DEPARTMENT OF COMPUTER SCIENCE
University of Toronto
CSC 454S/2527S: **THE BUSINESS OF SOFTWARE**

END OF TERM EXAM + **ANSWERS**

2 April 2001, 6:10-7:25 p.m. (1 hour 15 minutes)

OPEN BOOK, OPEN COURSE NOTES

Write all your work in this booklet (10 pages in total).

NAME   _____

STUDENT # _____

Answer the following **ten (10)** questions, based on
• what you have learned working on your business plan
• the course notes, texts, readings, and visitor presentations (see page 5).

The exam is primarily short answer, with one essay. It requires an understanding of the
major concepts conveyed in the course, and not a memorization of tiny details.

From the lecture notes, you can ignore the following pages:
4.44-4.46
5.53-5.56; 5.61-5.66
6.8; 6.12-6.13; 6.15-6.16; 6.25-6.27
7.20-7.22
8.3-8.12; 8.29-8.30

Your answers should be as terse and crisp as possible. If you can't say it succinctly,
excess verbiage won't help. In fact, it will hurt.

SKIM THE ENTIRE EXAM FIRST. Do not spend too much time on any one question.

Good luck.

SCORE   _____ OUT OF 125

(to be divided by 10, i.e., worth 12.5% out of 100% for the semester)

_____

1. **(10 points)** Which of the following statements (**select all that are true**) are true?

Answers: b, d

a) The Rich-Gumpert evaluation system places heavy emphasis on the quality of the entrepreneurial idea and the size of the market, and not on the degree to which the idea has been embodied in a working product or developed service.

b) Bell and McNamara stress the quality of the entrepreneurial team along with the characteristics of the CEO as important determinants of success.

c) Scott Cook of Intuit says that one must focus equally on financing and "knowing the customer cold".

d) Differentiation is a key component of Moore's formulation of an "elevator test."

e) Research and development is a major component of the variable costs of a software products company.

f) If a growing company is profitable, its cash flow will be positive.

g) Entrepreneurs rarely experience symptoms such as back problems, indigestion, insomnia, and headaches.

7 correct =>10 points; 6 => 8; 5 =>6; 4 =>4; 3 =>2; 0,1,2 =>0

2. **(10 points)** Assume you are starting a company to develop and market software to coin collectors, to be called CyberCoin.com.   Which promotional vehicle would be best suited to this task? **Select the best three (3)** of the answers below and **fill in** the missing information **for those answers**. Make reasonable assumptions if need be.

Answers: a,b,e

a) Internet banner ads on sites that cater to ***coin collectors***

b) Direct mail to a list of ***coin collectors***

c) Press releases from a public relations firm_____

d) Coast-to-coast seminars on the topic of _____

e) Participation at a trade show catering to ***coin collectors***

3 correct =>7 points; 2 =>4; 1 =>1 plus one point for each blank filled in correctly

3. **(10 points)** CyberCoin.com desires to protect its intellectual property. **Fill in the blanks** with the appropriate phrases:

Programmer Izak Whizzard began his first day at CyberCoin. He was asked to sign a(n) ___***non-disclosure (or confidentiality) agreement***___. He was given a package of technical literature and software which had the word ___***proprietary and confidential***___ stamped over the first page of each document. There were also signs that the company consider the code to be protected by ___***copyright***___, and the name of the program protected by ___***trademark law***___. Several months later, he delighted his boss, the founder of the company, by developing a new approach to encoding key features of coins to enable collectors to shop and trade more intelligently and thereby to increase the value of the portfolios. His boss suggested that they try to protect this method by applying for a(n) ___***software patent***___.

2 points for correct answer

4. **(10 points)** Consider the list of products on the left below and the list of distribution methods on the right below. For each product, there is one best distribution method. Each method will be used only once. **Draw lines** linking the products to the best methods.

A Web-based family electronic "board game"
ECommerce sales
                                                        Direct sales

Anti-virus software protection for 286- and
386-based PCs
OEMs or Retail
                                                        Retail (i.e., distributors, stores)

Computer conferencing software linking all
the teachers in a school board
Direct sales
                                                        eCommerce sales

A database of famous quotes designed for
personal use with Microsoft Word
Retail or OEM
                                                        VARs

Inventory software for independent
automobile repair shops
VARs
                                                        OEMs

2 points for correct answer

5. **(10 points) Circle all of the following** that would be appropriate for the CEO of a 100-person software firm to do himself or herself (as opposed to having a member of the management team do it).

