

H.O.#1
COMP 4911
Fall 2016



COMP4911: IT Entrepreneurship

Dekai Wu

Professor, Department of CSE, HKUST

Who Is This Guy?

- ▶ Computer Science and Engineering
 - ▶ Computer networks (Multimedia and wireless networking)
 - ▶ Research and develop advanced networked systems for industrial deployment
- ▶ Interested in engineering and business. Studied at the heart of the Silicon Valley, USA
 - ▶ PhD (Stanford University), Minor in Business Administration
 - ▶ BSE (Princeton University), Certificate in Engineering Management Systems
- ▶ Office: 3507 Academic building (Lifts 25/26)
- ▶ Email: gchan@cse.ust.hk
- ▶ Phone: x6990
- ▶ Office hours: By appointment

Your TA



David Au

My Entrepreneurship Experience

- ▶ One startup failed, 3 current technology startups
- ▶ Streamphony: Software suite for Internet video streaming
 - ▶ Startup in 9/2014
 - ▶ Gold Award, Best SME, HK ICT Awards 2014
- ▶ Wherami: Indoor localization, tracking and navigation
 - ▶ Startup in 12/2015
 - ▶ Hong Kong Awards for Industries: Innovation and Creativity, 2015
- ▶ Lavinet: Embedded software for Wi-Fi access
 - ▶ Startup in 3/2014
 - ▶ Best Innovation & Research Award (Bronze Award), Hong Kong ICT Awards 2012
- ▶ **Warning:** Startup is exciting and addictive 😊
 - ▶ Seeing your company grow over time
 - ▶ Coming up and adapting with creative technological and business strategies over time to capture the ever-changing market

COMP 4911: IT Entrepreneurship

- ▶ **Lecture time**
 - ▶ MW 9:00pm-2:50pm, Room 6602 (Lifts 31-32)
- ▶ **Bookmark this: <https://course.cse.ust.hk/comp4911>**
 - ▶ Lecture materials, presentation schedule, seminar schedule, assignments
 - ▶ Always under construction: Download the materials a week before each class; peek at the materials in advance of classes
- ▶ **Course content and outcome (see course website)**

What is an entrepreneur?

- ▶ An alternative career choice
- ▶ From French, *entreprendre*: to do or to undertake. A doer.
- ▶ “Those who can, do it; those who cannot, teach it.” 😊



Why Should You Care About **IT** Entrepreneurship?

- ▶ “IT is cheap. No company is investing heavily in IT department.”
 - ▶ IT support and maintenance indeed does not cost much as it is at the low end of the value chain.
- ▶ “I am smart. Shouldn’t I work in financial industry?”
 - ▶ Consider your upside, working hours, stress, contributions to economy, value system, interest, etc.
- ▶ Can’t I open a flower shop, grocery store, barber shop, restaurant or cookie bakery?
 - ▶ Certainly! But you need to think about how to scale up your business. IT may help on this.
- ▶ My experience as being the judge of business plan for MBA students and committee of HKUST I-M competition
 - ▶ Global business cannot be separated from IT
 - ▶ Business people envy your IT knowledge
 - ▶ IT people need business knowledge

Defining Entrepreneurship

- ▶ Starting up new business or service which creates or enhances societal, economic and cultural value, often due to innovations or discoveries on
 - ▶ Technology and engineering
 - ▶ Science
 - ▶ Business model and operation process
 - ▶ Social science and humanitarian needs
 - ▶ E.g., founding commercial ventures, joining startups, environmental and green entrepreneurship, social innovation and services, innovation within large corporations (e.g., google and facebook), venture philanthropy, etc.
- ▶ Activities or services which increase values or capture emerging opportunities in industry or society, including
 - ▶ Transferring of technologies, knowledge or IPs to an external entity
 - ▶ Sharing of know-how through consulting services

Can Entrepreneurship Ever Be Taught?

- ▶ So many random or uncertain factors involved in entrepreneurship, such as
 - ▶ Special and unique characters
 - ▶ Special occasions and encounters
 - ▶ Market uncertainties, political undercurrents, economy, government policies, etc.
- ▶ Art more than science
 - ▶ No success formula
 - ▶ Every path is unique and unrepeatable
 - ▶ Business decisions often cannot be quantified or optimized; they have to be changed over time depending on the situation and your perspectives
- ▶ What can be taught?
 - ▶ Lessons learnt from success and failure stories
 - ▶ How to attract investment
 - ▶ Financing and share structuring
 - ▶ Market analysis
 - ▶ Operation management, etc.

