Innovation and Individual Investor’s Decision Making under Affordable Loss

Kwanrat Suanpong
Technopreneurship and Innovation Management Program; Graduate School
Chulalongkorn University; Bangkok; Thailand
kwanrat.s@student.chula.ac.th

Kamales Santivejkul
Faculty of Commerce and Accountancy
Chulalongkorn University; Bangkok; Thailand
kamales.s@chula.ac.th

Achara Chandrachai
Technopreneurship and Innovation Management Program; Graduate School
Chulalongkorn University; Bangkok; Thailand
chandrachai@hotmail.com

Duanghat@sc.chula.ac.th

Abstract
This study aims to emphasize the importance of affordable loss mindset to propensity to invest of individual investors in start-up companies that has technological innovation. From structural interviews with investors who invested in start-up companies in Thailand, the investors’ simple decision making rules were the balancing affordable loss and aspiration. By focusing on structuring the start-ups’ capabilities to increase level of affordable loss and innovation to increase growth potential, level of aspiration of investors, the start-ups should have more potential to obtain investment from investors. Web-based interactive case study of start-up comparing propensity of investments between base case and option-like case were presented to investors to test decision making criteria for security, potential and aspiration needs.

Keywords: Investment, security, growth potential, affordable loss, innovation, aspiration

I. INTRODUCTION
Affordable loss was one of the recently found to be key criteria in making decision to invest in start-up by individual investors, especially business angels investing their seed money before venture capitals [1]. The availability of financing to support as seed funding or risk capital for start-up should increase potential for exploration and exploitation of innovation during start-up [2]. From investment perspective, nature of newness in technological innovation caused both potential for growth together with risk of failure which made financing for technological innovation start-up difficult.

II. CAPABILITIES
Investors look for capabilities of start-ups to evaluate their investment to reduce risk of not survival. Capabilities in technology, marketing, and entrepreneurial capabilities are key matrices that investors used to evaluate probability to survive of start-up and propensity to invest in start-up by investors.
A. Technology Capabilities

Technological capability is ability to transform technological resources to combine/recombine components, linkages between the components, methods, process and techniques, and underpinning core concepts to offer products [3]. In addition to technological capabilities, exploitation of technological opportunities depends on variation in technology lifecycle, appropriability conditions, and complimentary assets, such as marketing and distribution system [4].

B. Market Capabilities

Market capability is considered as complementary capability, in addition to technological capability, required to commercialize technological know-how to create value to customer in the market [5]. Market capabilities are complex bundles of skills and collective learning, exercised through organizational processes that ensure superior coordination of functional activities toward market and customers [6].

C. Entrepreneur Capabilities

Entrepreneur capabilities that focus on capability to withstand intense effort during start-up is weight as the highest desired factor by venture capitalists [7]. Entrepreneurship is associated with growth, innovation and flexibility [8]. Entrepreneur’s ability to predict market direction, recognize market value of a particular technological innovation, help increase the attractiveness of such opportunity in related market [9].

While entrepreneur capabilities relate to ability to survive and flexibility to adapt with real situation as it unfold, technology capabilities and market capabilities relate to potential value or growth potential of the start-up.

III. DISRUPTIVE INNOVATION

Start-up can leverage its technological and market capabilities to capture growth opportunities through innovation. Disruptive innovation is one of the strategies that help start-up to create and sustain successful growth [10]. Disruptive innovation creates new growth business that disrupted the progress of established technologies in mainstream market [11]. To create new business that has more chance of success, the start-up should reconfigure existing components available in the market and applies to new market segment, rather than invent the whole new product to new market segment [12].

IV. INVESTORS’ DECISION MAKING

A. Potential for Growth and Disruptive Innovation

Disruptive innovation creates growth potential by focusing technology capabilities and market capabilities on new-market and low-end market [13]. Start-ups that contain disruptive innovation have more chances to achieve potential or target return. The higher the probability to achieve target return of star-up, the higher opportunity perception of investors become, and therefore, there is higher propensity to invest in the start-ups [14].

B. Security and Affordable Loss

Matching investor preference with characteristics of start-up is very important in financing start-up, especially for individual investors such as business angels. In general, investors in the start-up evaluate and making decision to invest based on indicative factors that could help predict ability to survive and potential of growth [7]. The ability to survive is a reasonable factor that investors with safety-first in mind would consider due to the fact that there is always a chance that the any investment may become lost [15].

