Technological Entrepreneurship

Round Table Discussion

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Roy Toffoli - ESG-UQAM and
Catherine Kokoreff - Product Managers Consulting

Introduction

Good evening ladies and gentlemen and welcome to this roundtable discussion on technological entrepreneurship. Thank you all for coming and I'm sure many of you will have questions for our guests. I'd also like to especially welcome my colleagues from the joint program and other friends who are sitting in the audience with us and who I'm sure will also want to contribute some of their knowledge to this discussion.

We're are indeed fortunate to have with us tonight four experienced and successful entrepreneurs who have graciously accepted to participate to share their experiences and wisdom with us. All have been intimately involved in launching and managing one or more high tech ventures and are familiar with the opportunities and potential problems associated with the various phases of the life cycle of the venture. The founders and CEOs sitting on our panel also provide a nice contrast in terms of age: Two young entrepreneurs who started they business just out of school; and two seasoned CEOs who have launched and grown more than one firm.

I'd like to first of all introduce them to you:

Mr. Olivier Guillaumin, a graduate from École Polytechnique, President of INTERSEC, supplier of service plateforms to large operators such as: Orange, SFR, Maroc Telecom… Olivier had previously co-founded NETGEM, which was introduced on the stock exchange in 2000, and is now also president of FASTFORWARD investment fund.

Mr.Thibaut Bechetoille, Graduate from ENSIMAG and holder of an Executive MBA from our competitor, HEC. He is President and CEO of Qosmos, a supplier of a network intelligence technology known as Deep Packet Inspection (DPI) which analyzes in real time the data which flow on networks. Previously, Thibaut founded Maiaah! A service operator which was subsequently bought by Easynet in 2002. From 1992 to 1998 Thibaut was the General Manager of Wellfleet/Bay networks in France, having brought the turnover from 0 to $70 million. He started his career in Silicon Valley at Bridge Communications.

Mr.Oliver Issaly, President and CEO of OWLIENT, specialized in community games which was sold to UBISOFT in September 2011. He is one of the co-founders of the company and is in charge of communication, organization, financing, and day-to-day affairs. Oliver brings the vision of a major web player while working with determination to the development of his firm.

Mr. Michel Racat, Co-founder and CEO of BeezUp. This is a Platform for use by e-businesses on 500 networks which compares prices and marketplaces. He is the winner of the prestigious competition of the French Ministry of Research as well as the winner of the prize for the best technological innovation in e-commerce. Founded 3 years ago, BeezUP now has twenty employees.

Why entrepreneurship?

Launching one's own enterprise is an important career option for MBA graduates – especially experienced business people like yourselves. Some of you may already have your own businesses, some of you may be in the planning phase, or some of you may not even have given it a thought. But it is an option; especially when good opportunities present themselves, personal circumstance change, or simply when you want a new challenge to invigorate your life.

I once read an interesting study that showed that, within ten years of graduating, a majority of Harvard MBA graduates had started their own businesses. In another study among managers laid off as a result of downsizing, 70 % are over 40 years of age and one-fifth of them are starting their own company[1].

However, I don't think that starting and running one's own business, especially a high tech enterprise, is for everyone and tonight's round table may help to define what it take to do this.

I'm sure that most of you know the economic benefits to society of entrepreneurship such as economic growth, job creation (in fact it is shown that SMEs create the most jobs) the creation of economic and social mobility, innovation, industry formation, etc., but there are many personal advantages as well:

1. You get to create your own job, and for members of your own family. Sometimes even for future generations;

2. As Jeffry A. Timmons and Stephen Spinelli, distinguished professors of entrepreneurship at Babson College U.S.A note (incidentally, part of this presentation is inspired by their classic textbook: New Venture Creation: Entrepreneurship for the 21st Century, Seventh Edition, McGraw-Hill 2007)

[1] Timmons, Jeffry A. and Stephen Spinelli (2007), *New Venture Creation : Entrepreneurship for the 21st Century*, Seventh Ed., Boston: McGraw-Hill

> Because it (entrepreneurship) is opportunity-centered and rewards only for talent and performance – and could care less about religion, gender, skin color, social class, national origin, and the like – it enables people to pursue and realize their dreams, to falter and to try again, and to seek opportunities that match who they are, what they want to be, and how and where they want to live. No other employer can make this claim[2].

