environmental toxicology and actuarial science and innovative niche programs in business such as the Master of Science in Finance with specializations in either Investment or Risk Management, and the Master of Technology MBA. With SFU's unique tri-semester system, undergraduate students can take courses year round and can also choose when (which semester, days, and in some cases evenings and weekends) they take their courses and at which campus (SFU - Student Services, 2012).

SFU offers over 100 programs in eight faculties and is known for its ground breaking interdisciplinary approach that lets students pick their pathways and explore different subjects. For example, incoming students do not have to immediately declare a major; instead, they can spend the first year taking various courses until they find the right program. Students can also choose a major and minor from different faculties. They can explore a variety of learning experiences from Co-op work programs and the Undergraduate Semester in Dialogue to international exchanges with overseas universities. SFU has agreements with approximately 130 other universities for student exchanges in over 45 countries (SFU - Student Services, 2012).

SFU provides students with a supportive community atmosphere and responsive customer service. SFU is there to help students with their careers and prepare them for life (Dalton, 2012). This is particularly useful given that 61% of SFU students are

employed while attending school and 26% work more than 20 hours per week (SFU - Student Services, 2012).

2.2.4 Core Activities

The core activities that enable SFU to deliver the value proposition are: research (knowledge creation) and teaching (knowledge distribution); fundraising and investment in faculties, laboratories, equipment and technology, libraries and student residences; financial assistance, student bursaries and awards; and student services, such as academic advising, health and career counseling, and responsive customer service.

2.2.5 Strategy Statement

The strategy statement encompasses the four strategy components identified above (Crossan, Rouse, Fry, & Killing, 2013, pp. 32-34). Using the four components, SFU's strategy statement can be summarized as follows: SFU is one of Canada's leading comprehensive universities providing undergraduate and graduate education to domestic and international students by giving them the knowledge and skills needed to prepare them for life, in an organizational environment that is rich in fundamental research and which provides strong ties to our community.

2.3 Differentiation versus Cost

In B.C. universities do not use a cost leadership strategy to differentiate themselves. This is probably because of the government-imposed tuition caps. Instead, universities seeking a competitive advantage employ a differentiation strategy. For example, the Beedie School of Business' strategy is innovation. The focus is on innovative "niche" programs targeting very specific markets (economies of scope) where

competitors are weaker. Further, since graduate professional programs are higher margin premium fee programs, students perceive the higher tuition fees as having added benefit.

When using a differentiation strategy, brand and reputation are critical. Two ways that universities can enhance brand and reputation are through university rankings and accreditation.

2.3.1 Brand - University Rankings

University rankings such as Maclean's University Rankings raise brand and reputational awareness and, therefore, serve as a good marketing tool for potential students. According to Maclean's University Rankings, universities in Canada fall into three main categories: Medical Doctoral (UBC), Comprehensive (SFU, UVIC) and Primarily Undergraduate (UNBC) and are ranked according to "differences in the levels of research funding, the diversity of offerings and the breadth and depth of graduate and professional programs" (Coates & Morrison, 2013, p. 88). In Maclean's best overall national reputational category that considers highest quality, most innovative and leaders of tomorrow, SFU ranked 7th out of 49 universities reviewed for 2012. SFU also ranked 1st in the Comprehensive category (Maclean's Magazine, 2012, p. 106).

2.3.2 Brand - Accreditation

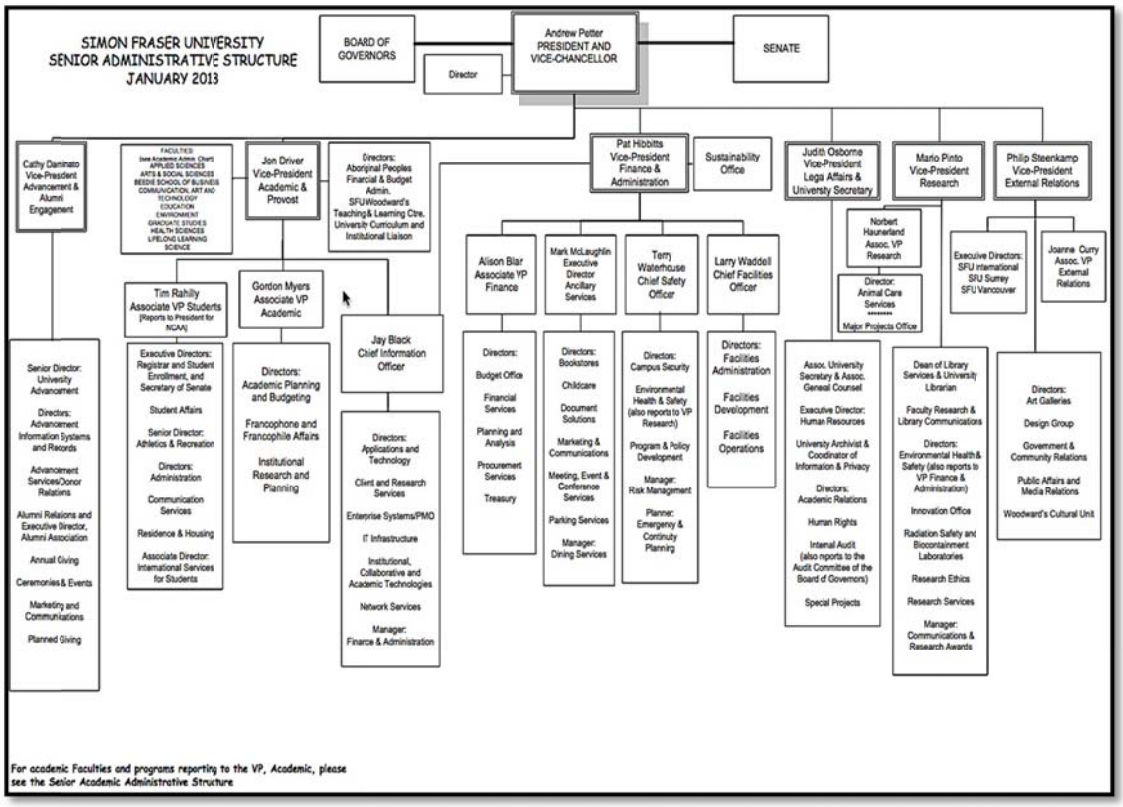
Accreditation at the University, Faculty, Department, and Program levels plays a significant role in higher education. It is perceived as a stamp of quality and helps to market the differentiated offerings. For example, SFU's Beedie School of Business is one of a select group of business schools globally (less than 1%) that is accredited by both the Association to Advance Collegiate Schools of Business (AACSB) and the

European Quality Improvement System (EQUIS). SFU is the first and only international university to be an accredited member of the largest athletic association in the U.S., the NCAA (National Collegiate Athletic Association). This differentiates SFU from other Canadian and B.C. universities and helps with the recruitment of athletes from the U.S. to SFU. Finally, SFU is pursuing full accreditation status with NWCCU (Northwest Commission on Colleges and Universities). If obtained, SFU will be the first university outside the U.S. to have achieved NWCCU accreditation.

2.4 Organizational Structure & Current Performance

SFU is a functional bureaucracy with a senior management team. Under the President, there are six Vice-Presidents: Academic, Finance and Administration, Research, Advancement, External Relations and Legal Affairs. Executive decision-making is centralized, however budgetary responsibility is decentralized and the University's budget is distributed based on the size of each of the Vice-President's portfolios. In total, as at September 30, 2011, there were 2,686 continuing employees (1,741 continuing support staff and 945 faculty members) (SFU-Institutional Research and Planning, 2011) supporting the various Vice-President portfolios. SFU's senior administrative structure is shown in the figure below.

Figure 2. SFU Senior Administrative Structure



Source: (SFU - Senior Administrative Structure, 2013)

SFU, like its industry competitors, receives the majority of its funding from various government agencies – with approximately half of its annual funding coming from the B.C. Ministry of Advanced Education, Innovation and Technology (AVED). AVED allocates grant funding based on performance as compared with government-assigned enrolment targets. Considerable additional funding comes from federal grants, and various non-government research grants. The remaining funding sources are from tuition fees, ancillary services (e.g. residences, bookstore), donations, endowments, and investment returns. As a public post-secondary institution, SFU is required by legislation to provide a balanced operating budget. Therefore, SFU's goals support and contribute directly to those standards/restrictions required by AVED for the post-secondary

education system in British Columbia. SFU's annual operating budget, approved by the Board of Governors, for fiscal 2012/13 was $448 million.

2.4.1 Performance – Financial

There are a number of external governmental decisions that not only affect SFU's ability to control rising costs but also hinder investment in new initiatives. Some of those governmental decisions are: (SFU-Finance, 2012)

- Annual tuition fee increases capped at 2%. The cap applies to domestic, international and graduate professional fee programs.
- Stagnant FTE grant funding.
- Reduction in provincial funding for capital maintenance (from $6M to $500K over the last several years).
- $50M removed from the post-secondary sector in the 2012 Provincial Budget Speech (reductions to be phased in over three years) (Steffenhagen, 2012).

The direct impact of these governmental decisions, identified in the examples below, clearly demonstrate the financial constraints currently faced by SFU. In the absence of a significant change in government funding and tuition policy, SFU's ability to continue operating as it has been is questionable (SFU-Finance, 2012).

- ✓ Increasing Deferred Maintenance Costs – Many of SFU's campus facilities are over 45 years old and in need of repair and/or upgrade. This impacts functionality, reliability and energy efficiency.

- ✓ Space Availability - The increases in undergraduate and graduate enrolment and support staff (faculty and staff) have grown faster than the space available at the three campuses.
- ✓ Rising IT Infrastructure Costs – Along with technological advances comes increasing pressure to advance SFU's IT infrastructure capabilities.
- ✓ SFU's defined benefits pension plan for the Administrative/Union employee groups is no longer sustainable. According to SFU's Annual Report dated March 31, 2012, "The December 31, 2010 actuarial valuation noted a $16.3M going concern unfunded liability and a $64M solvency deficit" (SFU-Finance, 2012, p. 27).

2.4.2 Performance - Domestic and International Student Enrolment

SFU's overall enrolment has been increasing steadily over the last five years (up 18%) helped largely by increasing international enrolments. International student enrolment accounts for approximately 18% of SFU's total enrolment (SFU-Finance, 2012).

The significant growth in international enrolments is due in part to SFU's agreement with Fraser International College (FIC). FIC, located adjacent to SFU's Burnaby Campus, acts as a feeder school to SFU for international students. In addition to increased international enrolments, SFU also receives revenues from FIC (SFU-Finance, 2012). The projected Gross Revenues for fiscal 2013/14 from FIC to SFU are expected to total $9.5M.

For the fiscal year ending March 31, 2012, international enrolments were 1,621, exceeding the original target of 927 students or 17.5% of domestic students (SFU-

Finance, 2012). This growth has both positive and negative implications. The over-enrolment has impacted SFU's ability to provide sufficient course accessibility and availability and, increases instructional and operational support costs. However, the higher international tuition fees do help alleviate some of SFU's financial and budgetary constraints.

SFU's domestic enrolment has risen over the years and continues to rise (0.1% increase expected over 2011/12) however the aging population in Canada has changed the demographics. According to a University Affairs article dated May 26, 2011,

> *"The number of Canadians aged 18 to 21 peaked this year. Students within this age group now comprise 52 percent of full-time enrolment. Over the next decade the population in this age group will decline by about 10%." (Association of Universities and Colleges of Canada (AUCC) , 2011, p. 24)*

The number of post-secondary school age population (age 18-24 years) is also expected to decline (SFU-Finance, 2012).

SFU's heavy reliance on tuition revenues generated from domestic undergraduate students in the 18 to 24 year old age range presents a financial risk to SFU. The projected decline of that age group in the absence of any change by the institution, will significantly affect domestic tuition revenues. In addition, since government funding is based on enrolment targets, a decline in domestic enrolments would result in an associated drop in funded government FTE enrolments. The problem is not unique to SFU. In an AUCC's University Affairs article "Trends in Higher Education", the authors' state:

> *"The population in Canada over the age of 65 will double by 2030, while the working age (25-64) population will grow by eight percent". The authors go on to state*

that "Universities will need to respond to the anticipated economic, social and labour market demands by expanding access to higher education for untapped segments of the population and international students, and increase the quality of the education students receive."

The authors close by suggesting that the quality of university education can be enhanced by providing, "more interactive and engaging learning experiences." (Association of Universities and Colleges of Canada (AUCC) , 2011, p. 5)

2.4.3 Performance – Online

SFU's use of online instructional course delivery is limited. SFU does offer online and distance education through the Centre for Online and Distance Education (CODE) in Lifelong Learning, up to 100 courses each term (SFU - CODE, 2013). Roughly, 10% of SFU courses are offered online, with no complete degree programs.

Technology is changing rapidly in the area of online course delivery as seen with the rise of MOOCs. Many Canadian universities (i.e. Athabasca, Royal Roads) are also using technology to develop alternate instructional formats to improve their offerings, in an effort to provide students with more flexible learning options and as a way to differentiate themselves and enhance their individual brands. These strategies by other universities create uncertainty surrounding SFU's continued ability to attract students in the future.

SFU has choices. SFU can continue to view online course delivery as simply an additional service provided to existing students, or as an opportunity to do two things: provide existing students with a more interactive and engaging learning experiences and target a new market of students (current non-customers). In the long run, however,

changing technologies and greater demand for online course delivery will affect how SFU delivers courses in the future and this will impact the way in which professors teach.

2.4.4 Performance - Research

In the area of research, SFU has enjoyed significant growth and SFU's research activities represent a major strength to the institution in terms of research funding and reputation. Between 1999 and 2011, SFU's research income expanded fourfold. According to SFU's Vice-President Research Office (January 28, 2013), in fiscal 2012, SFU's funding for research activities expanded by 6% to $95.6M putting it within easy reach of its 2013 target to make the "100 million club". Over three-quarters of SFU's sponsored research comes from the federal government (through the Tri-Council, Canadian Foundation for Innovation and other sources) (SFU-Finance, 2012).

Success in securing research funding is heavily dependent on SFU's reputation and ability to attract high profile researchers such as Dr. Robert Young, SFU's Merck Frosst B.C. Leadership) Chair in Pharmaceutical Genomics in Drug Discovery (with support from Leading Edge Endowment Fund). Dr. Young is credited with having developed the asthma drug Singulair™ at Merck Frosst. Today, Singulair™ is used worldwide in treating adult and childhood asthma and allergic rhinitis (hay fever) (LEEF: Leading Edge Endowment Fund, 2008).

2.4.5 Performance – Endowment

The income generated on endowments received via a university's fundraising efforts can be material, depending on the individual university's brand, reputation and fundraising abilities. Since endowed funds are invested in capital markets, income

generated is highly impacted by changes in interest rates and the strength of the economy. For example, endowments in Canada and the U.S. suffered significant income reductions and value losses due to the recession and market decline of 2008. The ongoing market volatility continues to threaten the annual amount of endowment income that is available for spending allocations (SFU-Finance, 2012, p. 27).

2.5 Current Strategic Issues

Change, when it occurs, is driven by the government's university funding formula (i.e. resulting from a change in political party or if another university is built). SFU is shielded somewhat from many of the external market forces and enjoys stability because of its governmental sponsorship. However, since the majority of SFU funding originates from government, there is a strong emphasis on satisfying government, and SFU policies are set up in accordance with governmental guidelines. Since not all funding originates from government, SFU is also dependent on attracting domestic and international students, and as such, competes directly with the other post-secondary institutions in B.C. and other parts of Canada.

This strategic analysis will attempt to address some of the conditions that could severely affect SFU's current operations:

- ✓ Mounting questions surrounding the actual quality and value that universities provide to students and the society as a whole (SFU - Vice–President Academic Office, 2013).

- ✓ Rising demands by government, parents and students to provide more skills-based programs that better prepare students for jobs available in the economy (SFU - Vice–President Academic Office, 2013).
- ✓ The sustainability of the traditional university's' business model resulting from changing technologies, ever-increasing salary and operational costs, declining facilities, and greater demand for more interactive and engaging learning experiences (such as those provided with alternative instructional models).
- ✓ Increased competition from within Canada and globally from disruptive technologies such as MOOC's and the increase in the number of universities such as Royal Roads and Queens that offer blended programs (alternative instructional formats that include both online and face-to-face components in their programs).
- ✓ Uncertainty regarding the impact that the population shift (changing demographics) will have on future enrolment.
- ✓ Potential risks associated with a decline in the number of international student enrolments resulting from the rise of universities in Asia. If this happens, SFU will have to increase recruitment efforts to attract international students or risk losing students to competitors.
- ✓ Course availability, course access, and relevant course options (i.e. attention to differences in individual learning styles and preferences).

2.6 Internal Analysis Summary & Conclusion

This section covered SFU's current position. The review showed that SFU is a well-reputed comprehensive university in Canada that offers students choices of a variety of learning experiences and a sense of community. However, as current observers point out, there are a number of external pressures that require attention. In particular, questions arise around the value and quality of education universities provide to students and society, the increasing demand for universities to provide more skills-based programs and to better address the needs of mature adult learners returning to school later in life. Then there are the changing demographics (resulting from an aging population) and the risks associated with the potential decline in international student enrolments as the number of universities in Asia increases. Finally, and of significant importance, are the rapid advances in technology especially in the area of online learning.

The remaining discussion expands upon and addresses the issues raised in this section.

3: External Analysis

In this section, the focus moves outward, looking at the external industry environment. This paper analyzes the publically funded post-secondary education industry in B.C., Canada and focuses on B.C. undergraduate and graduate domestic and international students. The analysis will first define the industry and the scope of this review followed by the academic value chain. The value chain is a basic tool for diagnosing, creating and maintaining competitive advantage. Next, the analysis identifies customer segments, their willingness to pay for preferences, and the current competitive landscape.

When conducting an industry analysis it is important to look at the structure and nature of the competition. For this Porter's Five Forces framework is applied to the higher educational market to acquire an understanding or snapshot of the competitive forces that impact the current players and those considering entering the market. The Five Forces framework will show that the threat of substitutes is particularly relevant. The discussion then moves from the current environment to a review of what might happen in the industry in the long term. We look at the political, environmental, social and technological factors (PEST) that may affect SFU and the industry in the future. Finally, no industry analysis is complete without identifying the sources of advantage (SoA) and then comparing those to your competitors. Specifically, how well SFU and its competitors rate on previously identified SoA relative to each other is evaluated. The section concludes with the strengths and weaknesses identified in the relative competitive

analysis and a synopsis of the threats and opportunities that will enable SFU to take actions to improve and strengthen its competitive position.

3.1 Industry Definition

According to the Ministry of Advanced Education, universities are degree granting publically or privately funded institutions that provide undergraduate and graduate education to domestic and international students. They also offer non-credit education to those seeking continuing education or lifelong learning. These institutions may also offer a selection of diploma and certificate programs along with other skill-based technical programs. (Ministry of Advanced Education, Innovation and Technology, p. 5)

Post-secondary education in Canada is the responsibility of provincial and territorial Governments. Therefore, each province has its own policies, procedures, laws and quality assurance mechanisms that govern how the institutions will operate. The post-secondary education industry in B.C. includes academic, vocational, technical and continuing professional education offered by universities, colleges and institutes. Most of the funding for public post-secondary institutions is derived from provincial, or territorial budgets and the federal government (e.g. Tri-Council research funding) with the balance coming from tuition fees and various private sources (Ministry of Advanced Education, Innovation and Technology, p. 7). Universities are vertically integrated in that courses are developed within the particular university, however, some things, such as textbooks, are provided from independent suppliers. They are also highly autonomous. For example, they set their own admission standards, program offerings, degree

requirements, and oversee the management of their financial affairs (Ministry of Advanced Education, Innovation and Technology, p. 9).

