STRATEGIC ANALYSIS OF E-LEARNING
FOR NEW TOWN COLLEGE (NTC)

by

Sunny Yan Tung Wong
Bachelor of Commerce 1999 UBC

Rodin Xiaoguang Hu
Master of Computer Graphics 1993 SJTU
Bachelor of Electronic Engineering 1990 SJTU

PROJECT SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE DEGREE OF
MASTER OF BUSINESS ADMINISTRATION

in the Faculty

of

Business Administration
(Management of Technology Program)

© Sunny Yan Tung Wong and Rodin Xiaoguang Hu 2003

SIMON FRASER UNIVERSITY

December 2003

All rights reserved. This work may not be reproduced in whole or in part, by
photocopy or other means, without permission of the authors.
APPROVAL

Name: Sunny Yan Tung Wong
Degree: Management of Technology MBA, 2003 SFU

Name: Rodin Xiaoguang Hu
Degree: Management of Technology MBA, 2003 SFU

Title of Project: Strategic Analysis of E-Learning for New Town College (NTC)

Examining Committee:

Chair: Dr. Michael Parent
Academic Director
Faculty of Business Administration

Dr. Ian P. McCarthy
Supervisor
Associate Professor
Faculty of Business Administration

Date Approved: 5/12/03
Partial Copyright License

I hereby grant to Simon Fraser University the right to lend my thesis, project or extended essay (the title of which is shown below) to users of the Simon Fraser University Library, and to make partial or single copies only for such users or in response to a request from the library of any other university, or other educational institution, on its own behalf or for one of its users. I further agree that permission for multiple copying of this work for scholarly purposes may be granted by me or the Dean of Graduate Studies. It is understood that copying or publication of this work for financial gain shall not be allowed without my written permission.

Title of Thesis/Project/Extended Essay

Strategic Analysis of E-learning for New Town College (NTC)

Author: Sunny Wong

Date: Sept 25, 2003
Partial Copyright License

I hereby grant to Simon Fraser University the right to lend my thesis, project or extended essay (the title of which is shown below) to users of the Simon Fraser University Library, and to make partial or single copies only for such users or in response to a request from the library of any other university, or other educational institution, on its own behalf or for one of its users. I further agree that permission for multiple copying of this work for scholarly purposes may be granted by me or the Dean of Graduate Studies. It is understood that copying or publication of this work for financial gain shall not be allowed without my written permission.

Title of Thesis/Project/Extended Essay

Strategic Analysis of E-learning for New Town College (NTC)

Author: 

Rodin Hu

Date 

September 23 2003
ABSTRACT

The language teaching industry in Vancouver is unstable. External forces such as global unrest, economic downturn, and epidemic disease have reduced the number of traveling international students. However, the lower market entry barriers and the potential for profits in good times are attracting many new schools to compete for the diminishing number of language students. The most cost-effective growth strategy form that many language schools use is to reach a new market in the education and training sectors with new programs delivered through electronic-learning (e-learning).

E-learning, powered by Internet technology, is characterized by an “anywhere, anytime and for anyone” accessibility. This feature allows e-learning-enabled schools to immediately extend their business to the multi-billion dollar global, online education and training market. E-learning gives schools accesses to a huge potential student enrollment through a virtual learning environment, which can be achieved relatively quickly and with relatively low costs.

This paper first examines New Town College (NTC) internal and external environments. The technology, industry, and market for e-learning is also discussed and analyzed. From the analysis, we conclude that an e-learning initiative is a viable strategic option for NTC. NTC should choose e-learning as its growth strategy by extending its business to online language and training in new markets, including all of North America and Asia-Pacific. Also, a partnership with an information technology (IT) company is recommended to enable NTC to exploit its competency in education while compensating for its weak IT capability.
Key implementation strategies for positioning, marketing, and developing technology are also proposed.
DEDICATION

“The person who goes farthest is generally the one who is willing to do and dare. The sure-thing boat never gets far from shore.”


I would like to dedicate this project to my parents, Jason and Shirley Wong. I would also like to thank my beloved girlfriend, Kitty Mok for her love and understanding.

Sunny Wong

This project is dedicated to my wife Bokki. Without her being with me unconditionally, I wouldn’t be standing where I stand today.

Rodin Hu
ACKNOWLEDGMENT

We are grateful to Jonathan Eccleston for his whole-hearted helps and valuable inputs. His friendship means a lot to us.

We particularly acknowledge the kind guidance and support from Dr. Ian McCarthy, Dr. Blaize Reich and Dr. Michael Parent.
## TABLE OF CONTENTS

Approval ............................................................................................................................................... ii

Abstract ........................................................................................................................................ iii

Dedication ........................................................................................................................................ v

Acknowledgement ........................................................................................................................ vi

Table of Contents .......................................................................................................................... vii

List of Tables ................................................................................................................................... x

List of Figures ............................................................................................................................... xi

Chapter 1 Introduction ..................................................................................................................... 1

1.1 Objective of This Strategic Analysis ....................................................................................... 1

1.2 NTC History ............................................................................................................................. 1

1.3 E-learning Overview ............................................................................................................... 3

1.4 Method of the Strategic Analysis ........................................................................................... 4

1.5 Organization of this Paper ....................................................................................................... 4

Chapter 2 The School ....................................................................................................................... 6

2.1 NTC Overview ........................................................................................................................ 6
  2.1.1 Mission Statement ............................................................................................................... 6
  2.1.2 Goals .................................................................................................................................. 6
  2.1.3 The Business of NTC ....................................................................................................... 7
  2.1.4 NTC Organization ........................................................................................................... 8
  2.1.5 Faculty ............................................................................................................................. 9
  2.1.6 NTC Marketing ................................................................................................................. 10
  2.1.7 Sales and Revenue .......................................................................................................... 12
  2.1.8 Profitability .................................................................................................................... 14

2.2 Language Teaching Industry .................................................................................................... 15
  2.2.1 Language Teaching Industry in Canada ........................................................................... 15
  2.2.2 Market for Language Teaching in Vancouver ................................................................. 16
  2.2.3 Regulation of Private Schools in BC ................................................................................ 19
Chapter 3 The E-learning Industry

3.1 E-learning Industry History
3.1.1 Instructor-led Teaching / Training (Pre-1983) 22
3.1.2 1990-1999: The Era of Custom Computer-based Training (CBT) 22
3.1.3 1994-1999: The Movement to Packaged CBT 24
3.1.5 1999: The Rise of Web-based Training 25
3.1.6 Mid-1999 to Mid-2000: The Internet Land Grab is on 26
3.1.7 Latter half of 2001: Recognition of On-line Learning’s Shortcomings 27
3.1.8 The Present: Survival of the Fittest 27

3.2 E-learning Technology
3.2.1 Anatomy of the E-learning System 29
3.2.2 E-learning Standards 33
3.2.3 Types of E-learning 34
3.2.4 Benefits of E-learning 36
3.2.5 Pedagogic Best Practices and E-Learning 38
3.2.6 Issues of E-learning 39
3.2.7 Implication of E-learning 42

3.3 E-Learning Industry
3.3.1 E-learning Industry Value Chain 43
3.3.2 NTC’s Position in E-learning Industry 46
3.3.3 Five-Force Analysis 46

3.4 Future Trend of the E-learning Industry
3.4.1 Competition Should Pick Up 53
3.4.2 Branding: Quality Is Key 54
3.4.3 E-learning Partnerships will be the Goal 55
3.4.4 Training is Converging 55
3.4.5 Development Cycles will be Shortened Tremendously 56
3.4.6 Interoperability Demand Leads to Standardization 56

3.5 Summary of the E-learning Industry 57

Chapter 4 The E-learning Market

4.1 Economic Forces behind Increasing Education and Training Demand
4.1.1 Shift from an Industrial to a Knowledge Economy 59
4.1.2 Shift from a Manufacturing to a Service Economy 60
4.1.3 Higher Education Results in Higher Salaries 61

4.2 The North American E-learning Market
4.2.1 US Education and Training System 63
4.2.2 The Canadian E-learning Market 67

4.3 Asian Pacific E-learning Market 69

4.4 The Europe E-learning Market 71

4.5 Summary of Learning Market Analysis 71
### Chapter 5  Strategic Alternatives for Growth

#### 5.1 SWOT Analysis of NTC

- **5.1.1** Strengths
- **5.1.2** Weaknesses
- **5.1.3** Opportunities
- **5.1.4** Threats

#### 5.2 Growth Strategy for NTC

- **5.2.1** Strategic Alternatives
- **5.2.2** Assessment of Strategic Alternatives
- **5.2.3** E-learning and Diversification Strategy

#### 5.3 Summary of Strategic Alternatives

### Chapter 6  E-learning Strategies

#### 6.1 Marketing Implementation Strategy

- **6.1.1** Marketing Strategy
- **6.1.2** Corporate Positioning Strategy
- **6.1.3** Marketing Implementation

#### 6.2 Technology Implementation

- **6.2.1** E-learning Technology Implementation Methods
- **6.2.2** Suitable Implementation Method for NTC
- **6.2.3** Selection of E-learning Platforms

#### 6.3 Financial Viability

- **6.3.1** Key Facts
- **6.3.2** Key Assumptions
- **6.3.3** Results of Financial Analysis

#### 6.4 Summary of E-learning Strategies

### Chapter 7  Conclusion

### Appendices

- **Appendix 1** Individual E-learning Stock Performance on NASDAQ
- **Appendix 2** E-learning Industry Value Chain
- **Appendix 3** NTC Language Schools Competitors
- **Appendix 4** NTC E-learning Financial Analysis
- **Appendix 5** BlackBoard and WebCT
- **Appendix 6** BlackBoard vs. WebCT

### Reference List
LIST OF TABLES

Table 1 Methods of Gaining Students .......................................................... 12
Table 2 Student Registrations and Enrollment ........................................ 13
Table 3 NTC Revenue ............................................................................ 13
Table 4 Structure of Cost Centers for a Typical Year ................................. 14
Table 5 NTC Profitability ...................................................................... 15
Table 6 Comparison between Data from a Canadian Survey and from NTC .. 16
Table 7 Number of Students by Age Range ............................................. 17
Table 8 Number of Students According to Nationalities ............................ 18
Table 9 Gender Percentages .................................................................. 18
Table 10 Authoring System Providers ...................................................... 23
Table 11 Merges of E-learning Companies .............................................. 28
Table 12 Summary of Simulating Investment .......................................... 28
Table 13 Pedagogic Best Practice and E-learning ..................................... 39
Table 14 Summary of Porter’s Five Force NTC’s Programs in the E-learning Industry 52
Table 15 Fastest Growing Occupations (2000-2010) .................................... 62
Table 16 Projected E-learning Revenue (in US millions) ............................ 67
Table 17 Canadian Education Expenditure in 1999-2000 (in CDN millions) 68
Table 18 Asia Pacific E-Learning Market Forecast for 2005 ..................... 70
Table 19 Explanation of Strategic Alternative Assessment Criteria .......... 84
Table 20 Assessment of Strategic Alternatives ....................................... 84
Table 21 Possible Strategic Positions ....................................................... 93
Table 22 Pricing Strategies .................................................................... 98
Table 23 BlackBoard Prices ................................................................. 109
Table 24 Results of Financial Analysis .................................................... 111
LIST OF FIGURES

Figure 1 NTC Value Chain ........................................................................................................ 8
Figure 2 NTC Organization Chart ............................................................................................... 10
Figure 3 E-learning System Architecture .................................................................................... 30
Figure 4 Types of E-learning ........................................................................................................ 35
Figure 5 E-learning Industry Value Chain ................................................................................... 48
Figure 6 Changing Paradigm - Human Capital is Replacing Physical Capital as a Primary Productive Asset ............................................................................................................ 60
Figure 7 US Economy Shifting to Service Jobs ........................................................................ 61
Figure 8 Salary Gap between Male High School and College Graduates ............................. 62
Figure 9 US Education and Training System ............................................................................ 65
Figure 10 2001 Industry Revenue by Sector (in US billions) ............................................... 66
Figure 11 E-learning in Canada .................................................................................................. 69
Figure 12 Product-Market Matrix ............................................................................................... 81
Figure 13 NTC’s Market Segmentation ...................................................................................... 88
Figure 14 Fishbone Chart Showing that Price is one of the Tools for Increasing Cash Flow .......................................................................................................................... 97
Figure 15 How Do Students find their Programs? .................................................................. 100
Figure 16 TCO and NPV ............................................................................................................. 111
Figure 17 ROI .............................................................................................................................. 112
Chapter 1  Introduction

1.1 Objective of This Strategic Analysis

NTC has enjoyed several years of success in the language teaching industry. Two years ago, its growth stalled and profits began to fall. Since then, NTC’s top executives have been considering the adoption of e-learning as a strategy to reverse the decline and realize its long-term goal of becoming a private university. In April 2003, a business initiative of adopting e-learning was launched at NTC.

This paper presents a strategic analysis of the e-learning initiative at NTC. The objectives of the paper are to: 1) analyze e-learning technology, its industry, and markets 2) analyze NTC’s competitive position to verify that e-learning is a viable growth strategy, and 3) formulate a series of implementation strategies for e-learning at NTC.

1.2 NTC History

In response to the booming language-teaching industry in Vancouver, Mr. Michael Lee, current president and CEO of NTC, began a small language school in his garage ten years ago to provide English courses to new immigrants. After three years of operation, Mr. Lee quickly expanded his organization to an official private school. NTC was formed in 1995 to help students, especially those from Asia and South America, to attain their educational and career goals. In 1999, NTC opened its first branch campus in Toronto, and in 2000, NTC opened a business school campus in downtown Vancouver, providing basic business skills training programs.
NTC's core business is to provide English and business programs to English as a Second Language (ESL) students. NTC's English program includes courses such as ESL, Power Talk/Targeted Listening, Test of English for International Communication (TOEIC), and Test of English as a Foreign Language (TOEFL). The business programs include business administration foundation, and professional certification courses.

By its 7th year, NTC had become a middle-sized private school, serving more than 350 students from 15 countries. International students, particularly from the Asia-Pacific region and from South America, comprise 95% of the student enrollment. Currently, NTC has a total of 60 staff and instructors.

In its first five years, NTC grew quickly, but since 2001, the college's revenue and profitability began to decline significantly. NTC's revenue and profits have been decreasing for several reasons. Safety concerns as a result of the current global unrest have deterred many international students from studying in North America and this impact is expected to continue. The Canadian Government has also tightened its student visa policy, reducing the number of potential students. Further, many new competitors have entered the language teaching industry. Finally, the spread of SARS in Asian countries has reduced students' willingness to visit other countries. The cumulative effect is that NTC's performance has declined and it is now searching for a turn-around strategy.

E-learning is emerging as a revolution in education and training. Senior managers at NTC are aware of the benefits of e-learning and realize that the new technology may help them to exploit new markets and enhance the quality of the educational programs. A
business initiative was launched to further investigate the feasibility of adopting e-learning at NTC.

1.3 E-learning Overview

The rapid evolution of underlying technologies continues to change the context of an e-learning definition. According to Malcolm Ryan and Lynda Hall, e-learning is the ability to use the Internet, network computing, and other electronic-technologies to facilitate, measure, and manage corporate and professional training, higher education, and K-12 education (Ryan, M and Hall, L. 2001).

E-learning is not a simple equivalent of E-commerce or of learning on the Web, but it is a systematic use of networked multimedia computer technology to:

a) empower learners to choose and use programs,
b) assist teachers to author the contents,
c) improve the learning outcome,
d) connect all parties involved in a learning activity, and
e) integrate learning and performance, and individual and organizational goals.

E-learning started from the Computer Based Training (CBT) concept ten years ago. CD-ROMs were the primary media for CBT to deliver learning contents. CBT provided students with self-paced, multimedia learning experiences, but did not radically change the landscape of education and the training sector. Since the late-1990's, the development of the Internet and Web technology has increased the potential for delivering e-learning to a wider market. Currently, a second wave of e-learning adoption is happening and revolutionizing the existing education and training system. E-learning is still at an early adoption stage and regarded as complementary to traditional education and training. E-
learning and traditional learning often coexist in many institutions and training companies. The concept of e-learning is still not completely accepted by all learners and educators. In addition, an e-learning technological standard has not yet been ratified at this time. All of these factors bring great challenges to the process of implementing e-learning. To ensure a successful implementation, e-learning adopters should first carefully study both their internal and external environment, and then appropriately formulate a series of implementation strategies.

1.4 Method of the Strategic Analysis

This paper presents a strategic analysis of the e-learning initiative at NTC. The research is based on internal investigation in NTC and external study in education and training industry. Staff interviews, student surveys, and examination of NTC’s operational data are the primary methods of the internal investigation. SFU’s library and Internet Web sites are the primary sources for research on education and training industry.

1.5 Organization of this Paper

This paper is divided into six chapters. Chapter 1 is the introduction of the project, and provides an overview of NTC and e-learning. Chapter 2 describes NTC’s background, as well as its organizational structure and overall current performance. Chapter 3 has two parts. The first part examines e-learning’s features, issues, and technology in depth. The second part describes an in-depth analysis of the e-learning industry through the application of the value chain and the five force analysis. This
chapter also forecasts the future trends of this industry. Chapter 4 describes the global learning and e-learning markets, separating them into geographic regions and highlighting regional characteristics. Chapter 5 lists growth strategies and screens these to determine the best alternative for NTC. Chapter 6 explains business and implementation strategies that NTC should deploy to grow and become profitable once again.
Chapter 2 The School

This chapter presents an overview of NTC by looking at its mission, long-term goals, and current competitive strategy. This chapter also investigates NTC's corporate value chain, resources, human capital, reputation, technological capabilities, and marketing. The purpose of this chapter is to assess NTC's current situation and identify trends in the language teaching industry, to reveal the opportunities and potential pitfalls for NTC in adopting e-learning.

2.1 NTC Overview

2.1.1 Mission Statement

NTC's mission statement is:

"to teach English language skills using quality courses specialized to suite our ESL students' requirements" and "to equip our business students with the knowledge and job skills expected by the business community by providing a standardized curriculum taught by experienced, qualified instructors." (NTC, 2002)

2.1.2 Goals

Generating revenues and profits is an ongoing goal that NTC pursues on a daily basis. A recent goal of NTC is to gain accreditation from the Private Post Secondary Education Commission (PPSEC) of BC. Only accredited schools can be designated for British Columbia Students Assistance Program (BCSAP) funding. After accreditation, students who need financial assistance could acquire student loans to attend NTC.

NTC's long-term goal is to achieve private university status with government approval. This also reflects one of Mr. Lee's personal life goals. To achieve this goal,
NTC must radically upgrade its infrastructure and provide more programs covering a broader range of subjects.

Over the past three years, NTC has set up several tasks to attain these goals. They include renovating the headquarter campus, adding branches in major cities in Canada, and adding programs for international junior students, etc. These tasks require massive capital investment and are time-consuming and NTC is considering e-learning as an all-in-one solution to move itself towards its goals.

2.1.3 The Business of NTC

English and business programs are the primary revenue generators for NTC. NTC also provides students with services such as home-stay coordination and referrals.

As shown in Figure 1, the corporate value chain indicates that the primary value-added activities are program-related, such as program planning, management, coordination, teaching, and service. The support activities include accounting, HR, and general office. Technology is not considered a value-adding activity and is only seen as a part of general office administration.

NTC provides approximately 25 programs, covering Teaching English as Second Language (TESL), ESL, TOEFL, Business Communication, and Public School Bridge Program (PSBP).
2.1.4 NTC Organization

NTC is a privately owned school. Mr. Lee purchased the shares from the original co-founders and is now the sole owner. He has the complete authority over the operations of the school.

As displayed in Figure 2, the organization has three layers. As president of NTC, Mr. Lee is at the top of the organization chart. Below him are three directors, two campus managers, and one financial / accounting advisor. Staff and instructors comprise the third layer performing the tasks of daily administration and teaching.

NTC relies on agency referrals to acquire students and does not have its own sales force. NTC has one oversea office in Seoul and the other in Tokyo. The primary function of these offices is to facilitate communication with local agents. NTC’s business performance depends largely on its relationship with agents, who introduce the school to new students. If the agents are unproductive, NTC’s performance will also suffer.
NTC outsourcers most of its IT support and has only one IT technician, who reports directly to the general manager. One part-time consultant looks after the financial and accounting management. NTC’s organization is flat and the authority is highly concentrated, to ease the top-down administration and shorten the decision-making process.

2.1.5 Faculty

NTC’s faculty consists of three levels. Top level faculty members include the education directors. They are usually senior level educators who have more than 10 years experience in leading programs at college or university. The middle level faculty members are the instructor heads, who act as the leaders for all programs at NTC. The bottom level faculty members are the instructors, many of whom are new graduates or undergraduates who have teaching certification.

Since NTC’s faculty consists of young people who are familiar with IT and can adapt quickly to new environments, they tend to show less resistance in adopting e-learning at NTC.
2.1.6 NTC Marketing

2.1.6.1 Target Market

The primary target market of NTC is English language students, who come from the Asia-Pacific and South America regions. They usually attend short-term programs,
which usually last less than a year. The school recognizes that many students have dual motives for attending an overseas school, as recreation can be as important as the learning opportunities. NTC seeks to offer students a safe and friendly learning environment, where students can learn about Canadian culture through extra-curricular activities as well as through the language in classrooms.

2.1.6.2 Current Marketing Strategies

• **“Location, Location and Location”**

NTC’s top executives believe that downtown location is the key for NTC to attract language students. Young students enjoy the trendy image of downtown, which is also the transportation hub to many locations. As students are unlikely to have the access to cars, ease of transportation becomes an important criterion for a student's choice of a school. The location strategy is the center of Mr. Lee’s philosophy of running a language school. Currently, both NTC’s campuses are located in the downtown areas of Vancouver and Toronto.