They further go on to state that "Increasingly, women start businesses at a faster pace than men, and a growing portion are high-potential, higher growth companies"[3]…and we have a good example right here. And a similar pattern can be seen for a variety of other ethnic and racial groups[4].

3. You get the highest level of personal satisfaction, challenge, pride, and remuneration… Entrepreneurs tend to love their work because it is invigorating, energizing, and meaningful[5].

4. You get to have the resources to contribute to bettering society in a significant way through foundations and philanthropy. Think of the Bill & Melinda Gates foundation which is dedicated to bringing innovations in health, development, and learning to the global community.

5. You can get to contribute to your Alma Matter. Think of the founder of Dell Computers, Michael Dell, contributing 50 Million to the University of Texas at Austin's Medical school and the big donation by Kenan Sahin, one of the co-founders, I believe, of Lucent technologies, of 100 Million to MIT.

Just think of some of the successful entrepreneurs in the last 25 years of so:

In America:

Pierre Omidyar of eBay
Jeff Bezos of Amazon.com
Larry Page and Sergey Brin of Google
And, of course, Marc Zuckerberg founder of Facebook

In Europe:

Our four panel members

The Guillemot brothers from Brittany who founded Ubisoft computer games in 1986
Niklas Zennstrom, who started Skype.
Kristian Segerstrale & Sebastian de Halleux who founded Playfish

[2] Ibid. p. 51
[3] Ibid. p. 51
[4] Ibid. p. 51
[5] Ibid

Not to mention some other famous names.

According to Timmons and Spinelli[6], there are 6 dominant themes that characterize highly successful entrepreneurs. Our guests here tonight are good exemplars of these values:

1. Commitment and Determination
2. Leadership
3. Opportunity Obsession – (Having intimate knowledge of customers' needs and wants, being market driven, and obsessed with value creation and enhancement)
4. Tolerance of risk, Ambiguity, and Uncertainty
5. Creativity, Self-Reliance, and Adaptability
6. Motivation to Excel

Seven Paradoxes of Entrepreneurship[7]

There are, however, a number of paradoxes that mark the entrepreneurial process. It is worthwhile mentioning some of the more important ones:

1. ***To make money you first have to lose money.***
   "It is commonly said that in the VC business the lemons ripen in two-and-a-half years while the plums take seven or eight years. A startup, venture-backed company typically loses money, often $10 million or more, before sustaining profitability and going public, usually at least five to seven years later"[8].

2. ***To create and build wealth one must relinquish or give up wealth.***
   "Among the most successful and growing companies in the U.S., the founders aggressively dilute their ownership to create ownership throughout the company"[9]. The idea is not to get a bigger piece of the pie, but to make the pie bigger. Better to have 20% of a $ 1 billion dollar company, than 100% of a $1 million dollar company.

3. ***To succeed, one first has to experience failure.***

4. ***Entrepreneurship requires considerable thought, preparation, and planning, yet is basically an unplannable event.*** We'll see why later. One must plan and react continuously.

[6] Ibid. p. 8.
[7] Ibid. p. 82.
[8] Ibid. p. 82.
[9] Ibid. p. 82.

5. ***For creativity and innovativeness to prosper, rigor and discipline must accompany the process.***

6. ***Entrepreneurship requires a bias toward action and a sense of urgency, but also demands patience and perseverance.*** Think about the fact that the pioneers of an innovation are often not the winners. Many times it is the followers that succeed. Think of the inventor of the PDI, The Newton by Apple. Think of the invention of the CAT scanner, EMI of Britain. It went out of business soon after because the giants like GE overtook them.

7. ***Adhering to management best practice, especially staying close to the customers that created industry leaders in the 1980s became a seed of self-destruction and loss of leadership to young dynamic upstart competitors. This is the concept of the "tyranny of the served market"[10].***

Why High Technology and Innovations?

For one thing, **BIGGER IS BETTER. SIZE DOES MATTER!**

On of the most useful pieces of advice of Timmons and Spinelli, is that you should not think small. **"One of the biggest mistakes aspiring entrepreneurs make is strategic. They think too small….The chances of survival and success are lower in these small, job-substitute businesses..."[11] compared to higher potential ventures. "As one founder of numerous businesses put it: Unless this business can pay you at least five times your present salary, the risk and wear and tear won't be worth it.[12]"**

Arthur Rock, one of the most successful American venture capital investors, has a simple criterion for deciding to invest: "Look for business concepts that will change the way people live and work"[13]. He's invested in Intel, Apple, Teledyne. **THINK BIG.**

You simply don't want ventures that "do not create, enhance, or pursue opportunities that realize value. They tend to be job substitutes in many instances. Undercapitalized, undermanaged, and often poorly located"[14]. They are a recipe for failure!