Affordable loss was proposed as one of the major criteria for entrepreneur in making decision to plunged into new venture [16]. Informal investors or business angels were similar to entrepreneurs in term of business creation or co-creator [17]. Therefore, affordable loss could be applied to both entrepreneur and business angles as decision making criteria to estimated what they might be able to put at risk and possible to lose in order to plunge in to investment in start-up.
In order to increase amount that investors prepare to lose, entrepreneurs should focus to plan to accept risk as inevitable and try to minimize downside loss in order to provide security for invested capital from investors.

C. Security-Potential and Aspiration

Decision making tool that combine focusing on security and potential was proposed by Lopes and Oden [18] as SP/A (security-potential/aspiration) theory which incorporate the analysis of investors seeking for security from its investment, potential of gain and aspiration level in avoiding poverty or seeking wealth. Investors will select the choice options that are evaluated based on their probability of reaching aspiration level (or target or goal). This study proposed to use SP/A as dual criteria of security and potential because security level ties to affordable loss and its probability of loss concept of effectuation [19] and potential level also ties to disruptive innovation. In addition, the use of aspiration level as single parameter to determine whether the start-up could provide outcome higher than aspiration/target/goal or not which such parameter could be used to describe propensity to invest of investors in start-up companies.

The preferences for upside potential and limiting downside risk are probably the most important to individual investors when investing in start-up because they cannot diversify the risk out in capital market. Therefore, it is important for start-ups to structure their product structure or business model to be in-line with tools and criteria that investors are using so that they can reflect valuation that match with investors’ behavior in making choice under uncertainty.

V. AFFORDABLE LOSS

Affordable loss is the factor that influences decision of entrepreneurs and investors to taking plunge into the start-ups. Factors affected affordable loss were 1) preference for taking the plunge, 2) ability to take plunge, and 3) depth of the plunge [17]. Preference for taking the plunge in investment in start-up depended on perception of financial motivation such as upside potential, and non-financial motivation such as psychological reason and socioeconomic factors [17]. Growth potential from disruptive innovation could increase preference of investors through perception of upside profit potential which satisfy their aspiration.

Ability of investors to take plunge in investment in start-up could be from unexpected increase of wealth which lifts mental account set aside for affordable loss, from actions such as inheritance, stock option, and lottery winning [17].

Depth of the plunge depends on level of commitment to start the business and also pre-commitment to adhere to the level of affordable loss-to back away when it required to quit [17]. Proper strategies of entrepreneurs to structure start-ups to match with investors’ preference, ability, and depth of the investments should increase propensity and amount of investment from investors.

VI. EXPERT INTERVIEWS

An exploratory study using the semi-structured interview were conducted with 10 individual depth interviews representing individual expert related to investments in start-up companies such as business angels, seed stage investors, venture capitalist, private fund manager and technology licensing officer asking about nature of investment in start-up, return and risk level expected, investment criteria, innovation, and affordable loss.

A. Capabilities

Technology capability was perceived by investors as growth potential, protection and sustainability, when patenting was possible. Market capability that help created survival through customer-linking was valued by investors to be more important than technology capability in the beginning of firm starting up. After sustainable of operations and cash flow, investors prefer to explore new market and adding new
technology capabilities to go up market. Entrepreneurial capability was given the highest weight among technology and market capabilities. Investors prefers entrepreneur that is strong in both execution and planning, but when asked to choose only one, they preferred entrepreneur that is strong in execution over strong in planning. Most cited characteristic from the interviews were high in commitment and ethics of entrepreneur, over even technology and market capabilities.

**B. Affordable Loss**

The investors all agreed that they used criteria of affordable loss to make decision to invest and plunged into start-up. They mentioned about their preference and depth of plunge that related to affordable loss, but not directly mentioned about their ability to take plunge. They confirmed that their affordable loss level on each start-up varied depending on level of capabilities of entrepreneurs such as preference, commitment, credential and especially ethics.

**C. Disruptive Innovation**

Investors agreed that disruptive innovation was a way to create survival of start-up and create wealth with less competition from incumbents. They give more weight to start-ups that have plan for innovation as it created growth. But they would consider the start-up to pursue any type of innovation only after start-up could prove to be sustainable and survive.

**D. Security-Potential/ Aspiration (SP/A)**

Investors were asked about SP/A to measure level of aspiration (goal or target return), minimum return requirement, and expect probability to achieve aspiration and minimum return (or loss) as in Figure 1. However, potential level that start-up could achieve was not mention because investor would not stop their aspiration lower than potential that start-up could be. Therefore, level of aspiration of investor and level of potential return from start-up are the same point.