• **Favorite Agency Policy**

NTC relies heavily on student agents, and the college has a small marketing team of up to five agent coordinators. Exclusive commission arrangements and personal relationships with agents are considered as keys to gaining student enrollments.

Table 1 includes the data from a survey conducted by *Language Travel Magazine* in 2002 on 31 post-secondary schools which provide language programs in Canada. For comparison, NTC’s data is also listed. From the data presented in this table, NTC
acquired 95% of its students from agents, while the surveyed schools gained 57% of students from agents. NTC also pays 3% more out of its revenue to agents than surveyed schools.

Table 1 Methods of Gaining Students

<table>
<thead>
<tr>
<th>Means of gain student</th>
<th>Survey Respondants</th>
<th>NTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agents</td>
<td>57%</td>
<td>95% (estimated by staff)</td>
</tr>
<tr>
<td>Other means</td>
<td>21.20%</td>
<td>5%</td>
</tr>
<tr>
<td>Local bookings</td>
<td>14%</td>
<td>0%</td>
</tr>
<tr>
<td>Internet</td>
<td>7.80%</td>
<td>0%</td>
</tr>
<tr>
<td>Agent Commission</td>
<td>17%</td>
<td>20%</td>
</tr>
</tbody>
</table>

Source: authors, compiled from the works of Language Travel Magazine\(^a\), 2002 and NTC operational reports.

- **Minimal Advertising Effort**

  Since NTC relies on student agencies to acquire student enrollment, the college does not spend much on promotion. Marketing expenditures only include those for brochures and advertisements in newspapers. Examination of the student registration records suggests that NTC has a 4% student return rate. NTC’s lack of efforts in branding has resulted in a low student return rate.

2.1.7 **Sales and Revenue**

Table 2 shows the total number of registered students and the number of enrolled student-years. A growth in numbers occurred between 1999 and 2001 but the rate of growth was declining. In 2002, the number of students dropped significantly, probably
from the after-effects of the September 11th attack in New York in 2001, and as a result of the global economic downturn. The number of students is showing a recovery in 2003, but will not recover to the level attained in 2001. The decline in revenue is also due to the increasing competition in Vancouver.

Table 2 Student Registrations and Enrollment

<table>
<thead>
<tr>
<th>Year</th>
<th>Registration Count (in students)</th>
<th>Enrollment Count (in student-years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>968</td>
<td>303</td>
</tr>
<tr>
<td>2000</td>
<td>1187</td>
<td>328</td>
</tr>
<tr>
<td>2001</td>
<td>1341</td>
<td>345</td>
</tr>
<tr>
<td>2002</td>
<td>1123</td>
<td>289</td>
</tr>
</tbody>
</table>

Source: authors, compiled from NTC operational reports.

Tuition is the primary revenue generator, so that revenue is directly related to the number of student enrollments. Table 3 displays the revenue figures from 1999 to 2002. Mirroring the number of student enrollments, revenue increased by 8% in 2000 and by 5% in 2001, but then decreased by 16% in 2002. By the third quarter of 2003, NTC began to see some signs of recovery.

Table 3 NTC Revenue

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue</th>
<th>Percentage of Change (over last year revenue)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>$3,599,640</td>
<td>N/A</td>
</tr>
<tr>
<td>2000</td>
<td>$3,896,640</td>
<td>8%</td>
</tr>
<tr>
<td>2001</td>
<td>$4,098,600</td>
<td>5%</td>
</tr>
<tr>
<td>2002</td>
<td>$3,433,320</td>
<td>-16%</td>
</tr>
</tbody>
</table>

Source: authors, compiled from NTC operational reports.
2.1.8 Profitability

The structure of NTC’s cost center is displayed in Table 4. As a language school, fixed assets are low, and amortization is correspondingly low. The major fixed cost is office overhead and staff salary. Since instructors are paid on an hourly basis, their expense is a variable cost. Staff salaries and the instructor payroll comprise the biggest portion of NTC’s costs, each accounting for 33% of total expenses.

<table>
<thead>
<tr>
<th>Cost center</th>
<th>Yearly expense</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Staff Salary</td>
<td>$1,000,000</td>
<td>33%</td>
</tr>
<tr>
<td>Instructor Payroll</td>
<td>$1,000,000</td>
<td>33%</td>
</tr>
<tr>
<td>Space lease and utility</td>
<td>$600,000</td>
<td>20%</td>
</tr>
<tr>
<td>Other</td>
<td>$400,000</td>
<td>13%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$3,000,000</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Source: authors, compiled from NTC operational reports.

The expense and calculated margin data are presented in Table 5. (For the purposes of this paper, margin is defined as net income before tax) After two years of growth, the margin percentage began to shrink in 2001, even though the total revenues were higher, indicating that the expenses were increasing faster than was the revenue. This is because:

1) salaries were up significantly in an active job market;
2) campus was being moved and renovated;
3) inflation;
4) under the pressure of increasingly rigorous competition, NTC was not able to raise tuition fees to reflect the extra expenses incurred. The increase in the number of enrolled students was not sufficient to offset the increased expenses.
Margin was significantly reduced in 2002 with the decline in student numbers and NTC failed to react quickly enough to cut expenses. This caused NTC's margin to decline by 40% compared to the previous year. The report of the first half-year of 2003 suggests an even worse performance, when language schools, relying heavily on international students, were hit by the SARS panic. Many schools are now experiencing financial difficulties and struggling to survive with very low profits (Language, 2002).

**Table 5 NTC Profitability**

<table>
<thead>
<tr>
<th>Year</th>
<th>Revenue</th>
<th>Expenses</th>
<th>Margin</th>
<th>Margin rate (over revenue)</th>
<th>Percentage of Margin change over last year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1999</td>
<td>$3,599,640</td>
<td>$2,843,716</td>
<td>$755,924</td>
<td>21%</td>
<td>N/A</td>
</tr>
<tr>
<td>2000</td>
<td>$3,896,640</td>
<td>$3,039,379</td>
<td>$857,261</td>
<td>22%</td>
<td>13.41%</td>
</tr>
<tr>
<td>2001</td>
<td>$4,098,600</td>
<td>$3,278,880</td>
<td>$819,720</td>
<td>20%</td>
<td>-5.18%</td>
</tr>
<tr>
<td>2002</td>
<td>$3,433,320</td>
<td>$2,918,322</td>
<td>$514,998</td>
<td>15%</td>
<td>-42.89%</td>
</tr>
</tbody>
</table>

Source: authors compiled from NTC operational reports.

### 2.2 Language Teaching Industry

#### 2.2.1 Language Teaching Industry in Canada

The language teaching market in Canada is served by numerous small- to medium-sized institutions. Among these institutions, the larger players are likely to continue to expand and evolve by setting up new schools and buying existing ones. Meanwhile, small schools will continue to appear, especially when the market is buoyant, to fill niche areas in terms of courses and locations. With an increasing number of providers, substandard schools will not survive and will thus exit the market. Mr. Lee believes that an industry-wide consolidation will occur within the next five years.
Currently, hundreds of post-secondary schools operate in the public and private sectors in BC. Theoretically, all of them could compete for international language students.

Table 6 uses 2002 statistics data from the survey conducted by Language Travel Magazine. For comparison, equivalent data for NTC is listed (Language, 2003).

Table 6 Comparison between Data from a Canadian Survey and from NTC

<table>
<thead>
<tr>
<th>Items of Comparison</th>
<th>Survey Respondants</th>
<th>NTC</th>
<th>Percentage Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average no. of students per school in 2002</td>
<td>737</td>
<td>1011</td>
<td>37%</td>
</tr>
<tr>
<td>Average no. of student years per school in 2002</td>
<td>194</td>
<td>260</td>
<td>34%</td>
</tr>
<tr>
<td>Overall average length of stay weeks</td>
<td>13.6</td>
<td>15</td>
<td>10%</td>
</tr>
<tr>
<td>Average cost of a one-month course</td>
<td>$844.00</td>
<td>$1,100</td>
<td>30%</td>
</tr>
<tr>
<td>Average cost of residential accommodation per week</td>
<td>$170.00</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Average cost of host family accommodation per week</td>
<td>$174.00</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Average commission paid on a language course</td>
<td>17.50%</td>
<td>20.00%</td>
<td>14%</td>
</tr>
</tbody>
</table>

Source: author, compiled from the works of Language Travel Magazine, 2002 and NTC operational reports.

Although NTC charged 30% more on tuition fees, NTC’s student numbers were 30% greater than those for an average school. Nevertheless, NTC paid 20% commission to agents while the average survey respondents paid 17.5%. NTC recruited more students also because Vancouver is more attractive to international language students compared to other cities in Canada, because of its friendly environment and beautiful scenery.

2.2.2 Market for Language Teaching in Vancouver

International students have been the primary consumers of the language programs in Vancouver for the past five years. More than 30,000 international language students
arrive in Vancouver every year (PPSEC, 2002), contributing to the CDN$ 100 million language teaching industry with its 50 schools. Typical international students are between the ages of 20 and 30 years, and have the time and financial capability to travel and study in foreign countries.

Table 7 shows the age distribution of students at NTC. Data from the survey indicates that students are highly concentrated within the 19 to 24-year old age group, while data from NTC indicates an additional concentration of students in the 25 to 30-year old age range (Language, 2003).

### Table 7 Number of Students by Age Range

<table>
<thead>
<tr>
<th>Age</th>
<th>Schools participating in Survey</th>
<th>NTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>8-11</td>
<td>3.20%</td>
<td>2.17%</td>
</tr>
<tr>
<td>12-15</td>
<td>14.40%</td>
<td>2.01%</td>
</tr>
<tr>
<td>16-18</td>
<td>19.10%</td>
<td>4.68%</td>
</tr>
<tr>
<td>19-24</td>
<td>45.10%</td>
<td>46.05%</td>
</tr>
<tr>
<td>25-30</td>
<td>8.30%</td>
<td>35.72%</td>
</tr>
<tr>
<td>31-50</td>
<td>8.40%</td>
<td>9.04%</td>
</tr>
<tr>
<td>51+</td>
<td>1.50%</td>
<td>0.32%</td>
</tr>
</tbody>
</table>

Source: authors, compiled from the works of Language Travel Magazine\(^3\), 2002 and NTC operational reports.

Table 8 presents the number of students by nationality. Students from Korea, Japan and South America are the top three nationalities. At NTC, the distribution is more concentrated and students from Korea account for a little more than 50% of the total number, which may be the result of Mr. Lee's connections to his motherland.

Table 9 shows that female students outnumber the male students by two-to-one (Language, 2003), suggesting that females have more opportunities to travel than males,
and are more willing to study language while traveling. In contrast, similarly-aged Asian males likely have more responsibilities to support their families and may be less able to study abroad.

**Table 8  Number of Students According to Nationalities**

<table>
<thead>
<tr>
<th>Top student nationalities in Canada by student numbers, 2002</th>
<th>Schools participating Survey</th>
<th>NTC</th>
</tr>
</thead>
<tbody>
<tr>
<td>East European</td>
<td>0.30%</td>
<td>0.22%</td>
</tr>
<tr>
<td>Other Asians</td>
<td>1.30%</td>
<td>0.15%</td>
</tr>
<tr>
<td>Taiwanese</td>
<td>4.00%</td>
<td>2.16%</td>
</tr>
<tr>
<td>Canadian</td>
<td>4.20%</td>
<td>0.00%</td>
</tr>
<tr>
<td>West European</td>
<td>4.50%</td>
<td>0.00%</td>
</tr>
<tr>
<td>Others</td>
<td>4.70%</td>
<td>1.27%</td>
</tr>
<tr>
<td>South European</td>
<td>5.60%</td>
<td>0.07%</td>
</tr>
<tr>
<td>Chinese</td>
<td>6.90%</td>
<td>1.49%</td>
</tr>
<tr>
<td>South American</td>
<td>15.90%</td>
<td>17.23%</td>
</tr>
<tr>
<td>Japanese</td>
<td>22.60%</td>
<td>27.22%</td>
</tr>
<tr>
<td>Korean</td>
<td>30.00%</td>
<td>50.19%</td>
</tr>
<tr>
<td>Total</td>
<td>100.00%</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Source: authors, compiled from the works of Language Travel Magazine, 2002 and NTC operational reports.

**Table 9  Gender Percentages**

<table>
<thead>
<tr>
<th>Gender</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>35.69%</td>
</tr>
<tr>
<td>Female</td>
<td>64.31%</td>
</tr>
<tr>
<td>Total</td>
<td>100.00%</td>
</tr>
</tbody>
</table>

Source: authors, compiled from the works of Language Travel Magazine, 2002 and NTC operational reports.
2.2.3 Regulation of Private Schools in BC

The PPSEC of BC was formed by the provincial government in 1992 to ensure that consistent standards of quality exist for private training in BC. Two standards were established for private schools:

1. **Registration**

   Registration is the minimum standard for operating a private training institution in BC. All private schools in BC are required to be registered. The application process includes providing a syllabus, a prediction of student numbers, and a deposit of approximately 20% of student fees.

2. **Accreditation**

   Accreditation is optional, but is important if a private school is to qualify for BCSAP funding. The act of becoming an accredited college is complex and lengthy, taking up to 18 months to complete. The process involves a rigorous self-study of the college and its operational procedures, as well as detailed surveys of student satisfaction and job placement rates. Only the finest schools are awarded accreditation, and currently, 252 colleges are accredited out of the total number of 1,131 private schools in BC.

   NTC applied for accreditation in 2001, but the application was rejected due to NTC’s lack of rich programs offerings and school facility, especially in IT infrastructure. Accordingly, NTC is considering enhancing its infrastructure and adding more programs as a high priority in its current agenda.
2.3 **Summary of NTC**

The wave of incoming Asian students to Canada in the 1990's created a language teaching industry that generated hundreds of millions of dollars in revenue. Mr. Lee’s instinct for exploiting business opportunities in an immature language teaching industry led NTC to its early success in the mid-1990's. Nevertheless, the maturing market and global unrest have deteriorated NTC’s financial performance since 2001. Following the September 11th tragedy, the SARS panic of 2003, and the economic downturn, students have been looking for safer and more economical ways to study.

Significant competition and high vulnerability characterize the current language teaching industry. NTC’s current strategies, which include superior locations and a slim organization, are no longer sustainable. In particular, the weak institutional infrastructure and narrow program offerings are preventing NTC from obtaining accreditation from PPSEC and are directly limiting NTC’s future growth. E-learning is generating new opportunities in the education and training sectors. NTC believes that e-learning will become the primary way to learn and teach.

For NTC to reverse its current situation and move toward to its long-term goals, a strategic move must be initiated. NTC's merits will greatly benefit its adoption of the e-learning strategy:

1) Mr. Lee’s ability to capture business opportunities and his vision in e-learning

2) the company's quick decision-making process that is the result of its flat and highly concentrated organization, and

3) the faculties’ receptiveness of new technology.
Since language teaching is still generating revenues and profits for NTC, it should remain in the list of program offerings in NTC. Considering the nature of language teaching, the face-to-face classroom based teaching has to coexist with on-line teaching at NTC if NTC will adopt e-learning and extend to other education and training sectors.
Chapter 3  The E-learning Industry

A new knowledge economy is bringing tremendous opportunities, in particular, e-learning, to the education and training sectors. NTC’s senior management believes that e-learning can reverse the recent decline in its financial performance.

With a thorough understanding of e-learning, NTC will be able to formulate appropriate e-learning strategies. This chapter first investigates e-learning technological aspect in e-learning’s history, features, benefits, types, standards, and issues. Second, this chapter also analyzes e-learning’s industrial environment, using Michael E. Porter’s Value Chain and Five Forces Analysis.

3.1 E-learning Industry History

3.1.1 Instructor-led Teaching / Training (Pre-1983)

Before computers were widely available, instructor-led teaching and training (ILTT) was the primary teaching and training method. ILTT allowed students to interact with their instructor and classmates in person. It is still the primary teaching and training methods for schools and companies.

3.1.2 1990-1999: The Era of Custom Computer-based Training (CBT)

During this period, e-learning was largely computer-based training (CBT), which operated by standalone CD-ROM training courses that were run on computers, standalone-training stations, and sometimes across client/server LANs. The technology players during this era were well defined as a handful of companies selling desktop-based
multimedia authoring systems. To be assembled, these systems required skilled programmers or savvy instructional designers.

With the new macromedia, the market developed further with the anchor product--Authorware, which put interactive teaching tools into the hands of educators. The educators could then create anything from web-based tutorials, to sophisticated simulations and deliver these applications via the Internet, across corporate networks, or using CD-ROMs. Notables authoring system providers included:

**Table 10 Authoring System Providers**

<table>
<thead>
<tr>
<th>Authoring System Providers</th>
<th>Products</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asymetrix (now Click2learn)</td>
<td>Toolbook</td>
</tr>
<tr>
<td>Allen Communication (now Mentergy)</td>
<td>Quest</td>
</tr>
<tr>
<td>Aimtech (acquired by Asymetrix in 1997)</td>
<td>IconAuthor</td>
</tr>
<tr>
<td>Macromedia (still existing)</td>
<td>Authorware &amp; Director</td>
</tr>
</tbody>
</table>

Source: authors, compiled from the works of Jay Cross and Ian Hamilton, 2002

Many high-quality developers of custom courseware have used authoring tools to compose the content side of CBT. Most of these developers were acquired by other companies, a few survived, and many others did not.

Their courses were often innovative, highly participatory, engaging, and instructionally effective. While the large, surviving CBT vendors eventually grew to companies with $20 million in revenue, the content providers varied in their revenues of between $4 to $10 million (Cross, 2002).

Content providers, however, had their own problems:

- Products are very expensive - for example, a 4-hour, custom multimedia course would cost between $200,000 and $500,000 (Cross, 2002)
• Products were slow to develop - the development time for the content side usually required 8–10 months for a good course, comprising 4 hours of seat time.

• Monolithic - essentially the courses were too difficult and expensive to modify once they were finished and deployed.

Ultimately, the CBT did not “cross the chasm” because of the high cost, slow and labor intensive development, and technical limitations.

3.1.3 1994-1999: The Movement to Packaged CBT

Highly customized CBT was too expensive and inefficient. The notion of pre-packaging CBT training courses and selling them on a mass scale was clearly a better model, where the vendor could create a margin and scale its business. The successful CBT companies in the mid-1990's were those that adopted this model exclusively. Successful examples included CBT Systems (now SmartForce) and Netg, which grew and exceeded the $100 million revenue level. Typically, these companies did not provide content customization because of its low-margins.


Following CBT, was the appearance of the Course-Managed Instruction System (CMI), also known as the Course Management System (CMS). CMI features a desktop or LAN-based student administration and data reporting system, which was already included in many CBTs. In any case, taking advantage of the more expansive and powerful WAN-based or Intranet, and the faster, Web-based structures, these systems work across different platforms. The first vendors with WAN-based CMI / CMS
solutions for CBT were the same companies that sold the authoring tools: Macromedia, Asymetrix, and Allen Communications.

At the same time, another breed of systems arose with the development of KnowledgeSoft, Syscom, and DKSystems, known as the Teaching Management Systems (TMS). CMI / CMS and TMS concepts were eventually merged into a new breed of Learning Management Systems. These systems possessed more robust enterprise technologies that were based on Oracle foundations and were making a comprehensive attempt to administer, manage, track, and report on skills, classroom training, and CBT, across the enterprise. Many companies were competing in this arena, though only a handful of them were achieving more than a few million dollars in annual revenue.

Since so many players were in the LMS field, product differentiation became the major competition strategy. Ironically, since LMS must be compatible with all CBT contents, a call was also made for standardization in LMS.

3.1.5 1999: The Rise of Web-based Training

As companies completed installation of their Intranets, it made good sense to migrate from CD-ROM-based training to Web-based training for several reasons:

- Web-based training helped justify the cost of the Intranet
- Learning could be done "anywhere, anytime," so long as a browser-based Web connection could be made to the host server
- Shelf life of courseware is extended because updates can be done on the server rather than on each training workstation at each training location.
• Central LMS management and control, through easy-to-establish Web connections, empowered the Training and HR Department to manage training totally. Still, the "move to the Web" came with considerable downsides:

• CD-ROM courses were much more interactive and richer in instructional contents than Web courses due to the immature Web technologies at that time.

• Bandwidth continued to be a limitation and prohibited media richness by restraining the abundant use of digital media.

• Long wait time between "pages" reduced the value of the learning experience.

3.1.6 Mid-1999 to Mid-2000: The Internet Land Grab is on

In this period, Web courseware with central administrative management became the trend. High-quality or customizable and manageable content, however, was nowhere to be seen. Many e-learning vendors offered "shopping marts" of centrally managed Web content that was accessible across the enterprise. The technology was in the learning portal, and the content philosophy was to offer mass quantities. Quantity of content was intended to make up for a lack of quality, industry focus, and customizability. Many portals were one-stop-shop e-commerce Internet sites that offered a wide array courseware from other vendors, both online and offline. LMSs eventually became the data-management backbone of all of these learning portals.

Interestingly, the majority of the original, high quality custom CD-ROM courseware developers did not make the jump to the Web successfully, just as most had not become packaged content vendors. Reasons for their failure included their unwillingness to lower quality standards to what was then current on the Web, and their lack of any aptitude for large-scale production for the mass quantities of content. The March 2000 downturn in
stock markets brought these trends to a halt as many companies went bankrupt; others were quickly sold, while the survivors won the right to play another round by re-inventing themselves.

3.1.7 Latter half of 2001: Recognition of On-line Learning’s Shortcomings

The general market conclusion reached by the end of 2001 was that online learning technologies, as platforms to meet the needs for business-critical training, simply did not do what companies needed or expected.

Factors that contributed to the downfall (Internet Time Group, 2003) included:

- Implementation time proved to be long and expensive, yet the results were often less powerful than what had been originally imagined.