How Easy It Is to be an Entrepreneur!

- ▶ Getting rich is easy – look at many of the exciting stories (Uber, Whatsapp, google, facebook, etc.)!
- ▶ Be the next Steve Jobs (Apple), Bill Gates (Microsoft) or Jack Ma (Alibaba)
- ▶ Be your own boss (with no boss)
- ▶ Improved life so that you can sit back and relax

Stop dreaming!
These are more
myths than truths

The Disillusion Path: Entrepreneurship Education

- ▶ Demystifying entrepreneurship to beat the odds of failures
- ▶ Entrepreneurship practice is an irrational act
- ▶ Familiarize you with the terms and conditions of starting up a company
- ▶ Equip you on the language used in the area
- ▶ The factors of success and failure
 - ▶ Pitfalls and hurdles
- ▶ How to run a startup; what it takes to grow (or fold) a company
 - ▶ From 0 to 1 (creating some completely new and viable): founding team, technology, value proposition, business plan, company registration, angel investment, etc.
 - ▶ From 1 to infinity (in terms of company size, revenue, sales, value, etc.): business plan, share (re-)structuring, company growth, VC-A, VC-B, branches, IPO, acquisition, etc.
- ▶ Case studies to develop critical thinking

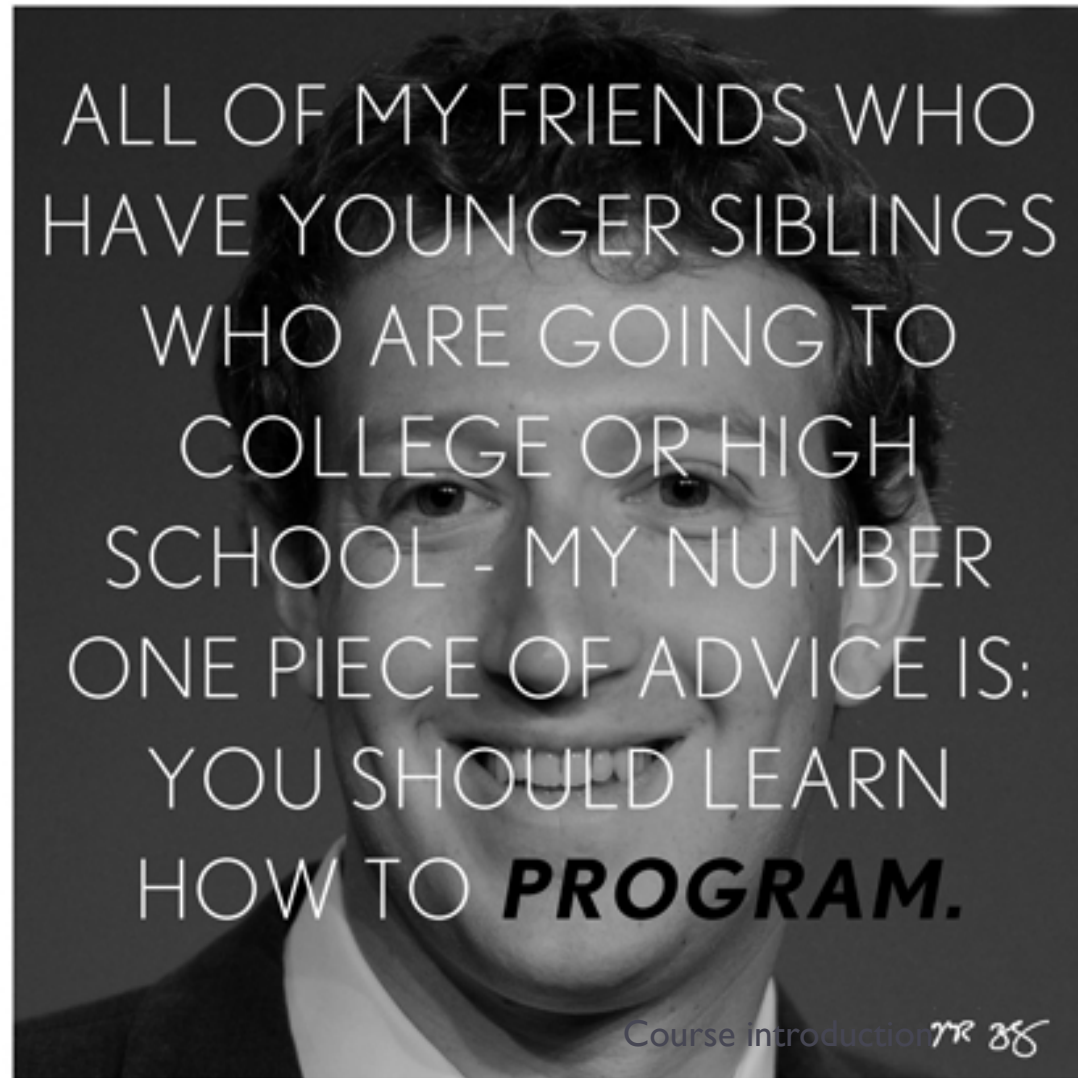
COMP4911: IT Entrepreneurship

- ▶ The first half of the semester: Basic elements and fundamentals of starting a new business in information technology
 - ▶ Role of technologies, financing and venture capitals, marketing and sales, business strategies, writing business plan, market and competitive analysis, startup environment in Silicon Valley, China and Hong Kong, etc.
- ▶ The second half of the semester: Case studies of ventures in Hong Kong and elsewhere to develop critical thinking and analytic skills
 - ▶ Google, facebook, Apple, etc.
 - ▶ Guest lectures from Hong Kong and/or China entrepreneurs
 - ▶ Student presentations from the past
 - ▶ Personal experience from my startups
- ▶ **Many inspiring and even more failure stories to tell**
 - ▶ Failures are more important than successful experiences for those who want to start a business.

Major Course Topics

1. Introduction
2. Why entrepreneurship? Who can be an entrepreneur?
3. Business analysis: SWOT and business plan
4. From technology to IPO: Corporate structure, role and protection of technology, role of VC, value creation, stock options, and company lifecycle
5. Internet, Silicon Valley and the emerging market trends
6. Cases: Google, Apple and Facebook and product pitches
7. Student case discussions
8. Guest lectures and my stories

IT Entrepreneurship Pre-requisite: COMP2011 (As Said by Facebook CEO Mark Zuckerberg)



Technopreneurship: A COMP course, or NOT?

- ▶ *Prerequisite(s):* COMP 201 I
