



KOC UNIVERSITY

LECTURE BRIEFS

Entrepreneurship and Innovation

MUSTAFA ERGEN

<http://courses.ku.edu.tr/engr401/>

Foreword

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Lecture 1

Entrepreneurship

The goal of this lecture is to introduce some of the basic entrepreneurship skill sets and provide examples that will allow reader to identify and recognize the difference between entrepreneurship and small business. Major principles of thought process and benefits are emphasized throughout the lecture.

Lecture 2

Wireless and Internet Revolution

In this lecture we go over the basic facts about wireless revolution and talk about why it has considered to be a renaissance. Part of the lecture is constructed from Prof. Alberto L. Sangiovanni-Vincentelli from UC Berkeley, co-founder of Cadence, Synopsis and many others. The lecture also talks about the unique position of United States in terms of diversity and economic model with factors of Silicon Valley what makes it successful.

Lecture 3

Silicon Valley History

This lecture covers the history of the valley. What makes this place unique among others and how technology revolution has blossomed. We start with radio era up to internet era and go back to gold rush era where the seed has been planted with 1872 employee law. In U.S. there are other technology locations and Silicon Valley shows difference in terms of culture as well as laws one example is Route 128 where Prof. Annalee Saxenian from UC Berkeley has introduced a comparison in her book, named *Regional Advantage: Culture and Competition in Silicon Valley and Route 128* (Harvard University Press, 1994).

Lecture 4

Web

This lecture introduces the evolution of Web technologies powered by the concept of knowledge sharing. Since it is constructed based on sharing early web technology dates back to telegraph. The book called *The Victorian Internet: The Remarkable Story of the Telegraph and the Nineteenth Century's On-line Pioneers* by Tom Standage describes why the impact of telegraph revolution back then was similar to Internet revolution of today. Samuel F.B. Morse demonstrated a working telegraph between two committee rooms of the Capitol, and Congress reluctantly voted \$30,000 for an experimental line to Baltimore in 1842 with 89 to 83, with 70 abstaining "to avoid the responsibility of spending the public money for a machine they could not understand." By 1850 there were 12,000 miles of telegraph line in the U.S., and twice that two years later. The book also highlight that how new technologies inspire unrealistic hopes but when those hopes are disappointed, they themselves are blamed.

We then follow the path to Web 1.0 which is the first Internet technology we used in our browsers. Web 2.0 where we use the Internet to connect others and waiting for Web 3.0 which will introduce semantic web where now machines will recognize and understand certain things.

Lecture 5

Venture Capital

In this lecture we give a thorough discussion about Venture capital (VC) which is financial capital provided to early-stage, high-potential, high risk, growth startup companies. What is startup? A company with a limited operating history and in the phase of development and research for markets. In terms of funding method venture capital is a subset of private equity. Therefore all venture capital is private equity, but not all private equity is venture capital.

Venture capital is attractive for new companies with limited operating history that are too small to raise capital in the public markets and have not reached the point where they are able to secure a bank loan or complete a debt offering. They own equity in startups they invest where they think that there is a novel technology or business model especially in high technology industries that provides higher returns.

This lecture explains the mechanics of venture capital starting from other sources of funding and why venture capital fits best to high tech startups. In exchange for the high risk that venture capitalists assume by investing in smaller and less mature companies, venture capitalists usually get significant control over company decisions, in addition to a significant portion of the company's ownership (and consequently value).

The typical venture capital investment occurs after the seed funding round as growth funding round (also referred as Series A round) in the interest of generating a return through an eventual realization event, such as an IPO or trade sale of the company.

Lecture ends by providing statistics about venture capital industry in general with rising and falling technology sectors and trends in vc funding. At the end we list the angel & venture capital agencies in Turkey and in appendix, we give the venture association of United States.

Lecture 6

Venture Impact

This lecture addresses the impact of venture capital to the economy. Besides introducing technological progress, venture capital backed companies contributes to jobs, sales, economic growth. We use findings of National Venture Capital Association where they say 11% of private sector jobs come from venture backed companies and venture backed revenue accounts for 21% of U.S. GDP.

In U.S. for instance, according to the study in 2008, 21% of U.S. GDP comes from total revenue of venture capital backed companies and they contribute 11% of U.S. private sector employment (12.1M). If we look at the invested amount, there is more than 100X return. Also when compared with the non-ventured counterparts, venture capital backed companies outperforms in terms of employment growth by eight-fold between 2006-2008.

The lecture illustrates the facts that venture capital is more than money. They provide a reward to economy far beyond their investment of money and time invested. The employment statistics show that a heavy concentration of venture capital supported employment is in the software industry almost 90 percent of the total jobs in software, in 2006. It won't be different as venture backing progress in biotechnology, medical devices and clean-tech.

Also it has to be noted that equity in venture-backed companies are distributed, meaning that employees also get shares and in return if successful, they acquire substantial wealth. If we look at job creation in another way, an individual person in the society contributes several jobs with its spending, if the wealth is not distributed, wealth is concentrated in few people and spending of wealthy individuals are limited since it is almost based on their needs, on the opposite side however, if spending comes from many wealthy but in moderate scale individuals, then spending is in large in quantity and spending spectrum is wider, which give rise to job creation in several sectors.

Lecture 7

Pitch

In this lecture, we present the slide-deck template that most VC would want to see. A typical business slide-deck has to present critical information to help VC understand and grasp your idea, market as well as your strength in accomplishing. There are various way of preparing a business pitch, we give the basic and required skeleton as well as introduce several examples.