Answers: a, d, e, f,

a) Hire a VP of sales

b) Find a bug in the 4th release of a product

c) Develop a Lotus 1-2-3 financial forecasting model for the business

d) Personally thank a programmer who has worked all night

e) Decide on the average percentage salary increase for the next fiscal year

f) Give a speech at a meeting of industry analysts

g) Prepare the text describing the firm that will appear in the Fall Comdex Show Guide

7 correct =>10 points; 6 =>8; 5 =>6; 4 =>4; 3 =>2; 0,1,2 =>0

6. **(10 points)**
a) **(5 points) Name** two companies with very similar products and markets who visited the class this term that might be attractive candidates for a merger or for one to acquire the other. (All our guests are listed on the next page.)

Telepresence, Novator, Name.net

b) **(5 points) Name** two companies with complementary products and markets who visited the class this term that might be attractive candidates for a merger or for one to acquire the other. In 10-25 words, **explain why**.

Janna or NovaForum could acquire Novator or Telepresence

are attractive candidates for a merger or acquisition because.....

in order to increase its Web development expertise.

Or, Novator could acquire Perceptual Robotics to strengthen its technology for e-retail markets.

8 January
Ron Riesenbach is co-Founder and CEO of **Telepresence Systems, Inc. (**www.telepres.com), a consulting firm which provides project leadership and software development services to organizations building advanced electronic commerce and knowledge management systems. Riesenbach was previously Managing Director of the Ontario Telepresence Project. He has a MBA from U of T, is an alumnus of this course, and was a Guest Entrepreneur in Fall 1997.

15 January
Mark Skapinker is co-founder of **Brightspark (**www.bspark.com**)**, an incubator of Internet and software ventures. Prior to founding Brightspark, Mark was a founder of Balisoft Technologies, later merged into **Servicesoft (www.servicesoft.com)**, a leader in Internet customer service. Recently, Broadbase Software agreed to acquire Servicesoft. He was also previously co-founder and President of **Delrina Technologies**, which was, until its sale to Symantec, a leading software development and marketing firm specializing in PC productivity products such as fax and forms software. Mark has spoken in this class several times over the past decade.

22 January
David Abrams is Direct of Technology for **Perceptual Robotics, Inc. (**www.perceptualrobotics.com**),** in Evanston, Illinois, an application service provider offering TrueLook, the leading edge system for live visual telepresence. David was the first full-time hire at Perceptual Robotics, Inc. and has multiple patents pending in this area. He develops products for e-commerce, mass-audience webcasting (e.g. NBA Finals), 360-degree surround panoramas, collaborative imaging, and digital video. David was the top B.S. graduate from Northwestern University, has a M.Sc. in Computer Science from U of T, and is an alumnus of this course.

29 January
Prof. Mark Fox, the NSERC Industrial Research Chairholder in Enterprise Integration in the Department of Mechanical and Industrial Engineering, is founder of **Novator Systems (**www.novator.com**)**, an e-retail software and services company specializing in e-retail shopping sites that build brand loyalty, maximize customer satisfaction, and operate under high demand conditions. He also founded and was President twice and VP of Engineering once of **Carnegie Group Inc. (CGI)**, which provided semi-custom solutions employing knowledge-based systems for engineering and management, and in the mid 80s was the only profitable AI company. CGI was taken public on NASDAQ in 1994, and acquired by Logica in 1998. He was a Guest Entrepreneur in Fall 1992.

12 February
William Tatham is CEO of **Janna Systems (**www.janna.com**)**, a CRM systems company founded by him in 1990 and recently sold to **Siebel Systems (**www.siebel.com**).**   Bill's vision, leadership, and understanding of the financial services industry propelled the company to a leading position in the eRM (Enterprise eBusiness Relationship Management) industry, where its solutions give organizations an enterprise information portal for client knowledge. Prior to founding Janna Systems in 1990, Bill was a senior manager in Andersen Consulting's Toronto office for the Advanced Technologies and Financial Services practices.