 - ▶ Skills of software development, concepts on large software development, and knowledge on the capabilities and limitations of software
- ▶ The only COMP course without programming (unless you'd like)
- ▶ Training your social and soft skills (rather than the quantitative hard skills)
 - ▶ Group projects, team work and presentations
- ▶ A “business” course beyond a COMP course
 - ▶ Business with IT knowledge
 - ▶ A different learning experience from your other COMP courses
 - ▶ Peer evaluations
 - ▶ Reading, case studies, reports, communications
- ▶ Business plan building
- ▶ A place to meet and work with people, build friendship and partnership for future venture

Lecture

- ▶ Slides
- ▶ Class participations: Feel free to interrupt to ask questions
- ▶ Ask questions → the way to learn in entrepreneurship
- ▶ Not compulsory, but it is your responsibility to catch up with your missed lectures with your friends

Course Group Projects

- ▶ There will be two group presentations: midterm and final presentations
 - ▶ You have to attend the presentations
- ▶ To keep the length of the midterm and final under control, the class should consist of no more than 15 groups
 - ▶ Form a group of 3-4 members
 - ▶ Select a group leader to submit reports and ppt. We will take his/her submission as final
- ▶ If your group is under-sized, I will randomly pair you up with other under-sized team(s)
- ▶ A group has to work together the whole semester as if it is a startup team
 - ▶ I will not entertain “complaints” on group-mates or regrouping after the deadline
 - ▶ A student cannot be in more than one team
- ▶ As you are in a team, you present as a team.
 - ▶ I will not try to distinguish you within the team. Therefore, all the members will have the same score for the group projects (except those absentees)

Midterm Project on Company Analysis

- ▶ Pick an IT startup from around the world which is “sizable” (with notable number of users) but has not yet been gone through IPO or acquired yet. Please be more specific on its product or service if the company offers a portfolio of them.
- ▶ Discuss its success factors in terms of the following with supporting evidence:
 - ▶ Company background (history, product/service, team, etc): What is its founding history? How does its history and team contribute to its success?
 - ▶ Business model
 - ▶ Its competitive advantages over other similar, bigger or listed companies, i.e, its factors of its success
 - ▶ SWOT analysis and how to mitigate threats and weaknesses
 - ▶ Suggested growth plan and exit strategies with reasons
- ▶ E.g., dropbox, evernote, snapchat, spotify, etc.
- ▶ We will not duplicate companies. Send us your company name as soon as you form a team. Companies will be taken on a FCFS basis.