3.2 Value Chain

The Value Chain is a concept introduced by Harvard Professor Michael Porter. In his book Competitive Advantage: Creating and Sustaining Superior Performance, Porter states:

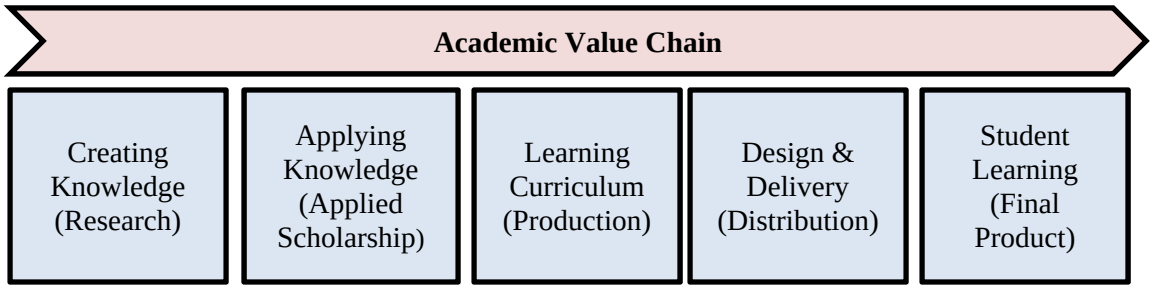
> *"The Value Chain is a basic tool for diagnosing competitive advantage and finding ways to create and sustain it. The value chain creates a systematic way to divide the firm into its discrete activities, and thus can be used to examine how the activities in a firm are and could be grouped." (Porter M. E., 1985, p. 59)*

Using Porter's Value Chain model, we can apply it to the higher education industry to help detect where potential bottlenecks may occur. For the education industry, the product is education and the outcome is student learning. The raw materials are the faculty, land, buildings and the customers are the students who select the school and pay for the education. In the higher education industry, the role of faculty is instrumental given that they are the ones delivering the product (learning content) (Lauridsen, 2011, p. 106). Faculty members carry out the dual roles of research and teaching.

According to Crossan et al., the value chain should only include those activities that are essential in producing a predetermined outcome that adds value. The objective is to examine how each activity contributes to the customer's (student's) willingness to pay. "The value created, less the costs, dictates the margin, or lack thereof, derived by each activity along the value chain." (Crossan, Rouse, Fry, & Killing, 2013, p. 65)

The figure below shows the Academic Value Chain as depicted by Barbara Lauridsen's paper entitled Shifting the Paradigm.

Figure 3. Academic Value Chain



Source: Reproduced from: Shifting the Paradigm: Value-Chain Analysis Applied to Online Learning (Lauridsen, 2011, p. 106)

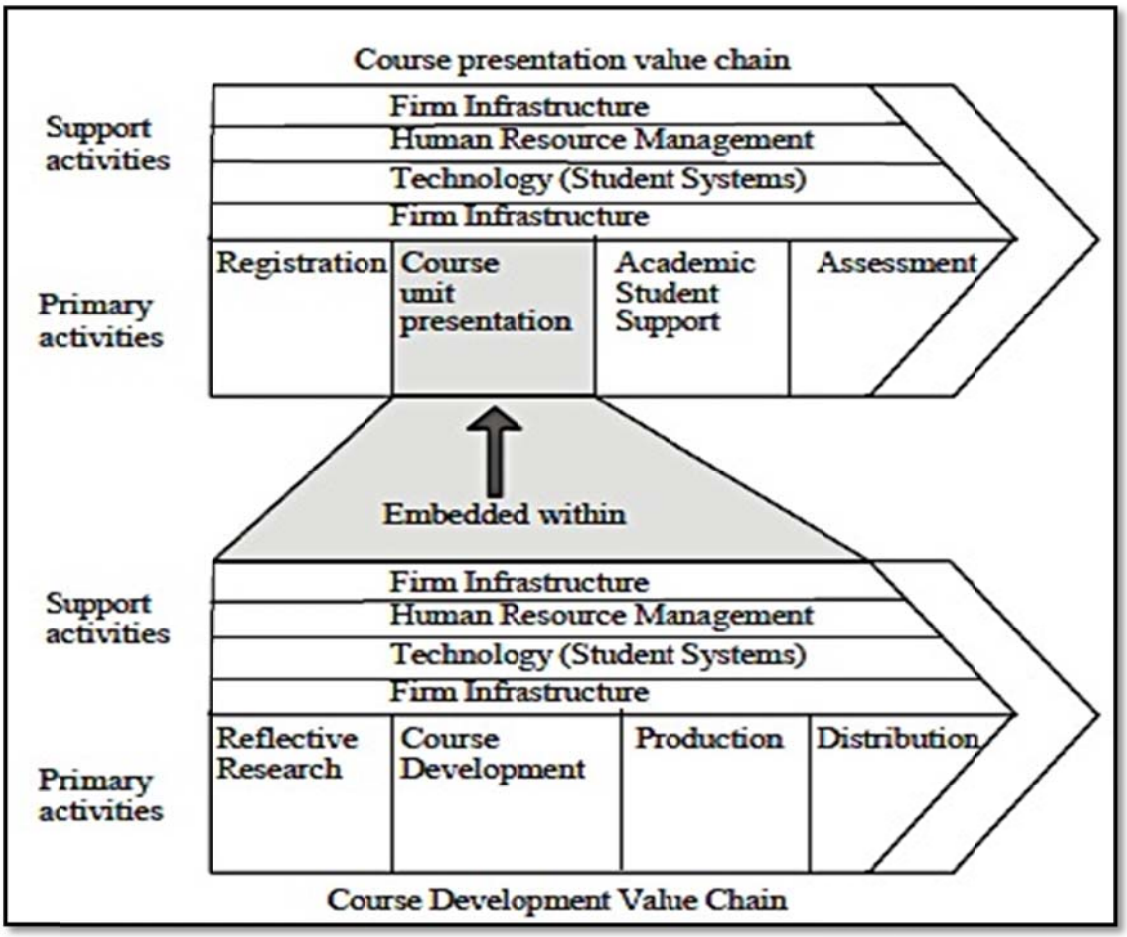
With respect to course development van der Merwe says,

> *"The first step in the process is to identify only the processes responsible for or involved in the design and construction of a student's learning environment. The next step is to identify the processes that determine the predefined outcome. There are two outcomes in the educational environment, course development and course presentation."* *(van der Merwe & Cronje, 2004, p. 4)*

Below is education value chain for course development as depicted by van der Merwe et al. The diagram shows that a course cannot be distributed until a student registration has been processed. Furthermore, a course cannot be presented without the course first having been developed. Therefore, course development is embedded within course presentation and follows registration:

> *"A value chain approach to higher education will go some way towards determining those areas of the system where bottlenecks are likely to occur, as well as providing a route to follow when determining the value that can be added by technology."* *(van der Merwe & Cronje, 2004, p. 5)*

Figure 4. Course Development Value Chain



Source: Reproduced from: The Educational Value Chain as a Modeling Tool in Reengineering Efforts Figure 5: Education Value Chain (van der Merwe & Cronje, 2004, p. 6)

3.3 Competitors – Industry Structure and Types of Competitors

This paper will focus on B.C.'s four research-intensive publically funded institutions (SFU, UBC, UVIC, UNBC), along with some data provided on the teaching-intensive institutions, at the aggregate level. Since this analysis focuses on teaching, research activities at the four research-intensive universities are not covered. These institutions offer an "array of undergraduate degree programs and a range of programs at the graduate level" (Ministry of Advanced Education, Innovation and Technology, p. 1).

In B.C. there are 25 publically funded institutions consisting of four distinct types or strategic groups, each with its own mandates. As shown in the table below, there are four research-intensive universities, seven teaching-intensive universities, eleven colleges and three provincial institutes.

Table: 3. Publically-Funded Educational Institutions

Research-Intensive Universities	
Simon Fraser University (SFU)	University of British Columbia (U.B.C.)
University of Victoria (UVIC)	University of Northern British Columbia (UNBC)
Teaching-Intensive Universities	
Capilano University	Emily Carr University of Art and Design
Kwantelen Polytechnic University	Royal Roads University
Thompson Rivers University (TRU)	University of the Fraser Valley
Vancouver Island University	
Colleges	
Camosun College	College of New Caledonia
College of the Rockies	Douglas College
Langara College	Okanagan College
North Island College	Northern Lights College
Northwest Community College	Selkirk College
Vancouver Community College	
Institutes	
British Columbia Institute of Technology	Justice Institute of British Columbia
Nicola Valley Institute of Technology	

Source: Adapted from Post-Secondary Data – Education Costs (Ministry of Advanced Education, Innovation and Technology)

From the table above, the research-intensive institutions, three in particular, UBC, SFU and UVIC receive the largest amount of government funding and have large endowment and research funding from which to draw on. Further, these three universities are the only ones in B.C. that offer, in addition to an undergraduate

education, a full range of post-graduate degree programs. They also receive significant research-related funding. For students interested in medicine and law there are few choices if they wish to study in B.C. UBC, TRU (in collaboration with Calgary) and UVIC have law schools, while only UBC has a medical school.

The table below presents the weighted average tuition paid by students in each of the four public instructional groupings.

Table: 4. Public Instructional Groups

Institution	2011/12 Tuition	2012/13 Tuition	% Increase
Research	$4,735	$4,830	2%
Teaching	$3,824	$3,900	2%
Colleges	$2,647	$3,700	2%
Institutes	$4,827	$4,926	2%
System Weighted Average	**$4,004**	**$4,008**	

Source: Reproduced from Post-Secondary Data – Education Costs (Ministry of Advanced Education, Innovation and Technology, pp. 1-3)

3.4 Customers - Segments

Customers for the purposes of this analysis are post-secondary individuals pursing undergraduate (baccalaureate) or graduate degrees. The undergraduate segment includes post-secondary domestic and international students and the graduate segment includes those pursuing a graduate degree. An example of a professional graduate program in the Beedie School of Business is the Executive Masters in Business Administration (EMBA).

3.4.1 Why the distinction matters

Customer preferences or willingness to pay criteria, for the purposes of this analysis, falls into five broad categories: cost, university location/convenience (proximity to home), university brand/reputation, range of product offering, and student experience.

These categories are important to both undergraduate and graduate students segments but to varying degrees of importance. For example, PhD students when choosing a university are primarily interested in cost, available funding, brand (academic reputation), specific program offering in their chosen area of specialization and reputation of the supervisor. Undergraduate students primarily choose a university based on proximity to home. Further on in this analysis, in the section on Customer Utility Advantage, the five categories making up the customer preferences are broken down and ranked.

There are also demographic differences. For example, the demographics of the MBA and EMBA professional graduate programs in business are quite varied. In the MBA program, there are usually more international students. The candidates are younger and have as little as two years' work experience. These students have completed their undergraduate degree and have decided to go directly to graduate school. The EMBA program targets older candidates with six to ten years of work experience who work full-time. These students reside in B.C. and work and study at the same time. Therefore, it is important, when considering the value proposition to understand the differences between and within the segments. Appendix A provides additional information regarding SFU's EMBA program and the EMBA industry analysis, including the Maclean's EMBA Rankings and EMBA competitive market in B.C. The table below shows a side-by-side comparison between typical undergraduate students and graduate EMBA students.

Table: 5. Undergraduate and Graduate EMBA Professional Segments

Undergraduate Students	**Graduate Professional - EMBA**
Typically young 18-24 year olds seeking an UG degree	Older, mid-career professionals who already hold a UG degree
May/May not still live at home	Generally do not live at home
Study full time and work part time	Work full time, study part time
May/may not know upon entry what they would like to study	Chosen to pursue an advanced degree (EMBA) to provide additional career options
Value student campus community, experience important	Value program content and networking opportunities are important

3.5 Five Forces Framework

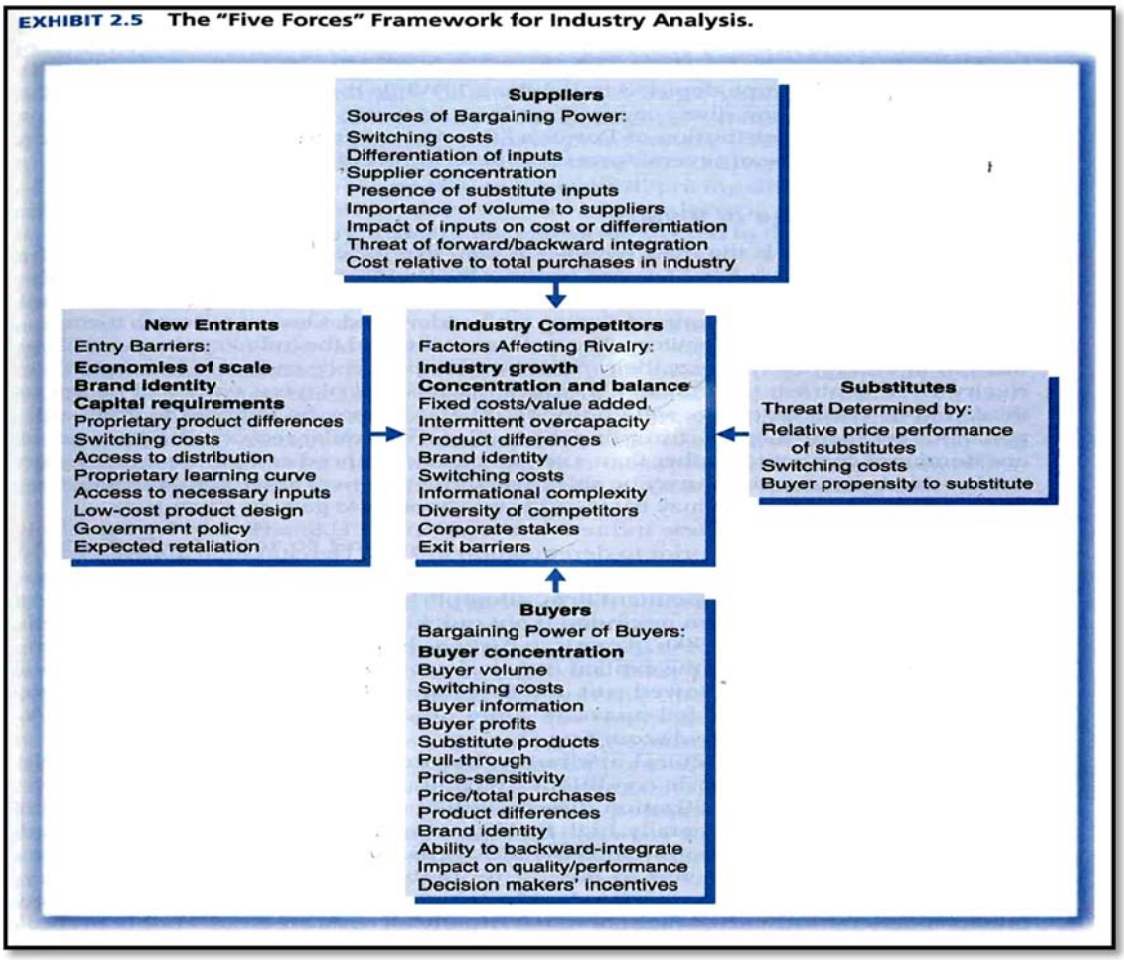
Regarding the five forces analysis, Crossan et al. state:

> *"Understanding industry structure is the starting point for strategic analysis and strategy formulation. Examining five forces helps organizations understand how value that is create by companies, is actually captured by the industry players." (Crossan, Rouse, Fry, & Killing, 2013, p. 60)*

Porter's Five Forces framework is a way to evaluate a firm's position compared to the overall industry in which it operates. We will use Porter's Five Forces framework (Porter M. E., 2008, p. 4) to help determine the long run profitability of the higher education industry and the nature of the competition. The five forces that shape competition are: rivalry among existing competition, threat of new entrants, threat of substitute products or services, bargaining power of suppliers and bargaining power of buyers (customers).

The exhibit below is extracted from Chapter 2 of Pankaj Ghemawat's book entitled: Strategy and the Business Landscape. The exhibit reproduces Porter's Five Forces Framework for Industry Analysis showing the influences (factors) that Porter flagged as relevant for each of the forces (Ghemawat, 2010, p. 23).

Figure 5. Porter's Five Forces Framework for Industry Analysis

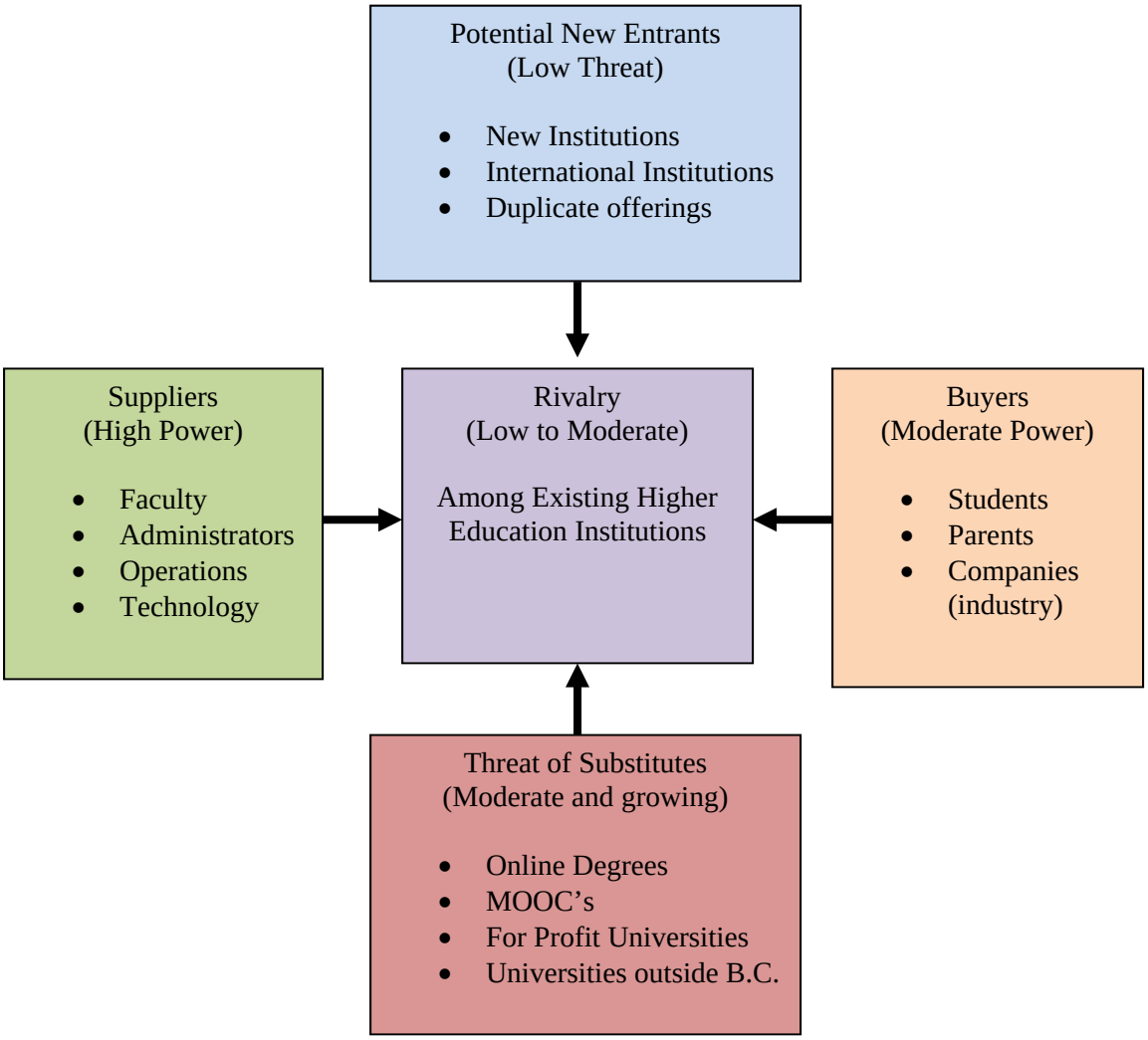


Source: Reproduced from Chapter 2 of Pankaj Ghemawat's book: Strategy and the Business Landscape (third edition) (Ghemawat, 2010, p. 23)

According to Ghemawat, of all the influences, only those highlighted in boldface "commanded strong empirical support." (Ghemawat, 2010, p. 22)

Using Porter's set of influences as a guide, the Five Forces framework (Porter M. E., 2008, p. 4) as applied to the Post-Secondary Education Industry is shown in the figure below. The Five Forces analysis will show that the real threats to the industry are coming from the substitutes.