12 March
Dave Penny is an Associate Professor of Computer Science at the University of Toronto, specializing in software engineering. From 1994 to 1999, he held a number of senior positions at **Algorithmics Incorporated** (www.algorithmics.com), the industry leader in enterprise risk exposure calculation. These positions included Vice President of Software Development, Chief Technology Officer, Vice President of Client Services, and Vice President of Product Marketing.

19 March
Leonard Lidov is President and co-founder of **Name.net** (www.name.net). NAME is one of the world's first Internet application integrators, helping clients understand and take advantage of network technologies in electronic business, on-line publishing, knowledge management, and process reengineering. Recently, itemus (www.itemus.com) finalized its merger with Name Inc, a move that allows itemus to become one of the first true end-to-end providers of business webs.

26 March
Teri Kirk is founder and President of **NovaForum** (www.novaforum.com), the Electronic Courthouse. NovaForum is a wholly web-enabled online dispute resolution service for the global B2B market. Ms Kirk continues to be active in the broader e-Com. community, providing senior e-strategy services to Canadian enterprises such as Rogers Media Inc and TVO, and to early stage companies such as ADV-Care, the online pharmacy. She services as a Business Advisor to Canadian incubator QCED, and has served on the Board of a number of technology companies and agencies, including Health Link Inc. and the Ontario Center for Science and Technology.

7. **(10 points)** You are close to completing the prototype of a new product and want to find your first customer. In a brainstorming session, you list 20 ideas for companies that might make reasonable candidates to be the first customer. In 5-10 words each, **state three criteria** that you might apply to decide which of the 20 would be the most suitable.

Innovator, early adopter

Represent all the attributes of the target customer

Needs and can afford your product, which solves a real problem for them

Knowledgeable company and customer

Will be cooperative in providing feedback about the product

Well-connected or prestigious company
(Alternatively, will not damage your reputation if product does not meet their needs)

Company has been good customer in past for other products, or likely to buy other products

8. **(10 points)** Bell and McNamara state (p. 225) that "marketing's job, in essence, is to make selling easy." In 5-10 words each, **state three ways** that this can be done.

Identify and segment target markets

Create and continually refine a marketing plan

Identify the best distribution channels

Establish reasonable price for the product

Prepare promotional literature and promote the product

Provide pre-sales and post-sales support

9. **(10 points)** Imagine that Ron, David, and Caryn are planning to start a business marketing a commercial version of "The Business of Software course" to would-be software entrepreneurs and possibly other interested parties.

(a) **(5 points)** In 10-25 words, **describe** what "the product" should be, i.e., what they should be selling. Think broadly, i.e., define what Levitt calls the "augmented product."

Delivery of the course

Associated consulting services

A web site offering access to associated content

Templates for creating business plans, financial models, etc.

(b) **(5 points)** In 5-10 words each, **describe** three submarkets into which they could reasonably segment the market.

Graduating CS students

New software entrepreneurs and individuals in start-up companies

Individuals in larger, more established companies thinking of starting companies

Venture capital and investment banking firms contemplating software investments

10. **(35 points)** Consider the business idea described above, namely:
"Ron, David, and Caryn are planning to start a business marketing a commercial version of The Business of Software course to would-be software entrepreneurs and possibly other interested parties."
Assume they will need to use substantial savings to launch this venture, and they decide to write a business plan both because they know this is a good idea (!!!) and because they want "their spouses" to be convinced that this is a wise use of part of their family nest-eggs, not to mention the threat this represents to their current, "day jobs." **Write** a 10-15 sentence Executive Summary for such a business. **Make any assumptions you think are reasonable. Use fake names and placeholders for figures such as $xxxM and yyyK individuals where appropriate.**

A few hints and instructions:

1) Spend the first 5 minutes on this question thinking, jotting down notes, organizing your approach, and outlining in bullet form the Executive Summary. Do this on this page.

2) Then write your Executive Summary on the next two pages.

THIS IS THE END OF THE EXAM.

PLEASE CHECK YOUR WORK.