- The industry standard of AICC and SCORM were too loosely defined. Interoperability was missing, which resulted in the lack of “plug and play” features.

3.1.8 The Present: Survival of the Fittest

"Survival of the fittest" is the theme of Darwin’s theory of natural selection and is also one of the mechanisms that drive the evolution of business. The concept of natural selection was demonstrated once again in the e-learning industry between 2001 and 2003. Non-competitive companies were either shutdown or were merged with other players as illustrated in Table 11.
Table 11 Merges of E-learning Companies

<table>
<thead>
<tr>
<th>Company Target</th>
<th>Acquirer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achieva</td>
<td>Kaplan</td>
</tr>
<tr>
<td>Bigchalk</td>
<td>ProQuest</td>
</tr>
<tr>
<td>Campus Pipeline</td>
<td>SCT</td>
</tr>
<tr>
<td>Epylon</td>
<td>Accenture</td>
</tr>
<tr>
<td>Higher Markets</td>
<td>SciQuest</td>
</tr>
<tr>
<td>MetaText</td>
<td>XanEdu</td>
</tr>
<tr>
<td>NetSchools</td>
<td>PLATO Learning</td>
</tr>
<tr>
<td>Prometheus</td>
<td>BlackBoard</td>
</tr>
<tr>
<td>PricewaterhouseCoopers</td>
<td>IBM</td>
</tr>
<tr>
<td>SmartForce</td>
<td>SkillSoft</td>
</tr>
</tbody>
</table>

Source: authors, compiled from the works of Eduventure Research Group, 2003

The surviving and acquiring companies began to show signs of rebound in 2003. Appendix 1 illustrates a simulation of investments in 24 NASDAQ’s e-learning stocks between January 1, 2003 and May 21, 2003. Each stock receives an equal investment of $2000.00 each. At the end of the simulation, the aggregate performance of the e-learning stocks is compared with NASDAQ’s overall performance (Table 12). During this period, the initial investment of $48,000 grew into $62,347.17, a 29.89% return. In fact, the e-learning sector surpassed overall performance of the NASDAQ (with a return of 11.65%), by 18.24%.

Table 12 Summary of Simulating Investment

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Today's Total Portfolio Value</td>
<td>$62,347.17</td>
</tr>
<tr>
<td>Total Portfolio Value on January 1, 2003</td>
<td>$48,000.00</td>
</tr>
<tr>
<td>Amount Earned or Lost to date</td>
<td>$14,347.17</td>
</tr>
<tr>
<td>Return on Investment</td>
<td>29.89%</td>
</tr>
<tr>
<td>Compared to NASDAQ (from 1335.51 to 1491.09)</td>
<td>11.65%</td>
</tr>
<tr>
<td>eLearning stock compared to NASDAQ</td>
<td>+18.24%</td>
</tr>
</tbody>
</table>

3.2 E-learning Technology

3.2.1 Anatomy of the E-learning System

To accommodate all the learning, teaching and transactional activities within a Web-enabled environment, a comprehensive e-learning software suite would be necessary. An e-learning software suite solution would include, but is not limited to, several layers. They are Data Repository, Security, Learning Management, Community Portal, and End-User. Figure 3 indicates the architecture of an e-learning system including these layers.

3.2.1.1 Data Repository Layer

Data Repository is the heart of the e-learning system. It stores all data and provides a data retrieving, processing, and reporting service to the front e-learning applications. The Relational Database (RDMS), Multidimensional Database (OLAP) and Light Weight Directory Service (LDAP) are three core components of the Data Repository. RDMS deals with transactional data processing; OLAP provides a reporting and data mining service; and the LDAP stores the profile information of users and system devices, or the “Metadata.”

These products are provided by software infrastructure companies such as Oracle, IBM, and Microsoft, and are integrated by e-learning vendors.

3.2.1.2 Security Layer

A key role of the Security layer is to provide authentication and authorization services to front learning management applications. Upon receiving requests for authentication and authorization, the Security Layer retrieves data from the data
repository, processes verification, updates profiles, and then responds to the front applications with the results. For example, user profiles are referenced, and the privileges are verified when users attempt to access any e-learning functional component. Secured by the role-based mechanism, the Security Layer allows users to generate restricted shared areas that are only accessible to granted users, to facilitate user-built collaborative communities.

Figure 3 E-learning System Architecture
3.2.1.3 Learning Management Layer

The Learning Management Layer plays a key role in realizing e-learning practice, which is enterprise- or campus-specific for online daily teaching, learning, and administration. The Learning Management Layer includes, but is not limited to: a Content Management module, Learning Management module, Transaction System module, and an External System Gateway module.

- **Content Management Module**

  The Content Management module usually includes four components. They are: 1) Content Courseware Management; 2) Assessment Management; 3) Assignment Management; and 4) Collaboration and Communication.

  The Content Management module can be a Web-based utility to empower the instructor with complete pedagogical control within the course environment. Rich and easy-to-use tools are available for the teacher to create, organize, navigate, and assign content. Well-organized and highly accessible content has the potential to bring the performance of students to a new level.

- **Learning Management Module**

  The Learning Management module manages learners and tracks their progress and performance across all types of training activities. It provides instructors with assessment tools to raise student preparedness and to closely monitor learning progress. It also
facilitates an effective feedback channel between teachers and students through online quizzes, self-tests and surveys.

Assignment tools help teachers to create, deliver, collect, grade, and manage electronic assignments. Individual student performance is also recorded and can be used to build learning statistics.

The Learning Management module is empowered by e-mail and instant messenger technology to enhance collaboration. By exploiting media-rich technologies such as Virtual Classroom and Discussion Board, it provides a rich, multi-functional environment for both synchronous and asynchronous communications (Yaskin, 2002).

- Administration Module

The Administration module provides Web-enabled tools to help staff administer daily school operations. This module of e-learning eliminates many of the complex administrative processes carried out by traditional institutions. Most administrative activities and business processes are automated in this module based on predefined rules.

- Transaction Management Module

The role of the Transaction Management module is to provide an e-commerce environment for student to register course and pay the tuition fees. In addition, shopping carts, debit/credit accounts, and even online auctions deliver convenient, secure, and efficient campus auxiliary services to students, faculty, and staff.
• **External System Gateway Module**

To integrate with existing systems or third party software, the External System Gateway module provides methods to interact with external applications such as traditional school administration software. Software Development Kit (SDK), a programmable interface, is the typical form of External System Gateway module.

### 3.2.1.4 Community Portal (CP) Layer

Simply speaking, CP is what users see and feel in an e-learning Web site. CP provides shortcuts for e-learning users to fast reach the on-line learning service and contents. On the other hand, featuring rich tools, CP allows instructors or e-learning administrators to arrange the layout of Web learning environment without having to use programming languages such as HTML and XML.

### 3.2.1.5 End-user Layer

A browser-equipped device is the only requirement for the End-user layer to access the e-learning environment. In addition to desktop and laptop computers, PDAs, tablets, and browser-enabled cellular phones extend the e-learning advantage into the wireless era. Thus, the promise of e-learning to deliver “anywhere, anytime, and to anyone,” is supported.

### 3.2.2 E-learning Standards

E-learning standards refer to a system of common rules for content, authoring and Learning Management software -- rules that specify how courses can be created and
delivered over multiple platforms so that they will operate seamlessly together. (ICUS, 2003)

Many software companies are providing wide range of products. Building an e-learning environment could be a rigorous task requiring integration of products from different vendors. In addition, all products must be made to comply with common standards to ensure compatibility.

Currently, several non-government committees and associations are working independently to ratify their own standards, which have yet to become universally accepted. Four standards have been established, which are represented in the current e-learning industry. They are:

- IEEE LTSC (Learning Technology Standard Committee)
- AICC (Aviation Industry CBT Committee)
- IMS (IMS Global Learning Consortium)
- SCORM (Sharable Content Object Reference Model)

Among the standards listed above, AICC and SCORM appear to be the most popular, however, no official standard certification programs exist to prevent vendors from deviating from the standards. Any claims of standard compliance made by vendors should be rigorously reviewed.

3.2.3 Types of E-learning

E-learning serves three sectors including K-12, higher education, and corporate/professional training in the modern knowledge economy. E-learning products may be categorized in two ways: e-learning for education and e-learning for corporate
and professional Training. E-learning for education is much more complex than e-learning for training.

Learning Management Systems (LMS) and Learning Content Management Systems (LCMS) constitute e-learning environment for corporate and professional training, while e-learning for education is based on Virtual Learning Environments (VLE) and Managed Learning Environments (MLE). Figure 4 indicates the relationship among the LMS, LCMS, VLE and MLE.

**Figure 4 Types of E-learning**

Source: authors.
3.2.4 Benefits of E-learning

Properly implemented, e-learning can be a win-win scenario for institutional or corporate adopters. In practice, the users and adopting institutions have offered a great deal of positive feedback about e-learning. It seems to be a tasty medicine with few side effects. Benefits include:

a) **Anywhere, Anytime, Anyone.**

Students, teachers and administrators are able to access e-learning 24-hours-a-day, 7-days-a-week, and around the globe. This asynchronous learning environment eliminates the geographic and time constraints of traditional learning environments, making e-learning convenient for all students, at any time, from any place.

b) **Substantial Time and Cost Savings.**

The virtual environment of e-learning allows institutions to save on the investment and expense of physical equipment and space. Also, the expectation is that wage costs for teaching staff will be reduced - a substantial part of a school's operating expenses. Historically, the average gross salary per educator has been increasing steadily, with a sharp rise of approximately 8% occurring in 2002 (Ministry of Education, 2002). An e-learning module can be reused many times, so that in the e-learning environment, a smaller number of teaching staff are needed to be skilled in course and content design. Also, training materials can be updated for a fraction of the cost of revising materials that are distributed by other means.
For students, e-learning eliminates the need to travel to specific locations for the purpose of education, which translates into personal savings of time and the cost of travel.

c) **Innovative and Interactive Learning.**

E-learning allows different learning styles for different students, and fosters cognitive learning through a variety of interactive exercises. Cognitive learning leads to better understanding and recall of knowledge.

d) **Improved Collaboration.**

Instant Messaging, e-mail and portal technology implemented within e-learning, enable more effective collaboration on a one-to-one, one-to-many, and many-to-one basis, involving students and teachers.

e) **Learner Focused.**

Technology can personalize content and anticipate learners’ future learning needs. It can also match the teaching styles with each individual’s learning style, experience, and skills. Further, e-learning is geared to the needs and interests of the individual learner. Finally, control of the learning process can shift from institutions to individuals, who assume greater responsibility for developing their skills and knowledge.
f) **Self-paced Learning.**

E-learning courses are comprised of "Learning Objects," which allow learning to be divided into discrete learning units. This fosters self-paced learning whereby students can learn at their own speed.

g) **Economic Use of "trainer."**

With Web casting, a live learning program can be sent concurrently to multiple sites so that the trainers are utilized in the most cost-effective way. More, programs provide by e-learning can be archived and reused numerous times, and the content remains consistent for every delivery of the course.

h) **Simulation and Practice.**

Participants, which require additional practice with a concept learned in a traditional training class, can use a computer to simulate or perform exercises to improve their skills. The model would also be useful for remediation and to correct deficiencies. Students are able to practice skills in "managerial practice fields" before actually applying them on the job (Senge, 1994).

3.2.5 **Pedagogic Best Practices and E-Learning**

The following table describes how the "best practices" of pedagogy are realized and even enhanced by e-learning. While the best practices of pedagogy are identified in the left column, the corresponding e-learning solutions are presented in the right column.
Table 13  Pedagogic Best Practice and E-learning

<table>
<thead>
<tr>
<th>Best Practices of Learning</th>
<th>How E-learning can achieve it?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning shall be social</td>
<td>By e-mail, online forums, newsgroups, distribution lists, chats interfaces and live Web cam video. Activities could include collective brainstorming, team projects, and role-playing scenarios.</td>
</tr>
<tr>
<td>Learning environment interface should meet standards for usability and accessibility</td>
<td>Well-defined environment interfaces are widely adopted among e-learning educators.</td>
</tr>
<tr>
<td>Learning outcomes should be diverse and well-defined</td>
<td>Quizzes and tests can be given to ensure learning outcomes.</td>
</tr>
<tr>
<td>Learning quality should be high</td>
<td>The media rich, high quality learningware breaks down content into smaller sections, so they may be combined in many ways for each learner. These high quality-learning objects are also reusable.</td>
</tr>
<tr>
<td>Learning environment should facilitate knowledge sharing</td>
<td>Knowledge management can be integrated into e-learning, to encourage sharing. The alumni can also provide feedback and advice to new students.</td>
</tr>
<tr>
<td>Learner assessment and course evaluation should be integrated and ongoing</td>
<td>Assessments can be in the form of quizzes and simple, bulleted reminding list. Interactive exercises are a good way to provide feedback. A well-designed simulation could both reinforce knowledge and communicate to learners how well they mastered the material.</td>
</tr>
</tbody>
</table>

Source: authors.

3.2.6  Issues of E-learning

E-learning offers new opportunities in the education and training sectors through revolutionary means of learning and teaching. Nevertheless, some issues and drawbacks are also created.

Because the technology is relatively young, high-level authorities, especially in large and legacy institutions, scrutinize e-learning rigorously. The teacher-centered physical classroom environment has existed for thousands of years and most people believe this learning style is the single most effective way of learning. Existing alternative learning
styles, such as correspondence courses and self-study, are designed to supplement conventional learning, and the initial assumption is that other new techniques will fall into the same category. The general public has difficulty accepting the notion that online learning is a revolutionary innovation that is able to surpass conventional learning and provide an enhanced learning experience. This conservative attitude is the key reason for e-learning being slow to be adopted in the higher education sector, even though it is predicted to be the biggest host of e-learning.

Many of the doubts and questions around e-learning can be addressed by education about, and promotion of this new concept, though some issues seem to be related to the nature of e-learning.

1) Can e-learning satisfy all learners?

E-learning appears to be the product of modern technology and pedagogy, and the outcomes of e-learning heavily depend on the level of access to the technology and the necessary range of skills needed to exploit it. The satisfaction level of e-learning users could be different based on their differing technical skill sets. Moreover, people still question whether all subjects can be delivered satisfactorily to all levels of students. Currently, the technology, and online programs, cannot give students the type of hands-on experience they could easily get in a science lab, engineering workshop, or training kitchen (Ryan, 2001).

2) Can e-learning reach the majority market?

As mentioned by Geoffrey A. Moore in “Crossing the Chasm,” the technology adoption life-cycle is divided into different segments: innovators, early adopters, the early majority, the late majority, and laggards. Moore proposes that each of these
segments is discontinuous and will take on the new technology at different stages of its life-cycle. Since online learning is in an early stage and remains predominantly unknown to students, only the innovators and early adopters are likely interested. Together, these groups comprise a minority of the student body. As a result, most conservative schools are reluctant to integrate online learning into their programs.

3) Can the stakeholders adapt to the new culture?

E-learning not only revolutionizes the ways of learning and teaching, but also involves a cultural shift. This shift can be described as a move away from a teacher-centered, didactic exposition to a more resource-based, immersive, and learner-focused environment (Ryan, 2001). It is over-optimistic to assume that all students will embrace the e-learning culture shift, especially in those institutions that provide education and training globally, and foster a multi-cultural environment.

3) Will teachers accept their new role as facilitators?

Teachers represent another group that will be impacted by online learning. One notable feature of online learning is the reusable course content. Course content is stored in central storage and is delivered to students upon their request. The instructor's actual teaching hours would be expected to decrease dramatically upon adoption of e-learning, though their course preparation and facilitation time will increase dramatically. Recognizing that the nature of their work is changing, with the possibility of job losses, many teachers will resist the new concept.
3.2.7 Implication of E-learning

Given the issues raised above, an institution or training organization needs to review its current policies and practices to maximize the potential of e-learning. E-learning will have a direct impact upon students and schools should consider the likely impact and notify students of the differences between traditional methods and those of e-learning. In addition, many students have limited access to the technology and only a few have experience with operating in a virtual environment. If e-learning is to become successful, then schools must consider how students will obtain regular and frequent access to technology.

Currently, e-learning is still in its infant stage and is encountering “the chasm” between early adopters and the majority users. E-learning institutions and companies need to identify the differences in the group characteristics such as their perception of technology and the demographics of the two groups. An effective marketing strategy is thus required to “cross the chasm.”

Although some staff may be competent users, others are likely to require additional support to be enabled to fully exploit the potential of e-learning. A comprehensive staff development program ranging from awareness, to the design, development, and exploitation of e-learning tool kits is recommended. In addition, user-support mechanisms should be available both on and off campus for hardware, software, authoring, and design.

E-learning is a huge commitment for every institution and company that attempts to adopt it. E-learning not only requires substantial capital expenditure, but also changes a
company’s business model and corporate culture. All aspects of e-learning that impact stakeholders must be constantly reviewed.

3.3 E-Learning Industry

3.3.1 E-learning Industry Value Chain

This section presents an analysis of the e-learning industry organization. It includes descriptions of each of the value-creating activities. Since the e-learning industry consists of many companies performing various functions, a basic conception is necessary for understanding the structure. To accomplish the task, a revised Michael Porter’s value chain of the e-learning industry has been constructed (Appendix 2).

Content

Content companies are the most important part of the value chain because they trigger the whole e-learning industry. The content companies provide learning objects, units, modules, lessons, courses, programs, and even entire curricula, which may or may not grant credits. In return, participants can receive certifications or degrees. Currently, the contents are available in two forms: prepackaged or off-the-shelf.

Authoring and Development Tools

Authoring and development tools are used to create e-learning content. The tools are written using HTML, XML, Java, and Flash and the resulting tools
include design tools and multimedia tools. The companies that develop authoring and developing tools are competing on the following values:

- Breadth of resources - capacity and scale
- In-house resources - whether the development company has its own resources or whether it's serving as a broker for subcontractors.
- Vertical market and subject matter expertise.
- Instructional design expertise.

**Enterprise Systems**

Enterprise systems are applications that tend to be centralized and deployed for the whole organization. These applications manage e-learning from its development to delivery. Software applications include LMS, LCMS, and KMS.

**Delivery and Collaboration Tools**

Delivery and collaboration tools include applications for course delivery, live learning, collaboration, threaded discussion, sharing applications, and audio or video over the IP.

One of the noticeable trends is that, with maturation of the e-learning technology, some vendors horizontally integrate their products to other technology tools. For example, both WebCT and BlackBoard offer authoring, learning management, and delivery tools, so that the borders between each of the technology sectors is becoming blurred.
Learning Specific Hardware

The middle part of the e-learning industry value chain (Appendix 2) is a small sector for learning specific hardware. E-learning likely will require a lot of computers and networks, but surprisingly, few learning specific hardware companies are in the market.

Services Sector

The services sector is shown at the bottom of Appendix 2. This sector offers numerous services ranging from consulting to technical support services, which are provided to ensure successful customization and deployment to the end-consumers.

Portals, Distributors and Integrators Sector

Content, technology, and services are eventually distributed to markets through the portals, distributors, and integrators sector, where potential buyers can actually see and buy finished products.

Education Providers: Schools and Corporate Training Institution

Schools and corporate training institutions provide e-learning to students. They serve as the primary purchasers of the e-learning products and services before delivering them to the end-consumers. They are comprised of K-12, higher education, training institutions, and corporations, each with its different requirements. Currently, content, technology, and service providers typically specialize in only one of these four markets.
Markets: Students and Corporate Employees

The final consumers of this market are students and corporate employees. Historically, their e-learning opportunities are dictated by the decisions of their schools or corporate institutions. Now, however, a greater demand is placed with e-learning as it is receiving more publicity. Students expect the online presence of their teachers and peers and the ability to communicate with them in real-time.

3.3.2 NTC’s Position in E-learning Industry

NTC’s current position in the traditional learning value chain is as an education provider. NTC’s long-term goal is to become a private university and remain in the education sector. As NTC does not have the plan or the resources to expand into other sectors, NTC is predicted to remain as an education provider, even after expanding into the e-learning business.

3.3.3 Five-Force Analysis

Before NTC considers entering the e-learning market as an education provider, it needs to answer three critical questions:

1. What are the competitive forces in the e-learning industry?
2. How attractive are the growth opportunities?
3. What are the effective strategies to raise its profitability, power, and competitive position after entering the e-learning market?
To answer the above questions, NTC must consider the structural attractiveness of an industry. For any given industry, suppliers, buyers, competitors, potential substitutes, and threats of new entrants may be found. The relative strength of each of these groups determines whether an industry is structurally attractive.

According to Michael E. Porter, the relative strength of these competitive forces determines the profitability or attractiveness of an industry. The strength of the competitive forces limits the overall profitability of an industry and the more powerful these forces are in an industry, the lower is its profit potential. The strength of each force differs by industry and also changes over time. A consideration of each force will assist NTC to formulate its e-learning strategy.

a) Suppliers

Since NTC will potentially be an e-learning education provider, its suppliers are portals, integrators, and distributors; and content, technology, hardware, and service providers, as shown in the e-learning value chain (Figure 5). NTC has the capability to develop its own course contents, however, to focus on its teaching strength and to deliver high quality contents, NTC must look for outside content providers.
New suppliers are entering and the weak suppliers are exiting the e-learning market on a weekly basis. Even though the trend is toward convergence, IDC Canada has predicted that none of the top 15 suppliers will increase their market share by more than 30% in the next few years, for the following reasons (Kaufman, 2002):

- A large number of small suppliers exist across the country.
- A wider variety of services / core competencies offered will keep more players in the industry over the short-term.
- High growth will continue to attract more players into the industry.
- Less reliance is placed on geographical location of provider and provider's staff
• A wide variety of business/revenue models will support a broader industry over the next few years (Kaufman, 2002).