Figure 6. Porter's Five Forces – Post-Secondary Educational Industry



3.5.1 Rivalry among Existing Competition

Competitive rivalry within an industry comes from existing competition. According to Porter, "the degree to which rivalry drives down an industry's profit potential depends first on intensity with which companies compete and, second, on the basis on which they compete." (Porter M. E., 2008, p. 9)

According to James Pringle and Jeroen Huisman, in higher education, the intensity of rivalry depends on the object of the competition: students, faculty, research money, donor contributions and government funding. The more similar the universities are in one region, the greater the rivalry between them. Rivalry will increase if institutions are of roughly equal size and provide similar programs. The reason is that there are more providers competing for the same student segments and inputs including faculty and programs (Pringle & Huisman, 2011, p. 50).

In B.C., universities seeking competitive advantage employ a differentiation strategy. The newer smaller known universities (university colleges) attract students who are looking for skills-based programs or those searching for an undergraduate degree offered in a smaller institutional setting. The university colleges act as feeder schools to the larger established universities. The larger established universities have the advantage of attracting students looking for knowledge, brand reputation, program specialization (i.e. law, medicine, criminology) and those interested in pursuing graduate and post-graduate studies not offered by university colleges.

The extent of price competiveness depends on growth, number of competitors, differentiation and fixed costs. The intensity of rivalry within the industry is low to moderate. The criteria used to rank the intensity of rivalry within the industry are presented in the table below.

Table: 6. Rivalry Criteria

Factor	Criteria Reviewed	Impact
Growth demand	The number of K-12 students is flattening and is expected to remain so for the next 10 years therefore high rivalry (institutions competing for students). Rivalry is always more intense when markets are stagnating.	High
Low price differentiation	Schools cannot lower the price to win business so institutions do not compete on price. Note: The Government has capped tuition rate increases (currently at 2%)	Low
Product Differentiation	Schools in B.C. are diffentiated by location. (i.e. UVIC is in a better position to compete for students in Victoria than SFU) Location (proximity to student) is an important factor in many school choice decisions therefore these schools are naturally differentiated.	High
Number of competitors in the market	There are 25 publically funded institutions in B.C. (see table 3) The greater the concentration the lower the rivalry.	Low
Capacity utilization	The institutions are required to operate at full or near capacity (funded FTE) to achieve competitive economies of scale therefore high rivalry.	High
Cost structure (fixed costs)	Significant portion of the costs incurred are fixed. Exceedingly high fixed cost (salaries, advanced technology, capital infrastructure) to total cost ratio.	High
Exit barriers	The costs associated with exiting the industry are high. This increases the intensity of the competition.	High

3.5.2 Threat of Entry

According to Porter, "entry barriers are advantages that incumbents have relative to new entrants." (Porter M. E., 2008, p. 3) For example, in the past, the B.C. colleges presented a threat of entry to the existing four-year degree-granting universities. Some B.C. colleges finally succeeded in becoming universities and obtaining degree-granting status. The potential for entry into the higher education market depends on a number of factors: economies of scale, capital requirements, brand identity, buyer resistance to switch, and government policy. In addition, the transportation infrastructure also affects access to higher education. Students want easy access to classes. Those universities that

are close to transportation routes have a competitive advantage over those that are not. Therefore, distribution channels present a strong barrier for new entrants that do not have access to comprehensive public transportation systems (Pringle & Huisman, 2011, p. 44 & 45).

The threat of new entrants (new institutions, international institutions, duplicate offerings) is low (high barrier, low entry threat). The criteria used to rank the threat of new entrants are shown in the table below (Pringle & Huisman, 2011).

Table: 7. Threat of New Entrants Criteria

Factor	Criteria Reviewed	Impact
Incumbency advantage (Investment Costs)	The original three established institutions (UBC, SFU, UVIC) have large endowments, large facilities (high capital requirements) and grounds, brand recognition, alumnae base, established faculty, political connections and an age legacy. Further, the funding required to support the faculties, land & buildings suggests large economies of scale and therefore entry barriers. The other institutions also have this advantage but to a smaller degree.	High Barrier, low entry
Restrictive Government policy	The provincial government constricts the number of entrants. Post-secondary institutions in B.C. receive about 50% of their operating budget from the Provincial Government. Funding is allocated based on the approved number of seats a particular institution has been awarded.	High Barrier, low entry
Accreditation requirements and restrictions	Those universities or schools (Business, Law, Medical, Engineering) that are accredited provide an entry barrier due to the onerous process and continuing requirements that accreditation bodies impose to first become and then remain accredited.	High Barrier, low entry

3.5.3 Threat of Substitutes

According to Porter, a substitute performs the same or a similar function by a different means (Porter M. E., 2008, p. 8). Substitutes for the industry include: organizations outside of the higher education industry, such as employer in-house on-the-job training, training companies, and corporate universities and online programs.

Substitutes also include universities outside B.C. These would be a very strong substitute for international students.

According to Martinez & Wolverton, identifying substitutes for existing higher education services entails a review of the learning experience. By using three attributes: time, convenience and application (application-based research rather than traditional theory-based research), one can determine the legitimacy of a particular substitute (Martinez & Wolverton, 2009, p. 27 & 28).

Table: 8. Threat of Substitutes

Factors	**Examples**
Time	Time is considered the most important factor driving students to seek out substitutes. Students are looking for options that decrease the completion time for a degree (i.e. at Royal Roads one can complete an UG degree in 2 years). Seminar and Training companies have found ways to shorten the time needed to obtain certain skills and knowledge by creating one to five day modular programs.
Convenience	As the number of mature adult learners increases, programs offered online (module offerings over the internet), for days, at evenings, or at weekends become more appealing. Mobile technology allows "learn anywhere, anytime" capacity.
Application	Relevance of the traditional university degree. More and more students are questioning the value of the traditional theory based instruction and are demanding more relevant application based instruction. Students are looking for programs that will lead to jobs. Application based instruction may be considered a substitute to traditional theory based instruction.

According to Martinez & Wolverton, "competitors that offer substitutes often combine time, convenience and application because of expanded delivery options made possible by technology." They go on to point out that "often today's substitutes become major industry players tomorrow and hold the potential to redefine the industry." (Martinez & Wolverton, 2009, p. 28) We only have to consider the rapid rise of MOOCs

and the attention placed on online learning in 2012 to understand that the industry is changing.

Based on the three factors noted in the table above, the threat of substitutes, in this case MOOCs and online learning is moderate and growing.

3.5.4 Bargaining Power of Buyers

The amount of buyer power is determined by the level of ability that buyers have to exert pressure, to either drive down prices or increase the quality of the product for the same price (Porter M. E., 2008, p. 7 & 8). The major buyers in the higher education industry are the domestic B.C. students, international (mainly Asian) students and their parents. Buyers also include companies and executives in industry. The assigned ranking for buyer power is moderate to high.

Even though students are not able to negotiate on tuition rates or admission requirements, they can easily switch institutions if unsatisfied with the current institution that they are in. B.C. has an extremely flexible transfer credit policy facilitated by BCCAT (B.C. Council on Admissions and Transfer). However, when compared to supplier power, student power is weaker, the reason being that buyers act as individuals when choosing their particular university while the suppliers or faculty operate as a collective. The table below presents the criteria used to rank the bargaining power of buyers within the industry.

Table: 9. Bargaining Power of Buyers Criteria

Factor	Criteria Reviewed	Impact
The cost of switching	Easy to switch to another university. In B.C. there is considerable flexibility in routes to a credential and students can easily transfer between institutions.	Moderate to High
Size of Buyers relative to Sellers	Much smaller – each buyer is infinitesimal % of sellers' revenues	Low
Price sensitivity	Price sensitivity is inversely related to how important the quality of the seller's product is to the buyer and positively related to how much of the buyer's total costs the seller's product represents. Students choose whether or not they want to pay the price.	High
Ability to backward integrate	If the ability to backward integrate (threat to buy rivals product) is yes then buyer power is increased. There are several degree granting institutions in B.C. therefore buyers can choose where to take their courses	Moderate to High
Number of domestic buyers	Number of domestic buyers from K-12 is flattening.	High
Relative concentration or fragmentation of buyers	Buyers are highly fragmented, Low buyer concentration, hence low power	Low

3.5.5 Bargaining Power of Suppliers

According to Porter, supplier power is strong if the supplier (faculty) offers differentiated products (for example, law, medicine, actuarial science), buyers (students) face switching costs, there are no substitutes for what the suppliers (faculty) provide and if the power is more concentrated than the industry that it sells to (students) (Porter M. E., 2008, p. 6 & 7). The assigned bargaining power of suppliers is high.

In the higher education industry, the suppliers are the highly skilled instructors, researchers and administrators, and a significant portion of the university's budget supports the associated labour costs. University support services such as the bookstore, food services and residences also provide a source of supplier power but to a lesser degree than those of the faculty and administrators. In the higher education industry the

product is education and is provided by skilled instructors who hold the bulk of the supplier power. In the instructional area faculty are specifically recruited for their research and instruction-specific expertise. Faculty members are highly specialized, highly educated, and work with great independence and autonomy. Tenured faculty members have job security (positions guaranteed for life), and recruitment and replacement costs are high. Faculty members directly affect the institution's end product (student learning) and therefore affect the reputation of the institutions that they work for. Therefore, they are crucial to providing customer value and hence the bargaining power of suppliers is high.

The table below presents the criteria used to rank the bargaining power of suppliers within the industry.

Table: 10. Bargaining Power of Suppliers Criteria

Factor	Criteria Reviewed	Impact
Switching costs	In B.C. there is considerable flexibility in routes to a credential and students can easily transfer between institutions. However, students are tied to their institutions through the networks they have developed and are reluctant to move to an institution that is not in close proximity to home.	Low
Relative concentration or fragmentation of suppliers	High supplier concentration, low fragmentation, hence high power	High
Ability to forward integrate	Faculty are highly specialized in their area of expertise and are required by the nature of tenure to continue to perform research in their respective fields.	High
Importance of suppliers' product quality to quality of school's product	Faculty members directly impact the institutions end product (student learning) and therefore affect the reputation of the institutions that they work for.	High

3.6 PEST

Use of the PEST (political, economic, social, technological) analysis method provides insight into upcoming industry trends. Crossan et al. state:

> *"These forces can be viewed as more macro in orientation than Porter's five forces and in many respects are the early warning signals about changes in the industry. The PEST forces impact the micro forces of supply, competition and demand." (Crossan, Rouse, Fry, & Killing, 2013, p. 70)*

The PEST analysis helps us understand the factors that will affect SFU and the industry in the future. This will help to identify the threats and opportunities. SFU can then take advantage of the opportunities and mitigate the threats.

3.6.1 Political

In the higher education industry, governmental policies are a powerful driver. As governments attempt to balance their finances, universities should prepare for further

reductions in base funding transfers. As noted in the Threat of Entry section, universities receive a significant portion of their funding from government therefore any reduction in the level of funding will have significant effect on a university's ability to operate. To remain competitive, universities will have to find alternative revenue sources and improve efficiencies in course delivery (i.e. combine online with face-to-face instruction to improve customer experience and learning outcomes).

3.6.2 Economical

There is rising criticism that universities are not providing students with the skills necessary to get jobs (Coates & Morrison, 2013, p. 43). This impacts not only the students but society as well. In addition, student debt is increasing and students are questioning the value they are getting from their degrees. Many students now have to work part-time while going to school. Further, according Ken Coates and Bill Morrison, 60% of all graduating students in Canada carry debt with the average amount of $24,600 (Coates & Morrison, 2013, p. 43).

Individuals returning to higher education do so to increase their current skills or develop new skills, however, due to limited financial resources, these mature students seek lower cost options.

3.6.3 Social

The demographic make-up of the student body is changing with an increase in the number the mature adult learners. This group wants greater flexibility regarding when and how they take their courses. The increased demand from older age groups is good for graduate professional programs such as the EMBA. While the 18 to 24 year old

demographic is declining, participation rates for this age group are rising. Further, demand for university graduates is expected to continue as noted in the quote below:

> *"based on past labour-market trends and projected population changes, there will be close to 1.3 million more jobs for university graduates in 2020 than there were in 2010. In addition, there will be approximately 700,000 to 900,000 more jobs for university graduates to replace those who will retire over the coming decade. It is expected that part of the growth projected would come from increases in international students." (Association of Universities and Colleges of Canada (AUCC) , 2011, p. 57)*

If participation and enrolment rates were to fall for some reason, the declining demographic could present a potential threat given that a significant amount of the government funding is based on UG full-time equivalents (FTEs). However, the real threat may not be the shrinking of the 18-24 demographic, but rather the shift in what students are demanding. For example, if demand shifted towards the skills-based programs such as business and engineering and away from liberal arts and general sciences. Universities are slow to change, therefore it is important that universities be cognoscente of potential demographic and demand shifts and responds accordingly.

Further, more and more people are going to school to differentiate themselves and want to obtain the skills necessary to get a job. Customer preferences are changing. Students are now more technologically aware and expect online access to professors and study groups and access from mobile devices. The bargaining power of buyers in Porter's Five Forces model is currently moderate, however, with the globalization of learning and increasing development of online educational tools, students are no longer tied to a particular institution.

There has been a huge increase in the growth of international students over the last five years. These student learners want skills that facilitate mobility and transferability for the global economy. This trend is also appearing with domestic students who are concerned about marketability.

There is also uncertainty regarding the continued growth in international student enrolments. The home countries of many of Canada's international students (e.g. China) are committing significant resources to building universities and expanding higher education sectors. This may deter many students from going abroad to study. China is also developing programs that cater to Americans and other international students with the hopes of attracting a half a million foreign students to China (Chen, 2012, p. B16 & B17). The impact of this is yet unknown.

3.6.4 Technological

Applying Porter's Five Forces to higher education, over time, the power of buyers and substitutes can change. Technology is a powerful driver and the globalization of higher education could disrupt the competitive landscape by increasing substitute products (i.e. MOOC's) and lowering the barriers to entry. In Section 4 of this paper, attention is placed on the idea that massive open online courses (MOOCs) are disruptive and threatening traditional face-to-face instructional formats. For example, at the time of writing of this paper, the MOOCs phenomenon that has dominated most of the U.S. in 2012 has now expanded to the U.K. with the Futurlearn consortium in December 2012 and to continental Europe in March 2013 with the Berlin-based start-up "iversity". Finally, in March 2013, two Canadian universities, University of Toronto and McGill joined edX, the Harvard/MIT MOOCs partnership.

3.7 Sources of Advantage (SoA) – Cost Advantage

In Pankaj Ghemawat's book he raises the concept of a competitive wedge.

> *"A firm is said to have created a competitive advantage over its rivals if it has driven a wider wedge between willingness to pay and costs than its competitors have achieved." (Ghemawat, 2010, p. 44)*

Therefore, Sources of Advantage (SoA), commonly known as Key Success Factors, can be broken down into cost advantages and customer utility or willingness to pay (WTP) advantages. This part of the paper covers cost advantages.

To identify cost advantages requires systematically looking at the components of the industry's cost structure and identifying the factors that lead one firm to have lower costs than another. The first step is to identify the cost structure and then explain how they are related. Finally, the cost advantages are rated according to magnitude of cost advantage across industry competitors.

In this section, the important sources of cost advantage are identified, explained and rated by importance according to each of the identified sources of advantage. The table below summarizes the nature of the cost advantages. Unmarked cells indicate that there is neither an advantage nor disadvantage.

Table: 11. Cost Advantages

Cost Advantages	**SFU**	**UVIC**	**UBC**	**Teaching-Intensive Univ.**	**UNBC**
Cost (from least to most expensive)	2	1	3	No data	4
Scale economies	advantaged	advantaged	advantaged	disadvantaged	-
Scope economies	advantaged	advantaged	advantaged	disadvantaged	-
Bargaining					
Labour Costs					
Union agreements					
Operational Efficiencies Cost/Student 1st & 2nd year class size	$253.24	$362.48	$279.08	$242.21	$334.19
Operational Efficiencies Cost/Student 3st & 4nd year class size	$510.58	$712.02	$459.52	$242.21	$752.22

3.7.1 Cost-Operating Expenditures per WFTE Student

In order to determine the efficiency in providing instruction at a particular university, a useful measure is to review the operating expenditures per weighted full-time-equivalent (WFTE) student. The lower the cost per FTE, the greater the cost advantage for that competitor. The table below, extracted from the 2013 Maclean's University Rankings, presents the operating expenditures per WFTE student.

Table: 12. 2013 MacLean's University Rankings – Operating Exp. Per WFTE

University	Operating expenditures per weighted FTE student	Rank (from most efficient to least)
Simon Fraser University	$12,192	2
University of Victoria	$11,732	1
University of B.C.	$13,486	3
Teaching-Intensive Univ.	No data	No data
University of Northern B.C.	$14,393	4

Source: 2013 Maclean's University Rankings (Maclean's Magazine, 2012, p. 100)

From the table above, UVIC and SFU are more efficient in providing instruction to their students than UBC and UNBC, and therefore they may have a slight cost advantage.

3.7.2 Scale and Scope Economies

According to the article by Sheets, Crawford & Soares,

> *"Many higher education institutions are under considerable pressure to compete by adding more course offerings and programs and it becomes difficult to acquire the faculty expertise and organizational resources to ensure a high quality in all the program offerings. Therefore they can achieve greater economies of scale only by sacrificing economies of scope." (Sheets, Crawford, & Soares, 2012, p. 9)*

Based on the operating expenditures per WFTE student data, there is little evidence to support any significant advantages in scope and scale between the different universities.

3.7.3 Bargaining Power

No one university really has more bargaining power or rather the ability to purchase land and buildings cheaper than the other. All universities probably receive

discounts for leasing photocopiers and perhaps the larger the university the better the rate. This difference would not be material. SFU may get a better deal on a parcel of land in Surrey than one of the other universities because it already has a campus in Surrey and has developed relationships with the local Government. Then again, Kwantlen is located in Surrey. In general, there is probably no advantage for SFU or any university.

3.7.4 Operational Efficiencies

One way to review operational efficiency is to look at average undergraduate class size, average instructional salary and average instructor teaching (course) load per year. The larger the class sizes the lower the instructional cost per student. Again using the 2013 Maclean's University Rankings, the table below presents the average class size for first and second year classes and for third and fourth year classes. In addition, the table includes Statistics Canada 2010/11 data on the total teaching staff and average salary of full-time teaching staff at Canadian universities and colleges.