**VII. TEST OF ACCEPTANCE**

Test of acceptance for decision model was conducted to test the usefulness in prediction of the model with 10 individual investors. Web-based interactive case study of start-up was presented to investors as in Figure 2. The first case was presented as hypothetical project of starting up new company to pursue business in making biodiesel from wasted cooking vegetable oil in Thailand. The base case focused on using current technology to produce biodiesel for current market of vehicle using diesel engines. Investors were asked to evaluate chance of survival and growth, propensity to invest in such start-up and affordable loss. The second case with disruptive innovation options were presented for new-market disruptive innovation as addition investment to improve technological performance to produce biodiesel for airplane market and for low-end disruptive innovation as reconfiguration existing technology in market to scale down to home-use market. Again, investors were asked to evaluate chance of survival and growth, propensity to invest in such start-up and affordable loss for both options.
Innovation and Individual Investor’s Decision Making under Affordable Loss

Result from test of acceptance was found that investors related survival ability of start-up with investors’ weight on security of investment which related to level of their affordable loss and entrepreneur capabilities. Low-end and new-market disruptive innovations were related to entrepreneurs’ capabilities and investors’ affordable loss level. Disruptive innovation and high capabilities of entrepreneurs provide high propensity of investors in the start-ups.

VIII. CONCEPTUAL MODEL

The following conceptual model was constructed from result of expert interviews and test of acceptance. The SP/A (security-potential/aspiration) theory helped investors understand proper value of start-up, due to its coherent survival ability and growth potential from disruptive innovation. Varieties of degree of affordable loss of individual investors and degree of capabilities of entrepreneurs and start-ups combination could be summarized as in Figure 3.

![Figure 3: Capabilities of start-up that create survival and propensity to invest according to level of Affordable Loss](image)

The basis evaluation criteria, investors value the start-up form technological, market, and entrepreneurial capabilities. Disruptive innovation was perceived to create upside potential and reduce downside risk that corresponding to either low-end disruption or new-market disruption.

Focusing on valuation process that describe capping downside risk and upside potential, the start-up funding request should match with investors preference on meeting security need, growth potential needs and match level of aspiration of wealth of investors with intensity and commitment of entrepreneur.

Individual investors, who have low affordable loss, tend to focus on survival and sustainability. Investors with high affordable loss focused on growth of the start-up under criteria of investment choice under SP/A. Propensity to invest of investors was found to be depending on probability that start-up could deliver probability to achieve potential return at higher level than investors’ aspiration level. For individual investors that have high affordable loss with desire to achieve high potential return, but start-ups have low relative capability to current incumbents, they could use low-end disruptive innovation to split and exclude unnecessary module to have option to reduce cost and improve efficiency. On the other hand, start-up that was perceived to have high relative capability to current incumbents in the market could use new-market disruptive innovation to add new product features or substitute old with new modules that satisfy new-market.

However, for individual investors that have low affordable loss which tend to focus first on survival ability of start-ups, the entrepreneurs with high capabilities but low resources obtained from investors should focus on survival by creating new business model through business creation with stakeholders such as suppliers or customers in order to create new ways of doing business with low resources as much as possible. We propose to term this high capabilities but low resources available as “Smart Start-up”. Entrepreneurs that have low capabilities in technology or market dimension which are unable to come up with new business model, should focus on survival by co-opting with stakeholders such as suppliers or customers in order to leverage underutilize assets of suppliers or customers.
We propose to term the low capabilities, with low financial resources but survive as “Frugal Start-up”, which could have achieved when entrepreneurs have strong commitment, credential and ethics which are essential to build trust with all stakeholders.

IX. CONCLUSIONS

This study proposed model that integrate between start-up capabilities, low-end disruption or new-market disruption with simple heuristic criteria of security, potential and aspiration of investors. Focusing on affordable loss help start-up deliver higher survival chances as first stage and deliver at later stage the growth potential from disruptive innovation that suit aspiration need of investors.

For individual investors, framing decision space into SP/A theory had simplified decision making. Various scenarios of start-up business plan that simulate possible outcomes could be a good learning tool for both investors and entrepreneur to exercise various options related to investment in each capabilities. It could be a starting point for discussion and negotiation between entrepreneur in order to better explain the process of value creation and risk reduction.

ACKNOWLEDGMENT

This paper is financially supported by Chulalongkorn University Graduate School Thesis Grant.

REFERENCES