Overall, the potential suppliers for NTC will remain highly fragmented. Without any dominant player and with low switching costs, the suppliers’ bargaining power is low. Suppliers with weak bargaining powers are providing a favorable environment for NTC and for other new participants to enter the industry.

b) Buyers

Currently, NTC program-takers are overseas students from Asian and South American countries. The number of program-takers is limited, because they have to be physically at the campus. Since the programs that are offered by the various language schools are similar (Appendix 4), students’ switching costs to attend other programs are low. As a result, the other language schools possess bargaining power over NTC in terms of program content and methodology offered.

Nevertheless, the situation will be reversed immediately once NTC’s programs are available online. NTC will no longer compete for a limited number of traveling overseas students, but instead, will recruit students from around the world. Initially, the buyers’ bargaining powers will be diffused and low, however, with more language schools moving towards e-learning, students will have more options to choose and eventually gain in bargaining power.
c) Competitor Rivalry

The current language and business training market features intense competition from competitors and is in the mature stage. The institutions are facing stagnant or even negative growth. The stronger institutions are pursuing a holding strategy while weaker companies are exiting. Appendix 4 lists the existing players in the market, the programs they offer, and prices. Currently, all players offer similar, if not the same programs, which increases the level of competition, though the number of competitors is expected to decline within the next few years.

Many institutions are exploring new opportunities for becoming e-learning education providers. The institutions fall into one of three categories: 1) corporate universities, 2) public schools (universities and colleges), and 3) private schools (language schools and professional training schools). Currently, competitiveness forces for e-learning service providers are low because:

1. e-learning technology lacks a standard,
2. software and consulting is expensive,
3. although implementing for corporate training is relatively easy, it is difficult at university and college levels, because of the need for policy ratification, massive customization, and system integration.

In a few years, however, these obstacles will be overcome and more institutions will adopt e-learning, which will increase the competition. These e-learning education providers will largely compete in terms of content quality, IT infrastructure, and price. Competition in the next few years will likely become high.
d) New Entrants

Currently, difficulties to implement and high overhead costs are the primary barrier for entries. The threat from entrants is low to medium. As technology matures and software prices decline, the entry barrier will be lowered, and incumbents will have difficulties to defend their market share as new entrants arrive, since switching costs for students will be very low.

In addition, many e-learning suppliers, such as content providers, software and hardware vendors, integrators, and distributors will seek ways to enter education markets. In many cases, they will form partnerships with the traditional educators. Overall, the threat from entrants is low, but it will increase in the future.

e) Substitutes

E-learning faces a challenge from traditional teaching as a major substitute. Substitutes for NTC’s e-learning program will be English, business, and IT programs that are offered by other teaching institutions in the students’ home countries. The low switching costs and the favorable prices for these substitutes are significant threats to NTC’s e-learning programs, especially for students who prefer face-to-face teaching, and who enjoy the social aspect of attending school. Students planning to take language and business programs will not only consider whether to study at home or abroad, but whether to take the course from a traditional school or online.

Table 20 summarizes the potential forces that NTC will face after they enter the e-learning market. Porter’s Five Force Analysis reveals that the e-learning industry will feature high competition and many substitutes, however, the potentially huge market and
the low to mediocre bargaining power of buyers, suppliers, and new entrants will mitigate these negative forces. Moreover, to achieve its long-term goal, NTC needs to enter the e-learning market as an education provider.

Table 14 Summary of Porter’s Five Force NTC’s Programs in the E-learning Industry

<table>
<thead>
<tr>
<th>Structural Element</th>
<th>Characteristic providing power to that element</th>
<th>Relative Power</th>
<th>Overall</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suppliers</td>
<td>Fragmented, composed by many small companies</td>
<td>Low</td>
<td>LOW</td>
</tr>
<tr>
<td></td>
<td>Suppliers’ products are differentiated</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Switching costs are low</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Threat of integrating forward into the industry’s business</td>
<td>Low, but growing</td>
<td></td>
</tr>
<tr>
<td>Buyers</td>
<td>Buyers are concentrated relative to the industry</td>
<td>High, but will become extremely low after e-learning implementation</td>
<td>LOW</td>
</tr>
<tr>
<td></td>
<td>Buyer volume is high</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buyers are able to integrate backwards into the industry</td>
<td>Low, but growing</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Substitute products are available</td>
<td>High, but will become extremely low after e-learning implementation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Industry products have no standard</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Buyers are price insensitive</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td>Competitors</td>
<td>High industry growth</td>
<td>Low now but predicted to become high</td>
<td>LOW to MEDICORE (HIGH in future)</td>
</tr>
<tr>
<td></td>
<td>Competitors are numerous or roughly equal in size</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Industry product lacks differences, switching costs</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High fixed costs</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Exit barriers are low</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>New Entrants</td>
<td>High economies of scale</td>
<td>High</td>
<td>MEDICORE</td>
</tr>
<tr>
<td></td>
<td>Products are not standardized</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td></td>
<td>High capital requirements</td>
<td>Low</td>
<td></td>
</tr>
<tr>
<td></td>
<td>New entrants lack technological capability</td>
<td>Low, but growing</td>
<td></td>
</tr>
<tr>
<td>Threat of Substitutes</td>
<td>Relative price and performance favors substitutes</td>
<td>High</td>
<td>HIGH</td>
</tr>
<tr>
<td></td>
<td>Switching costs are low</td>
<td>High</td>
<td></td>
</tr>
</tbody>
</table>

Source: authors.
3.4 Future Trend of the E-learning Industry

WR Hambrecht (Learnframe, 2001) identifies several trends that will have an impact on e-learning. These trends are: increasing competition, branding based on quality, increasing amount of e-learning partnerships, training convergence, shortening of development cycles, escalating needs for standardization for the established training companies, and increasing demand for reusable objects.

3.4.1 Competition Should Pick Up

WR Hambrecht anticipates competition in the corporate e-training market to heat up over the next few years, especially in the IT training industry. Strong market growth and relatively low entry barriers are attracting new market entrants in both software development and consulting service sectors. The potential entrants to the e-learning market are predicted to be existing technical giants such as American On-Line (AOL), Yahoo, Microsoft, AT&T, IBM, Sun Micro-system, and Oracle (Bachman, 2000). These technology giants will be moving into this new arena because the industry features:

- An enormous market with annual expenditures potentially reaching trillions.
- An inefficient and fragmented market.
- The high likelihood that technology will improve efficiency and consolidate the market.
- Exciting opportunities to create life-time brands for young consumers.
- The technology giants have a great chance to become the dominant players, if not the leaders in e-learning because they possess the key success factors to dominate.
- A recognized brand.
• The financial resources to lose money until critical mass or a significant market share is captured, particularly by supporting a massive marketing budget.

• Superior reputations for quality, service and innovation.

• A large, installed base of users.

As new players enter, competition will grow vigorously for market leadership, and branding will become the key. Most likely, in this early-stage market, prices for well-known products will be relatively unaffected by the battle for market share and may even increase.

3.4.2 Branding: Quality Is Key

Currently, new content providers, technology suppliers, and service vendors are emerging on a weekly basis. As a result, corporate and educational buyers face challenges when purchasing e-learning solutions. These buyers often lack sufficient knowledge to select the most appropriate product. The quality, price and sophistication of courses and technology also vary widely. Low market transparency and a limited knowledge of e-learning products will represent serious challenges for corporate customers in the next several years. Under these circumstances, companies and education institutions will be conservative and choose providers with established brand names.

Brand is, and will continue to be, the most important factor influencing the competitive landscape. Corporate and educational institute buyers will be willing to pay a premium for quality products to avoid future problems. The successful branding strategy will convey the message of high quality, consistency, and good reputation.
3.4.3 E-learning Partnerships will be the Goal

Content providers of e-learning are forming strategic alliances and partnerships with other education technology vendors, training services suppliers, or other content providers to increase their product offerings, expand their distribution channels, explore new market segments, and capture a larger share of the market. Other content providers will also team up with learning portals, or even diversified e-commerce sites, to extend their reach to a broader audience. Once a strategic alliance is formed, the participating companies will enjoy the competitive advantages and synergies that cannot be replicated by the efforts of an individual company.

3.4.4 Training is Converging

The trend towards convergence in corporate training and advanced learning is visible. Since corporate customers no longer want to employ several different contents, services, and technology providers to meet their educational needs, training companies have started to vertically integrate in these three areas. Currently, many IT and computer-training vendors are expanding their product lines with management and soft skills training, while soft skills training providers are eyeing the technical arena. The convergence will be even more evident as the large technology players, such as Microsoft and IBM, launch their all-in-one e-learning solutions.
3.4.5 Development Cycles will be Shortened Tremendously

Historically, content providers had four to six months to create an average, two-hour learning program. Due to the increasing competition, however they no longer have six months or even six weeks to develop a course. Development cycles are predicted to shorten by 20% every year, to be just two or three weeks by 2004 (Jaffray, 1994). This will result in more template-based designs and fewer custom graphics. Learning objects will be created in smaller chunks and in reusable formats. As a consequence, the industry will become more efficient and competitive.

3.4.6 Interoperability Demand Leads to Standardization

The e-learning market features many hundreds of individual companies competing for a market share. The lack of compatibility between existing learning technologies and current Information System infrastructures, however, is one of the main barriers to adopting e-learning. For the market to adopt e-learning, inter-operability between various platforms is needed. As a result, a standard communicating methodology (protocol) between various components of e-learning is required. Various organizations and groups like the IEEE Learning Technology Committee (LTSC), Instructional Management System (IMS), Global Learning Consortium (AICC), and Advanced Distributed Learning (ADL) initiative are working on specifications and guidelines for various standards in e-learning (Rao, 2000). Still, many obstacles must be overcome in creating the flexible, adaptive, and integrated learning systems needed to push e-learning into the mainstream.
3.5 Summary of the E-learning Industry

E-learning is not just an innovative application of technology for education, but a revolution that is radically changing the ways of teaching and learning. E-learning increases the accessibility of education by: 1) its features of "anywhere, anytime and anyhow"; 2) online content and learning management tools that power learners and foster a learner-focused culture; and 3) its rich communication tools and a virtual community that encourages learners to be more collaborative.

To adopt e-learning, a "cultural shift" is needed -- from a teaching focus to a learning focus. At the same time, the stakeholders’ perceptions and attitudes towards e-learning need to be addressed. The implication of these issues is that e-learning institutions and training companies must review their strategies and practices to maximize the e-learning potential (Ryan and Hall, 2001).

Even at its infant stage, the e-learning industry is becoming increasingly crowded. E-learning suppliers provide many solutions to institutional customers, however, only a few comprehensive solutions exist. The standard issues should be addressed before decisions are made to adopt a particular system.

Learning inefficiency is inevitable in a face-to-face learning environment because one teaching style can not satisfy multiple learning styles. As a result, learning outcomes are compromised. E-learning has the technological capabilities to overcome this issue, and moreover, e-learning can conform to the best pedagogic practices, which are difficult to realize in traditional education.

This chapter suggests that the main driving force behind the increased budget spending on education is the shift from industrial to a knowledge economy, and the shift
from manufacturing to a service economy, with the logic that higher education will result in higher salaries.

This chapter also points out that the e-learning industry structure is highly fragmented, with companies focusing in one specific segment of the value chain. In the long-run, not only will the competition increase, but more emphasis will be placed on strategic partnerships and inter-operability. Eventually, consolidation will occur with new standards being set.
Chapter 4  The E-learning Market

The e-learning market refers to a group of people who can and want to use e-learning as a method to undertake their learning tasks. These people mainly include students from K-12 and higher education as well as corporate and professional learners.

Education and training sectors encompass the e-learning market. Theoretically, e-learning can be applied in most learning scenarios. E-learning can possibly expand to the education and training sectors. The size of education and training sectors reflects the e-learning market potential.

The purpose of this chapter is to analyze e-learning market to support the e-learning strategies, which will be formulated in Chapter 6. This chapter first investigates the economic forces driving people to advance their education and training. This chapter also assesses the US, Asia-Pacific, Europe, Australia, and the other e-learning markets, in which NTC is likely to engage after adopting e-learning.

4.1 Economic Forces behind Increasing Education and Training Demand

The current economy is heading to a new direction. Education and training becomes more important in the new economic era than ever before. In this section, several economic dynamics in the education and training sectors are explored.

4.1.1 Shift from an Industrial to a Knowledge Economy

The economy is changing from that of an industrial to a knowledge-based economy, where human capital is more valuable than physical assets such as machines and natural resources. Figure 6 illustrates this paradigm. In 1981, the price / book ratio was 1.2
times, which means that a company would have a market value 120% times larger than its net asset value. In 1999, the same company had a price/book ratio of 12.1 times, or 1,200% greater than its book value. The difference between the market value and the book value arises because non-monetary assets, such as intellectual property and the knowledge base of the company's employees, underwent tremendous growth. An employee hoping to increase his or her value within a company will require higher education.

Figure 6 Changing Paradigm - Human Capital is Replacing Physical Capital as a Primary Productive Asset


4.1.2 Shift from a Manufacturing to a Service Economy

Figure 7 shows data of manufacturing vs. service employment over the last 50 years. The trend of declining employment in manufacturing, and increasing employment in the service sector, is likely to continue.
Since the economy is changing from an industrial and manufacturing to a knowledge and service base, the reward system is also shifting to compensate the better-trained and more skillful personnel (Figure 8). In addition, the fastest growing industries such as IT and medical services are looking for better-trained and more skilled personnel (Table 15).
Figure 8  Salary Gap between Male High School and College Graduates


Table 15  Fastest Growing Occupations (2000-2010)

The increasing salary gap due to the difference in individuals’ education and training reflects the need for multi-skilled and knowledgeable people in the new economy. The demand for more skilled graduates from higher education institutions not only increase the demand of continuing education, but also lead to a revolution in the education system. E-learning will play a key role in meeting the increasing demand of education and training, as well as undertaking the educational revolution.

4.2 The North American E-learning Market

4.2.1 US Education and Training System

The US education market exceeds $100 billion with a lot of growth potential. As the front-runner in education, the adoption of e-learning will assist NTC in formulating its strategic initiative. The US education system is divided into three areas: 1) Pre K-12, 2) Post-secondary, and 3) Corporate and Professional training (Figure 9).

4.2.1.1 US Education and Training System Performance

In 2001, the overall education industry revenues in the US grew by 2.6% to reach $102 billion (Eduventures, 2002). A detailed breakdown of the revenue figures reveals the following:

a) The pre-K-12 sector constituted the largest component of the education industry with $58 billion in revenue. Professional childcare services constituted 40.9% of the market in this sector and are predicted to continue with a growth at 4% per year.

b) The corporate and professional training sector remained the second largest part of the industry, with $27.4 billion in revenue, but suffered a 4% decrease in 2001. The decrease was due to the downturn in the economy. Traditional instructor-led training represented the major source of income in this sector, at about 60% of the
revenue. The route to gaining knowledge for career development no longer leads automatically to institutions of higher education. Instead, it can be corporate or professional training institutions. These institutions can provide direct and intensely focused training programs to those learners who are chiefly interested in the short route to results.

c) The post-secondary education sector is the smallest sector with a total revenue of $16.5 billion. The prediction is made, however, that it will be the fastest-growing sector in the next few years. Besides the growing population, an increasing percentage of the population is motivated to attend higher education. In addition, higher education institutes are attempting to make their programs more practical. One trend of many higher education institutes is to extend their programs to professional training areas.
Figure 9 US Education and Training System

Education and Training Industry

- Pre-K-12
- Post-Secondary
- Corporate & Professional

Education and Service Delivery

- Childcare
- Education
- Language Training
- Instructor-Led Training
- Testing and Assessment
- Testing Services
- Professional Development

Content

- Publishing
- eLearning Content

Infrastructure

- Technology
- Synchronous eLearning
- Procurement
- eLearning Platform

Source: authors.
Figure 10 2001 Industry Revenue by Sector (in US billions)

Pre-K-12

Postsecondary

Corporate & Professional

Source: authors, compiled from the works of Eduventures' Research Group, 2002.
4.2.1.2 E-learning Growth in the US

The corporate and profession training, higher education, and K-12 sectors are expected to increase their adoption of e-learning within the next few years. As shown in Table 16, by the year 2007, e-learning is expected to grow into a $15 billion business in the corporate and professional training sector, while in the higher education and K-12 sectors, e-learning will grow to $3.3 and $2.8 billion, respectively. E-learning has a sustainable competitive advantage over traditional education: the ability to generate more value at less cost. This fundamental strength, combined with the massive size of global education, should support the profitable development of several multi-billion dollar e-learning companies.

Table 16 Projected E-learning Revenue (in US millions)

<table>
<thead>
<tr>
<th>Sector</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Corporate &amp; Professional</td>
<td>$4,116</td>
<td>$5,762</td>
<td>$8,067</td>
<td>$11,294</td>
<td>$15,812</td>
</tr>
<tr>
<td>Higher Education</td>
<td>1,379</td>
<td>1,724</td>
<td>2,155</td>
<td>2,693</td>
<td>3,367</td>
</tr>
<tr>
<td>K-12</td>
<td>992</td>
<td>1,290</td>
<td>1,677</td>
<td>2,180</td>
<td>2,834</td>
</tr>
</tbody>
</table>

Source: authors, compiled from the works of David M. Derman et al., 2000.

4.2.2 The Canadian E-learning Market

In comparison to the US, the Canadian education and training market is a lot smaller, at CDN$ 67 billion in 1999 to 2000 (Table 17). In both countries, the largest sector in education is in elementary and secondary education. In Canada, however, the second-largest expense was on higher education, while corporate and professional training ranked second in the US. The difference is seen between the countries because a more
active business environment is present in the US, with the need for more corporate and professional training.

Table 17  Canadian Education Expenditure in 1999-2000 (in CDN millions)

<table>
<thead>
<tr>
<th>Element</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elementary</td>
<td>$39,309.40</td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
</tr>
<tr>
<td>Community College</td>
<td>5,467.90</td>
</tr>
<tr>
<td>University</td>
<td>14,549.00</td>
</tr>
<tr>
<td>Vocational Training</td>
<td>8,370.40</td>
</tr>
<tr>
<td>All Expenditures</td>
<td>67,696.70</td>
</tr>
</tbody>
</table>


According to International Data Corporation (IDC) Canada, the Canadian e-learning markets will not continue to grow at the astonishing rate of 65%. The market is expected to stabilize into a 30-40% annual growth rate. At the same time, the overall Canadian market will grow steadily into a $1.1 billion business by 2006 (Figure 11). In spite of the growth, the Canadian e-learning market will be only 1/15\textsuperscript{th} the size of the US market in 2006.
4.3 Asian Pacific E-learning Market

The Asia-Pacific education and training market features a massive population with enormous demand for educational services. English is a popular second language because of the strong business ties between Asia Pacific countries and the US. Most Asia-Pacific countries adopted the US's K-12 plus four years bachelor degree education system.

According to industry analysts at IDC, the Asia-Pacific (excluding Japan) corporate and professional e-learning market is expected to be worth almost US$ 233 million by 2005, with a compound annual growth rate of 25%. (IDC, 2001) In 2000, Smith Solomon Barney estimated that Asia-Pacific accounted for 26% of the global corporate
training market. In 2001, however, Asia-Pacific e-learning expenditures comprised only 1% of worldwide e-learning revenues. As such, instructor-based training still embodies 75% of all enterprise training in the region, at present (Payne, 2002).

Even though the Australian e-learning business currently accounts for more than half of the regional investment, it will be quite different in 2005. By then, many other Asian Pacific countries will catch up as illustrated below.

Table 18 Asia Pacific E-Learning Market Forecast for 2005

<table>
<thead>
<tr>
<th>Countries</th>
<th>Revenue (SUSD)</th>
<th>Compound Annual Growth Rate (CAGR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>$65 million</td>
<td>22%</td>
</tr>
<tr>
<td>Korea</td>
<td>$51 million</td>
<td>31%</td>
</tr>
<tr>
<td>People Republic of China</td>
<td>$37 million</td>
<td>41%</td>
</tr>
<tr>
<td>Singapore</td>
<td>$27.56 million</td>
<td>18%</td>
</tr>
</tbody>
</table>

Source: authors, compiled from the works of Cindy Sim, 2001.

Currently, the Asia-Pacific e-learning market is highly fragmented and complex, with both global and local vendors jostling for positions in this infant market. The bursting of the technology bubble in 2000 resulted in negative pressures on e-business technologies. This negativity then led to the poor reception of new technologies and hurt e-learning adoption within the Asia-Pacific region. Currently, only a few local players have been able to offer a complete solution. This instability has opened the door for established players from Europe and North America to move into Asia-Pacific in the future. Asia-Pacific e-learners are more receptive to the programs offered by North American providers because North American credentials are more widely recognized and accepted in the job market than those granted by other regions.
4.4 The Europe E-learning Market

The European e-learning market is more mature in terms of adoption and more advanced in its application. IDC forecast that the European e-learning market will be worth nearly USD$6 billion by 2005 (Jueptner, 2001). By that time, e-learning will account for a quarter of the European IT training market.

E-learning will become popular in the UK, Netherlands, and Sweden as these countries have high Internet penetration rates and a high proportion of English speakers. Figure 15 (Kaufman, 2003) shows that Western Europe had the highest corporate e-learning market growth at 49% in 2002, compared to other global regions. Nevertheless, Southern Europe will tend to lag behind as e-learning progresses.

4.5 Summary of Learning Market Analysis

There are three main driving forces behind the increasing demand for higher education and training. They are: 1) the shift from an industrial to a knowledge economy, 2) the shift from a manufacturing to a service economy, and 3) the logic that higher education will result in higher salaries.