Table: 13. Operational Efficiencies

Institution	Total Teach'g Staff	Average Salary	Courses per Year	1st & 2nd Year Classes	Cost per Student*	3rd & 4th Year Classes	Cost per Student*
SFU	943	$113,654	6	74.8	$253.24	37.1	$510.58
UVIC	755	$107,657	6	49.5	$362.48	25.2	$712.02
UBC	2,630	$127,929	6	76.4	$279.08	46.4	$459.52
Teaching-Intensive Univ. (Kwantlen)	375	$84,774	10	35.0	$242.21	35.0	$242.21
UNBC	188	$84,416	6	42.1	$334.19	19.4	$725.22

Source: *(Maclean's Magazine, 2012, p. 111) and (Statistics Canada, 2010/11, pp. 42-46)*
**Note: the cost per student equals the average salary divided by the number of courses per year divided by the average class size.*

The Maclean's magazine did not provide data on the teaching-intensive universities; however, as a group offers smaller class sizes (16-25 at BCIT and A maximum of 35 at Kwantlen). Running smaller classes increases the instructional cost per student; however as the table above shows, faculty salaries are lower at the teaching-intensive universities than in the large universities thereby offsetting the higher costs. Further, teaching loads are higher at the teaching-intensive universities. This too would lower the per student instructional cost. For example, at Kwantlen, "The maximum teaching (course) load is restricted to 5 courses per semester; the average is 3 – 4 courses per semester" and there are three semesters per year. (Kwantlen Polytechnic University, 2013). At SFU, the maximum teaching load for faculty is 4 courses per year and the lecturer teaching (course) load is expected to be double that of faculty. Therefore it is reasonable to assume that when looking only at average instructor salary, class size and teaching (course) load the teaching-intensive universities are operationally more efficient than the other universities.

Using SFU's instructional teaching load as a guide (e.g. assuming 6/year), and the same criteria, the table above shows that among the universities there are differences in operational efficiency. The table also shows that in the 3rd and 4th years when class sizes go down, the instructional cost per student rises for the universities but remains constant for the teaching-intensive universities.

3.8 Sources of Advantage (SoA) - Customer Utility Advantage

This section identifies and explains the important customer preferences and corresponding sources of customer utility or willingness to pay (WTP) advantage for undergraduate and graduate students. The goal is to rank customer preferences

previously identified in the customer segment section of the above external industry analysis and then explain why they are relevant. The table below lists the main customer/student willingness to pay preferences by segment.

Table: 14. Sources of Advantage (SoA) – Customer Utility

Customer Preferences (Willingness to Pay Factors)	UG Importance	Grad Importance
Cost	**#1**	**#1**
Tuition and textbooks	High	High
Access to financial aid, scholarships and bursaries	High	High
Location & Convenience	**#2**	**#4**
Location – proximity to home	High	Med
Geographic Location i.e. Vancouver	High	Med
Brand/Prestige/Reputation	**#5**	**#2**
Brand/Prestige/Reputation (i.e. Accreditation, admission requirements)	Med	High
Faculty – are they distinguished (important for PhD students)	Med	High
Industry networks to get a job when done	Med	High
Range of Product	**#3**	**#3**
Course Scheduling – days, weekends, evenings, multiple starts throughout the year (tri-semester or year round)	High	High
Course Access - when they need them so as to complete on time	High	High
Curriculum - theory or research based to satisfy program goals	Med	High
Distinctive (unique) Programs (Criminology, Law, Medicine)	High	High
Class size/contact relationship with faculty member	High	High
Student Experience	**#4**	**#5**
Experiential Learning – take courses outside normal curriculum	Med	Low
Learning Experiences – international exchanges & co-op & dual degree programs with overseas universities	Med	Low
Responsive Customer Service – when students ask, all the guidance, support and assistance are available (i.e. career counselling and academic advising)	High	High
Student Life/Campus Community	Med	Med
Diverse student population	Med	Med

3.8.1 Cost

Students at the undergraduate or graduate level are concerned about the cost of tuition (see table 4) and the amount of financial aid, scholarships, bursaries and awards that are available to help provide financial assistance for those tuition costs. In addition, students are concerned with the overall cost of living (housing, transportation, food) while they attend university.

According to the AUCC's document, students are carrying more debt. "Only four out of 10 students graduate debt free. For those who graduate with debt, the average amount they owe is $24,600, with a median of $20,000" (AUCC: Association of Universities and Colleges of Canada, 2012). At SFU, 52% of SFU students have debt, with the average amount being $21,000 (SFU - Student Services, 2012).

3.8.2 Location & Convenience

When choosing a particular university, location or proximity to home is an important factor for many prospective students. The ability to commute from home to school rather than living in residences or in rental housing lowers the overall costs associated with obtaining a university education. However, if tuition costs were to increase significantly, students may consider cheaper online instructional formats.

3.8.3 Brand/Prestige/Reputation

There are a number of quality attributes that strengthen a university reputation. They include but are not limited to, high profile faculty, ability to attract research funding, large amounts of capital funding and infrastructure and quality and profile of

research produced. Accreditation also enhances a university's reputation through its strict assurance of learning requirements.

To many students, the reputation of the university and in particular the quality of the university's faculty is a deciding factor. Often those universities with the greatest reputational capital also have the best industry networks. Ties to these industry networks are useful to graduating students looking for jobs.

3.8.4 Range of Product

In addition to proximity to home, students look for the university that offers the programs that they wish to pursue. Students want flexibility in how and when they take their courses. This includes flexible scheduling on days, weekends, evenings and multiple starts throughout the year. Students also want smaller class sizes and the ability to interact directly with faculty. Most importantly, students want sufficient access to their courses such that they are not prevented from graduating on time. With rising tuition, textbook and housing costs, students want to finish their degrees on time.

3.8.5 Student Experience

As shown in Table 15, students prefer to go to a school that provides a good social experience one that includes a sense of student life and community and a place with a diverse student population. Students also want to take their courses outside the normal curriculum and have flexibility when choosing their majors. Further, students are looking for responsive customer service. Therefore, universities need to have the student support services in place when students come in with requests (i.e. Career Services, Health Counseling and Academic Advising).

3.9 Relative Competitive Analysis – UG

This section lists the sources of customer advantage (customer preferences) along with the relevant set of competitors for comparison of the main customer preferences and assesses the relative strength of each competitor. The table below summarizes the sources of relative competitive advantage. Unmarked cells indicate that there is neither an advantage nor disadvantage.

Table: 15. Relative Competitive Analysis

Sources of Customer Utility Advantage	SFU	UVIC	UBC	Teaching-Intensive	UNBC
2011-12 Full-Time Students	17,261	15,226	40,814	No data	2,425
2011-12 Part-Time Students	12,457	4,973	15,545	No data	1,200
Cost					
AVED 2012/13 Tuition Only (one being the lowest)	2	3	5	1	4
Location & Convenience					
Location &Convenience					
Brand/Prestige/Reputation					
2013 Maclean's University Rankings, Top 49 Canadian universities listed in the Best Overall National Reputational Ranking. Ranked in order from best to worst	7 advantaged	12 advantaged	2 advantaged	n/a disadvantaged	33
Range of Product					
Course Scheduling – days, weekends, evenings, multiple starts throughout the year (tri-semester or year round)	advantaged				
Course Access - when they need them so as to complete on time	disadvantaged				
Curriculum – theory or researched based to satisfy program goals					
Distinctive Programs					
Class size/contact relationship with faculty member	disadvantaged	disadvantaged	disadvantaged	advantaged	disadvantaged
Student Experience					
Experiential Learning & Learning Experiences					
Responsive customer service					
Student Life/Campus Community	disadvantaged				
Fraser International College	advantaged	disadvantaged	disadvantaged	disadvantaged	disadvantaged

Source: (p. 118 for # of full and part time students) 2013 University Rankings (Maclean's Magazine, 2012)

3.9.1 Cost of Tuition

The table below shows that the per student tuition at various research universities ranges from $4.7K to $5.0K per year. This is largely due to the government's annual 2% cap on tuition increases.

Table: 16. Cost of Tuition

Institution	2011/12 Tuition	2012/13 Tuition	% Increase
SFU	4,914	5,013	2%
UBC	4,608	4,700	2%
UVIC	4,862	4,959	2%
UNBC	4,629	4,722	2%
Teaching-Intensive Univ.	3,824	3,900	2%

Source: Reproduced from Education Costs (Ministry of Advanced Education, Innovation and Technology, pp. 1-3)

These amounts however do not include the Compulsory Ancillary Fees that when added could change the rank order as noted in the table below with the 2010 MacLean's University Rankings.

Table: 17. Maclean's University 2010 Rankings Tuition and Ancillary Fees

Institution	Tuition	Compulsory Ancillary Fees	Total
UBC (Arts)	4,518	1,607	6,125
UBC (Science)	4,814	1,607	6,426
SFU	4,815	745	5,547
UVIC	4,766	708	5,474
UNBC	4,538	823	5,361

Source: Reproduced from 2010 University Rankings (Maclean's Magazine, 2010, p. 161 & 162)

The table shows that universities in B.C. do not aggressively compete on price (tuition). What we can infer from the information presented is that there is no apparent advantage from a price perspective.

3.9.2 Location and Convenience

Given that students prefer to go to school in close proximity to home, the catchment area where the university is located is important. SFU has a campus in Surrey, one of the largest growing municipalities in Canada allowing it to have a strategic advantage over UBC. Further, were the government to award additional UG FTE's, it would probably be in Surrey given its current growth status. Therefore, though SFU cannot compete on size with UBC, the strategic campus location in Surrey may provide SFU with additional government funding in the future. However, Kwantlen is also located in Surrey and therefore any new FTE funding may be split between Kwantlen and SFU, thereby reducing SFU's competitive advantage.

3.9.3 Brand/Prestige/Reputation

A university's competitive advantage is heightened through its brand, prestige and reputation. The brand and reputation of an institution helps employers to differentiate between potential job applicants. For that reason, many students when choosing a particular university make their choices based on the brand, reputation and prestige of that university.

- ✓ Using data extracted from the 2013 Maclean's University Rankings, Best Overall National Reputational Ranking that considers highest quality, most innovative and leaders of tomorrow, out of 49 universities listed UBC ranked 2nd, SFU 7th, UVIC 12th and UNBC 33rd. No data was listed for the University Colleges. In the rankings, SFU consistently ranks in the top 25%. It ranked 1st in the comprehensive category places in Canada, ahead of UVIC (Maclean's Magazine, 2012, p. 106).

- ✓ UBC has a traditional university personality. Its promotional material is formal. UBC is staking out the market looking for the best and the brightest rather than just the K-12 segment. UBC's competitive advantage comes from its size, its huge endowment, the law and medical schools and its name. UBC has huge name recognition and has been around for 150 years. UBC is competing for Canadian and international dominance or U.S. "Ivy League" status.
- ✓ SFU has a very different personality from UBC. SFU is a place to go for future game changers and focuses on what the student wants. SFU celebrates the local communities, for they are considered part of the fabric. A quote from SFU's 2012/13 promotional flyers asks the question "Who are you really? – Are you more ambitious and driven than most? Fearless and always curious? And are you a great team player and, at the same time, a bit of a rebel too? YES? Then you can expect to flourish at SFU? In contrast to UBC, SFU is targeting the local markets and the K-12 segment.
- ✓ Accreditation in a number of programs enhances reputation and brand (e.g. NCAA Athletics; CEAB Engineering Science, EQUIS Business). SFU has obtained NCAA accreditation and is the only Canadian University to hold this accreditation outside the U.S. In this regard SFU has a competitive advantage over UBC, UVIC and UNBC. However, the other universities also have accredited programs.
- ✓ SFU is pursing full university status accreditation with the Northwest Commission on Colleges and Universities (NWCCU) in the U.S. If obtained, SFU will be the 1st Canadian university to be accredited outside the U.S. This will help bolster SFU's

reputation in the area of international student recruitment efforts and hopefully enhance SFU's competitive advantage.

- ✓ The teaching-intensive universities as a group generally offer smaller class sizes, one-on-one access to faculty, flexible pathways and choices and an applied learning focus to many of their program offerings. This tailored individual approach fosters learning. However, the university colleges do not garner the same brand recognition and reputation that SFU, UBC, UVIC and UNBC do. For example, BCIT and Kwantlen are not included in Maclean's University Rankings.

3.9.4 Range of Product and Student Experience

Students are looking for a range of program choices, multiple pathways, and the flexibility to take courses outside the normal curriculum. Further they want smaller class sizes with the ability to interact directly with faculty. They are also looking for a good social experience.

- ✓ SFU's tri-semester model is unique in B.C. and provides students with the flexibility to drop in and out year round. For example, SFU has one of the most noted co-op programs in Canada and the tri-semester system provides students with the opportunity to take advantage of co-op. This is difficult to do with a regular/normal semester system. Also, by running courses year round, classroom space is fully utilized. Conversion to a tri-semester model would be a costly and time-consuming process for the other universities and therefore presents a competitive advantage to SFU.

- ✓ SFU, UVIC and UBC all offer distinctive programs. For example: UBC has Faculties of Medicine and Law, UVIC and TRU have Law, and SFU has Criminology and the downtown Woodward's School for Contemporary Arts. Therefore all are advantaged.
- ✓ UNBC is a predominately an undergraduate university in Prince George and targets students who live within close proximity. UNBC does not offer the number of graduate and PhD programs offered by the other three universities. Therefore students wishing to continue their academic education have to move. This is a disadvantage when compared to UVIC, SFU and UBC.
- ✓ The teaching-intensive universities (e.g. Kwantlen, BCIT) compete by being able to attract students who are seeking a gradual transition from high school to university, students who may not be ready for the traditional university experience. They also compete by offering a number of skills-based programs that prepare students for a specific job when they graduate. In addition to the skills based programs, the flexible options, applied learning, range of program choices and student support services, the university colleges offer smaller class sizes (i.e. 75% of classrooms across all BCIT campuses have a capacity of 30 seats or less) (BCIT, 2013) where students have direct one-on-one access to faculty and their real world experiences. These smaller classes and direct access to faculty differentiates the university colleges from SFU, UBC, UVIC and UNBC with their large class sizes, limited or no instructor access and teaching assistant (TA) run study groups in many of their first and second year course offerings. In this regard, the university colleges are advantaged. In addition, since university colleges have received University status,

SFU, UBC, UVIC and UNBC's competitive advantage has been further weakened for students no longer have to transfer to a traditional university to complete their undergraduate studies.

- ✓ Fraser International College (FIC) – FIC is a feeder school to SFU for international students. SFU is the only university in B.C. that is affiliated with FIC. Students come to FIC for their first year to receive language training and have an opportunity to adjust to the Canadian culture. This reduces international recruitment costs and improves SFU's competitive advantage for attracting international students. Currently 18% of SFU students are international students. FIC provides a unique advantage to SFU for international recruitment opportunities.
- ✓ Students indicated in SFU's Fall 2010 and 2011 UG surveys that the sense of community and overall student experience is an area that SFU could improve upon. Given UBC's campus and amenities (more vibrant and urbanized), it can be inferred that UBC has an advantage over SFU. Being located atop a mountain and more isolated makes it difficult for SFU to create a sense of community and this is a disadvantage for SFU. In addition, students would like to have access to the courses they need so that they can graduate on time. However, there are certain programs where it is impossible for students to obtain the necessary access to the required courses so that they can graduate on time. This can be due to course scheduling or to the limited number of sections offered. In this regard, SFU is disadvantaged.
- ✓ Responsive Customer Service. At SFU, as soon as a student declares a major or has determined a course of study, SFU provides all the support needed and connections to help him or her succeed. If a student shows passion, interest and reaches out,

SFU is there to help (Dalton, 2012). Kwantlen, one of the teaching-intensive universities, also offers services to "assist students who have decided they want to succeed" noting that they have "25 student services to help student succeed". (Kwantlen Polytechnic University, 2013). This is an advantage to both SFU and Kwantlen, however all universities have a Student Services office available to provide students with responsive customer service and support therefore all are advantaged.

3.9.5 Relative Competitive Analysis Summary and Conclusion

In terms of individual strength, UBC is the largest and most reputable university in B.C. In addition to offering Law and Medicine, it commands a significant research presence. UBC's medical school is the only one in B.C. According to AVED, UBC's Medical School has the highest number of seats (up to 288 per year by 2014-15) of any English-speaking medical school in Canada (Ministry of Advanced Education, Innovation and Technology, 2012, p. 3).

In terms of overall competitiveness in the industry, SFU scored higher than UVIC and UNBC and lower than UBC. SFU and UBC compete for funding and for students. Both would like to enhance their reputation by attracting better students. SFU competes with UVIC and not only ranks above UVIC in the comprehensive category but also ranks ahead in the Best Overall National Reputational Ranking that considers highest quality, most innovative and leaders of tomorrow. Where the teaching-intensive universities come out ahead of the big research institutions is in the area of class size (especially in 1st and 2nd year courses) and contact relationship with faculty. The teaching-intensive

universities not only provide an education, they also offer a community for personal development and focused learning. In this regard they garner competitive advantage.

Finally, the relative competitive analysis exposed an interesting vulnerability. The big universities with their large first and second year lecture hall class sizes and limited student/faculty interactions are vulnerable to alternate instructional delivery formats such as MOOCs that also promote large class sizes and limited student/faculty interaction.

3.10 S.W.O.T. Summary

The SWOT (strengths, weaknesses, opportunities and threats) analysis identifies the key internal and external factors that are important in helping and organization to obtain its objectives. The tables below summarize the observed internal strengths and weaknesses identified in the relative competitive analysis and internal analysis and the observed threats and opportunities facing the higher education industry.

Table: 18. Observed Strengths & Weaknesses

Potentional Internal Strengths	**Potential Internal Weaknesses**
Connects students with employers through co-op programs and internships thereby facilitating the transition to careers.	Stagnant government FTE funding and annual tuition caps yet rising operating, salary, facilities, IT infrastructure, deferred maintenance costs. Defined benefits pension plan that is no longer sustainable.
Flexible pathways, tri-semester system (students can take courses year-round), choices.	Course availability and accessibility - Access to the required courses so that students can complete on time.
SFU reputation/brand and SFU is the only university in B.C. affiliated with FIC – feeder school for intl. students.	Overall sense of community and student experience could be improved upon.
Attitude to innovation and openness to new evolving disciplines (1st EMBA in Canada, criminology) and opportunities (experiential learning - U.G Semester in Dialogue)	Large 1st and 2nd year class sizes with limited faculty interaction and TA led study groups increases vulnerability to MOOCs.

Table: 19. Observed Opportunities & Threats

Potential Environmental Opportunities	Potential Environmental Threats
Increased use of online technology - different instructional modes can lead to lower costs, new customers, and increased course access and availability.	MOOC (Online learning) and asynchronous education. The threat of global competition for students who can take an online degree anywhere in the world. MOOCs vs large >200 lecture halls with TA led study groups. Is a MOOC any different?
Increase buyers by offering more skills-based training.	Rising criticisms that universities are not providing students with the skills necessary to get jobs.
Take advantage of technology (alternative instructional models) to enhance university education by providing interactive and engaging learning experiences and that take into account different learning styles – adaptive learning.	Market demand – (1) flattening trend of the projected number of graduating grade 12 students. A trend expected to continue for the next 10 years. (2) shift in what students demand (to skills-based – business and engineering)
Consider partnering with a MOOCs provider for certain 1st & 2nd year course offereings.	Globalization and changing demographics (growth in mature adult learners, aging population).
Leverage partnerships/collaborations with other universities locally and globally.	Rapid rise in the number of universities being built in China => uncertainty regarding the continued growth in international student enrolments. Star faculty may be recruited by the Chinese Universities offering higher salaries.
Public/Private partnerships with industry.	Reduction of government funding to higher education.
	Mobility and transferability for the global economy.

3.11 External Analysis Summary & Conclusion

SFU and its competitors all compete for students, government funding and try to provide students with flexible program choices and engaging learning experiences. Further, all try to differentiate themselves by offering unique programs, small class sizes, or through brand recognition. In these cases, competitive differences were noted. The external industry analysis helps to provide insights into where an organization's opportunities and threats are.

A review of Porter's Five Forces suggests that there is a need for the post-secondary institutions in B.C. to be cognizant and attune to the changing global landscape (globalization) and the increasing importance of technology. These factors could erode and disrupt the existing barriers to entry and increase the availability of substitute products. This would reduce the competitive advantage that the post-secondary institutions in B.C. currently hold.