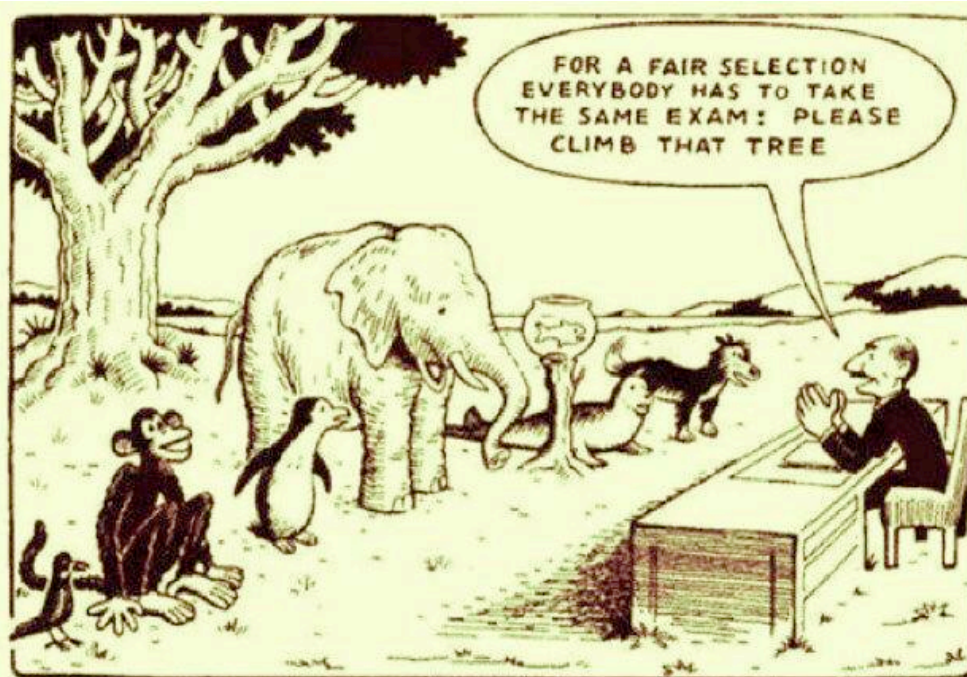
Final Project on a Business Plan

- ▶ Suppose you are to start up an IT company. Discuss your technologies, value proposition, business model and business plan. Be realistic.
- ▶ Send us your company name and a tagline/catch-phrase describing the company beforehand
- ▶ There are not many unexploited commercializable ideas
→ Be creative in thinking about them

Attending Seminars on Entrepreneurship

- ▶ Be exposed to different experience and perspectives on entrepreneurship
 - ▶ Broaden your horizon
 - ▶ Sharpen your analytic thinking
- ▶ Valid seminars will be posted in the course webpage
 - ▶ If in doubt of a seminar, please ask me before attending it
- ▶ Write a report on what your *personal* reflections and lessons learnt for the ones you attended
 - ▶ Half a page to 1 page
 - ▶ Do NOT repeat the facts of the seminar (i.e., the abstract)
- ▶ Batch grading schedule
 - ▶ 11:59pm, the last day of each month
- ▶ Submit your report any time. Grading will be done on a rolling basis after the deadline.
 - ▶ If you would like to submit multiple reports at the same time, please zip your files into a single one before submission.
- ▶ Submit at most 5 reports. We will pick the highest 3 scores out of that.

No model answer. Grading is on strengths.



Our Education System

"Everybody is a genius. But if you judge a fish by its ability to climb a tree, it will live its whole life believing that it is stupid."