The e-learning market potential is summarized by the US e-learning market being relatively smaller when compared to its overall education and training market. Nevertheless, it is forecast to grow into a $15 billion business by the year 2007. The European e-learning market will reach a $6 billion plateau by 2005. The Asia-Pacific e-learning market is the smallest among the three regions, but will grow to $233 million by 2005 with an annual growth rate of 25%. The biggest barrier for the adoption of e-
learning in Asian Pacific countries is the reliance on traditional face-to-face teaching. Once this obstacle is overcome, the Asia-Pacific e-learning market will be vast.

Compared with the language teaching market in Canada, education and training sectors represent a significantly larger market opportunity for NTC (Language Travel Magazine, 2002). In particular, the fast growing markets in the North America and Asia Pacific could be NTC’s target markets.
Chapter 5  Strategic Alternatives for Growth

The previous chapters analyzed NTC’s situation and e-learning’s technology, industry, and market. These analyses are critical because they refute the unfavorable strategic alternatives and support the most viable growth strategy for NTC.

This chapter first utilizes the SWOT analysis to summarize NTC’s current internal and external situations. Then, a product-market matrix is applied to identity the five strategic alternatives by which NTC may grow. An assessment framework also is employed in the process to screen strategic alternatives.

5.1 SWOT Analysis of NTC

5.1.1 Strengths

Flat and Highly Concentrated Organizational Structure

NTC has a flat organizational structure and the authority is highly concentrated. These two characteristics shorten NTC’s decision-making process and helps NTC to become more responsive to new opportunities. In addition, NTC’s management can easily communicate with the bottom-level employees. This advantage allows NTC to more quickly adopt e-learning techniques, compared to other institutes having larger organizations.

Flexible Cost Centers and Low Fixed Assets

As a language school, NTC has relatively low fixed assets compared to those schools which provide science or engineering programs. NTC hires instructors on a contract
basis, which results in low fixed overhead costs. Thus, NTC is able to react quickly if a strategic shift is needed to reconstruct assets and the organization.

**Existing Viable Business**

Even while facing a stalling growth, NTC still remains as a middle-sized player in the Vancouver language teaching industry. By entering the market early, NTC secured one of the busiest and most convenient locations in downtown Vancouver, enjoying a long-term lease at a discount. This ensures viability of NTC's classroom-based language teaching business and hedges against the risks that could result from offering online programs through e-learning.

**Multiple Financial Resources**

Over its years of successful operation, NTC has accumulated sufficient financial resources to restructure its business operations. As a result of enthusiastic social networking, Mr. Lee has established a reputation within the local Korean community as a successful and dependable businessman. The Korean community has many wealthy immigrants looking for investment opportunities in a new environment. This exceptional access to funding enables Mr. Lee to launch a project, which might require massive capital.

**Established Expertise in Educational Program Design and Delivery**

During its years of operations, NTC has developed the ability to design and deliver language-related and other educational programs that satisfy the requirements of the
industry. This strength is critical for NTC in delivering a variety of just-in-time programs in the e-learning environment.

**Potential Alliance with IT Companies**

Lacking in-house IT resources, NTC must rely on service from local IT companies. NTC maintains a stable and mutually-beneficial business relationship with Cybus Internet Technology Inc., a company with strengths in enterprise business solutions. The proven trust between these two parties could lead to a partnership between them in pursuing e-learning.

5.1.2 *Weaknesses*

**Obsolete Marketing Strategy**

NTC’s “location-location-and-location” strategy has been the basis for its growth in the 1990's. The college's location is still seen as a key competitive advantage by traveling students. Now, the external business environment has changed and ESL students are less willing or able to travel. In these new circumstances, the reliance on this strategy has resulted in negative growth and declining profitability. In particular, the superior location strategy is not applicable to e-learning where geographic constraint is eliminated.

**Ineffective Sales and Marketing Function**

Referrals from student agencies are the primary way for NTC to gain its students. Four student agent coordinators became the only marketing force in NTC, facilitating the
agent’s work, but not actively searching for new business. In fact, the marketing
department in NTC is not fully functioning. The Internet has gradually become a major
medium and marketing requirements have changed significantly in the last five years.
Advertising and the work with student agencies are less effective ways to reach potential
students. NTC currently lacks a marketing team that is familiar with exploiting the
Internet highway to reach the student market.

**Single Distribution Channel**

As discussed earlier in this chapter, many external forces are beyond NTC’s
control and limit its ability to enroll students. Since NTC is a traditional language school,
classroom based programs are the primary teaching method. Their reliance on face-to-
face teaching as a sole distribution channel means NTC’s business is restricted by the
physical constrains such as school capacity, facilities and timing. Those constraints could
be the hurdles for NTC’s growth.

**Weak IT Infrastructure and IT Resources**

Unlike the public schools, NTC does not receive government funding and must build
its infrastructure from its own resources. Even after seven years of operation, the
college's IT infrastructure is very simple. The computer system is under-equipped and has
not even reached the departmental level. For example, no internal e-mail system is in
operation for students and access to the Internet is only available in a small portion of the
campus. Since NTC outsources its IT activities to an IT company, it minimizes its
internal IT resources to one part-time computer technician who belongs to the general
office department. NTC’s lack of IT expertise will become a huge shortcoming in implementing and maintaining an e-learning system.

**Lack of Experience in Academic Education and Professional Training**

NTC lacks experience in designing and delivering higher education and professional training programs. NTC is reluctant to extend its program offerings to areas other than language or basic business courses. Nevertheless, higher education and professional training could be the only directions in which NTC can grow. NTC must find ways to extend its existing competency to these new programs.

5.1.3 Opportunities

**Fast Growing Education and Training Market**

While language schools are struggling to survive, the knowledge economy drives a continuous growth in the education and training market. In 2002, the North American education and training market reached $750 billion and the global education and training market reached US$ 2 trillion (Eduventures’ Research Group, 2003). After the healthcare industry, education and training is predicted to be the second largest global market in the near future.

**E-learning**

Internet-empowered e-learning is revolutionizing the whole education and training industry and first entrants to this market can expect to be rewarded by a substantial market share. The virtual environment can help NTC overcome the short-fallings in its school infrastructure and to reach a market that is currently unavailable because of
government regulations and geographic separation. By eliminating many of the current constraints to the programs offered, NTC would be in a better position to achieve its long-term goal: to become a private university.

Growing Training Market in North America

North America is the largest market in the world for corporate and professional training. In a drive for efficiency, organizations are expected to adopt e-learning as the preferred method of delivering corporate and professional training. Being a North American firm, and knowing North American corporate culture, NTC should be able to compete effectively in this market.

Asia-Pacific Connection

Students from the Asia-Pacific region make up the largest share of the language market in Canada (Language³, 2002). Nevertheless, the region still has a huge growth potential. In particular, the Chinese market is still largely unexplored due to restrictive immigration policies in North America. With natural connections to the Asia-Pacific region, NTC has an advantaged position to explore this market.

5.1.4 Threats

Vulnerability of the Language Teaching Industry

As international students are the primary consumers of language programs, the language teaching industry is strongly impacted by international affairs and immigration
regulations. In a tumultuous world, deeply slumped in terrorism, epidemic disease, and economic downturn, language teaching appears to be extremely vulnerable.

The language schools in North America were hard hit after the September 11th terrorist attacks, with an overall decrease in student enrollment of 20% (Language, 2002). The SARS panic, which erupted in March 2003, also had a dramatic impact on student enrollment. Not surprisingly, after September 2001, and during the SARS panic, visas were hard to obtain because governments looked for quick ways to increase national protection. Adding to the above issues, economic uncertainties in Argentina and Brazil, and continued economic stagnation in Japan and Germany, accelerated the market collapse.

Unlike many language schools, NTC survived the challenge and did not go out of business. As shown in Table 5, NTC lost 16% of its revenue and 50% of its profit.

Low Entry Barrier and Increasing Competition in the Language Teaching Industry

Although the BC Government requires a deposit of 20% of tuition fees for student protection, many entrants to the language teaching industry have materialized (Language, 2002). These have been attracted by low fixed costs and the history of profitability in the past ten years. In addition, many public schools began to extend their offerings to this sector. Competition thus has increased significantly.

Restrictive Regulations

Historically, private schools, especially language schools, have faced restrictive regulations. For example, BC Education Ministry regulates private schools to accept
students from a limited number of countries, a policy that does not apply to public schools. Private schools are thus put at a competitive disadvantage to the public schools.

**Increasing Competition in the Future in the E-learning Industry**

As the technologies and services that facilitate e-learning broaden and mature, the industry will begin to attract new entrants from a variety of sectors. Unlike many of the small Internet start-ups, the new e-learning competitors are more established, profitable firms in the technology and service sectors. In addition, a number of higher-education institutions are adding online programs into their programs being offered. They are even looking beyond degree-based e-learning programs to cater to the corporate and professional training market. In the near future, the competition in the e-learning industry will be considerably fiercer.

**5.2 Growth Strategy for NTC**

**5.2.1 Strategic Alternatives**

In the product-market matrix of Figure 12, five options are shown.

**Option 1: Market Penetration with Current Programs**

Having provided language programs for seven years, NTC is a veteran player in the language teaching market and holds a stable market share. To further penetrate the market, NTC needs to enhance its marketing ability, which currently relies heavily on agents. Strengthening its in-house marketing function will involve additional marketing channels and activities, even though the additional channels will cause channel conflicts.
and may jeopardize the relationship with student agents. In addition, marketing expenditure is unlikely to yield an acceptable return, given the shrinking market and global unrest.

**Figure 12 Product-Market Matrix**

![Product-Market Matrix](image)

Source: authors, compiled from the works of David A. Aaker, 2001.

**Option 2: Program Expansion in the Current Market**

International, traveling language students are NTC’s current target market. Classroom-based English programs are the appropriate program offerings to them. As
English is the predominant international language, the demand of programs other than English is low. Adding new classroom-based or online programs for the current market will do little to increase NTC’s revenue and profitability. Therefore, program expansion into the current market is not a viable solution for NTC’s growth. For example, NTC attempted to provide business courses to international traveling students in the NTC Business School, but the attempt was not successful due to its poor student enrollment rate.

**Option 3: Market Expansion with Current Programs**

NTC provides language programs such as TOEFL, ETS and TOEIC, which are designed specifically for traveling international students. These programs do not appeal to local students or the corporate training market. Thus, it is hard to expand to new markets with the current programs and program delivery methods.

**Option 4: Diversification with New Programs to New Markets**

NTC promoted business programs to existing language students, but the results were unsatisfactory. The poor performance of NTC business school is not because of incompetent program offerings, but because of the lack of demand for business programs in the current language student market. Working groups and corporate customers are more likely to enroll in business or online training programs, rather than the young traveling students.

The failure of the business school suggests that NTC should be exploring new markets for its new programs. More precisely, NTC should diversify by providing more practical programs such as corporate and professional training to new student markets.
such as the corporate and professional learners. Corporate and professional training is the biggest and fastest growing area in the education and training sectors, as mentioned in Chapter 4. Online program offerings will be the most suitable method for NTC to enter this market quickly, yet, cost-effectively.

Option 5: Vertical Integration

Looking at the value chain of the education and training sectors, NTC is an education service provider, which directly serves the student market. Potentially, NTC can integrate backwards into student agencies, though student agencies are the most competitive part of the education and training industry. Therefore, this is not an advisable approach for NTC.

5.2.2 Assessment of Strategic Alternatives

To determine the right growth strategy to achieve NTC’s goals, a strategic alternative assessment framework is generated. Table 19 describes each criterion and its corresponding weighting derived from a NTC management survey. Table 20 indicates the scores for every criterion as well as the total score. The criteria reflect various corporate goals and the weighting given to each criterion indicates its degree of importance to NTC. The scores range from a low value of 1 to a high value of 3. The full score for one option is 18 points.

In summary, based on the quantitative assessment, Option 4, diversification, is determined as the most favorable growth strategy among the five alternatives. In
contrast, Option 1, market penetration, is regarded as the most unfavorable growth strategy.

Table 19 Explanation of Strategic Alternative Assessment Criteria

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Description</th>
<th>Weighting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grow School</td>
<td>Will the strategy help the school grow in size?</td>
<td>1</td>
</tr>
<tr>
<td>Grow revenues</td>
<td>Will the strategy result in significant revenue growth?</td>
<td>0.8</td>
</tr>
<tr>
<td>Achieve short-term profitability</td>
<td>Will the strategy generate profit which will allow growth using retained cash.</td>
<td>0.6</td>
</tr>
<tr>
<td>Enhance infrastructure</td>
<td>Will the strategy involve building new infrastructure required for accreditation</td>
<td>1</td>
</tr>
<tr>
<td>Build reputation</td>
<td>Will the strategy help the school build the brand?</td>
<td>0.6</td>
</tr>
<tr>
<td>Attract financing</td>
<td>Will the strategy will make the school attractive to loan or VCs?</td>
<td>0.4</td>
</tr>
<tr>
<td>Feasibility</td>
<td>Is the strategic move do-able?</td>
<td>1</td>
</tr>
<tr>
<td>Least risky</td>
<td>Is the strategy risk averse?</td>
<td>0.6</td>
</tr>
</tbody>
</table>

Source: authors, compiled from NTC management survey

Table 20 Assessment of Strategic Alternatives

<table>
<thead>
<tr>
<th>Criteria (score 1-3)</th>
<th>Weigh</th>
<th>Option 1: Market Penetration</th>
<th>Option 2: Program Expansion</th>
<th>Option 3: Market Expansion</th>
<th>Option 4: Diversification</th>
<th>Option 5: Vertical Integration</th>
<th>Full score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Grow School</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Grow revenues</td>
<td>0.8</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Achieve profitability</td>
<td>0.6</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Enhance infrastructure</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Build reputation</td>
<td>0.6</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Attract financing</td>
<td>0.4</td>
<td>0</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Feasibility</td>
<td>1</td>
<td>3</td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Least risky</td>
<td>0.6</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Total Score</td>
<td>7.8</td>
<td>10.2</td>
<td>11.6</td>
<td>12.2</td>
<td>8.4</td>
<td>18</td>
<td></td>
</tr>
</tbody>
</table>

Source: authors
5.2.3  **E-learning and Diversification Strategy**

E-learning, a revolutionary learning environment, appears to be the best way to implement the diversification strategy, because e-learning:

- will help NTC to grow in both school capacity and revenue, and in the meantime, achieve profitability.
- will allow NTC to enhance its infrastructure with a solid computer network system.
- has rich functionalities in course creation, learning, and teaching management and in school administration. Shortening a program's creation time and increasing the school capacity will significantly enhance efficiency.
- will enable NTC to establish a library system, which is highly accessible, yet requires low investment in both capital and time.
- will also enable NTC to extend into corporate and professional training with practical and just-in-time programs.
- will help NTC to create a virtual learner-focused environment with state-of-art multimedia and communication technology. In e-learning, collaboration is emphasized.

Besides e-learning, NTC should retain its current classroom-based language teaching business courses because many students enjoy the social interaction aspect provided by face-to-face education. These students also value highly the overseas experience in addition to just learning the English language. Until e-learning can fully replace current language teaching methodology, NTC should not rely solely on e-learning.
5.3 Summary of Strategic Alternatives

Having been in the language teaching industry for seven years, NTC has language teaching experience and an established reputation. NTC's cash reserve and access to local individual investors from society has laid a solid financial foundation for its growth. The trustful relationship between NTC and a local IT company would further help NTC to implement e-learning. Nevertheless, a weak IT infrastructure, narrow program offerings, and a lack of experience in higher education and training could present hurdles for NTC's pursuit of e-learning.

The language teaching industry is vulnerable to external forces such as terrorism and economic downturn, and is maturing with greater levels of competition. In contrast, the overall education and training industry is growing rapidly and indicates a promising future. E-learning is emerging and empowering educators in their abilities to perform teaching, administration, and marketing tasks, with the enormous opportunities in the industry.

The diversification growth strategy is recommended out of the five strategic alternatives. Pursuing the diversification growth strategy through adopting e-learning will expose NTC programs to a broader education and training market. In addition, this strategy will enhance the college's IT infrastructure and school facilities, as well as increase program offerings.
Chapter 6  E-learning Strategies

This chapter discusses two key tasks of e-learning implementation: marketing and technology. Marketing implementation includes the tactics for the product, price, promotion, and place. Technological implementation covers the deployment of methods and selection of platforms. A financial analysis is also conducted in this chapter to examine the viability of this e-learning initiative.

6.1 Marketing Implementation Strategy

6.1.1  Marketing Strategy

The objective for NTC is to obtain competitive advantage by being an early entrant to the e-learning market. The reasons for formulating a marketing strategy include:

- many people are skeptical of the concept and this perception can be reversed through marketing efforts
- a large investment is at stake
- an e-learning marketing campaign is an ongoing process and not just as an event. Therefore, a carefully planned strategy is needed
- the relationship with the customer will increase from the first 2-3 months to many years. To secure customers, a continuous marketing effort is needed

To define the market, market segmentation is needed, which is an aggregating process. Segmentation clusters people with similar needs into a market segment that consists of a homogeneous group of customers who will respond to a marketing mix in a
similar way. For NTC's e-learning market, segmentation is on three levels: geographic area, education systems, and programs.

Figure 13 NTC's Market Segmentation

At the top level, the market is separated geographically between North America and Asia-Pacific regions, which will comprise more than 60% of the global Internet population in 2004 (Global Reach, 2002). In the subsequent level, the market is separated by the education systems of K-12, high-level education, and corporate training and continuing education. At the bottom level are the program offerings from NTC. The order of levels does not have any implication other than to ease interpretation.

Four segments are determined for NTC to engage in e-learning environments:
1. Business program design for corporate training in North America

North America has been the core of the international IT business world. Many language schools in Canada and the US offer courses specifically geared towards executives and staff. The courses sharpen the learners’ understanding of basic financial concepts used to manage business performance and improve managerial decision-making. In addition, the courses broaden the executive learners’ conceptual framework for negotiations, and provide a more complete understanding of the components of effective negotiation. With the economic downturn and downsizing, many corporations cannot afford, and are unwilling to spare, their employees for further training. As a result, more and more individuals are paying for their own training. NTC’s new business programs fulfill the need for this training. NTC’s executive learners can access the content at anytime and from anywhere, without restrictions from their current companies.

2. IT Program Design for Continuing Education in North America

According to America’s Career InfoNet, the five fastest growing occupations are all in IT. Job opportunities in these occupations are expected to increase by 89% by the year 2010, which means that the number of professionals in these fields will climb from 1.5 million to 2.9 million (Technology, 2003). The boom in technology employment over the next eight years will lead to further growth in the demand for IT training.

The demand for IT training programs in North America is either for the low-end courses, such as office applications, or for high-end courses, such as database and
network architecture. The students' employers reimburse most customers of the IT programs, though an increasing number of individual IT training students are paying for the tuition themselves.

Even though NTC is not offering any IT programs in the current curriculum, the school has strong ties with an IT company, which has provided consulting and implementation for various projects in the past. Collaboration with an IT company will help NTC's transition to becoming an IT program provider.

3. Business and IT Program Design for Corporate Training in Pacific-Asia

NTC's primary target countries in the Asian Pacific region are Japan, Korea, and especially, China. Compared to North America, these countries have recently exposed themselves to Western economic systems and the companies are adopting Western business systems and continuously searching for qualified personnel who are equipped with Western business concepts. The market is highly fragmented by a variety of learners who are distinguished in demography and purchasing behavior. The challenge for e-learning schools and training companies is to form an effective marketing strategy to deliver suitable programs. In particular, product and pricing strategies must be flexible to meet a variety of requirements.

4. Language Program Design for Continuing Education in Pacific-Asia

Although many language schools in Canada reported satisfactory market performance in 2002, not all schools are confident that year-end results will show an increase in student numbers. Currently, a few factors actually enhance the business outlook for the
short-term. One major drawback is the fear expressed by Immigration Canada that students from developing countries may claim refugee status if they attend non-public schools. The Asian market for language travel is booming around the world, but it seems that many Canadian schools are being denied the opportunity to seize their share of the market. Providing languages courses online is a viable solution to overcome the government regulations for Chinese students.

According to statistics presented by *Travel Language Magazine*, most language students from the Pacific Asia region are in the 16 to 35-year old age range. They have an inbuilt lecture/exam mentality and are inclined to attend language programs that will prepare them for English tests such as TOFEL, GRE, and GMAT, etc. This group consists of school students or young office workers who pay the tuition by themselves and tend to be price-elastic.

### 6.1.2 Corporate Positioning Strategy

Corporate positioning deals with the perception of an entire company. A valuable strategic position will provide a consistent message both internally to employees and externally to the market. It can also differentiate products from others and resonates the needs of customers. In many ways, corporate positioning is similar to product positioning, however, the objective is to create and transfer an image for an entire company. More precisely, the positioning of a company is the core of its business strategy and other subsequent strategies depend upon it.

An all-cure positioning strategy does not exist for all companies. Firms need to consider both their internal and external situations to form an appropriate positioning strategy. Table 21 illustrates a list of representative strategic positions adopted by many
world-class companies. It provides NTC with good examples of how companies achieve success by adopting positioning strategies according to the nature of their business.

Chapter 5 carefully examined NTC's internal and external situations, and the results give NTC a framework on which to rely for formulating positioning strategies.