Finally, the SWOT analysis summarized SFU's internal strengths and weaknesses as identified in the relative competitive advantage section and presented the observed industry opportunities and threats. The industry opportunities and threats identified are relevant to both SFU and its competitors. They also align with the current issues identified in the internal analysis section of this paper.

4: Disruptive Innovation – Online & MOOCs

In this section of the paper, Clayton Christensen's concept of disruptive innovation is discussed with respect to the online higher education industry and the rise of MOOCs. This section will first define, explain and show how disruptive innovation is affecting the delivery of higher education. Then online education is introduced along with advantages and disadvantages. Finally MOOCs, a type of online instructional format are introduced and explained.

The purpose of this section is to determine whether or not MOOCs are disruptive and a threat to traditional bricks and mortar, face-to-face instructional formats.

Clayton Christensen's research into disruptive innovation is well known and his material is used extensively in this section to demonstrate why online educational models (i.e. MOOC's) are disruptive.

4.1 Mainstream versus Disruptive Innovation Defined

To assess whether or not an innovation is disruptive, one must first have a clear understanding of what differentiates sustaining or mainstream technologies from disruptive innovations. Christensen and Overdorf provide the following definitions:

> *Sustaining technologies are innovations "that make a product or service perform better in ways that customers in the mainstream market already value. They are nearly always developed and introduced by established industry leaders. Disruptive innovations create an entirely new market through the introduction of a new kind of product of service, one that is actually worse, initially, as judged by the performance metrics that mainstream*

customers value." (Christensen & Overdorf, Meeting the Challenge of Disruptive Change, 2000, p. 6)

4.1.1 Mainstream versus Disruptive Innovation - Value Networks

Christensen refers to two important characteristics of disruptive technologies that affect product life cycles and competitive dynamics (Christensen C. M., The Innovator's Dilemma, 1997, p. 173). They are:

1. The attributes that make disruptive products worthless in mainstream markets typically become their strongest selling points in emerging markets
2. Disruptive products tend to be simpler, cheaper and more reliable and convenient than established products

When we think of differences between mainstream and disruptive innovation, we look at value networks, which refer back to how the organization delivers its value proposition. Value networks have distinct requirements surrounding customer preferences, cost structures, models for making profits, culture, and strategic direction.

The value network of a disruptive technology will have "different attributes of performance than those relevant in established value networks" (Christensen C. M., The Innovator's Dilemma, 1997, p. 41). For example the customer preferences and relevant cost structures may differ substantially from one network to another. The overall business strategy for each is also different. Each value network has a cost structure so that products and services can be provided to customers.

Some of the characteristics between the disruptive innovation and mainstream value networks are described in the following table:

Table: 20. Disruptive vs. Mainstream Value Networks

Mainstream - Sustaining	**Disruptive**
Innovations that sustain the leading companies' trajectories in an industry	Disrupts the mainstream trajectory by offering a product or service that is not as good as what the companies are already selling
First mover not always important	First mover advantage important
High margin product focus	Low margin focus - Invest in developing performance products that generate lower margins
Upstream focus - Always looking at what your competitors are doing and trying to beat the competition	Downstream focus
Pursue large markets	Pursue small markets
Listen to your existing customers	Looking for new customers and not listening to current customers
Resource dependence – firms are dependant on the existing customers and investors outside the firm (satisfying existing customer needs)	Strategizing what non-existing customers may want. Requires that those making the day-to- day resource allocation decisions invest the time, money and energy in the low margin products that current customer do not want (p.109)
Higher cost price point	Products are simpler, usually offered at lower price points than mainstream.
Mainstream has its own value network and will not commit the resources and attention to the disruptive innovation project (as success is uncertain and project may fail)	Must constitute an opportunity for profitable growth. Requires dedicated resources and support and should be set up as a separate business entity and not included as part of the mainstream value network
Strategy is to increase profit margins. Failure is not acceptable (manager compensation based on increased profits)	Strategy is trial and error. Failure is possible.

Source: The information contained in the above table has been adapted from Clayton Christensen's book: The Innovator's Dilemma and is presented in tabular format to facilitate readability. (Christensen C. M., The Innovator's Dilemma, 1997)

If we consider universities and look at the customer preferences, students who want the traditional university experience with face-to-face instruction are different from those looking for an online university instructional experience. Likewise if we look at

the costs associated with face-to-face instruction and online delivery, online offerings are cost-effective.

4.1.2 Disruptive Innovation Enablers or Elements

> *"Disruptive innovation is the process by which a sector that has previously serviced only a limited few because its products and services were complicated, expensive and inaccessible, is transformed into one whose products and services are simple, affordable and convenient and serves many no matter where wealth or expertise." (Christensen, Horn, Caldera, & Soares, 2011, p. 2)*

With disruptive innovation, the product doesn't have to be better than the mainstream sustaining technology it just has to satisfy a need that is currently not being serviced. Therefore, if there are customers that want it, then it has the potential to be disruptive. If we relate this to students who would like the option to take their courses online or participate in courses that are more interactive and make better use of online instructional formats, then the university has to adjust to accommodate to their demands. Otherwise the students will go elsewhere, and given our flexible transfer credit policy in B.C. that option is readily available.

According to Christenson, there are two elements or enablers that can characterize a disruptive innovation. They are: a technology enabler and business model innovation. (Christensen C. M., Future of State Universities Conference, 2011) By looking at the two enablers, we can show how online learning is disruptive to higher education.

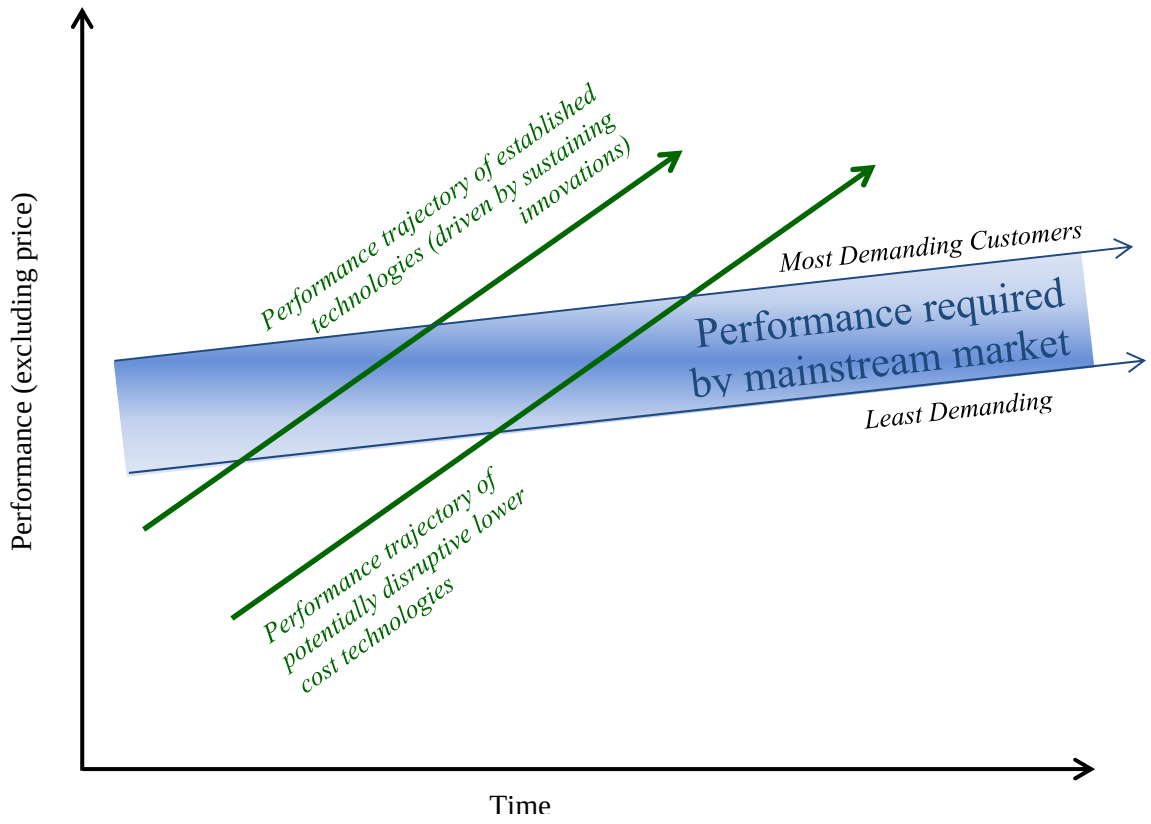
4.1.2.1 Disruptive Innovation – Technology Enabler

According to Christensen, a disruptive product is a product that is at the bottom of the market, and is not usually as good as what the leaders are making (i.e. traditional

university face-to-face courses), but it is simpler and more affordable allowing a larger number of non-customers to use it. (Christensen C. M., Future of State Universities Conference, 2011) The products are “embraced by the least profitable customers in the market.” (Christensen C. M., The Innovator's Dilemma, 1997, p. xvii)

“Disruption occurs in industries where there is an enabling technology that can “scale” upward and allow the disruptive entrants to take their low-cost business models up-market.” (Christensen, Horn, Caldera, & Soares, 2011, p. 27) Small innovative entrants can perfect their technology away from the radar of the mainstream players and for a while this gives them a competitive grace period. Christensen uses the example of mini-mills’ vs. the integrated steel mills and explains how the mini-mills kept chipping away at the low cost products (Christensen, Horn, Caldera, & Soares, 2011, p. 27). The diagram below, adapted from the HBR article by Christensen, Bohmer and Kenagy shows how Christensen’s disruptive innovation model works.

Figure 7. The Progress of Disruptive Innovation



Source: Reproduced from (Christensen, Bohmer, & Kenagy, 2000, p. 3)

Christensen notes that there are products that in the past have had immunity from disruption and sites hotels and the eating-out business (MacDonald's) as examples. These are products where there was no upwardly scalable technology driver (Christensen, Horn, Caldera, & Soares, 2011). For example, in the past, to compete in higher education, universities had to replicate the existing models, always moving up-market, replicating the cost structures and forms of the institutions they were trying to emulate (e.g. colleges in B.C. that acquired University status in 2008). This is not disruptive.

However, today with online learning one does not have to replicate. Online learning is an enabling technology and therefore changes the game. According to Christensen, "online learning constitutes an upwardly scalable technology driver that is capable of disruptively carrying the business model for low-cost universities up-market." (Christensen, Horn, Caldera, & Soares, 2011, p. 28) We have to consider the rise in the number of students taking online courses. According to Christensen, "in 2003, roughly 10% of students took at least one online course. By 2008, that fraction grew to 25%, was nearly 30% in the fall of 2009 and is projected to rise to 50% by 2014" (Christensen, Horn, Caldera, & Soares, 2011, p. 3).

4.1.2.2 Disruptive Innovation – Business Model Innovation

Universities currently try to do everything for everybody with multiple value propositions – research, teaching and preparing students for life and careers. This is the model at SFU. In addition to focusing on teaching, SFU focuses on building its research strength (trying to attain the $100 million club) and by offering students choices (interdependent pathways, whatever they want to study, major from one faculty, minor from another faculty). The table below highlights the multiple concurrent value propositions offered by traditional universities.

Table: 21. Multiple Business Models and Value Propositions

Business Model	Value Proposition	Fee
Solution Shops	Knowledge creation (research)	Fee for service
Value-adding Process businesses	Knowledge proliferation and learning (teaching)	Fee for outcome measure
Facilitated User Networks	Preparation for life and careers	Fee for membership

Source: Adapted from Disrupting College (Christensen, Horn, Caldera, & Soares, 2011, p. 3 & 33)

Offering all three value propositions results in a very costly and extremely complex organizational structure. According to Christensen, in the absence of philanthropy, universities could not exist. Universities are vertically integrated with the argument that one has to integrate back to create knowledge. Therefore faculty members first had to do the research before they could be teachers. However, this is no longer true. Rarely do the students get to see the research until they have reached the PhD level. The significant overhead costs are at the expense of research and teaching. If teaching were separated from research then the overhead costs would be reduced. (University of Texas conference video clip) (Christensen C. M., Future of State Universities Conference, 2011)

Disruptive innovations create a new model that allows organizations to offer customers increased convenience at a lower cost. According to Christensen, "using online learning in a new business model focused exclusively on teaching and learning, not research and focused on highly structured programs targeted at preparation for careers has given several organizations a significant cost advantage" (Christensen, Horn, Caldera, & Soares, 2011, p. 3). However, adding the disruptive innovation to an existing business model will not result in a transformation of the model.

4.2 Online Learning & Massive Open Online Courses (MOOCs)

Before commencing the discussion regarding MOOCs and online education and how the two are connected, one must first understand what online learning is. Taken from a U.S. survey done in 2011 by the Babson Survey Research Group, the authors describe online learning based on the proportion of course content that is delivered

online. For the purposes of this report, references to the type of course, traditional face-to-face, hybrid, or online will be based on the information presented in the table below.

Table: 22. What is Online Learning?

Proportion of Content Delivered Online	Type of Course	Typical Description
0%	Traditional	Course where no online technology used. Content is delivered in writing or orally.
1 to 29%	Web Facilitated	Course that uses web-based technology to facilitate what is essentially a face-to-face course. May use a course management system (CMS) or web pages to post the syllabus and assignments.
30 to 79%	Hybrid	Course that blends online and face-to-face delivery. Substantial proportion of the content is delivered online, typically uses online discussions, and typically has a reduced number of face-to-face meetings.
80+%	Online	A course where most or all of the content is delivered online. Typically has no face-to-face meetings.

Source: Reproduced from Going the Distance: Online Education in the United States, 2011 (Allen & Seaman, 2011, p. 7)

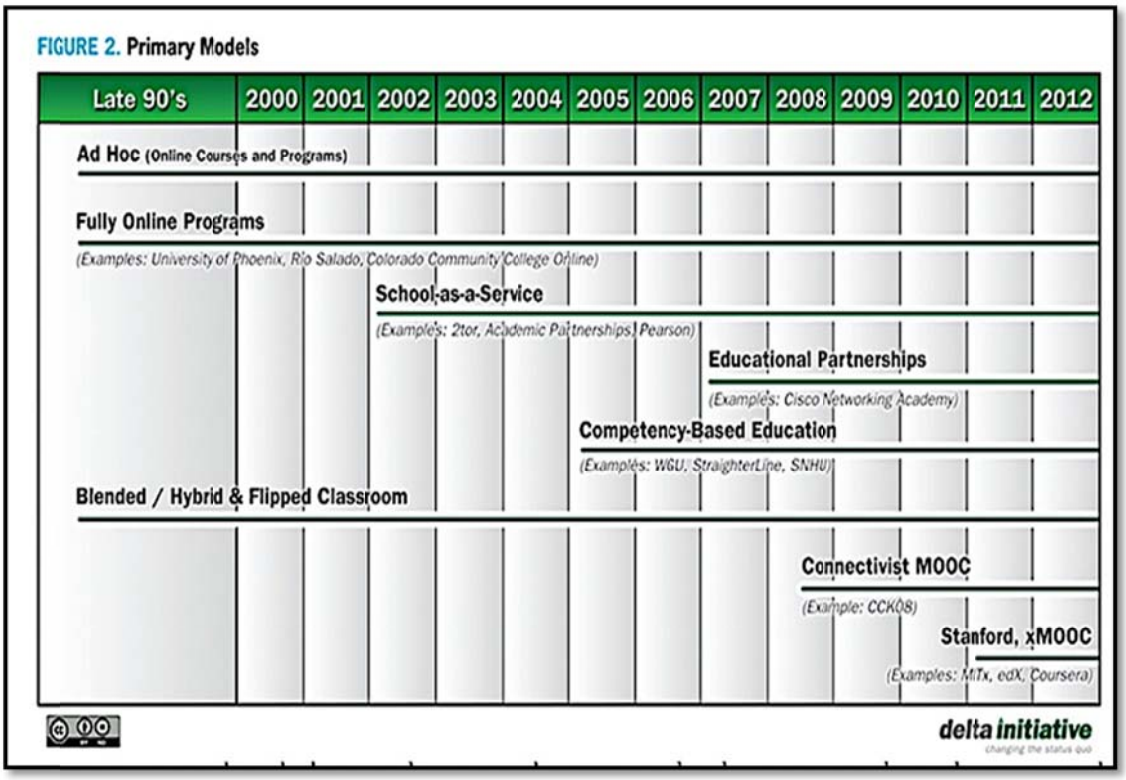
4.2.1 Online Learning

Online, distance education is not new. Universities have been offering online instruction for some time. What is new is the impact and potential of online university education and learning in a digital environment (Canadian Virtual University, 2012, p. 7).

In Canada there is no national education or funding body for online education and there is no national online learning strategy or nationally supported digital literacy strategy. There is also no single source where one can go nationally, provincially or territorially to obtain statistics on online education in Canada (Canadian Virtual University, 2012, p. 8 & 9). Information is available in the U.S. In the absence of Canadian information, U.S. online data will be sourced. In a November 2012

EDUCAUSE Review article, Hill provides several diagrams on the evolution of the various online educational delivery models. In the figure below, the evolutionary timeline of online education is presented.

Figure 8. Online Education Timeline



Source: Reproduced from EDUCAUSE Review-Online Education Delivery Models: A Descriptive View (Hill, 2012, p. 88)

Referring to the online education timeline, there are different types of online delivery models such as Ad Hoc, Fully Online, School-as-a-Service, Educational Partnerships, Competency-Based, Blended/Hybrid, and MOOCs. The information in the table below has been adapted from the Hill article and is presented in a tabular format to facilitate readability. The table provides a brief definition of each of the delivery models.

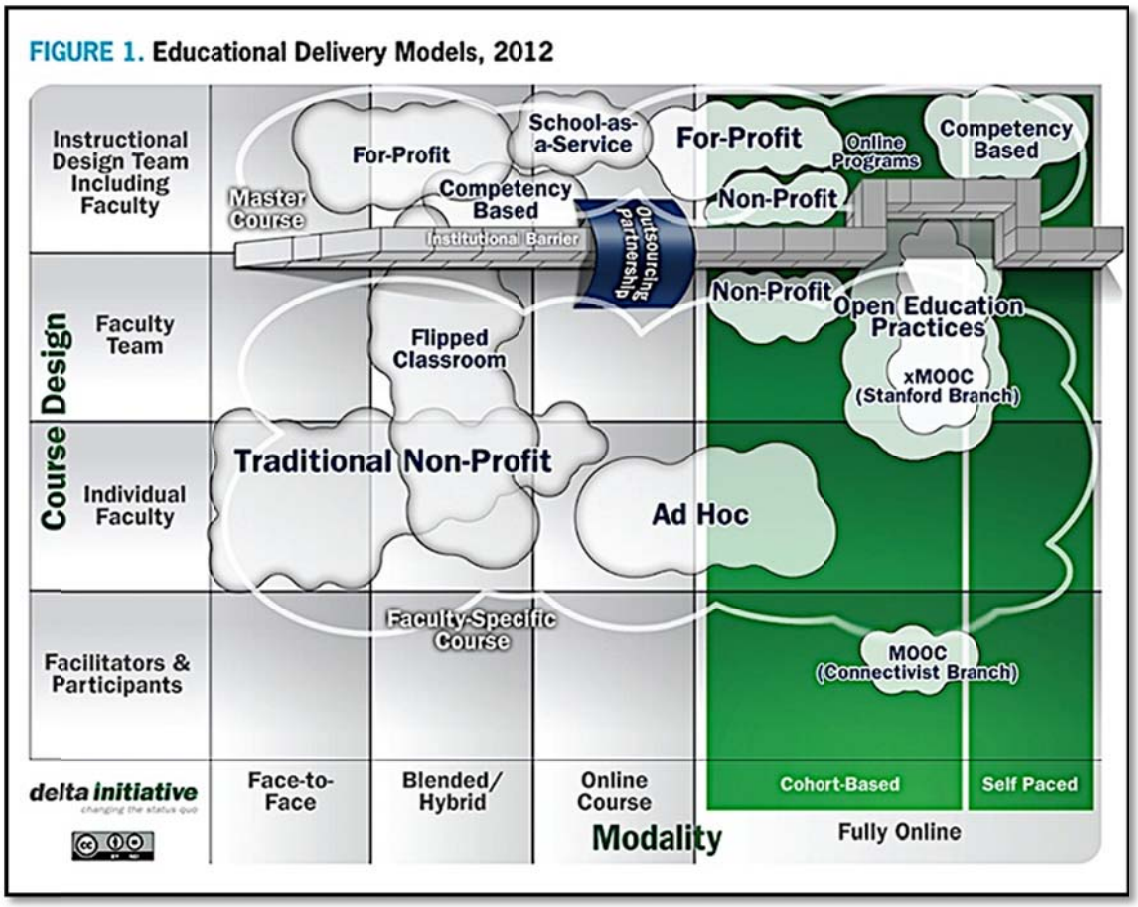
Table: 23. Types of Online Delivery Models

Primary Models	Description
Ad Hoc	Online courses and programs not based on institutional policy and strategy.
Fully Online	No face-to-face organized around the concept known as master course (course is designed by instructional design team and faculty members, gets replicated and is taught by or facilitated by multiple instructors).
School as a Service	Outsourcing/partnering with an external company for online content
Educational Partnerships	External organizations provide portions of the online course and communities of practice, including a network of peer instructors worldwide working in similar programs (p. 90).
Competency Based	Outcomes based education (OBE). Starts with desired outcomes and moves to the learning experiences that should lead students to those outcomes. These can be implemented in face-to-face, online and hybrid models. In Competency based education (CBE) the outcomes are tied to job skills and employment needs and the methods are self-paced.
Blended/Hybrid/ Flipped	Combine face-to-face with online in a structured format. Objective is to make more effective use of the face-to-face time. Students prepare for the class using online tools. The instructor then uses class time to facilitate class participation and discussion.
MOOCS	Massive Open Online Courses – fully online courses scaled to enable an unlimited number of student registrants. Faculty members both design and lead the course. This replaces the master design concept and leverages the natural scaling power of online tools (p.92).