Business slide-deck has to answer the questions that could come to VC's mind? They will probably think the interest level about the idea and venture, if there is no interest, then the rest might be questioning. They will then look at the market, and see whether a company in that space could be a billion dollar company. And then they will think about the problem you introduced if the problem is crucial, then you have a chance to introduce good gross margins. Remember, venture capital is high risk high return type of investment, a VC would look at the seriousness of the problem and total market size to understand its investment and return. If they think that there is a substantial return ratio, then they will conclude that it is a venture-type investment. So far, they are in the process of understanding the size of the opportunity, next they will start questioning your solution to the problem and will try to understand why your solution is unique and haven't tested before.

Lecture 8

Financials

In this lecture, we'll discuss financials which is a process of allocating financial resources to meet strategic goals of the startup. In startup industry, financial planning starts before investment, which at least convince the investors on paper with operating and action plan and forecast sales based on the strategic plan. Finance is a way to think about cash, risk & value, since a smart entrepreneur is a methodical manager of risk.

Financial projection has to have high level figures covering at least five years and more granular first two year. Projections encompasses Profit & Loss Statement, Cash Flow Projections, Balance Sheet which answer the company performance, cash position, and financial position.

Lecture 9

Recruitment & Organization

Due to the unique characteristics of the startup industry, many companies face recruitment challenges. In this lecture, we list the recruitment ways and organization methods in startup. Startups have skeleton recruitment team which has to manage multiple competing priorities. There is a chance that during recruitment, organizations are sometimes swamped and unable to either find or hire the right candidates. Domain knowledge is another concern since with expansion to new locations and new business lines, companies may spend significant time and effort in determining the right approach and recruitment methodology, and yet be unable to deliver due to limited on-the-ground presence. We discuss these issues during the lecture.

Lecture 10

Term Sheet

Term sheet is the list of documents a venture capital submits in return to a funding request. Term sheet encompasses several agreements that construct the basis of the venture. In this lecture, we'll demystify the language of VC term sheets including what a price-based antidilution adjustment is and what its meant to address. An investor conducts business diligence to come up with pre-money evaluation of the company. Business diligence is whatever your investor needs to make his investment decision. Some firms complete business diligence before they offer a term sheet. Other firms offer term sheets before they complete business diligence because they want to lock out the competition while they evaluate the venture. Business diligence answers the following; approval of the entire partnership, reference check, legal diligence, plan, etc.

Lecture 11

Board

After term sheet, company will be restructured and venture capitalists will get seats on the board of directors when they invest. VCs will either have a director and/or an observer. Directors have two primary fiduciary relations to the company; the duty of care, and the duty of loyalty. Directors have two primary fiduciary obligations to the company: the duty of care, and the duty of loyalty. The difference is directors vote on matters that require their approval and receive attorney-client privileged communications. In this lecture, we discuss board formation and process in board meetings.

Lecture 12

Venture Capital Glossary

The terminology associated with venture capital is extensive. Therefore, we decided to introduce main ones in this lecture.

Lecture 13

Mindset

What type of mindset is successful? Although there is no formula, all based on subjective perception. In this lecture, we discuss general understanding of an entrepreneurial mind set. “An entrepreneur is a great strategist and a master at getting others excited about helping them grow their business. They know they need to develop multiple profit centers in their business, not just one or two, so they’re constantly looking for creative opportunities to do so. And some of those profit centers need to be passive income that is not dependent on their time. In other words they’re not always selling time for money. In addition, the entrepreneur knows how to make the most of every opportunity to bring in new prospects, convert them to paying clients, and get them to buy repeatedly. That means carefully planning, strategizing, measuring results against expectations and re-adjusting. It means taking calculated risks and learning from the ideas that fail and there are always ideas that fail.” We master this type of mindset in this lecture.

Lecture 14

Current Venture Trends

Where venture industry is going? We look at recent trends and returns in the venture industry, especially for North America. Venture capital market go in cycles, as we see there is a comeback since the bursting of the dot-com bubble, and many start-up companies which survived the past decade may have a bright financing future ahead of them. In this lecture, we provide an overview of the current state of venture capital marketplace, including a description of investment activity in the venture capital market; the nature of deal terms in recent financings, and the returns so far.

Lecture 15

Clean Tech & Life Sciences Ventures

As we discussed Internet in the previous lectures, we introduce next waves in this lecture. Clean Tech is a term to describe the clean technology including recycling, renewable energy (wind power, solar power, biomass, hydropower, biofuels), information technology, green transportation, electric motors, green chemistry, lighting, and many other appliances that are now more energy efficient. According to the United Nations Environment Program, wind, solar and biofuel companies received a record \$148 billion in new funding in 2007 as rising oil prices and climate change policies encouraged investment in renewable energy. \$50 billion of that funding went to wind power. Overall, investment in clean-energy and energy-efficiency industries rose 60 percent from 2006 to 2007. By 2018 it is forecast that the three main clean technology sectors, solar photovoltaics, wind power, and biofuels, will have revenues of \$325.1bn. In the United States, the clean tech industry is largely based in Silicon Valley. We discuss the

Life Sciences & Healthcare is another wave focusing on innovation and commercialization in the fields of biotechnology, pharmaceuticals, biomedical technologies, life systems technologies, nutraceuticals, cosmeceuticals, food processing, environmental, biomedical devices. We describe the investments so far and achievements in this field.