[10] Mohr, Jakki, Sanjit Sengupta, and Stanley Slater(2010), *Marketing of High-Technology Products and Innovations*, 3nd edition, Upper Saddle River, New Jersey: Prentice Hall.
[11] Timmons and Spinelli, op cit., p. 83.
[12] Ibid. p. 83.
[13] Ibid. p. 83.
[14] Ibid. p. 85.

The odds of success increase dramatically if the venture reaches a critical mass of at least 10 to 20 people with $2 million to 3 million in revenues and is currently pursuing opportunities with growth potential[15].

The entrepreneurial process has three driving forces: The opportunity, the team, and the resources. But it starts with the opportunity![16]

The process starts by identifying the consumer trends and behaviors that seek new products or services. Once you've identified these emerging patterns, the entrepreneur develops a service or product concept and, finally, the service and product delivery system is conceived.

According to Timmons and Spinelli[17]:

> The more imperfect the market, the greater the opportunity. The greater the rate of change, the discontinuities, and the chaos, the greater is the opportunity.... The greater the inconsistencies in existing services and quality, in lead times and lag times, and the greater the vacuums and gaps in information and knowledge**,** the greater is the opportunity.

When is an idea an opportunity?

Superior business opportunities have four fundamental anchors[18]:

1- They create or add significant value to a customer or end-user. You'll see examples from our panel guests shortly.

2- They do so by solving a significant problem, removing a serious pain-point, or meeting a significant want or need – for which someone is willing to pay a premium price.

3- They have a robust market (or will soon have), margin, and money-making characteristics that will allow the entrepreneur to estimate and communicate sustainable value to potential stakeholders: large enough ($ 50 million +), high growth (20 % +), high gross margins (40% +), strong and early cash flow (recurring revenue – think of printers and the replacement cartridges – low assets, and working capital), high profit potential (10 to 15% + after tax), and attractive, realizable returns for investors (25 to 30% + IRR).

4- They are a good fit with the founder(s) and management team at the time and marketplace – along with an attractive risk-reward balance.

[15] Ibid.
[16] Ibid.
[17] Ibid. p. 90.
[18] Ibid. p. 118.

> Finally, the "window of opportunity" is opening and will remain open long enough. Also, "the superior opportunity has the qualities of being attractive, durable, and timely and is anchored in a product or service which creates or adds value for its buyer or end-user – usually by solving a very painful or serious problem"[19].

All this points to high potential high technology innovations.

Research by Professor John Gourville[20] from Harvard, further supports the above when he claims that for an innovation to become a "Home Run" it should provide essentially at least 9 times the advantages of what already exists on the market – in the eyes of the founding company or entrepreneur promoting the product. He calls this the 9X factor. The reason for this is simple: When an innovation is put on the market, there are gains and losses for the customer (think of an electric car). The losses of course are the higher price and some of the features that are lost compared to the old product, for instance the range without recharging. Since the consumer weighs losses more than the gains (from prospect theory), there has to be a compensating factor of about 3 in the positive features to overcome the negatives. On the other hand, the inventor is biased toward the benefits of his new invention; that is, he thinks that his invention is the greatest thing that happened since the telephone or sliced bread. Therefore, there also has to be a factor to bring him down to earth – another factor of 3. The overall effect is that, from the point of view of the entrepreneur, his invention must deliver at least nine times the value of the product that it hopes to replace.

This seems to be confirmed in real life when one considers the innovations that had staying power: the computer, the internet, Facebook, e-bay, etc.

The Downside of Marketing High Technology

The three major uncertainties related to marketing technology

Marketing technology, however, is fraught with difficulties. First of all, there are three major categories of uncertainty[21]:

1. Market uncertainty

    a. Who will buy the product? What is the market?
    b. What is the market potential?
    c. How fast will it penetrate the market?