Source: Adapted from EDUCAUSE Review-Online Education Delivery Models: A Descriptive View (Hill, 2012, pp. 86-92)

The online, hybrid and face-to-face educational delivery models currently in place in 2012 are graphically presented in the figure below:

Figure 9. Educational Delivery Models, 2012



Source: Reproduced from EDUCAUSE Review-Online Education Delivery Models: A Descriptive View (Hill, 2012, p. 86)

4.2.1.1 Online Advantages and Disadvantages

There are a number of advantages associated with online course delivery. Through the use of technology, online course delivery places students at the centre of the learning process. It recognizes that people learn differently by offering pedagogy that is individualized, adapted to an individual student's needs, and offers an actively engaging environment. One linked to real life supported by digital tools where students can learn at their own pace. Online, also meets the needs of underserved students by providing them with more flexibility and choice at a lower cost than traditional face-to-face instruction. For the institution, online addresses the limited on-campus classroom space.

For all the advantages, there are also a number of key disadvantages. Online courses are expensive to develop, are not perceived, from a learning outcomes perspective, to be as good as face-to-face courses, are not embraced by many faculty members and are not for everyone.

First, the initial investment required to develop online courses is high, however, as more students enroll in online course delivery, online does become more cost-effective in the long run. Second, there are the perceptions surrounding pedagogy and assessment of learning outcomes. Even though there have been several studies attempting to measure online learning outcomes few have been effective. Therefore the perception remains that those students taking online courses do not learn as well as those in traditional face-to-face courses. This is followed by faculty members' own negative perceptions or mindsets towards online and blended course delivery models. In the absence of available evidence of the potential gains that can be accomplished through online learning, many faculty members are reluctant to consider changes in the way they teach. Further, many faculty members are concerned that the increase in online instructional models may lead to a decrease in faculty ranks. Unfortunately, universities have been slow to create the incentives that would lead faculty to embrace online initiatives (Bowen, 2012, p. 26 & 27). Online courses are for those that are self-directed, enjoy using online tools for communicating with other students and are not that interested in the social interactions one gets with face-to-face courses. However online does not accommodate students who are looking for or need an environment that offers a more structured approach to learning. Nor does it provide an environment for students looking for the traditional on-campus experience found in face-to-face courses.

4.2.1.2 Is Online Disruptive?

Traditional university is about instructional design and quality of the instructor. Online is disruptive because delivering content online is readily customizable and teaching can be offered in ways that are engaging. Currently instruction is monolithic (single instructional style for all students). Teaching and testing is done in the same way because individualized teaching is very expensive. However we need to teach each student in ways that he or she can learn best, tailored to individual types of intelligence. Computer-based learning can be customized to the way different people learn; the various ways brains are wired to learn. Innovation that will make a difference for the student will take off very quickly. Disruptive innovation will change the way the world learns. Universities can harness the technology and use it for a strategy for success. (Christensen, Horn, & Johnson, 2011), (Christensen C. M., Future of State Universities Conference, 2011), (Christensen & Horn, 2008)

According to Vaidhyanathan online courses when done well (where faculty designs the courses that integrate digital and multimedia tools), "include rich almost constant interactions among students and faculty, constant feedback and correction, and space and time for conversation beyond the contours of the course material." (Vaidhyanthan, 2012, p. 2)

Christensen and Eyring refer to the quality of online courses, noting, "Online courses are getting better now equaling or exceeding the cognitive outcomes of classroom instruction" (Christensen & Eyring, The Innovative University, 2011, p. 211).

4.2.2 Massive Open Online Courses (MOOCs)

MOOCs are an online instructional delivery model. The MOOCs acronym, coined by David Cormier and Bryan Alexander in 2008, stands for Massive (i.e. hundreds of thousands, even165K, students in one section), Open (to anyone for free without pre-requisites), Online (worldwide via the Internet), and Course (in a singular course).

In Canada the first MOOCs originated as an open online learning experiment. In 2008, Stephen Downes and George Siemens set up a class entitled, "Connectivism and Connective Knowledge". The course was offered to 25 tuition fee-paying students at the University of Manitoba and was also offered as an open version for free. Two thousand and three hundred people signed up (Educause - Learning Initiative, 2011, p. 1 #3). This type of MOOC is coined cMOOC. The xMOOCs are somewhat different. They are affiliated with celebrity institutions and were all established in 2012.

Though this paper focuses on xMOOCs, it is important to first understand the differences between the two types of MOOCs. The information contained in the table below has been adapted from Watter's article and is presented in a tabular format to facilitate readability (Watters, Top Ed-Tech Trends of 2012: MOOCs, 2012).

Table: 24. cMOOCs vs. xMOOCs

cMOOCs	**xMOOCs**
Started in 2008 at University of Manitoba by Dave Cormier, Alec Couros, Stephen Downs, George Siemens & others	Established in 2012 - Udacity, Coursera, edX
Declarative, distributed knowledge (Principals of Connectivist/Networked-based learning)	Behaviourist pedagogy (generic knowledge where faculty represent the knowledge centre and the students are the replicators or duplication of knowledge)
Knowledge creation – content, context, connections (open learning and online network practices)	Knowledge duplication – information transmission, computer market assignments, peer assessments
Emphasis on creation, creativity, autonomy and social networking learning. Strong focus on online discussion	Emphasis on lecture video and multiple-choice tests (video-taped lectures appear online)
Instructor led	Instructor facilitated
Tools: gRSShoper (users inhabit their own space)	Tools: Learning Management System (LMS) -like platform

Source: Adapted from information contained in (Watters, Top Ed-Tech Trends of 2012: MOOCs, 2012)

Only recently have MOOCs attracted widespread attention and become a powerful force in the higher education industry. In 2012, MOOCs became the educational buzzword. In 2012, Coursera, edX, and Udacity were established and they are all affiliated with top-tier universities. This differentiates MOOCs from other online disruptors such as the University of Phoenix or Athabasca University both of which have low reputational capital. The table below, taken from the Education Advisory Board Company, highlights the attributes of the top three xMOOCs.

Table: 25. Envisioning the Current MOOC Market

xMOOCs	coursera	edX	UDACITY
Initial Funding	$22 M in venture capital	$30 M from Harvard $30 M from MIT $10 M from U of Texas	$20 M in venture capital $200K from Sebastian Thrun
Founders	Stanford computer science professors Andrew Ng and Daphne Koller	MIT and Harvard	Sebastian Thrun from Stanford
Course Structure	Fixed terms Automated assessment Lectures + quizzes	Fixed terms Automated assessment Pearson testing centers	Self-paced Automated assessment Pearson testing centers
Student Engagement	MeetUp gatherings Considering peer assessment	Class discussion boards Wikis	Active peer support forums Q&A Sessions
Scale	62 univerity partners, including Brown, Duke, Princton, Columbia and Stanford ~2.8M Courserians 4 languages / international	MIT and Harvard added UC Berkeley and are seeking additional partners 122K students in pilot course	Focus on STEM and industry 160K students in pilot course
Employer Partterships	None	None	Career Placement Program 400+ interested firms 20 official partners

Source: Reproduced from: (Education Advisory Board, 2012, p. 12) and The Promise and Perils of Innovation Slide #21 (Education Advisory Board, 2013)

Hypothetically, MOOCs could increase the productivity of teaching by increasing the transfer rate of information from one person to another (i.e. one facilitator, 160K students worldwide). The current MOOCs seem to focus more on how many people register, not on how many people complete or drop out part way through. Enrolment can be considered the "currency" and the number of registrants' can be considered the

"quality". Since the courses are offered worldwide, there is a need to ensure that the content is non-offensive to anyone. Therefore the course material is generally condensed and structured to appeal to the masses in simplified form. MOOCs are facilitated rather than instructor-led and often have no required assignments or grades. Course instruction focuses on knowledge duplication (behaviourist pedagogy) rather than knowledge transfer. MOOCs promote openness and flexibility, where individuals take learning into their own hands by making choices (e.g. choices to sign up, choices to drop out). Overall course completion rates range from 10% - 12% (Kolowich, Coursera looks to harness the free labor of its devotees, 2012, p. 1). Some likely reasons for the low completion rates are: course methodology (doesn't keep people motivated), lack of social interaction and lack of individual drive.

Many of the advantages sited in the preceding section for online education are the same for MOOCs. However, there are a few additional advantages they have over online courses:

- ✓ MOOCs provide access to learning without the overhead of a physical school
- ✓ MOOCs are available, for free, from private companies and public and private universities throughout the world (Futurelearn in the U.K., Berlin-based start-up iversity, edX in the U.S.)
- ✓ Transformative experience (since the class lends itself to collaboration)
- ✓ Students can take a MOOCs course as a refresher or to brush up on material prior to commencing a full-time university program.

- ✓ Offers a low-cost testing ground into ways that can be used to engage students in remote locations by using video, social media and new learning software (Bradshaw, Building open-learning platforms in Canada, 2012, p. A6 & A7)
- ✓ Student access: Enables people who cannot afford university access therefore provides an opportunity to reach more people
- ✓ Enables the non-traditional student who only wants the knowledge and not a degree to have access to learning (i.e. mid-career professional looking to upgrade skills)
- ✓ Skill certification and job placement (e.g. Udacity career placement program)
- ✓ Cost reduction - provides a free way to expand knowledge for students, and lower cost model for universities (in the long term)

Given that the xMOOCs are a relatively new phenomenon, there are a number of disadvantages in addition to those related to online courses. For example:

- ✓ Credentialing - Students cannot complete a degree (insufficient number of courses to provide a degree's worth of credit). Why take a MOOC and pay for transfer credit or get no credit when you can go elsewhere and complete an entire program leading to a degree online (e.g. University of Athabasca has no residence requirement)
- ✓ Assessment of learning outcomes and pedagogy - Assessment problems relating to peer grading (students grade each other based on instructors specifications), cheating possibilities/vulnerable to inappropriate behaviour (no proof that the person writing the exam online is the person registered in the course), and concerns

regarding the technology's ability to provide high quality feedback and assessment to students.

- ✓ Quality - MOOC courses are facilitated, therefore students do not know if the facilitators are the best professors or hired actors. We do not know if the most popular MOOCs are the best. Most popular course does not necessarily mean best quality. Finally, MOOCs are based on the behaviourist pedagogy therefore we do not know if the students taking the courses are learning.
- ✓ Costs – the upfront costs to develop the courses are high. Most universities would not have the necessary funds to establish MOOCs on their own.
- ✓ Business Model - currently MOOCs do not have a business model for generating revenues or have a real mission statement.
- ✓ Signalling value of a university education – currently MOOCs have a low completion rate. Completing a university education requires commitment (time, money, and opportunity cost). This commitment is a signal of the student's ability and willingness to invest in themselves and dedicate themselves to a substantial task, and signals to potential employers that the students are a safer investment risk if hired.

In addition to the disadvantages many concerns/questions surrounding the xMOOCs phenomenon have been raised. Much of the literature deals with issues surrounding, low completion rates, assessment, pedagogy, student overall learning experience and how to prevent student cheating. Many refer to the isolating nature of MOOCs and claim that they fail to encourage critical thinking (Carr, 2012, p. 3).

Another related concern resides in whether or not MOOCs can create opportunities to augment learning, increase employability and academic preparedness. There is then the whole argument regarding machine learning. Is it possible to get a machine to replicate the experience students get at a university campus and to emulate the subtle interplay between students and their professors? (Carr, 2012, p. 9) Finally there are those that believe that in the absence of a revenue generating business model, MOOCs are just another costly time-sensitive marketing tool (given that the xMOOCs were established with venture capital, personal financing and endowment income) and they question the long-term viability of the current MOOCs model.

4.2.2.1 Why MOOCs?

There are a number of questions surrounding why so much money has been invested into MOOCs in such a short time and what the motivation is. Some possible reasons are:

- ✓ MOOCs provide a live laboratory for studying how people learn, how the mind works and how to improve education both face-to-face and online (Parry, 2012, p. B7).
- ✓ MOOCs can be used to help understand why people forget things so that strategies can be created to prevent it (Parry, 2012, p. B7).
- ✓ Study which teaching methods and tools are most successful. The research can then be used to inform faculty as to how they can best use technology in their teaching to enhance the experience for students on campus (Harvard Gazette, 2012, p. 2). For example, MOOCs incorporate adaptive leaning routines into their software and,

online tutoring systems adapt to learning styles as students' progress through the course (Carr, 2012, p. 7 & 8).

- ✓ Tool for identifying top talent to charge recruitment fee - act as a career placement centre (e.g. Udacity is doing this).
- ✓ Tool for identifying the smart people - used as outreach tools to boost future enrolment (Educause - Learning Initiative, 2011, p. 1 #6).
- ✓ Large and diverse forum and meeting place for ideas (Educause - Learning Initiative, 2011, p. 1 #7) and for networking. MOOCs provide a large space where people can aggregate and network with each other (without seeing each other) in very personal ways. To be part of a network, much like Facebook is.

To summarize the motives, below are quotes from MIT president, Susan Hockfield and Harvard president Drew Faust regarding edX (Harvard Gazette, 2012, p. 2):

> *"EdX represents a unique opportunity to improve education on our own campuses through online learning" Susan Hockfield*

> *"EdX gives unprecedented opportunity to dramatically extend our collective reach by conducting ground breaking research into effective education and by extending online access to quality higher education…new technologies and research will enable Harvard and MIT to lead the direction of online learning in a way that benefits our students, our peers, and people across the nation and the globe" Drew Faust.*

4.2.2.2 MOOCs Possible Business Model

As previously noted, there are a number of questions surrounding the MOOCs business model. With MOOCs, the partner (i.e. Coursera, edX) company benefits, not

the individual institution. Some of the possible ways that MOOCs could perhaps earn revenues for educational institutions are:

- ✓ Sell registrant list of the best students to prospective employers
- ✓ Assemble data on student behaviour – develop algorithm to spot patterns in the data, gain insight into learning styles and teaching strategies. This information could then be sold.
- ✓ License online courses to other universities so that they can improve their offerings
- ✓ Course is free but trade MOOC certificate for a fee for credit elsewhere. (e.g. University of Maryland charges $1,300 for 3 college credits (Daniel, 2012, p. 16).
- ✓ Marketing

With respect to possible monetization strategies Sir John Daniel refers to the Coursera partnership agreement that lists eight potential business models. They are reproduced here: (Daniel, 2012, p. 7)

1. Certification (students pay for badge or certificate)
2. Secure performance assessments (e.g. students pay for proctors, such as Pearson, to invigilate their exams)
3. Employee recruitment (companies pay for access to student performance records)
4. Applicant screening (employers/universities pay for access to records to screen applicants)
5. Human tutoring or assignment marking (for which students pay)
6. Selling the MOOC platform to enterprises to use in their own training courses

7. Sponsorships - 3rd party sponsors of courses (i.e. licensing deal with Antioch University)

8. Tuition fees

4.2.2.3 Are MOOCs Disruptive?

If we use Christensen's theory of disruptive innovation, MOOCs do fit the disruptive model. For example:

- ✓ Serving non-consumers. MOOCs are open to everyone therefore they do not target traditional face-to-face learners.
- ✓ MOOCs are moving up-market. MOOCs have been around since 2008 but now the technology has improved to where they are a significant presence.
- ✓ Disruptive innovations change the definition of existing quality. MOOCs are leading people to question traditional bricks and mortar educational models.
- ✓ Established firms wanting to catch the disruptive wave should set up a separate autonomous business entity. Harvard and MIT did exactly that by creating their own MOOCs—edX—as a separate business unit (Harvard Gazette, 2012, p. 3).

4.2.2.4 Are MOOCs a Threat?

MOOCs are not a new pedagogy. Further, technology merely provides alternate routes to the material and makes possible automated feedback. However, technology has lowered the barriers to entry. The accelerated rate of technological advances has enabled the easy entrance of MOOCs within a very short period of time. Due to the sheer size of investment in the current MOOCs, something will survive leading to new paths for universities. The impact will lead to improvements in teaching and will encourage

institutions to develop distinctive missions. MOOCs may lead universities to embrace uniqueness and be less imitative. According to the Education Advisory 2012 Board Article:

> *"MOOCs have greatly accelerated the appetite and pace of change and will pressure universities to adopt new instructional approaches, be more flexible about credit articulation, and more clearly define their unique value in a changing higher education ecosystem." (Education Advisory Board, 2012, p. 4)*

Given the economic realities associated with government funding cuts, expensive physical campuses and increasing salary and operating costs, the real threat that MOOCs may present is irrelevance. For example, philanthropists could decide to fund alternative educational programs rather than university endowments, traditional undergraduate students could try to find less expensive ways to obtain their degree by taking courses at multiple institutions and then combining all their credits, students could simply go elsewhere, faculty could leave for higher paying opportunities in Asia or, as Sebastian Thrun did, give up their tenure positions to launch educational technology start-ups (Education Advisory Board, 2013, p. Slide #28).

In the industry analysis section of this paper, the teaching-intensive universities with their small classes, individualized faculty instruction, and student-centric tailored applied learning focus provide students with an enriching learning experience. These smaller universities will not be challenged by MOOCs. However, to the traditional bricks and mortar institutions with their large undergraduate classes, limited student/faculty contact, inconvenient course access and scheduling problems, MOOCs may be a threat if they focus only on knowledge transfer. MOOCs also present a large threat in the area of non-credit continuing education programming. Non-credit programs

offered by the university target the underserved, non-customer markets. There would be little value in paying for a non-credit course when one can take a MOOC for free. The only reason to pay would be for those seeking a non-credit face-to-face course experience.