NTC is considered a small- to moderate-sized firm, due to its multi-million dollar revenue and limited financial resources. NTC is not recommended to pursue the kind of pioneer positioning strategy that is adopted by many giant companies such as Boeing or Bank of America. To sustain their positions, these companies need to continue substantial investment in acquiring leading-edge technology. NTC lacks an adequate institutional infrastructure and is reluctant to provide a great number of courses. In addition, NTC is unable to follow the lead of companies like Oracle and Gatorade to provide customers with a full range of product categories. NTC is, however, able to acquire a strategic position by focusing on its existing strengths. NTC has a slim advantage in its originality and can quickly respond to a fast-changing market. Further, e-learning helps NTC to significantly reduce its program launch time with powerful courseware tools. Thus, NTC can provide short, low-cost, practical and just-in-time programs to meet the dynamic market. This is difficult for large and cumbersome institutions. By pursuing this positioning strategy, NTC will gain a market-focused image.
Table 21 Possible Strategic Positions

<table>
<thead>
<tr>
<th>Strategic Positions</th>
<th>Representative Firms</th>
</tr>
</thead>
<tbody>
<tr>
<td>The best</td>
<td>Accenture, Saks</td>
</tr>
<tr>
<td>Value</td>
<td>Hyundai, MydiscountBroker</td>
</tr>
<tr>
<td>Pioneer</td>
<td>Boeing, Bank of America</td>
</tr>
<tr>
<td>Product focus</td>
<td>Aamco</td>
</tr>
<tr>
<td>Target segment</td>
<td>Gerber, Gold Violin</td>
</tr>
<tr>
<td>Product categories</td>
<td>Gatorade, Oracle</td>
</tr>
<tr>
<td><strong>Product attributes</strong></td>
<td><strong>Volvo, Crest</strong></td>
</tr>
<tr>
<td>Product line scope</td>
<td>Amazon, Barnes &amp; Noble</td>
</tr>
<tr>
<td>Organizational intangibles</td>
<td>HP, Kaiser Hospital</td>
</tr>
<tr>
<td>Emotional benefits</td>
<td>MTV, Hallmark</td>
</tr>
<tr>
<td>Self-expressive benefits</td>
<td>GAP, Mercedes</td>
</tr>
<tr>
<td>Experience</td>
<td>Nike, Nordstrom’s</td>
</tr>
<tr>
<td>Contemporary</td>
<td>Lane Bryant, Oprah</td>
</tr>
<tr>
<td>Personality</td>
<td>Harley-Davidson, Tiffany</td>
</tr>
<tr>
<td>Competitors</td>
<td>VISA, Avis</td>
</tr>
</tbody>
</table>

Source: authors, compiled from the works of David A. Aaker, 2001.

NTC hopes that its efforts in the corporate positioning strategy will result in the following perceptions:

**From the perspective of students / corporate buyers**

NTC, with its years of educational experience and cutting-edge e-learning technology, always provides a wide range of trendy, practical, and convenient programs. Every time a new category of demand emerges in the job market; NTC is the first to provide the related programs.

**From the perspective of an industry member**

NTC is a private language, business, and IT training school that always responds quickly to the market and offers practical and just-in-time programs that are hard to
replicate. NTC no longer competes only in the local market, but has escalated to the
global platform.

To see if any gap exists between the perceptions of different parties and NTC’s
positioning goal, NTC should periodically conduct surveys of its students and industry
clients. To sustain its market-focused positioning strategy, NTC also needs to enhance its
marketing function to detect changes in market requirements.

6.1.3 Marketing Implementation

Marketing implementation is the process that turns marketing strategies and plans
into marketing actions to accomplish the strategic marketing objectives. Implementation
involves day-to-day and month-to-month activities that effectively put the plan to work.
Whereas, the marketing strategy addresses “what” and “why” questions of marketing
activities earlier, marketing implementation addresses issues of “who”, “where”, “when”
and “how”.

To ensure successful implementation, each of the 4Ps (Product, Price, Promotion, and
Place) is defined in terms of NTC’s strategic aims and objectives.

6.1.3.1 Product Features and Branding Decisions

NTC is not merely providing programs through e-learning as a product, but as a
complete solution to meet the needs of students. To comply with the demands from the
students, NTC shall integrate as much as possible, the best learning practices as
mentioned in Table 13. These are:

- Learning shall be social
• The learning environment interface should meet standards for usability and accessibility
• Learning outcomes should be diverse and well-defined
• Learning quality should be high
• The learning environment should facilitate knowledge sharing
• Learner assessment and course evaluation should be integrated and ongoing

NTC should take advantage of the existing offerings of e-learning platforms in the e-learning market. Many of these platforms capture the best practices through years of development and revision. The user-friendliness and course delivery have also improved with more comprehensive graphical interfaces.

Consumers view a brand as an important part of the product; branding can add value to a product. Branding has become a major issue in a product strategy. Furthermore, branding will become increasingly important in the education industry, just as it has become the predominant means of building companies in other industries. In the education industry of yesterday, brands were built by delivering exceptional education to an exclusive set of students. These brands have a tremendous impact in the education industry of today, with names like Harvard, Stanford, Princeton, and Yale, which carry significant authority. Branding will continue to be a key success factor as the world enters a new paradigm where education is delivered in a variety of forms.

To become one of the elite schools, NTC has to focus on the branding process of the institution as a whole, rather than on individual programs. The observation was made that the values and emotions symbolized by an organization are becoming key elements of differentiation strategies. Not only will corporate branding be the key competitive
strategy in the future, but Hatch and Schultz (2001) suggest that corporate branding will provide other benefits to its practitioners:

1. Corporate branding reduces costs – Hatch and Schultz believe that by pursuing the corporate branding strategy, companies will exploit economies of scale in advertising and marketing. They suggest that since the product life cycle has shortened tremendously with increasing competition, it makes sense to focus on corporate branding that will last longer than product branding.

2. Corporate branding gives consumers a sense of community – In their paper, Schultz et al. (2000) point out that customers are willing to pay for some badge of identification. This branding applies to schools when students identify themselves as the students of their institution, rather than by their programs.

3. Brands provide a seal of approval – A strong corporate brand can provide a clear, consistent message of what the company hopes to convey to its stakeholders, including employees and consumers. NTC’s goal is to create a quality image.

4. Brands create common ground – The authors suggest that to accomplish this goal, corporate brand symbolism must be robust enough to allow people across cultures to share symbols even if they have different interpretations (Schultz et. al, 2000). The common ground benefit will be important for NTC as it moves into a global market.

6.1.3.2 Pricing

The private language school in Canada is a mature industry featuring many competitors in a declining market. The total number of students dropped from 24,839 in 2000 to 22,837 in 2001 (a decrease of 8.06%, Language, 2001 & Language, 2002). In a survey of language students, conducted by Language Travel Magazine, 70% of the interviewees complained that the cost of living in Canada is higher than that in their own
countries. Since the living cost is not negotiable, the students hope tuition fees may be lower. In addition to the demand for lower tuition costs, many competitors are present in the market. Therefore, schools will be unable to avoid the demands for price reductions and the overall industry profitability will decline further until some providers leave the market to balance the supply and demand.

Pricing is not the only way for players in the market to compete (Figure 14). A company can increase its cash flow by increasing the demand for its products. Additional distribution channels will lead to more volume, which will result in increased revenue.

Figure 14 Fishbone Chart Showing that Price is one of the Tools for Increasing Cash Flow

Source: Australian National Training Authority, by permission.

Pricing strategies may be implemented in many ways. Table 22 lists several possible pricing strategies.
Table 22 Pricing Strategies

<table>
<thead>
<tr>
<th>Strategy</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost Based</td>
<td>Product based on the variable cost of goods</td>
<td>$100 over cost / 2 times the manufacturing costs</td>
</tr>
<tr>
<td>Good Value</td>
<td>Performance premium at a price point</td>
<td>Workstation performance at PC value</td>
</tr>
<tr>
<td>Meet the Competition</td>
<td>Promotional and short-term strategy</td>
<td>Products with similar price</td>
</tr>
<tr>
<td>Skim Strategy</td>
<td>First company charges what the market can bear until a competitor catches up</td>
<td>Sony's AIBO entertaining robot (electronic-dog)</td>
</tr>
<tr>
<td>Market Penetration / Pre-emptive pricing</td>
<td>Setting price so low that a new competitor can not enter the market</td>
<td>Long distance service price war.</td>
</tr>
<tr>
<td>Leader vs. Follower</td>
<td>Leader sets price for followers to copy.</td>
<td>IBM determine the price of mainframe market</td>
</tr>
</tbody>
</table>

Source: authors.

The five-force analysis indicates that the current competition among the e-learning education providers is low to mediocre. From the perspective of the product adoption life cycle, however, e-learning is in the early adoption stage. To raise awareness and promote its programs, NTC could pursue the cost-based pricing strategy, which focuses on low prices, though quality could be compromised. The competition is expected to increase in the near future and education consumers will require more high quality content and an advanced technological learning environment. During this time, NTC should use the good-value pricing strategy, which emphasizes high quality rather than low price.

Price discrimination in different geographic or consumer markets is also an effective marketing tactic. NTC could charge more to European or North American students who are less interested in being physically present at a Canadian school, compared to Pacific-Asian students. NTC has to charge less for its e-learning programs.
to students from the Asia-Pacific region because they are less receptive to online learning. In developing countries, students may be unable to pay the prices that would be acceptable in North America.

Prices for business or professional programs could be higher than for language programs because the students of business or professional training are usually working and are willing to pay for the flexibility of e-learning. In contrast, prices for language programs would have to be lower as international students would be forgoing the travel experience.

NTC could also exploit two other pricing strategies to enhance its profit. It could adopt a ‘Commodity Bundling’ pricing strategy by bundling different programs into one package. This would increase the sales of programs to a variety of student consumers who may differently evaluate individual programs. The other strategy is that of Block Pricing, which is the packaging of identical programs together and selling them to corporate customers at a discount price. Given the low marginal cost of e-learning programs, both pricing strategies would be able to achieve higher revenues and profit.

6.1.3.3 Promotion

According to investorwords.com, promotion is an activity, such as a sale or advertising campaign, designed to increase the visibility or sales of a product. The sales or advertising campaign can be delivered through various channels such as demo fairs, open houses, e-mail, surface mail, brochures, or Web sites. Since NTC does not have the financial resources to launch a world-wide marketing campaign, a careful screening process is needed. For NTC, its marketing campaign should accomplish three goals:
- Raise awareness of NTC's language, business, and IT programs
- Continuously pursue its corporate branding
- Change the perception that e-learning is only a supplement to in-class learning

To accomplish these goals, NTC must carefully select its marketing channels. According to a survey conducted by *Language Travel Magazine*, word-of-mouth recommendations play an important role in the recruitment of overseas students to Canada. Other effective forms for reaching students are summarized in Figure 23.

**Figure 15 How Do Students find their Programs?**

![Pie chart showing how students find their programs]

Source: authors, compiled from the works of *Language Travel Magazine*, Status: Canada 2002.

As shown in Figure 16, of students, 43% find their programs through friends or relatives, and 32% find their programs from the recommendation of agents. Reputation is hard-earned, but it can be greatly enhanced by advertising, endorsement by celebrities, PR, and editorial write-ups in newspapers and magazines in target markets. To benefit from word-of-mouth recommendations, NTC must offer quality programs at a reasonable price. NTC must continue working with agents, who can help to promote NTC's e-learning programs to students.
6.1.3.4 Place

Place involves making goods and services in the right quantities and having them available to customers when they want them. In an ideal situation, under- or over-supply will not be an issue, however, in the real world, many companies are continuously struggling with logistics and inventory problems even with careful management of distribution channels. As an online learning service provider, NTC can avoid many of the traditional supply chain issues. Since NTC will deliver online programs across continents, interconnection and network bottleneck issues may have a direct impact on the delivery quality. To ensure access quality in targeted regions, NTC will need to deploy servers in major cities in North America and the Pacific Asia countries. In addition, NTC will still need to develop relationships with local agencies in those countries, not just to recruit students, but also to provide physical contacts for online students, particularly in the early stages of offering online programs.

6.2 Technology Implementation

E-learning technological implementation consists of many complex processes, including system analysis, design, development, testing, deployment, and e-learning service launch. As e-learning software and service industries mature with increasingly quality products and services, more and more institutions and corporate customers are seeking quicker, simpler, yet more cost-effective ways to implement e-learning. The following sections describe and evaluate three methods of implementing e-learning, as is widely adopted by non-technical e-learning service providers. The most feasible option
should consider NTC’s current situation and capabilities and align to NTC’s long-term goal.

6.2.1 E-learning Technology Implementation Methods

1) In-house Method

By the in-house method, an institution or company exploits internal technical resources or external consultation to build an e-learning environment upon its own IT infrastructure. Unlike software companies that build software from the ground up, many institutions and companies prefer to purchase a license for existing e-learning software platforms. Activities that are involved with the in-house method may include purchasing hardware and software to build infrastructure, selecting and purchasing e-learning software as an e-learning platform, customization, ongoing daily maintenance, and system updates.

Advantages

- Retention of management control
- Retention of Institutional Knowledge
- Retention of control of Intellectual Property Rights (IPR)
- Improved internal IT infrastructure
- Higher profitability when benefiting from scale of economies
- Better financial evaluation with entire ownership of e-learning Web site
- Capability of providing hosting service
- Improved reputation
Disadvantages

- Much higher start up cost
- Higher maintenance cost
- Lack of available skills
- Complicated management and administration
- Increased risk
- Slow reaction to adapt to changes in the market or industry

2) Outsourcing / Hosting Method

An increasing number of companies are outsourcing their IT functions. In the education and training sectors, many schools that do not have an adequate IT infrastructure to host e-learning system, can host their online programs with the other online education service providers and outsource the associated IT activities to the hosting online education service providers. With the outsourcing / hosting method, institutions and companies create and upload their programs to the hosts, and the programs are then delivered under the name of the schools and companies that provide the content.

Advantages

- Much lower start up cost
- Cost reduction in maintenance and administration
- High profitability for small-scale operations
- Availability of skilled people
- Less risk
- Ability to handle peaks in demand
Disadvantages

- Loss of management control
- Loss of institutional knowledge
- No enhancement to NTC campus infrastructure
- More expensive at higher volumes of service
- Difficulties in proving estimates
- Uncontrollable service quality
- Need to be hooked up by host
- High dependency on host
- Loss of operational flexibility
- Weakens corporate brand
- Poor financial evaluation

3) Partnership Method

The partnership model is a hybrid of the in-house and outsourcing methods and could be either a joint venture or a strategic alliance. Each member of the joint organization shares the investment, responsibilities, ownership, and return. The partnership established between an IT company and an institute is regarded as an ideal combination to provide e-learning service.

Advantages

- Lower start-up cost
- Shared ownership
- Shared management control
- Shared institutional knowledge
- Exploiting core competencies of each member
- Shared risk
Disadvantages

- Mutual dependency
- Slow decision-making process
- Possible conflict of culture, interests, and goals
- Complex agreements and legal documentation

6.2.2 Suitable Implementation Method for NTC

As NTC lacks knowledge and experience with the technology associated with e-learning, it is suggested that NTC should seek help from outside its organization.

Possible implementation methods for NTC are outsourcing, or forming a joint venture / strategic alliance. These alternatives would allow NTC to focus on its own competency -- the educational program. In the long-run, however, NTC should pursue the joint venture / strategic alliance method because:

1) Outsourcing technical activities will incur higher variable costs than would the joint venture/strategic alliance option because hosting companies will charge on the basis of per-user or the volume of usage. The outsourcing model will become more costly as NTC’s student number grows. In the long-run, a joint venture and strategic alliance strategy will be more profitable for NTC.

2) By outsourcing, NTC’s fate will rely on the viability of host’s business. This could be a risky option, particularly in an uncertain economic environment.

3) A joint venture or a strategic alliance would give NTC partial ownership of the e-learning infrastructure and would therefore address the above-mentioned issues.
In addition, a joint venture / strategic alliance strategy would enhance NTC’s IT infrastructure, to align with NTC’s long-term goal.

6.2.3 Selection of E-learning Platforms

For institutes or companies that implement e-learning on their existing IT infrastructure, the selected e-learning platform is the determining factor for the features and quality, which the adopters will deliver.

6.2.3.1 Dominate E-learning Products

Within the industry value chain, e-learning vendors are categorized into three types: content, technology, and service providers. The technology section is comprised of hundreds of software companies that focus on one, many, or all of the LMS, LCMS, VLE, and MLE.

In the educational sector, BlackBoard and WebCT have the dominant market shares in the VLE. Docent’s LMS, Saba Learning: Enterprise Edition, Aspen LMS, eCollege and IntraLearn SME are regarded as the more popular LMS / LCMS products in the professional and corporate training sector.

6.2.3.2 VLE and LMS / LCMS

VLE distinguishes itself from ordinary LMS / LCMS by its sophisticated virtual campus and student administration functions. Compared to LMS / CLMS, VLE has an equivalent or superior ability for delivering corporate and professional training programs. Thus, VLE is a suitable e-learning platform for schools such as NTC, which provide both education and training program to students.
6.2.3.3 E-learning Product Evaluation

The e-learning product evaluation methods vary across evaluators with different criteria. After research of many well-known products, a list of criteria focusing on e-learning product features is described:

- **Learner Tools**: Discussion Forums, File Exchange, Internal E-mail, Online Journal / Notes
- **Productivity Tools**: Bookmarks, New User Orientation, Searching Within Course, Self-progress Review, and Work Offline / Synchronize
- **Real-time Tools**: Application Sharing, Real-time Chat, Video Services, Whiteboard
- **Student Involvement Tools**: Group work, Self-assessment
- **Administration**: Optional Extras, Registration
- **Curriculum Tools**: Course Layout Templates, Curriculum Management, Customized Look and Feel, Instructional Design Tools, Automated Testing and Scoring, Course Management, Online Grading Tools, Student Tracking
- **Technical requirement**: OS, Database, Browser
- **Cost**: Price of core module, consulting charge

6.2.3.4 BlackBoard™ vs. WebCT™

WebCT and BlackBoard are considered as two of the most widely used commercial VLEs. Each has around 2,500 global users (Martin and Jennings, 2002). Even though they are much more expensive than other VLE of the competitors, typically, they are the two finalists in the product-screening processes performed by school buyers. Appendix 5
provides details about both products. Appendix 6 takes a step further and compares BlackBoard™ and WebCT™ according to the criteria discussed in Section 7.2.3.3.

To summarize, BlackBoard is more flexible and emphasizes group working more. Thus, BlackBoard is more suitable for independent and collaborative learning. In contrast, WebCT has a more rigid structure with fully embedded support tools and therefore, would be appropriate for more guided, and less independent learning. While WebCT possesses more functionality than does BlackBoard, BlackBoard is perceived to be easier to use.

6.2.3.5 BlackBoard and NTC

NTC will be positioned as a learning provider offering short, practical, and just-in-time programs. For this purpose, BlackBoard is more flexible and easier for NTC to use than WebCT, and would be considered as a more suitable e-learning platform for NTC.

6.3 Financial Viability

Three financial analysis tools Total Cost of Ownership (TCO), Net Present Value (NPV), and Return on Investment (ROI) are used to evaluate the financial viability of NTC’s e-learning business initiative. For comparison, scenarios corresponding to three implementation methods are used in the financial evaluation. A number of assumptions about future costs and revenues are made.

6.3.1 Key Facts

1) The projection spans a five-year term starting in 2004 and is conservative in its estimates.
2) BlackBoard will be used as NTC’s e-learning platform.

3) BlackBoard Pricing: BlackBoard’s e-learning suite includes three modules, which are essential for establishing an e-learning platform. Table 23 exhibits the quotation on each module from BlackBoard. The prices of Learning System and Portal System are based on the capacity of 2000 full-time enrollment (FTE) students.

Table 23 BlackBoard Prices

<table>
<thead>
<tr>
<th>Modules</th>
<th>CDN$ (annually)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Learning System (0 to 2000 FTE):</td>
<td>25,000</td>
</tr>
<tr>
<td>Portal System (0 to 2000 FTE):</td>
<td>15,000</td>
</tr>
<tr>
<td>Transaction System:</td>
<td>150,000</td>
</tr>
<tr>
<td><strong>Total:</strong></td>
<td><strong>190,000</strong></td>
</tr>
</tbody>
</table>

Source: authors.

6.3.2 Key Assumptions

Cost

1) The TCO includes all the expenditures to establish and maintain the e-learning business unit in five years. They include software, hardware, development, customization and salaries for participating personnel.

2) System infrastructure is designed to accommodate 10,000 users. To provide high availability, the infrastructure is equipped with full redundancy.

3) NTC will provide 10 new programs every year. Each program costs CDN$ 30k to generate.

5) In the outsourced model, costs of hardware and software are on NTC’s partner. Thus these costs are not relevant to the NPV, TCO and ROI calculation for NTC.

6) In the partnership model, only the cost of content creation, staff salary is charged to NTC. Other costs are borne by the technical partner.
7) Overhead and marketing cost accounts for 20% of revenue.

Revenue

1) Each program lasts 3 months and is priced at CDN$ 1,000. NTC will be selling 2,000 course units in the first year. Sales are expected to grow by an annual rate of 20%.

2) In the in-house model, revenue is generated by sales of both courses and hosting service. Thirty hosting customers are projected for the first year, and sales are expected to increase by 20% per year. The annual hosting fee is CDN$ 30,000 per customer.

3) In the partnership model, NTC is assumed to receive 60% of the total revenue by agreement.

6.3.3 Results of Financial Analysis

All three scenarios indicate positive NPV and acceptable ROI. The results of Cost of the first year, TCO, NPV and ROI are shown in Table 24. The comparison is seen in Figures 17 and 18 and details of the data and calculation processes are presented in Appendix 5.