- Albert Einstein

Grading: Group Component (the first 50%)

- ▶ There are group and individual components
- ▶ **Midterm group presentation: Total 8 minutes (12%)**
 - ▶ Everyone has to attend
 - ▶ 6-minute presentation and 2-minute Q&A
 - ▶ 7%: Presentation content and analysis
 - ▶ 5%: Student vote
- ▶ **Midterm presentation file and at least 5-page report (8%)**
 - ▶ Submitted through canvas by the group leader
- ▶ **Final presentation: Total 13 minutes (15%)**
 - ▶ 2-minute elevator pitch
 - ▶ 8-minute presentation
 - ▶ 3-minute Q&A
 - ▶ 10%: Presentation content and business plan
 - ▶ 5%: Student vote
 - ▶ Held in the exam weeks as an extended final
- ▶ **Final presentation file and business plan (15%)**
 - ▶ Submitted through canvas by the group leader after the presentation

Grading: Individual Component (the next 50%)

- ▶ Participation in midterm and final presentations (10% total, 5% each)
 - ▶ 2%: Full attendance of the exams
 - ▶ 3%: Correctly fill and submit the voting form (i.e. no invalid vote)
- ▶ Attend 3 BYOB or other seminars on entrepreneurship (15% total, 5% each)
 - ▶ 2% for attending it (just let us know the seminar title, by whom, date and time)
 - ▶ A simple report (at most one page) on the lessons you learnt
 - ▶ An elaboration of what you have learnt and your comments on the points which you value most
 - ▶ 0%: No report or only abstract
 - ▶ 1%: Writeup with little reflection or effort (major grammatical mistakes)
 - ▶ 2%: Writeup with some reflections and learning (little grammatical mistakes)
 - ▶ 3%: Writeup with excellent insights and reflections
- ▶ Attend the guest lectures in-class (15%?)
- ▶ Case examination (25%)
 - ▶ 1.5-hour test on basic concepts in the course and case analysis
 - ▶ Conducted in a network-free environment
 - ▶ Open books, open notes

Student Participation: Peer Voting or Evaluation

- ▶ You have a budget of “likes” to be assigned to half of the presentations
- ▶ You must listen carefully on the presentations and assign all your “likes” to different groups
 - ▶ No more, no less
 - ▶ Give some brief comments on what you like and don’t like on the top two and bottom two, respectively
- ▶ For final presentation
 - ▶ Be critical, but be kind in criticizing them
 - ▶ It is always easy to kill or vote down an idea, but difficult to construct it
- ▶ Based on the number of “likes”, your score of the “voting” part will be assigned



A Word of Caution: Your Grade Does Not Define Your Worth

- ▶ Just like any other courses
- ▶ Especially so for entrepreneurship; there is very weak correlation between grade and success
 - ▶ Getting an A+ does not mean that you should start an IT company right away and will become the next Bill Gates (the richest person in the world as of January 9, 15)
 - ▶ Getting an F does not mean you should never start a company



Email Policy

- ▶ General course/lecture questions
- ▶ Use email unless it is necessary
 - ▶ Not effective to explain things
 - ▶ I prefer face-to-face discussion
- ▶ Please do not expect answers right away

References

- ▶ Ben Horowitz, The hard thing about hard things: Building a business when there are no easy answers
- ▶ Peter Thiel, From Zero to One
- ▶ Eric Ries, Lean Startup
- ▶ Bill Aulet, Disciplined Entrepreneurship: 24 Steps to Successful Startup
- ▶ Brent Schlender and Rick Tetzeli, Becoming Steve Jobs
- ▶ Clayton Christensen, The Innovator's Dilemma
- ▶ Jeffrey Liker, the Toyota Way
- ▶ J.P. Morgan, 写给儿子的三十二封信

Textbooks?

- ▶ Entrepreneurship is best learnt through experience and practices
- ▶ No one book fits all --- the field too broad and numerous to be listed here
- ▶ Read widely, as entrepreneurship involves multi-disciplinary knowledge
 - ▶ Marketing, finance, accounting, technology, organizational behavior, negotiation, etc.
- ▶ Listen to absorb knowledge
 - ▶ Talks/seminars
 - ▶ Experience sharing
- ▶ Speak to refine your pitch
 - ▶ Share your ideas
 - ▶ Present your ideas
- ▶ Write to pass along your messages
 - ▶ Summarize what you learn
 - ▶ Communicate with others through writing and reports (business plan)
- ▶ Think to make good judgments
 - ▶ Watch keenly and evaluate critically; what you see is not the whole (iceberg analogy)
- ▶ Follow your passion and interest
 - ▶ This will take you far, undeterred by difficulties and hurdles



Q&A