MOOCs may be the dawn of a new technological age for higher education. The real threat may not be the MOOCs themselves but the unbundling of higher education. If courses were bundled according to employer-specific market needs, then the definition of credentialing may change and this would constitute a threat to traditional bricks and mortar institutions. Universities will no longer have the monopoly (knowledge and credentialing) over the services offered (content, delivery and assessment, research, mentorship, affiliation, networking, credentialing, and job placement). Other businesses and institutions will compete with higher education and will offer these services (i.e. assessment gets re-bundled with Pearson, invigilation gets re-bundled with ProctorU a company who offers remote proctoring (Today Daily Focus - Education, 2013, p. 2) and classroom content gets re-bundled with textbook publishers to e-books) (Watters, Top Ed-Tech Trends of 2012: MOOCs, 2012, p. 8 & 9). The table below presents an example of the possible unbundling of faculty roles.

Table: 26. The "Unbundling" of Faculty Roles

	Content Creation	**Content Delivery**	**Learning Assessment**	**Student Support**
In-House	Professional Course Designers	Lecture Capture	Independent Competency Tests	Peer Tutors
Outsourced	Publisher "Course in the Box"	Adaptive Learning Technogies	Outsourced Grading	On-Demand Advising
Open Source	Open Educational Resources	iTunesU	MOOCs	Online Peer Advising

Source: Reproduced from Understanding the MOOC Trend (Education Advisory Board, 2012, p. 17)

4.3 Disruptive Innovation – Online & MOOCs – Summary & Conclusion

In this section, we defined and explained Christensen's concept of disruptive innovation and showed how it relates to higher education. Next, online learning and MOOCs were analyzed. One thing is certain: the emergence of MOOCs has changed the assumptions of traditional online education. Disruptive innovation has occurred and complacency is no longer acceptable.

Hill cites four key lessons for traditional higher education institutions. They are adapted and reproduced here: (Hill, 2012, p. 95 & 96)

1. Online education now consists of multiple delivery models and universities have to be aware of these models and technological trends.

2. The game has changed due to the new legitimacy of online education and universities will now have to have a strategic plan that answers "yes" or "no" to online courses and indicates how that decision serves its mission or immediate needs.

3. The increase in the number of different online educational models should lower, not raise student costs.

4. Online education will lead to increased competition. It increases the ability for institutions to compete with one another and can help to create new institutions and new online programs.

The resounding message that can be obtained from the information presented in this section is that MOOCs are a threat and universities should respond.

5: Blue Ocean Strategy Explained

This section of the paper presents and explains Kim and Mauborgne's Blue Ocean Strategy. The overall premise of Blue Ocean strategy is to redefine current offerings and to compete in areas where there was previously no competition. The purpose of reviewing this strategic model is to determine whether or not it can be used to develop SFU's preferred strategic option. Blue Ocean Strategy represents an analytical framework for firms to use when searching out new untapped markets or those markets where a firm's current customers are not. The model, which focuses on the demand rather than supply side of the equation, enables management to find out what the non-customers want and why they are not currently using your products. It will help to stimulate management into action and for that reason is the recommended model for developing and implementing SFU's strategic option.

W. Chan Kim and Renee Mauborgne introduced the concept of Blue Ocean Strategy in their 1997 Harvard Business Review (HBR) article, followed by their 1999 HBR article and then expanded on in their 2004 HBR article and book in 2005. The authors divide the market universe or competitive landscape in which firms operate into two "Oceans", Red and Blue.

Red oceans represent all the industries that are in existence today. Red ocean strategy is based on the "assumption that industry structure conditions are a given and firms are forced to compete within them" (Kim & Mauborgne, Blue Ocean Strategy, 2004, p. 7). With Red oceans, the industry boundaries and competitive rules of the game

are known; the market space is crowded as companies try to outperform their rivals. If the industries are overcrowded, it becomes hard to differentiate brands. Profits are obtained at the expense of consumers and the society at large. The prospects of increasing profits and growth are reduced, as products become commodities. The "cut throat" competition turns the oceans "bloody".

Blue oceans represent all the industries not in existence today. Blue Oceans are largely uncharted, unknown market space where competition is irrelevant because the rules of the game have not yet been defined. "Blue ocean strategy rejects the notion that strategy is a choice between differentiation and low cost, rather successful companies pursue differentiation and low cost simultaneously" (Kim & Mauborgne, 2004, p. 6). Blue ocean strategy is used to seize new profits and growth opportunities. It is a product of managerial action. Blue Ocean Strategy is based on the assumption that "market boundaries and industries can be reconstructed by the actions and beliefs of industry players (reconstructionist view)" (Kim & Mauborgne, 2004, p. 7). In other words, the excess untapped demand is out there in the market ready for the taking.

5.1 Value Innovation

Blue Ocean Strategy is all about value innovation. Value innovation is the creation of innovative value to unlock new demand. Firms should aim for value creation innovation by redefining their offerings to compete in niches where there is no competition. Defined, value innovation is the "simultaneous pursuit of radically superior value for buyers and lower costs for companies" (Kim & Mauborgne, 2004, p. 10). The idea behind value innovation is to stop doing things in the old way and start doing things in a fundamentally new way. One should ask the question: "What would our business

look like if we started over again (fresh)?" By redefining the problem, this leads to changes in the entire system and therefore a shift in strategy. Value innovation occurs when companies align innovation with price, utility and cost positions. Value innovation is a new way of thinking and executing strategy, a way to break from the competition and leads to the creation of a Blue Ocean (Kim & Mauborgne, Blue Ocean Strategy, 2005, p. 13). Value innovation takes place on three platforms; product, service and delivery. Those most successful, take advantage of all three platforms. To create a new value curve, the authors outline five dimensions of strategy. In the table below, conventional and value innovation strategies are presented and compared. The information is derived from Kim and Mauborgne's HBR article (Kim & Mauborgne, 2004, pp. 5-7).

Table: 27. Conventional vs. Value Innovation Logic

The Five Dimensions of Strategy	Conventional Logic (Traditional Barnum and Bailey Circus)	Value Innovation Logic (Cirque du Soleil)
Industry assumptions	Conditions are given	Look of new ideas and "quantum" leaps in value
Strategic focus	Compete at the margin, let competition set the parametes, compare rivals strengths and weakensesses and focus on building competitive advantage	Monitor competitors, dominate market by offering tremendous leaps in value
Customers	Focus on customer differences Retaining and expanding customer base	Build on commonalities in what customers value
Assets and capabilities	View opportunities through the firms existing assets and capabilities	Not contrained by where the firms are now. What if we started anew?
Product and service offerings	Compete witin clearly established boundaries	Cross boundaries, within terms of total solution

Source: Reproduced from HBR Article, Value Innovation (Kim & Mauborgne, 2004, pp. 5-7)

5.2 Four Action Framework

Once the firm has completed the value innovation process and formulated the company's logic around the five dimensions of strategy, managers then must ask four questions to translate the value innovation into a new value curve. The four-action framework focuses on the big picture. The framework is used to create the new value curve (strategy canvas). The four actions are: Eliminate, Create, Reduce, and Raise (Kim & Mauborgne, Blue Ocean Strategy, 2005, p. 29). The framework provides a powerful tool that can be used to create a new market space. The firm must look at every factor the industry competes on. If we were to apply the four-action framework to SFU here are some of the things that we could consider.

Table: 28. Four Action Framework & SFU

The Four Action Framework	Criteria	The Framework as Applied to SFU
Elliminate	What factors should be elliminated that the industry has taken for granted?	Courses that do not create demand or have low demand and value (i.e. those that can be better taught by the colleges or offered entirely online)
Create	What factors should be created that the industry has never offered?	Hybrid instructional models that provide improved course delivery (through interactive tools), improved learning outcomes (by using a combination of online and face to face tools that can tap into other ways that people learn) and improved course access (reduce face-to-face from three hours to 1 or 1.5 hours so that more sections can be offered). Partner with a MOOCs provider for first and second year course offerings. This would also improve course access.
Reduce	What factors should be reduced well below the industry standard?	The number of 100% face-to-face offerings and do not build additional lecture halls (classrooms)
Raise	What factors should be raised well beyond the industry standard?	The use of technology in course delivery so as to provide students with a more engaging and experiential learning experiences. The world has changed: we live in a technologically connected world (social media) and students want to work while going to school. The areas where SFU is unique, the ones that differentiate us.

Source: Adapted from (Kim & Mauborgne, Creating New Market Space, 1999, p. 3)

5.3 Six Principles of Blue Ocean Strategy

Once the firm has determined the new value curve (what aspects of the firms current offerings will be eliminated, reduced, raised and what new offering will be created), six basic approaches are used to remake market boundaries and create a new market space. They are: Industry, Strategic group, Buyer group, Scope of product/service offering, Functional and emotional orientation and Time (Kim & Mauborgne, Blue

Ocean Strategy, 2005, p. 79). In the table below, a column applying Blue Ocean Strategy to SFU and higher education has been added to Kim and Mauborgne's original figure.

Table: 29. From Head-to-Head Competition to Blue Ocean Creation

Six Principles	Head-to-Head Competition		Blue Ocean Creation	As Applied to SFU
Industry	Focuses on rivals within industry	→	Looks across alternative industries	MOOCs, University of Phoenix
Strategic group	Forcuses on competitive position within strategic group	→	Looks across strategic groups within industry	Royal Roads, University of Athabasca
Buyer group	Focuses on better serving the buyer group	→	Redefines the industry buyer group	Non-traditional students that learn differently, mature adult learners, Asian learners
Scope of product or service offering	Focuses on maximizing the value of product and service offering within the bounds of its industry	→	Looks across to complementary product and service offerings (define the total solution buyers seek when they choose a product or service)	Tap into technology to re-design courses and delivery formats. Students want to be able to work while going to school and finish on time (course access). Partner with a MOOCs provider for first and second year course offerings to improve course access.
Funtional emotional orientation	Focuses on improving price, performance within the functional-emotional orientation of its industry	→	Rethinks the functional-emotional orientation of its industry	Get rid of things that customers get no practical value for, add things that may increase emotional value (help getting a job)
Time	Focuses on adapting to external trends as they occur	→	Participates in shaping external trends over time	How SFU markets itself today vs the value it might deliver in the future. For example demographic shifts, technology (MOOCs, Online in K-12), changing students (works, uses social media)

Source: Adapted from Blue Ocean Strategy (Kim & Mauborgne, 2005, p. 79)

5.4 Blue Ocean Strategy Summary & Conclusion

In this section Blue Ocean Strategy was introduced and explained. The purpose was to assess whether or not the Blue Ocean framework could be used in developing SFU's preferred strategic option. Examples were presented to show how the various aspects of the model could be applied to SFU. The Blue Ocean Strategy can be hard to implement in an existing organization but still possible. For example, Nintendo applied Blue Ocean Strategy when they created Wii. They redefined the problem (time needed to learn and play the video games), focused on the demand side, reached out to non-gamers to create a larger market. They realized that there were more non-customers than customers so they targeted all customers (young, old, etc.). Nintendo then went out and researched why their non-customers (the parents/moms) were not using their products (video games). The result of their research was Wii in 2006. Wii (a wand- like controller resembling a TV remote control) re-defined how video games were played. (Farhoomand, 2009)

Universities by their design are not structured for rapid change and it is hard to know what customers really want. Further, the internal culture is reluctant to change and therefore there are inherent limitations. The entrance of MOOCs and rapid technological advances makes complacency or even gradual change no longer acceptable. The Blue Ocean analytical framework, with its demand side focus and its radical starting-over-blank-page approach for moving in a new direction provides SFU with a way to initiate the needed change and redefine current offerings.

6: Strategic Alternatives

The preceding sections of this paper first presented the reader with an overview and introduction to SFU and the higher education landscape followed by the internal analysis of SFU and the external industry analysis. The paper then moved on to the concept of disruptive innovation, showed how the landscape is changing in higher education, and the threats that online and MOOCs are having and will continue to have on traditional instructional delivery models (face-to-face only). Finally, Blue Ocean Strategy was presented as a framework that SFU can use to bolster its value proposition and generate improved customer utility or willingness to pay.

This section of the paper identifies and analyzes a number of alternatives that SFU should consider to improve its strategic position. Each alternative is evaluated to see how well each addresses the threats and opportunities identified in the External Analysis section. The three strategic alternatives are:

1. Maintain current business model
2. Develop Online courses & MOOCs to increase delivery options
3. Hybrid model

6.1 Maintain Current Business Model

SFU could continue to operate as it has been. Maintaining the current business model would consist of continuing with the current face-to-face instructional model along with online courses developed by the Centre for Online Distance Education (CODE). SFU would continue to pursue full university accreditation status as a way to differentiate itself from other Universities and would still explore options with the Government to increase the number of funded seats. For example, SFU could approach the provincial government to increase the number of funded seats at the Surrey Campus from 2,500 to 5,000 (given that Surrey is the fastest growing municipality in the lower mainland). SFU could also collaborate with UVIC and UBC to pursue the option with government of removing the tuition cap currently levied on graduate professional programs. Universities could then charge higher tuition rates for the professional programs, thereby providing options for revenue generation or at least cost recovery. Currently many of the professional programs at SFU are priced too low and it is becoming increasingly difficult to continue offering the programs. Also, the low cost price point can act as a deterrent when attracting students who often associate cost with the quality of professional programs.

Janet Steffenhagen reported that the six presidents from the Research Council of B.C., of which SFU is part, presented the Opportunity Agenda for B.C. This agenda called for 11,000 new spaces (3,600 UG, 3,000 Grad, 4,400 College and Trades) over four years at a cost of $130M plus $51M towards the expansion of student financial aid including loan reductions and grad scholarships plus more money for innovation and

research (Steffenhagen, 2012, p. A1 & A9). SFU could continue to support the Opportunity Agenda for B.C.

In some respects, the options presented above, fall into what Kim and Mauborgne refer to as Red Ocean Strategy. Here we have all the players competing in the same environment, all trying to deal with change by getting bigger and spending more money, embracing sameness and not differentiating.

Maintaining the current business model is not a long run viable option. The current model does not address the financial struggles and the mounting questions surrounding the actual quality and value that universities provide to students and the society. It does not address the impact that the rapid rise of Asian (i.e. China) universities will have on future international recruitment efforts or the impact that the population shift (older mid-career learner) will have on traditional face-to-face instructional delivery formats. Further, the model does not consider the impact of changing technologies and greater demand for more interactive and engaging learning experiences (such as those provided with alternative instructional models). Finally the model does not consider the impact that MOOCs are having.

MOOCs and online education are transforming higher education. MOOCs are disruptive, causing an upheaval and forcing education to be transformed. The elite universities are widening their scope and increasing their scale. They are "opening new opportunities for the agile and threatening doom for the laggard and mediocre" (The Economist, 2012, p. 101). As noted previously in this paper, online education in not new, but in 2012, we saw the power of technology. To summarize that power, in January 2012 Sebastian Thrun, a computer science professor at Stanford, quits his tenure track position

and with $5M from investors and personal money started Udacity. By October 2012 Udacity had raised $15M from investors. In April 2012, Andrew Ng and Daphne Koller, with $16M in venture capital, launched Coursera in the US, of which eight of the 33 partners are foreign, with the University of Toronto being one of them. Then in May, Harvard and MIT each contributed $30M of their own money to launch edX (The Economist, 2012, p. 101). In December, Futurelearn LTD, a new MOOC platform, consisting of a consortium of 12 (19 as at March 2013) British providers led by The Open University, was formed (Watters, 2012, p. 4). Finally, in March 2013, Berlin-based start-up iversity joins the MOOCs trend giving continental Europe a MOOCs presence (Lomas, tech crunch - Berlin Based iversity, 2013, p. 2).

6.2 Develop Online and MOOCs to Increase Delivery Options

In addition to the current face-to-face instructional programs, SFU could develop complete online degree program offerings. This would provide students with the option of both face-to-face and online instructional delivery models. Greater use of online course delivery could help address SFU's current course access problems and improve course/program completion times. It may also provide students with a cheaper tuition fee option. However, students interested in pursuing an online degree program would probably be better served by taking the program at a university that is set up only for online course offerings, for example, University of Athabasca or Royal Roads. These universities do not have the high overhead costs (facilities, research etc.) that traditional universities have and are therefore able to provide students with more specialized service at a lower cost. Further, students are looking for lower cost options with more flexibility so that they can work part-time while going to school. Therefore it is unlikely that SFU

can compete with the online universities for students. Finally, we know from the section on disruptive innovation that online education is a technology enabler for higher education and that simply adding the disruptive innovation into an existing business model will not result in a transformation of the model. According to Christensen et al, "the existing model co-opts the innovation to sustain how it operates." (Christensen, Horn, Caldera, & Soares, 2011, p. 3) Therefore, development of online programs in addition to everything else SFU currently offers would be costly and would not add any real value.

For the same reasons outlined above, developing a MOOCs platform would not present much in the way of additional benefits to SFU. There are a number of other reasons why embarking on MOOCs is not strategically advantageous at this time. They are:

- ✓ There is still no profit-generating model for MOOCs.
- ✓ The recent MOOCs were all started in 2012; therefore there is little evidence available regarding learning outcomes.
- ✓ The content of fully online pedagogies often does not lend itself to rigorous assessment. The offerings are not currently designed with assessment in mind. (Bowen, 2012, p. 27) MOOCs are more about quantity and number of registrants than about quality.
- ✓ SFU could purchase pre-packaged MOOCs courses, however MOOCs are mainly a one-size fits all model, therefore any courses that SFU may wish to purchase may

not be customizable. If they were customizable, it is unlikely that this would be cost- effective.

- ✓ SFU could custom-build an open-source xMOOCs software using Google Course Builder. SFU could go in, using Google's eco-system, access the codes and modify them, without restriction, as needed. However, given the stringent B.C. Freedom of Information and Privacy Association (FIPA) regulations in place, SFU would probably want to build a platform in-house, perhaps in an open-source cloud format. (Daniel, 2012)
- ✓ There are also substantial start-up costs associated with online course development and the sheer cost of creating an in-house MOOC platform would be prohibitive. One needs only to look at the significant amount of founders' money and venture capital that has been invested into Udacity, Coursera and edX.
- ✓ SFU may not have the necessary financial resources or the in-house talent to create the sophisticated online learning systems. Even if possible, development of an in-house MOOC would be inefficient, as it would not take advantage of the economies of scale that the elite universities have.
- ✓ SFU does not have the financial resources available to compete at the same level as elite universities such as Harvard, MIT and Stanford that are already heavily invested in this market.
- ✓ Why sign up for SFU MOOC's when you can take MOOCs for free from a brand name educational consortium such as edX (Harvard/MIT)?

6.3 Hybrid Model

SFU could develop a Blended/Hybrid model (face-to-face complimented by online instruction). In a hybrid model, students prepare for the class using online tools. The instructor then uses class time to facilitate class participation and discussion. "The objective is to make the face-to-face time more effective by pushing the content delivery into more efficient online tools." (Hill, 2012, p. 92) The model could provide students and mature adult learners with an affordable, good quality, and flexible, learning opportunity.

There would be costs associated with transitioning to hybrid. For example: "training instructors to take full advantage of the automated systems with feedback loops and there may be contractual limits on the section sizes of the traditional model that may not make sense with a hybrid model" (Bowen, 2012, p. 29). However, the arguments behind increasing the use of technology in face-to-face instruction are many.