[19] Ibid. p. 118.
[20] John T. Gourville (2003), *Why Consumers Don't Buy: The Psychology of New Product Adoption*, Boston: Harvard Business School Publishing, Reprint # 9-504-056.
[21] Mohr et al., op. cit., p. 11.

d. Is the innovation so disruptive that existing customers won't buy the product? In other word, will the new technology be so revolutionary that the existing customers and producers won't want to touch it either because it disrupts the existing business models, or because it doesn't quite perform like the old product (think again of electric cars). Although disruptive technologies can be seen as a major uncertainty, as was mentioned earlier, uncertainties also present major opportunities. In this case the **Disruptive Opportunity**[22]**.**

2. Technological uncertainty

    a. Will the product work as designed?
    b. Will there be unforeseen consequences in using the products (for instance the fear with cell phones that using them will cause brain tumors; or Aspartame as a sweetener in drinks being linked to cancers)?
    c. How fast will it be replaced by another technology?

3. Competitive volatility

    a. Who will be our next competitor (compare silver-based photographic film with digital photography).
    b. How fast can it be copied?

The major challenges companies face over the life cycle of their technologies

Usually, when new products are first launched, assuming that they meet most of the above requirements, sales can be expected fairly early. In fact early sales can be quite promising since they are usually made to customers who understand the technology, are curious about it, or see some specialized potential application. These are the innovators and early adopters. Early sales can be so promising, that it creates a false illusion in the startup. The problems begin when all the early adopters have stopped buying, and the company still has not penetrated the majority market. In fact, there is usually a major gap between the early sales and the early majority market. Geoffrey Moore[23] calls this the *Chasm*. In fact he's written two very popular books on this which I highly recommend: *Crossing the Chasm* and *Inside the Tornado*.

[22] Gilbert, Clark (2003), "The Disruption Opportunity," *MIT Sloan Management Review*, Vol. 44, No.4, Summer 2003.

[23] Moore, Geoffrey (1999), *Crossing the chasm: Marketing and Selling High-Tech Products to Mainstream Customers*, New York, N.Y.: Harper Perennial; Moore, Geoffrey (1999), *Inside the Tornado: Marketing Strategies from Silicon Valley's Cutting Edge*, New York, N.Y.: Harper Perennial.

In essence the concept of the chasm, which is based on the scientific literature, describes the turbulent period between the early adopter phase and the first sales to the majority - the most profitable market. In this phase, sales dry up, imitators enter the market, financing dries up, and many companies go bankrupt. The way to get out of this deep canyon is to find a beachhead on the other side; usually a small segment of the market for which this product has an immediate and pragmatic use and for which the product is sufficiently complete that it can solve the problem and deliver value. Think of this first application and market as the king-pin in a bowling alley. Once this market is captured, then you move on to a second niche with the same application, then to a third niche with the same application, and then back to the first segment with a new application, this segment with a third application, etc. All of these segments or niches represent bowling pins in their typical triangular arrangement. After a while, all the pins fall and the company enters the mainstream market.

One of the requirements for a company to succeed in the mainstream market is either to become the standard of the technology, or to recognize fairly early who is setting the standard and become a follower.

It is obviously beyond the scope of tonight's discussion to give you a full course on either entrepreneurship or on technological marketing. But researchers and practitioners have developed a considerable body of literature on the factors which promote or impede the adoption of new innovations both from the consumer's point of view and that of the industry. They have produced powerful models to help explain the adoption and diffusion of innovations and new technologies. Moreover, they have developed techniques to overcome these barriers and speed up diffusion of the innovations.

Finally, let me just mention two such areas that are very powerful to help aspiring start-up organizations:

1- The whole literature and techniques on branding. Developing brand equity is one of the most powerful ways of building value in the company and in helping to position the company for success in the mainstream market. This even applies to technological and B-to-B products. In fact branding may be even more important for high tech products and services because of their inherent uncertainties.

2- Rapid globalization through the use of the internet, global retailers, distributors, value added resellers, systems integrators, and, generally, through the development of a network of strategic alliances.

Below is a list of other recommended readings in the area of technological entrepreneurship and the marketing of technology and innovations.

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Oren Fuerst and Uri Geiger (2003), *From Concept to Wall Street: A Complete guide to Entrepreneurship and Venture Capital*, Upper Saddle River NJ: Financial Times/Prentice Hall.

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