The in-house model has the largest absolute NPV, but requires considerably more investment and appears to be the riskiest option. The in-house model gives the best overall financial results as it also has the highest ROI. The partnership model results in the lowest NPV, yet requires the lowest level of investment. The partnership model is thus preferred because it has an acceptable ROI, the lowest TCO, and shares the risk with the joint-venture partner. This finding supports the selection of the implementation method.
Table 24 Results of Financial Analysis

<table>
<thead>
<tr>
<th></th>
<th>In-house model</th>
<th>Outsourced Model</th>
<th>Partnership Model</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost of the 1st Year</td>
<td>$2,030</td>
<td>$1,670</td>
<td>$1,110</td>
</tr>
<tr>
<td>TCO</td>
<td>$7,176</td>
<td>$6,296</td>
<td>$4,490</td>
</tr>
<tr>
<td>NPV</td>
<td>$6,212</td>
<td>$4,003</td>
<td>$3,542</td>
</tr>
<tr>
<td>ROI</td>
<td>87%</td>
<td>64%</td>
<td>79%</td>
</tr>
</tbody>
</table>

Source: authors.

Figure 16 TCO and NPV

Source: authors.
6.4 Summary of E-learning Strategies

Due to the maturity of the current market, NTC is recommended to diversify its business by entering the e-learning market with new training programs. E-learning is a new way of delivering educational products and is considered the most cost-effective way for NTC to grow and eventually become a private university.

NTC needs to position itself as a private school providing trendy, practical and just-in-time business, IT, and language programs to the market, which is determined to be the North American and Pacific Asian areas.

This chapter approaches the marketing implementation through the 4Ps framework. Besides existing face-to-face language programs, NTC should add online language and training programs to its product and service lines. NTC needs to emphasize its programs and services through corporate branding, which would involve a total effort of the whole organization. Since NTC will be offering a variety of programs to different customers, pricing strategies should be flexible to satisfy the needs of different customers.
Specifically, NTC should follow the good value pricing strategy, as well as use price
discrimination and bundling. The most effective way of promotion has been shown to be
through word-of-mouth. The primary issue for place is the location of the servers, which
could affect the quality of program delivery.

Given its long-term goals, NTC should exploit e-learning to enhance its IT
infrastructure and program offerings. Since NTC does not yet have the expertise in e-
learning technology, the school is reluctant to establish an e-learning infrastructure
entirely based on its own resources. Instead, NTC should enter this market as part of a
joint venture or strategic alliance with a technical company. This strategy would enable
NTC to quickly enter the new market, yet reserve its autonomy.

Among the numerous products, BlackBoard™ is recommended as the most suitable
e-learning platform for use by NTC. The hardware and software costs of a BlackBoard e-
learning suite solution, which is able to accommodate 2000 students, is around
CDN$390,000.

Based on the cost quotation from BlackBoard™ and a number of conservative
assumptions, TCO, NPV and ROI of the e-learning initiative are CDN$1,110,000,
CDN$4,490,000 and 79% respectively. The financial analysis verifies that NTC’s e-
learning initiative would be viable to sustain its growth.
Chapter 7  Conclusion

NTC’s revenues and profits have been dropping for the past two years. In noticing the trend for players in the education and training sectors to adopt e-learning, NTC’s top executives have put forward e-learning as a possible turnaround strategy. The authors of this paper were brought into NTC to conduct an e-learning feasibility research study, with the purpose to: 1) determine and analyze NTC and the e-learning technology, industry, and market; 2) verify if e-learning would be the most appropriate turnaround strategy for NTC to use; and 3) devise suitable implementation strategies, position, marketing, and technology strategies.

NTC is a typical traditional language school characterized by its flat organization, weak IT infrastructure and narrow program offerings. The college loses both bargaining power and potential profits to the student agents, who refer potential students to the school. Occupying a superior location in the downtown region of two cities is one of the few remaining effective competition advantages that NTC has over other schools. NTC’s long-term goal is to become a private university. To achieve this goal, the college must sustain a continuous growth in revenue, profit, and size, to meet the accreditation requirements of the PPSEC.

NTC’s revenue and profit has dropped over the past two years because: 1) the market growth stalled after a peak of language student wave had taken place in the second half of the 1990’s; 2) the language industry indicated its vulnerability to the international environment as a result of global unrest, terrorism, and economic downturn; and 3) the
obsolete strategies of NTC and its weak infrastructure increasingly became liabilities in
the new knowledge economy.

Unlike the language teaching industry, the overall education and training sectors
indicate an encouraging growth despite the softening economy. IDC Canada has forecast
that the global e-learning market is likely to grow continuously to the $25 billion plateau
by the year 2006. Even though Porter’s Five Force Analysis reveals that the e-learning
industry will have intensive competition and many substitutes, the low bargaining power
of buyers, suppliers, and new entrants have mitigated these negative forces. To
summarize, the market potential and the fragmented industry are attractive to NTC.

Five strategic alternatives were identified as possibly helping NTC to sustain its
growth. They are:

1) penetrating the current language teaching market
2) expanding program offerings by adding corporate training programs
3) extending offerings to the education and training market with its current language
   training programs
4) diversifying NTC’s business by adding online training programs to enter the e-
   learning market
5) vertically integrating NTC’s current language teaching business with other
   educational service such as student agencies.

After screening the alternatives, using NTC’s internal and external condition,
diversification is selected as the most suitable growth strategy for NTC for several
reasons. First, the tremendous opportunities and potentials in education and training
market are able to sustain NTC’s long-term growth. Second, e-learning, powered by the
Internet, allows NTC to provide programs with anywhere, anytime, and anyone features.
NTC will be able to reach new markets, especially Asian markets, where learners are able to access the contents from anywhere and at anytime without having to leave their work and travel to Canada. The result is a win-win situation where the demands of customers are met and NTC can begin tapping the unexploited market. Third, e-learning will be the cost-effective and efficient way to enhance NTC’s institutional infrastructure and broaden its program offerings. This will help NTC in its application for accreditation to become a private university. Last, by diversifying its business, NTC is hedging itself from future negative external impacts such as the September 11th terrorist attacks or the SARS outbreak.

The success of NTC’s e-learning initiative will rely on the business strategy selection and implementation. NTC needs to position itself as a private school providing trendy, practical, and just-in-time programs to the market. The new positioning strategy will require a continuous corporate branding process, emphasizing e-learning features internally to staff and externally to consumers. This strategy will require continuous marketing efforts.

The two target markets for NTC are the US and Asia-Pacific. The current e-learning market is relatively smaller when compared to the overall education and training market, however, the market is forecast to grow into a $15 billion business by the year 2007. NTC should enter new markets immediately, after hosting its current and new programs online. The North American and Pacific Asian learning markets are more receptive to e-learning. In North America, NTC should campaign its current business programs and newly developed IT training programs. In the Pacific Asia region, NTC should promote its business, IT, and language programs.
Since NTC is a traditional private language school, IT is not its core competency. Moreover, the importance of establishing IT infrastructure has been overlooked at NTC. To avoid such weakness in the college's IT capabilities and leverage its competency in education, NTC should partner with an IT company to establish its e-learning business. Featuring superior flexibility and a comprehensive suite solution, the BlackBoard e-learning suite is selected as a suitable platform for NTC to manage its school and deliver online programs.
### APPENDICES

**Appendix 1**  Individual E-learning Stock Performance on NASDAQ

**Year 2003**  
Updated: May 21, 2003

<table>
<thead>
<tr>
<th>Stock Symbol</th>
<th>Company Name</th>
<th>1/1/03</th>
<th>1/1/03 5/21/2003</th>
<th>Stock Price $/Sh</th>
<th>How Much Earned or Lost for 2003</th>
<th>IPO Date</th>
<th>Company Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>AREL</td>
<td>Communic'tn</td>
<td>0.20</td>
<td>$2,000</td>
<td>0.51</td>
<td>$5,100.00</td>
<td>$3,100.00</td>
<td>155.00%</td>
</tr>
<tr>
<td>CLKS</td>
<td>Click2Learn</td>
<td>0.75</td>
<td>$2,000</td>
<td>1.50</td>
<td>$4,000.00</td>
<td>$2,000.00</td>
<td>100.00%</td>
</tr>
<tr>
<td>CTRA</td>
<td>Centra</td>
<td>1.00</td>
<td>$2,000</td>
<td>2.50</td>
<td>$5,000.00</td>
<td>$3,000.00</td>
<td>150.00%</td>
</tr>
<tr>
<td>DCNT</td>
<td>Docent</td>
<td>2.85</td>
<td>$2,000</td>
<td>3.35</td>
<td>$2,350.88</td>
<td>$350.88</td>
<td>17.54%</td>
</tr>
<tr>
<td>DTHK</td>
<td>DigitalThink</td>
<td>1.75</td>
<td>$2,000</td>
<td>3.14</td>
<td>$3,590.62 $1,590.62</td>
<td>79.53%</td>
<td>25 Feb 2000</td>
</tr>
<tr>
<td>ECLG</td>
<td>e-College</td>
<td>3.45</td>
<td>$2,000</td>
<td>7.35</td>
<td>$4,260.87 $2,260.87</td>
<td>113.04%</td>
<td>1999 Academic</td>
</tr>
<tr>
<td>EDT</td>
<td>EDT Learning</td>
<td>0.30</td>
<td>$2,000</td>
<td>0.30</td>
<td>$2,000.00</td>
<td>$0.00</td>
<td>0.00%</td>
</tr>
<tr>
<td>FMDAY</td>
<td>Futuremedia</td>
<td>0.14</td>
<td>$2,000</td>
<td>0.14</td>
<td>$2,000.00</td>
<td>$0.00</td>
<td>0.00%</td>
</tr>
<tr>
<td>HSTM</td>
<td>HealthStream</td>
<td>1.41</td>
<td>$2,000</td>
<td>1.50</td>
<td>$2,127.66</td>
<td>$127.66</td>
<td>6.38%</td>
</tr>
<tr>
<td>LTWC.OB</td>
<td>LTWC</td>
<td>0.06</td>
<td>$2,000</td>
<td>0.03</td>
<td>$1,096.35</td>
<td>$903.65</td>
<td>45.18%</td>
</tr>
<tr>
<td>MACR</td>
<td>Macromedia</td>
<td>10.65</td>
<td>$2,000</td>
<td>16.95</td>
<td>$3,183.10 $1,183.10</td>
<td>59.15%</td>
<td>5 Jan 1993</td>
</tr>
<tr>
<td>MNTEF.OBM</td>
<td>Mentergy</td>
<td>0.15</td>
<td>$2,000</td>
<td>0.07</td>
<td>$933.33</td>
<td>$1,066.67</td>
<td>53.33%</td>
</tr>
<tr>
<td>POVTE.OB</td>
<td>Provant</td>
<td>0.16</td>
<td>$2,000</td>
<td>0.10</td>
<td>$1,250.00</td>
<td>$750.00</td>
<td>37.50%</td>
</tr>
<tr>
<td>PVTE.OB</td>
<td>Provant</td>
<td>0.16</td>
<td>$2,000</td>
<td>0.10</td>
<td>$1,250.00</td>
<td>$750.00</td>
<td>37.50%</td>
</tr>
<tr>
<td>RLRN</td>
<td>Renaissance Learning</td>
<td>18.90</td>
<td>$2,000</td>
<td>19.75</td>
<td>$2,089.95</td>
<td>$89.95</td>
<td>4.50%</td>
</tr>
<tr>
<td>RKWK</td>
<td>Networks</td>
<td>3.81</td>
<td>$2,000</td>
<td>7.30</td>
<td>$3,832.02 $1,832.02</td>
<td>91.60%</td>
<td>1997 Provider</td>
</tr>
</tbody>
</table>

118
<table>
<thead>
<tr>
<th>System 19 Integrators, Jun Custom</th>
</tr>
</thead>
<tbody>
<tr>
<td>RWD Technologies 1.55 $2,000 2.06 $2,658.06 $658.06 32.90% 1997 Development</td>
</tr>
<tr>
<td>SABAD Saba 4.24 $2,000 4.06 $1,915.09 $84.91 -4.25% 1997 System Provider</td>
</tr>
<tr>
<td>SKIL Skillsoft 2.75 $2,000 4.00 $2,909.09 $909.09 45.45% 1995 Development</td>
</tr>
<tr>
<td>TNR Tenera 0.12 $2,000 0.18 $3,000.00 $1,000.00 50.00% 1992 Content Provider, Mar content provider</td>
</tr>
<tr>
<td>Thomson Corp 27.53 $2,000 30.40 $2,208.50 $208.50 10.42% 2002 Custom</td>
</tr>
<tr>
<td>TUTR Plato Learning 5.94 $2,000 4.49 $1,511.78 $488.22 24.41% 1992 Custom</td>
</tr>
<tr>
<td>UOPX U of Phoenix Online 35.84 $2,000 43.00 $2,399.55 $399.55 19.98% 2000 Online Degree Programs</td>
</tr>
<tr>
<td>VCMP VCampus Corp 3.81 $2,000 2.90 $1,522.31 $477.69 23.88% 1996 Hosted Learning</td>
</tr>
<tr>
<td>WEBX Webex 15.00 $2,000 10.56 $1,408.00 $592.00 29.60% 2000 Provider</td>
</tr>
</tbody>
</table>

Appendix 2  E-learning Industry Value Chain
Markets

- Delivery Systems
- Collaboration tools
- Live learning
- Virtual classroom
- Course delivery
- Meeting and collaboration tools
- Audio/video over IP

Enterprise Systems
- Learning Management Systems (LMS)
- Learning Content Management Systems (LCMS)
- Knowledge Management (KM)

Delivery Collaboration Tools
- Community portal
- Business portal
- Domain specific portal
- ASP portal
- Intranet portal
- Affiliation portal

Portals Integrators Distributors
- Consulting
- Co-integration
- Integration of multi-source
- Content vertical market
distribution
- International distribution

Services
- Consulting on strategy and deployment
- Instructional design
- Media design and development
- Custom content development
- Coaching, mentoring, instructing
- Teacher development
- Assessment & testing
- Localization & globalization
- Technical & supporting services

Authoring & Development Tools
- Authoring tools
- Capture & edit
- Multimedia
- Creation tools
- Design tools
- HTML, XML
- Java, Flash

Contents
- Technology
- Business
- Social sciences
- Health & medicines
- Personal interest
- Education
- Science
- Vocational
- Arts
- Off-the-shelf
- Custom
- Customized

Learning Specific Hardware
- Client/server
- Peer-to-peer
- Wireless
- PDA/Cell Phone

Source: Authors, compiled from the works Paul Stacey, 2002.
Appendix 3  NTC Language Schools Competitors
<table>
<thead>
<tr>
<th>School Name</th>
<th>Location</th>
<th>Program Offering</th>
<th>Fees</th>
<th>Remarks</th>
<th>E-Learning Availability</th>
</tr>
</thead>
<tbody>
<tr>
<td>British Columbia College</td>
<td>Vancouver</td>
<td>ESL, TOEIC/TOEFL, TESL, Business English, Hotel Management and Youth</td>
<td>Full-Time</td>
<td>Home stay</td>
<td>No</td>
</tr>
<tr>
<td>Canada as Second Language</td>
<td></td>
<td>Practical English, Business English TOEIC, Internship, TOEFL, Cambridge 1st Cert. FCE, TESOL and one-on-one tutoring</td>
<td>Full-Time $315/week Part-Time $205/week</td>
<td>Home stay, Apartment and Residence</td>
<td>No</td>
</tr>
<tr>
<td>Institute</td>
<td>Vancouver</td>
<td>TOEFL and TOEIC, English Development, University Preparation Program and Journalism Communication English and Afternoon English option courses</td>
<td>Full Time $900/month</td>
<td>Home stay</td>
<td>No</td>
</tr>
<tr>
<td>Provincial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>International College</td>
<td>Vancouver</td>
<td>ESL Program, Business Career Programs, Business English, Youth Programs</td>
<td>N/A</td>
<td>Home stay, Branch office in Korea and Japan</td>
<td>No</td>
</tr>
<tr>
<td>CREO College</td>
<td>Vancouver</td>
<td>English Program with different levels</td>
<td>$1,280 per month</td>
<td>Home stay</td>
<td>No</td>
</tr>
<tr>
<td>EJ Canada College</td>
<td>Vancouver</td>
<td>ESL, TESL, e-Business and Expert Pronunciation</td>
<td>Full Time $1,100~$1,200</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>ELS Language Center</td>
<td>Vancouver &amp; Toronto</td>
<td>Comprehensive English Program, Private Lessons, Specialty Class, Business English and Pronunciation Course</td>
<td>$1,135 per month</td>
<td>Whistler</td>
<td>No</td>
</tr>
<tr>
<td>English Bay College</td>
<td>Vancouver</td>
<td>Conversation and grammar, Business English, TOEFL preparation, wilderness English, Paid business practicum, English for lawyers</td>
<td>$1,100 per month</td>
<td>Home stay</td>
<td>No</td>
</tr>
<tr>
<td>VES International English and Sports</td>
<td>Vancouver 7 locations across 7 locations across Canada</td>
<td>Study of English, Conversation and Pronunciation, Listening Comprehension, TOEFL and Business English</td>
<td>Full Time $800 / 100 hrs, Part-Time $500</td>
<td></td>
<td>No</td>
</tr>
<tr>
<td>GEOS Canada</td>
<td>Canada</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grandview College</td>
<td>Surrey</td>
<td>English, TOEFL, TOEIC and English in one-on-one lesson and semi-computer assisted private</td>
<td>Full Time $1,320 per month, Part-</td>
<td>Home stay</td>
<td>No</td>
</tr>
<tr>
<td>Inlingua Vancouver</td>
<td>Vancouver</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Institution</td>
<td>Location</td>
<td>Programs</td>
<td>Tuition</td>
<td>Services</td>
<td>Notes</td>
</tr>
<tr>
<td>--------------------------------------------------</td>
<td>----------------</td>
<td>-----------------------------------</td>
<td>------------------------------</td>
<td>---------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td>International Language Learning Center</td>
<td>Canada</td>
<td>Language programs, TOEFL, TOEIC and Cambridge preparation programs</td>
<td>Full Time $920/month, Part-Time $520/month</td>
<td>Child programs No</td>
<td></td>
</tr>
<tr>
<td>Language Studies</td>
<td>Vancouver &amp; Toronto</td>
<td>General English, Exams &amp; Certificate, Executive Courses and Teacher Training English preparation programs, TOEIC, TOEFL, Cambridge Programs, Speaking Programs,</td>
<td>$2,555 for 200 hrs/month</td>
<td>Activities and home stay programs CD Self Study software</td>
<td></td>
</tr>
<tr>
<td>Pacific Gateway International College</td>
<td>Vancouver</td>
<td>Business English</td>
<td>N/A</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Northwest Language Studies</td>
<td>Vancouver</td>
<td>General English programs, skills development programs, career development diploma and professional English programs</td>
<td>Full Time $900/month</td>
<td>N/A</td>
<td>No</td>
</tr>
<tr>
<td>Robson College Royal Canadian College</td>
<td>Vancouver</td>
<td>TEFL Diploma Program, Listening Program High School Academic Program, ESL, University Transfer Program</td>
<td>N/A</td>
<td>Home stay No</td>
<td>No</td>
</tr>
<tr>
<td>Vancouver English Center</td>
<td>Vancouver &amp; Mexico</td>
<td>ESL, TOEIC/TOEFL, TESL, Business English</td>
<td>$3,500 (4 months) None</td>
<td>Home stay No</td>
<td>No</td>
</tr>
<tr>
<td>Van West College</td>
<td>Vancouver</td>
<td>Intensive English Program</td>
<td>$640/month Full Time $1,080/month, part-time $640/month</td>
<td>Home stay &amp; Travel No</td>
<td>No</td>
</tr>
</tbody>
</table>