Many of the negative perceptions surrounding learning outcomes with blended models are not well-founded. In an empirical study of learning outcomes conducted by the ITHAKA organization on a statistics hybrid course developed by Carnegie Mellon, two principal findings emerged:

> *"First there is no statistically significant difference in standard measures of learning outcomes between students in a traditional face-to-face and students in a hybrid online format course and second the findings were consistent across campuses and sub-groups of diverse student population. Therefore the ITHAKA research suggests that concerns regarding learning outcomes in online courses may not be well founded." (Bowen, 2012, p. 28 & 29).*

Traditional face-to-face education assumes that all students learn the same way however, we know that individuals learn differently. Even the assigned course textbooks by their very nature are fixed and static (Christensen & Horn, 2008, p. 18). The technology now exists to teach students how to learn. Traditional lectures could be replaced with a blended model that provides a platform for dynamic interaction. Courses can be re-designed in such a way that encourages active student participation and includes a more engaging set of activities. For example, faculty could integrate online discussion tools into their courses such as: real-time dashboards that promote progress over time and in daily activity, reward badges that motivate quality contributions and peers that vote both questions and answers "up" or "down" based on usefulness (Education Advisory Board, 2012, p. 21).

Classrooms can be technologically enabled to facilitate group work and team learning (good pedagogy and preparation for the workforce). The use of technology would allow the students to provide immediate and frequent feedback in class. Instructors could use assistants (UG and Grad) to provide additional support. Instructor-led class time could then be decreased with more time devoted to discussion, problem solving and questions.

Courses could consist of a combination of multi-media lessons, tutorials, student discussion forums and peer tutoring and one-on-one instructor/student sessions. This is all possible, because the underlying technology offers advantages in cost and ease of use. In this way the instructor becomes a curator and guide in the collective learning process (Education Advisory Board, 2012, pp. 19-21). For example, at University of North Carolina at Charlotte's physics program, "by replacing the traditional two-lectures-per-

week model with a blended model, they were able to reduce the drop/fail/withdraw rate by 12%, expand enrollment cap by 45% and achieve significant cost savings per student in one semester" (Education Advisory Board, 2012, p. 18).

Other benefits could be around course access, course scheduling, and time costs incurred by students. Available classroom space is a premium and by re-designing courses there may be more available classroom space. In this way, it may be possible for the same faculty member to lead more sections of a course. The hybrid model could provide simplifications in scheduling. Further, if the instructional format incorporated analytical tools that could identify early on students' individual learning abilities, the course could be tailored to accommodate individual learning styles. Students may then be able to reduce their time to completion by accelerating their passage through the program (Bowen, 2012, p. 29).

A hybrid model can incentivize pedagogical changes. In the table below, taken from the Advisory Board article, the authors show how a hybrid instructional model can incentivize pedagogical change.

Table: 30. Incentivizing Pedagogical Change

Provided Centralized Instructional Design Support	**Focus on New Hires to Create Culture of Innovation**	**It's Not about Technology. It's About Assessment**
Typical Problem:	**Typical Problem:**	**Typical Problem:**
Multiple, duplicative services	Political capital spent trying to convert external skeptics	Faculty recoil at "online" and "machine-aide" teaching
No integration of tech & instructional design expertise	Research remains the priority	Wasteful tech investments
Exemplar Model:	**Exemplar Model:**	**Exemplar Model:**
Center for Teaching & Learning	Faculty Development Institute focuses on new hires	Faculty required to submit self-assessment studies yearly
Staff directly involved with course design at all levels	100s of short courses available on every facet of teaching	Agnostic about end product; experimentation encouraged
UNC Charlotte	**Virginia Tech**	**University of Alabama**

Source: Reproduced from Understanding the MOOC Trend (Education Advisory Board, 2012, p. 20)

There are lessons that can also be learned from the gaming world and incorporated into re-designed courses. With games, there is contextual learning and motivational progression. In gaming, players learn by performing tasks first hand. The structure or underlying systems makes the game interesting and relevant, and since students learn differently, this may help some students learn. Games also provide a sense of accomplishment and are motivating because they are designed to entertain a wide audience. Study of gaming technology may provide alternatives to testing and letter grade assessments (Education Advisory Board, 2012, p. 23).

One thing is certain, for the hybrid model to work, faculty involvement is essential. To ensure quality and assurance of learning in course development initiatives, faculty presence in the design and teaching is imperative. In addition, SFU's Teaching and Learning unit could play a pivotal role in assisting with the course design. This

model has the potential to become a deeply personalized learning model where faculty mentors students anytime.

> *"Blending the online and in-class environment lets students and instructors make more focused use of their time potentially producing a learning experience of both lower cost and higher quality. A hybrid course more effectively reaches students with different learning styles." (Christensen & Eyring, The Innovative University, 2011, p. 278)*

To conclude, the hybrid model will respond to and support the customer preferences noted in the external industry analysis section of this paper and will also expand upon our current use of experiential learning practices. At the same time, the blended model will continue to provide students with a physical place for learning and access to mentors and faculty to guide them through the learning process.

6.4 Strategic Cooperation

We know that the landscape is changing rapidly. In a span of one year MOOCs have been established in the U.S., the U.K. and in continental Europe. MOOCs are also drawing interest from Canadian universities. For example in October 2012, University of Alberta joined Udacity and in February 2013, the University of Toronto and McGill University entered the MOOCs market by joining edX. (Bradshaw, McGill, UofT Join Online Learning Consortium, 2013) It is only a matter of time before other Canadian universities enter. Therefore, in addition to implementing a hybrid instructional model at SFU, it may be beneficial for SFU to consider partnering with a MOOCs provider to offer some of its first and second year courses in certain programs. This would provide needed course access, assist with course scheduling issues, provide students with choices, and increase student degree completion times.

SFU should also continue with efforts in developing partnerships and collaborations with other universities both locally and internationally to explore options that might help to mitigate any negative fallout from MOOCs. SFU's tri-lateral agreement with the BC Institute of Technology (BCIT) and Vancouver Community College (VCC) to share expertise and explore new methods of program development represents a local partnership (Dangerfield, Driver, & Ferreras, 2013, p. C4). This partnership will help enhance SFU's value proposition by providing students with more choices. On the international front, the Beedie School of Business already has the Executive MBA for the Americas program. Therefore it would be to SFU's competitive advantage to consider offering other similar programs so that they are prepared in the event that the traditional university structure changes.

6.5 Strategic Alternatives Summary

In this section, three alternatives or options were presented. Maintain current business model, develop MOOCs and online programs in-house to increase the suite of delivery options, and develop the hybrid instructional model. The rise of MOOCs and advancements in technology has shown that maintaining the current business model is not a viable option. The review of MOOCs and online-only programs demonstrated that the costs associated with set-up and maintenance would be too cost prohibitive and would not necessarily lead to an increase in student demand for the offerings. The hybrid model provides a platform for dynamic interaction and takes advantage of the in-house faculty expertise. By blending online learning technology and learning analytics with face-to - face learning, the hybrid model enables professors and students to better prepare for the face-to-face learning experience. The hybrid model, with its increased use of technology

in the classroom, offers students a more tailored, engaging and enriching learning experience. This section also suggested that SFU continue to develop partnerships and collaboration with other universities both locally and abroad and consider partnering with a MOOCs provider for certain first and second year course offerings.

7: Recommendation

Alternative 3, the Hybrid Model is the recommended option that best meets the goals of SFU. Complementary to this option would be that SFU consider partnering with a MOOCs provider for certain first and second year course offerings and continue to develop partnerships and collaborations with other universities locally and internationally to explore options that might help to mitigate any negative fallout from MOOCs.

Implementing the hybrid model at SFU would entail employing a strategic framework that could be used consistently throughout the organization. Earlier in this paper, Blue Ocean Strategy was introduced as an analytical framework. Through the creation of innovative value, SFU can unlock new demand. SFU can start doing things differently and make a shift in strategic focus, for example, using innovation as it pertains to product, service and delivery. The product would be the hybrid instructional model, the service would become heavily student-centric and the delivery would include increased use of technology.

It is recommended that the hybrid model be designed and tested in the Beedie School of Business suite of undergraduate and graduate professional programs. Beedie is well known for its innovative strategy, creating “niche” programs (e.g. mining) targeting very specific markets. The Beedie School, through its accredited status with both the Association to Advance Collegiate Schools of Business (AACSB) and the European Quality Improvement System (EQUIS) is well positioned, especially in the assurance of learning area to lead the way.

It is recommended that a committee be set up in Beedie and tasked with designing a number of the blended courses for Beedie's undergraduate and graduate professional programs using the Blue Ocean Strategy (that was presented in Section 5 of this paper) as the strategic model. Further, it is important for the committee to include people from SFU's Teaching and Learning Centre (for they can provide assistance and will be instrumental in supporting and facilitating the university roll-out in the future).

The hybrid model could differentiate and position SFU. As a possible starting point, it is suggested that the focus be on international students. In China, many students find their courses boring because online and traditional courses are mainly professor-centred rather than student-centred. The faculty member lectures, while students listen. Seldom are questions raised. The curriculum tends to focus more on science and engineering and less on liberal arts instruction. Given the Chinese government's strict control over course content, the curriculum does not focus on critical thinking. Chinese students are eager to take online courses offered outside China that provide opportunities for critical thinking. They are seeking intellectual interaction, the ability to ask questions and courses that focus on subjects other than engineering and science (Chen, 2012, p. 16 & 17). Students are looking for a student-centred learning experience. If SFU could design courses that address these needs and develop the tools to accommodate different learning styles, then perhaps more Asian students would want to come to SFU to study. A student-centric approach that transcends the language and cultural barriers and provides more individualized instruction in the areas that interest students would enhance their learning experiences. It would then enhance SFU's value proposition.

Time is of the essence. As previously discussed, China is already building universities and is developing programs that cater to Americans and other international students with the hopes of attracting a half million foreign students to China. (Chen, 2012). However, Chinese students are looking for a student-centric learning experience focused on critical thinking and open discussion. Beedie can offer students experiences that they cannot get back home.

8: Conclusion

The main goal of this analysis has been to show that by taking a more student-centric approach to teaching and by making better use of technology, SFU can strengthen its future position in the areas of pedagogy and learning outcomes while reinforcing SFU's vision. Implementing the hybrid instructional format will best enhance SFU's value proposition and improve customer utility.

In the preceding sections, it was shown that MOOCs and online instructional models are disruptive innovations. Access to the Internet now provides people with access to knowledge anytime, anywhere. This facilitates learning (Christensen & Horn, Colleges in Crisis, 2011, p. 41). Electronic media has now become the standard way of communicating and students want to be treated as distinct individuals. They want to work while going to school and they want choices and flexibility. Population demographics are also changing and in the future there will be more mature adult learners looking for educational opportunities that fit in with their lifestyles and contribute to their careers. The game is changing.

> *"Success in higher education requires that institutions pursue the things that it does uniquely well. Universities need to change their DNA to avoid serious disruption. They need to decrease the price premium and increase the contribution to students and society." (Christensen & Eyring, The Innovative University, 2011, p. 399)*

For MOOCs to be successful there would not only have to be a viable business model, there would have to be a systematic change to how the public views higher

education and the pursuit of learning. We also know that institutions such as Oxford and Cambridge do not see MOOCs as revolutionary or as a rival (The Economist, 2012, p. 102). However the rapid rise of MOOCs does raise questions regarding traditional face-to-face bricks and mortar instructional models. For so long, traditional face-to-face instructional model held a monopoly with its close bundled system of teaching, learning, assessment, credentialing (degrees) and control over what students needed to learn to get jobs after graduating. Employers had to rely on the reputation of the particular university to know what a potential employee could/could not do. This is difficult given that degrees and programs differ from university to university and are not consistent. MOOCs have the potential to open up educational resources and offer credentials that employers could use. For example, if MOOCs were able to demonstrate skill competencies to employers that university degrees cannot, this could be highly disruptive.

Christensen's extensive work on disruptive innovation in high school classrooms, colleges and universities refers to the advances in technology, in particular the increase in online education as a disruptive force that cannot be ignored. In his research relating to the current growth trends in online enrollments of U.S. public school students in grades 9-12,

> *"When viewed from the logarithmic perspective on the substitution curve graph, the data suggest that by 2019 about 50% of courses will be delivered online." (Christensen & Horn, How do we Transform our Schools, 2008, p. 17)*

If this prediction holds, then universities will have no choice but to adopt computer-based learning in their curriculum because students entering university will expect it. The great advantage of computer-based learning is that it can be customized to

meet different students' needs. For example, there are now learning systems that can detect the way a student learns best (i.e. University of Phoenix undertook this in 2010). The system facilitates remedial learning opportunities and can connect students with others working on similar problems (Christensen & Eyring, The Innovative University, 2011, p. 212). This is relevant, because if we can teach people to learn, we can help them achieve their professional goals and prepare them for life when they graduate.

MOOCs are a wakeup call to universities to react, to re-think and re-engineer current instructional models, to look at hybrid learning, with the goal of creating a more effective and efficient system of learning, one that is more student-centric. The time for change is now.

9: Appendix A – EMBA Analysis

Appendix A provides supplemental information on how SFU's EMBA program compares to other EMBA programs in Canada, and what differentiates SFU's program from others.

9.1 EMBA Industry Analysis

Graduate business education is a large and competitive market and there are hundreds of universities worldwide that offer professional graduate programs. Beedie's niche programs and extensive partnerships with public, private and not-for-profit organizations, demonstrate Beedie's spirit of innovation (differentiation), flexibility and relevance. One example of that spirit of innovation is the EMBA program.

The EMBA program was pioneered by SFU in 1968. The program is designed for experienced, mid-career working professionals who have an undergraduate degree and 10 to 15 years of practical work experience. The program is about expanding knowledge and expertise, learning from peers and from experienced internationally recognized faculty members who bring real world business experiences to the classroom. It is for people who want to think strategically and thrive in their careers.

Those attracted to the program generally work full-time and often have families; therefore these customers are looking for flexibility when selecting an EMBA program. Customers are interested in a part-time skills-based program that hopefully doesn't interfere too significantly with their work. As tuition fees are often either totally or

partially employer funded, customers are not price sensitive. They are also looking for interactive and engaging learning experiences rather than those offered in traditional face-to-face only lectures (professor lecturing in front of the class). Preferably lecture materials are available electronically in formats suitable to a number of different devices for easy portability. (SFU - Beedie School of Business)

9.1.1 Maclean's EMBA Rankings

In Canada there are a number of EMBA programs offered. Presented in the table below are the Maclean's 2013 University Rankings for Canada's EMBA programs.

Figure 10. Maclean's EMBA Rankings – 2012 Professional School Rankings

Canada's E.M.B.A. programs: for the working professional

Targeted at people who already have a career but want to take it to the next level by earning an advanced degree, executive M.B.A. prgrams usually allow their participants to remain at their jobs, pursuing the degree part-time. Tuition, often covered by employers, is generally high.

	Average Age	Tuition	Program Length (months)	Female (%)	Int'l (%)
ALBERTA-CALGARY (ALBERTA/HASKAYNE E.M.B.A.)	37	$58,000	21	25	0
ATHABASCA	40	$45,076	28-32	36	4
UBC(SAUDER)	44	$66,300	16	61	0
CONCORDIA (MOLSON)	35	$53,000	15	31	6
GUELPH	37	$29,360-$41,190	13-24	39	3
MCGILL-HEC MONTRÉAL (MCGILL-HEC MONTREAL E.M.B.A.)	41	$78,000	15	32	25
UNBC	42	$34,000	21	50	13
OTTAWA (TELFER)	38	$67,000	21	43	0
UPEI	38	$32,900	18	48	3
UNIVERSITÉ DU QUÉBEC À MONTRÉAL	38	$5,700*	24	40	N/A
QUEEN'S/CORNELL-QUEEN'S	38	$90,000/$102,000	16/17	28/13	N/A
REGINA (LEVENE)	40	$40,274	16	30	0
ROYAL ROADS	40	$37,545	18	42	2
SAINT MARY'S (SOBEY)	38	$45,000	18	30	N/A
SHERBROOKE	38	$33,075	22	30	N/A
SIMON FRASER (SEGAL)	41	$49,500	20	24	0
TORONTO (ROTMAN)/OMNIUM	38/35	$84,000/$78,000	13/18	37/33	0/36
WESTERN (IVEY)	39	$95,000	15	40	0
YORK-NORTHWESTERN (KELLOGG SCHULICH E.M.B.A.)	37	$110,000	15	37	14

*Information is for the 2012-2013 academic year. *Out-of-province students pay higher tuition; program is not open to international students. Three schools charge higher tuition for international students: $32,460-$45,240 at Guelph; $46,950 at UPEI; $56,260 at Royal Roads.*

Source: Reproduced from Maclean's 2012 Professional Schools Rankings (Sorensen, 2012, p. 56)

The various EMBA programs differ in some way. Some offer a face-to-face instructional format (SFU) while others use a hybrid model that combines online learning together with a face-to-face component (Queens). Team participation and group work are integral components of the program. The programs generally range from one to two years in length and can cost anywhere from $32K at University of Prince Edward Island

to $110K at York-Northwestern. Admission to the program typically requires a resume, undergraduate transcripts, and two to three letters of reference; several years (i.e. 10 years or more) work experience and GMAT test score. Some schools also include an interview. EMBA candidates according to the table above range in age from 37 to 44.

The list of direct competitors in B.C. include: SFU, UBC, UNBC, and Royal Roads. However, there are universities outside B.C. that offer EMBA programs that are either offered entirely online or have a combination (blended model) of online instruction along with a number of face-to-face residential programs. These outside universities, using alternative instructional models (blended), are also competitors. The table below includes two examples of such competitors.

Table: 31. EMBA Competitors

Institution	Age	2012/13 Tuition	Program Length (months)	Instructional Format (per website notes)
SFU	41	$48,500	18	Fridays and Saturdays every second week. EMBA America's option available
UBC (Sauder)	44	$66,300	18 to 20	18 weeks of 1-4 intensive days
UNBC	n/a	Yr 1 $20,270.94 Yr 2 $13,513.96	21	The program confers a high-degree of flexibility - One weekend session per month in a three, and sometimes four-day, session and two one-week residency weeks over two years. The weekend format facilitates attendance and minimizes the need for work release. Quality face-to-face interaction with professors and peers. Classes that work on a cohort system which allow students to build a valuable network of colleagues. Two locations: Prince George and Vancouver
Royal Roads	40	$37,930	19	Two three week residencies, 9 online courses and Organizational Management Consulting Project
Queens	38	$90,000	16	Only program that offers truly team based learning experience and personal coaching. There are three on campus sessions (opening session, creativity and innovation session in Jan. and strategic electives session in July). The balance of time is spent all day Friday and Saturday morning every other week in a Boardroom Learning Centre located in the home city.
Athabasca		$44,500 to $48,775	2.5 or 3 yrs must be completed in 5 yrs.	All online MBA courses are paced, meaning there are scheduled start and end dates, and assignment deadlines within each course. Individual course activities vary, but participation in online discussions and group projects is mandatory and forms part of the grade for every course. The learning environment is asynchronous, meaning students do not have to be online at a prescribed time. In-residence electives are held in major cities across Canada and in several international locations.

One way institutions compete is by differentiating themselves. In this way they can market their programs based on specific customer preferences. By offering different instructional formats (increasing customer choice and convenience), the institution can increase their individual customer base. For example, online EMBA options have no class limits and enable students to continue working in their current jobs. They also offer greater flexibility (choice and convenience). However, for some students brand and reputation are important therefore, an online blended model from Queens may be more attractive than a face-to-face EMBA from the Beedie School of Business. For others who are not employer sponsored, a blended program such as that provided by Royal Roads offers the flexibility and the career options at a lower, more affordable price (SFU $48,500 versus Royal Roads $37,540).

To remain competitive, business schools must always look for ways to differentiate. Their strategy is one of constant innovation. For example, in response to questions arising over the overall value of an MBA and the continued relevance of traditional approaches, business schools are re-designing and re-thinking their curriculums. Some are offering specialized programs (York University's Schulich School of Business offers 19 different specializations), others (Rotman) are developing a curriculum that focuses on problem-solving skills (replacing the standard case studies with live cases that managers and executives are currently trying to solve in their businesses) and by teaching students how to communicate clearly. UBC as well is restructuring their program to be more relevant (Sorensen, 2012, p. 55).

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