Source: authors, compiled from the works of [http://dir.yahoo.com/Rgional/Countries/Canada/Provinces_and_Territories/British_Columbia/Regional_Districts/Greater_Vancouver/Cities/Vancouver/Education/Language_Schools/English_as_a_Second_Language/](http://dir.yahoo.com/Rgional/Countries/Canada/Provinces_and_Territories/British_Columbia/Regional_Districts/Greater_Vancouver/Cities/Vancouver/Education/Language_Schools/English_as_a_Second_Language/) and various Web sites
Appendix 4  NTC E-learning Financial Analysis
<table>
<thead>
<tr>
<th>In-house model</th>
<th>Cost center</th>
<th>Items</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Infrastructure</td>
<td>Hardware (20% hardware update yearly)</td>
<td>$200</td>
<td>$40</td>
<td>$40</td>
<td>$40</td>
<td>$40</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Software license (Yearly flat)</td>
<td>$190</td>
<td>$190</td>
<td>$190</td>
<td>$190</td>
<td>$190</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Software customization (2 person years)</td>
<td>$120</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Implementation</td>
<td>Additional application development (1 person year)</td>
<td>$60</td>
<td>$60</td>
<td>$60</td>
<td>$60</td>
<td>$60</td>
</tr>
<tr>
<td></td>
<td>Contents</td>
<td>Contents creation (10 programs per year, $30k per program)</td>
<td>$300</td>
<td>$300</td>
<td>$300</td>
<td>$300</td>
<td>$300</td>
</tr>
<tr>
<td></td>
<td>Maintenance</td>
<td>Software update (Yearly Average)</td>
<td>$10</td>
<td>$10</td>
<td>$10</td>
<td>$10</td>
<td>$10</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vendor service charge (yearly flat)</td>
<td>$100</td>
<td>$100</td>
<td>$100</td>
<td>$100</td>
<td>$100</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Salary of 2 technical expert ($70k/person)</td>
<td>$140</td>
<td>$140</td>
<td>$140</td>
<td>$140</td>
<td>$140</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Internet access service charge (Yearly flat)</td>
<td>$10</td>
<td>$10</td>
<td>$10</td>
<td>$10</td>
<td>$10</td>
</tr>
<tr>
<td></td>
<td>Staff</td>
<td>Salary of 20 staff ($50k/person) at 20% growth</td>
<td>$500</td>
<td>$500</td>
<td>$500</td>
<td>$500</td>
<td>$500</td>
</tr>
<tr>
<td></td>
<td></td>
<td>20% of revenue</td>
<td>$400</td>
<td>$480</td>
<td>$576</td>
<td>$691</td>
<td>$829</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total cost for each year</td>
<td>$2,030</td>
<td>$1,830</td>
<td>$1,926</td>
<td>$2,041</td>
<td>$2,179</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Discount rate=12%</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PV of Cost</td>
<td>$7,176</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revenue</td>
<td>Revenue from course (1000 course sold; $1k per course; 20% of yearly sales growth)</td>
<td>$2,000</td>
<td>$2,400</td>
<td>$2,880</td>
<td>$3,456</td>
<td>$4,147</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Revenue from hosting (30 customers; $20k/cus at 20% of yearly growth)</td>
<td>$600</td>
<td>$720</td>
<td>$864</td>
<td>$1,037</td>
<td>$1,244</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total revenue for each year</td>
<td>$2,600</td>
<td>$3,120</td>
<td>$3,744</td>
<td>$4,493</td>
<td>$5,391</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PV of revenue</td>
<td>$13,388</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Hosting model</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------</td>
<td>---------------</td>
<td>----------------</td>
<td>----------------</td>
<td>----------------</td>
<td>----------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Implementation</td>
<td></td>
<td>$120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customization charge</td>
<td></td>
<td>$120</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content creation</td>
<td></td>
<td>$300</td>
<td>$300</td>
<td>$300</td>
<td>$300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maintenance</td>
<td>Hosting Charge: $30K/year</td>
<td>$30</td>
<td>$30</td>
<td>$30</td>
<td>$30</td>
<td>$30</td>
<td></td>
</tr>
<tr>
<td>Service charge</td>
<td>Service Charge $0.1k /person-course</td>
<td>$200</td>
<td>$240</td>
<td>$288</td>
<td>$346</td>
<td>$415</td>
<td></td>
</tr>
<tr>
<td>Staff</td>
<td>Salary of 20 staff($50k/person-year)</td>
<td>$500</td>
<td>$500</td>
<td>$500</td>
<td>$500</td>
<td>$500</td>
<td></td>
</tr>
<tr>
<td>Overhead/marketing</td>
<td>20% of revenue</td>
<td>$400</td>
<td>$480</td>
<td>$576</td>
<td>$691</td>
<td>$829</td>
<td></td>
</tr>
<tr>
<td>PV of Cost</td>
<td>PV of Cost= $6,296</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Revenue from course: (1000 course sold; $1k per course; 20% of yearly sales growth.)</td>
<td>$2,000</td>
<td>$2,400</td>
<td>$2,880</td>
<td>$3,456</td>
<td>$4,147</td>
<td></td>
</tr>
<tr>
<td>PV of revenue</td>
<td>PV of revenue $10,298</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NPV</td>
<td>NPV of revenue less NPV of cost $4,003</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<p>|                      | Partnership Model |                |                |                |                |
| Content creation     | contents creation (10 program per year) | 300 | 300 | 300 | 300 | 300 |
| Staff                | Salary of 10 staff ($50k/person-year) | 500 | 500 | 500 | 500 | 500 |
| Overhead/marketing   | 20% of revenue | $312.00 | $374.40 | $449.28 | $539.14 | $646.96 |
| Total cost           | Total cost | $1,112 | 1,174.4 | 1,249.28 | 1,339.136 | 1,446.963 |
| PV of Cost           | PV of cost $4,490.39 |                |                |                |                |
| Total revenue of web site | Total revenue of web site | $2,600.00 | $3,120.00 | $3,744.00 | $4,492.80 | $5,391.36 |
| Revenue              | Total revenue of NTC: 60% of total revenue of in-house model | $1,560.00 | $1,872.00 | $2,246.40 | $2,695.68 | $3,234.82 |</p>
<table>
<thead>
<tr>
<th>PV of Revenue</th>
<th>PV of revenue</th>
<th>$8,032.82</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPV</td>
<td>NPV of revenue less NPV of cost</td>
<td>$3,542.44</td>
</tr>
</tbody>
</table>

Note: The currency is in Canadian dollar.
Source: authors
Appendix 5  BlackBoard and WebCT

BlackBoard Inc.

BlackBoard Inc. is private enterprise held by a number of venture investors, media and technology companies. It provides e-learning solutions for higher education. BlackBoard headquarters are in Washington DC and the company has international offices in Australia, Spain, Germany, Greece, Netherlands and the UK with a total of 425 employees serving 2,400 customers.

BlackBoard provides almost a full range of e-learning products including BlackBoard Learning System, BlackBoard Community Portal System and BlackBoard Transaction System. Services include ASP Hosting Solutions, Support and Maintenance and Professional integration and training services. Figure 25 depicts the architecture of BlackBoard system.

WebCT Inc.

Very similar to BlackBoard, WebCT is a privately owned company, founded in 1997 and funded by venture capital and some strategic partners. WebCT is serving more than 2,500 institutions in 81 countries around the world with products incorporating 14 major world languages. Partnering with WebCT Learning Innovations Network, an infrastructure and content company, WebCT is able to provide solutions across the whole e-learning value chain.

Product lines include WebCT Campus Edition--Course Management and WebCT Vista—Academic Enterprise System. WebCT also provides ASP hosting service. Its products and services can be licensed separately or sold as a package.
## Appendix 6  BlackBoard vs. WebCT

<table>
<thead>
<tr>
<th>Learner Tools</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>BlackBoard 6</strong></td>
<td><strong>WebCT Vista 1.2</strong></td>
</tr>
<tr>
<td><strong>Productivity Tools</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Bookmarks</strong></td>
<td>Students can create bookmarks in a private folder.</td>
</tr>
<tr>
<td><strong>Calendar/Progress Review</strong></td>
<td>Students can view their completed and pending course readings and activities. Students can view their grades. Students can add items to and edit a ToDo list.</td>
</tr>
<tr>
<td>Instructors can post course-related events and announcements in the course calendar. The instructor can assign tasks by using the calendar and the instructor can enable an option so that the student can check their status at any point in a course. Students can check their grades on submitted assignments as well as compare their grades against the overall class performance. Students have a personal home page that lists all courses in which the student is enrolled and all course and system-wide events and tasks.</td>
<td></td>
</tr>
<tr>
<td><strong>Orientation/Help</strong></td>
<td>The system includes a product overview. Students can access a student manual, the product knowledge base, and the product reference center.</td>
</tr>
<tr>
<td>The system includes an online orientation course. Students can access context sensitive help for discussion forums and internal email.</td>
<td></td>
</tr>
<tr>
<td><strong>Searching Within Course</strong></td>
<td>Students can search all course content and chat or virtual classroom session recordings by name or dates.</td>
</tr>
<tr>
<td>Students can search all bookmarks, course notes, discussion threads, documents, email subject lines in their course as well as content held in the system content repository outside of their course. Students can constrain a search using filters.</td>
<td></td>
</tr>
<tr>
<td><strong>Work Offline/Synchronize</strong></td>
<td>Instructors can publish course content on a CD-ROM that can be linked to dynamically from within the online course or viewed offline.</td>
</tr>
<tr>
<td>Students can compile and download the content for an entire course into a format that can be printed or stored locally. Instructors can publish course content on a CD-ROM that can be linked to dynamically from within the online course or viewed offline. Upon re-entering a course, students have the option of resuming at the last page viewed.</td>
<td></td>
</tr>
</tbody>
</table>
### Learner Tools

#### Student Involvement Tools

<table>
<thead>
<tr>
<th>Groupwork</th>
<th>The software supports assigning students into groups by the instructor. Each group can have its own shared file exchange, private group discussion forum, synchronous tools, and group email list.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-assessment</td>
<td>The software can create practice tests that use the following types of questions: True/False, Fill in the Blank, Matching, Multiple Choice, Multiple Select, Ordering, and Short Answer/Essay. Questions can be imported from existing test banks or can be both built with the tool. The software can provide feedback; reveal detailed results and correct responses on a per question basis. Instructors can also create self-assessments that allow multiple submissions.</td>
</tr>
<tr>
<td>Student Community Building</td>
<td>Students can create online clubs, interest, and study groups at the system level.</td>
</tr>
<tr>
<td>Student Portfolios</td>
<td>Students can create a personal home page. Personal home pages may include their photo, personal information, and links to important websites.</td>
</tr>
</tbody>
</table>

#### Support Tools

<table>
<thead>
<tr>
<th>BlackBoard 6</th>
<th>WebCT Vista 1.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Authentication</td>
<td>Administrators can protect access to individual courses with a username and password. The system can also authenticate against an external LDAP server, NT domain server, Active Directory or using the Kerberos protocol.</td>
</tr>
</tbody>
</table>
Course Authorization

Instructors can assign different levels of access to their course based on the following pre-defined roles: instructors, students, designers, teaching assistants, tutors, and guests. Instructors or students may be assigned different roles in different courses. Instructors may also assign a user to an observer role to view the course activities of a particular student.

Hosted Services

The product provider offers a hosted system that includes managed software installation, redundant Internet connections, redundant and conditioned power, 24x7 monitoring, nightly tape backups, and a secure facility.

Registration Integration

Instructors can batch add students to a course using a delimited text file or students can self-register. The software (version 5 Level 2 and higher) supports data interchange with student information systems through an event-driven API or through their tool, which is based on scheduled system extracts. The system now supports the use of SOAP-based data integration. The system supports Secure Sockets Layer protocol.

Administrators can batch add students to the system using a delimited text file and then instructors can add students to their courses or students can self-register. Administrators can transfer student information bi-directionally between the system and an SIS. The software supports integration with SCT Banner, Campus Pipeline, or customized integration with other SIS or portal systems. The software support multiple organizational units or organizations within one server setup and each unit contains its own unique database of users and can be authenticated against a different source. The system has a password reminder option and students can maintain their own passwords. Administrators can set password length restrictions and require password changes after the initial logon and after a specified period of time. User logins can be encrypted with the Secure Sockets Layer protocol.
Layer transactions.

is compliant with the IMS Enterprise Specification for Student Data (Institution License only).

<table>
<thead>
<tr>
<th>Support Tools</th>
<th>BlackBoard 6</th>
<th>WebCT Vista 1.2</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Course Delivery Tools</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Automated Testing and Scoring</strong></td>
<td>Instructors can create true/false, multiple choice, ordering, fill-in-the-blank, matching, short answer/essay questions. Instructors can also import questions from existing test banks. Questions can contain images. Instructors can create different levels of feedback messages. Instructors can import questions from existing test banks. Instructors can also create survey questions. The system can randomize the questions in a test or can use selective release criteria. Instructors can set dates and times for when students must access tests. Instructors can set a time limit on a test. Instructors can use passwords to restrict access to tests. Instructors can use the Mathematics Markup Language equation editor to enable students to enter and edit mathematical notations. The system can randomize the questions in a test and the alternatives for multiple-choice questions, or can use selective release criteria. Instructors can set a time limit on a test. Instructors can set dates and times for when students can access tests. The system supports proctored exams. Instructors can override the automated scoring and determine how to communicate test results to students. Instructors can differentially weight tests and create grading rules.</td>
<td>Instructors can create automatically scored true/false, multiple choice, multiple answer, fill-in-the-blank, matching, calculated and short answer type questions. Instructors can also create essay type questions. Questions can contain images, video, other media files. Instructors can create feedback messages. Instructors can create personal, course specific or system wide test banks. Instructors can import questions from external test banks in the IMS QTI specification format. Instructors can use the Mathematics Markup Language equation editor to enable students to enter and edit mathematical notations. The system can randomize the questions in a test and the alternatives for multiple-choice questions, or can use selective release criteria. Instructors can set a time limit on a test. Instructors can set dates and times for when students can access tests. The system supports proctored exams. Instructors can override the automated scoring and determine how to communicate test results to students. Instructors can differentially weight tests and create grading rules.</td>
</tr>
<tr>
<td><strong>Course Management</strong></td>
<td>Instructors can selectively release assessments, announcements and other materials based on previous course activity or specific start and end dates. Instructors can specify start and stop dates for the entire course.</td>
<td>Instructors can selectively release course materials based on specific start and end dates. Instructors can personalize access to specific course materials and assessments based on access rights, group membership, previous course activity, student performance specific start and end dates, or other custom criteria. The system can synchronize course dates defined by the institutional calendar.</td>
</tr>
<tr>
<td><strong>Instructor</strong></td>
<td>Instructors can access an online</td>
<td>Instructors can access the online</td>
</tr>
<tr>
<td>Helpdesk</td>
<td>Instructor manual, product knowledge base, and reference center, and contact the technical support helpdesk if their organization purchased technical support.</td>
<td>Help manual, context sensitive help, and numerous instructor support communities to share information in a number of discipline-specific or general interest forums. Instructors can take a free online course, and subscribe to an instructor mailing list.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Online Grading Tools</td>
<td>Instructors can mark assignments, and short answer tests online. Instructors can add the grades for offline assignments to the online grade book. Instructors can view grades in the grade book by assignment, by student, and for all students on all assignments. Instructors can create import and export a comma-delimited version of the grade book from/to an external spreadsheet program. Instructors can provide feedback on all assignments through annotations. Instructors can search the grade book to find all students who meet a specific performance criteria, mark, or status such as exam completion. Instructors can manually edit all grades. Instructors can create a course grading scale that can employ either percentages, letter grades or pass/fail metrics. When an instructor adds an assignment to the course, the software automatically adds it to the grade book. Instructors can delegate the responsibility for grading assignments. The software automatically calculates the average grade on each assignment.</td>
<td>Instructors and teaching assistants can mark paragraph questions, and mark and return assignments turned in through the assignment drop box. Instructors can publish student submissions as examples for other students to see. Instructors can use the grade book for basic statistical analysis and final grade calculation. The grade book supports the creation of custom columns, which can contain either grade information or other instructor-determined details. The grade book can be exported and imported, and upon import the system will attempt to match up rows based on the student ID if it has been resorted outside of the system.</td>
</tr>
<tr>
<td>Student Tracking</td>
<td>Instructors can get reports showing the number of times and date on which each student accessed course content, discussion forums and assignments. Instructors can set a flag on individual course components to track the frequency with which students access those components.</td>
<td>Software tracks both student-centered information (first access date, most recent access date, histogram showing detailed access ratios to all parts of course for this student, conferencing tool readings and contributions, etc) and content-centered information (number of accesses to each page of content, average time spent on each page of content, etc). Information can optionally be released to students. In addition, the software provides information on usage and learner performance that is aggregated across an entire institution and can be grouped by course, program, department or other institutional</td>
</tr>
<tr>
<td>BlackBoard 6</td>
<td>WebCT Vista 1.2</td>
<td></td>
</tr>
<tr>
<td>-------------</td>
<td>----------------</td>
<td></td>
</tr>
<tr>
<td><strong>Support Tools</strong></td>
<td><strong>WebCT Vista 1.2</strong></td>
<td></td>
</tr>
<tr>
<td><strong>&gt; Curriculum Design</strong></td>
<td><strong>To comply with Section 508 of the US Rehabilitation Act, the software implements the following features:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Accessibility Compliance</strong></td>
<td>alt tags on all system images, collapsible menus, keyboard access to all utilities, and consistent use of form labels.</td>
<td></td>
</tr>
<tr>
<td><strong>Course Templates</strong></td>
<td>The software provides for the overall systems administrator enabling course functions that can then be incorporated into specific course templates by instructors.</td>
<td></td>
</tr>
<tr>
<td>Instructors can use templates to create course content. The templates include a rich text content editor. Instructors can categorize course content as announcements, calendar entries, course units, discussion forums, handouts, instructor biography, lecture notes, links, syllabus and course descriptions, tips, FAQs and resources.</td>
<td>Instructors can create new content templates, and clone and modify the default templates.</td>
<td></td>
</tr>
<tr>
<td><strong>Curriculum Management</strong></td>
<td>Content can be grouped into a learning path and linked to selective release criteria.</td>
<td></td>
</tr>
<tr>
<td><strong>Customized Look and Feel</strong></td>
<td>The system can support multiple institutions, departments, schools or other organizational units on a single server. Each unit can apply its own look and feel templates as</td>
<td></td>
</tr>
<tr>
<td>Institutions can apply their own institutional images, headers and footers across all courses. Instructors can change the navigation icons and color schemes.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

To comply with Section 508 of the US Rehabilitation Act, the software implements the following features:
- a tool for instructors to add alt tags to uploaded images
- alt tags on all system images
- data tables that are optimized for use with screen readers
- documentation to assist students and instructors in the use of the assistive technologies the software supports
- appropriately titled framesets that describe the functionality of the frames layout, and support for the JAWS screen reader technology.

Instructors can use templates to create course content. The templates include a rich text content editor. Instructors can categorize course content as announcements, calendar entries, course units, discussion forums, handouts, instructor biography, lecture notes, links, syllabus and course descriptions, tips, FAQs and resources.
and the order and name of menu items for a course.

**Instructional Design Tools**

Instructors can create both linear and nonlinear learning sequences using a content library.

The software includes templates for the construction of various kinds of standard pages including course outlines, assignments and recommended reading lists. Instructors can upload documents to the server using drag and drop through WebDAV. Instructors can create bookmarks for specific courses.

**Instructional Standards Compliance**

The system supports the following standards: SCORM 1.2, IMS Metadata 1.2.1, IMS Content Packaging 1.1.2 and Microsoft LRN 3.0. The system includes tools to facilitate the migration of course content between different versions of the software.

The system supports the IMS Learning Resources Meta-data Specification, the IMS Content & Packaging Specification, and the IMS Question & Test Specifications.

### BlackBoard 6

#### Technical Specifications

**Client Browser Requirements**

The software supports Internet Explorer 5.5+, Netscape 4.78+. Students can download course content to a PDA.

The software supports Internet Explorer 5.x and 6.x, AOL 7.0+, and Netscape 6.2. Use of some features requires Java Virtual Machine (JVM).

**Database Requirements**

The system requires either SQL Server 2000 on Windows 2000 Server, or Oracle8 on Solaris. The system also supports MySQL databases.

The system requires Oracle RDBMS 9.0.1.2.0 (Standard or Enterprise) and Oracle 9iFS 9.0.1.1.0. Although hardware requirements vary based on anticipated usage and growth plans, the suggested minimum hardware requirements for the database servers listed in the documentation are 4x750MHz or equivalent CPUs for Solaris install (or Dual PIII-1266 CPU for Windows 2000 server or Linux installs), 4 GB RAM, 4 GB disk space for Oracle software, 3x18 GB SCSI drives for Oracle data.

**Server Software**

The following server software tools are available: log rotation and log consolidation, a secondary database to provide customizable reports, and course archive and restore. The log tools can be accessed over the Web. The software requires Apache.

The following server software tools are available: resource monitoring, crash recovery, backup of a course to a desktop machine. The server administration tools are accessed over the Web. Typically, local administrators install the software.
<table>
<thead>
<tr>
<th>Unix Server</th>
<th>Windows Server</th>
<th>BlackBoard 6</th>
<th>WebCT Vista 1.2</th>
</tr>
</thead>
</table>
| **web server software or Microsoft Internet Information Server (IIS) software.** The software is available for Solaris 2.8 and Red Hat Linux 6.2. Suggested hardware recommendations are two Ultrasparc II, 450 Mhz, 2 GB RAM. The software is available for Red Hat Linux Advanced Server for Intel and Solaris 7 and 8. Suggested minimum hardware recommendations are four 750 Mhz CPUs for Solaris or two Pentium III CPUs for Linux, 4 GB RAM, 2 GB disk space. | **The software is available for Windows NT, 4.0, Windows 2000 Server, or Advanced Server. Suggested hardware recommendations are 2 Pentium III, 800 MHz CPUs, 2 GB RAM.** The software is available for Windows 2000 Server SP 2 or Windows 2000 Advanced Server. Suggested hardware recommendations are two Pentium IIIs, 4 GB RAM, 2 GB disk space. | **The product provider offers for-fee installation consultation. Archived courses can be restored to overwrite another course. The system is a four-tier architecture within the J2EE Framework that uses the BEA WebLogic Enterprise Server, which is included in the software license.** | **BlackBoard 6**

**Technical Specifications**

<table>
<thead>
<tr>
<th>Pricing/Licensing</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Company Profile</strong></td>
</tr>
</tbody>
</table>

<p>| <strong>Costs</strong> | <strong>The annual license fee is based on FTE students in an institution or consortium. Optional annual licenses, with three and five year terms, and perpetual licenses are</strong> | <strong>The annual license fee is based on FTE students in an institution or consortium. Optional annual licenses, with three and five year terms, and perpetual licenses are</strong> | <strong>The annual license fee is based on FTE students in an institution or consortium. Optional annual licenses, with three and five year terms, and perpetual licenses are</strong> |</p>
<table>
<thead>
<tr>
<th><strong>Open Source</strong></th>
<th>available.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Optional Extras</strong></td>
<td>The Building Blocks initiative is an attempt to create a community of developers who can provide API-integrateable applications to enhance the functionality of the system. Current applications include WYSIWYG web page editors, DAV file transfer mechanisms and a toolkit for science courses (e.g. MathML editor). Akiva recently announced the release of a new BlackBoard add-on module for WebBoard 6 Editions. This module allows WebBoard owners to seamlessly integrate their message boards into BlackBoard.</td>
</tr>
<tr>
<td><strong>Software Version</strong></td>
<td>The current software version number is 6.0.</td>
</tr>
</tbody>
</table>

The product provider offers a range of professional services offerings including: Implementation Planning, Installation, Training, and Systems Integration. In addition, the product provider offers support service in 4-hour response (Premium) and 7x24 response options in addition to the basic offering included with regular license.

Source: WCET, by permission.
REFERENCE LIST


[http://www.apconnections.com/perspective/99-0.html]


Wenger, M and Testa, W. 2000. The e-learning Value Chain: Content, Services and Technology