

A Dynamic Behavior of Korean Internet Venture Business using SD approach

-Focused on CSF of internet venture business-

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Abstract

Since 1998, government-led Korean venture business boom now proceeds into the stage of market-oriented venture business growth. At such a moment, this research is to clarify the relations between the success factors of Korean venture businesses, based on domestic and foreign documentary surveys and inquiry surveys over domestic venture businesses. This research starts from the necessity to overcome the limits of the existing researches by uni-dimensional probing research into success factors of Korean venture businesses and to manifest the multi-dimensional relations between the success factors from the various viewpoints.

And this research adopts System-Dynamics methodology to manifest and utilize relations among those factors, avoiding the existing metrical approaches. This research can be called a new approach to the current ecosystems of Korean venture in which whether venture businesses success in Korea is considered to depend on the list on the stock market. For this, this research implemented verification analysis through the simulations of each factor at various levels to build causality map which clarifies the causality of success factors of venture businesses through the System-Dynamics methodology and to utilize it as a way of supporting tool for decision-making of venture businesses. This research will be able to suggest the reactions depending on various internal and external situations.

This research tried to manifest the causality map of each factor on the basis of inquiry surveys and documentary surveys to verify feedback among each factor by the SD methodology. This research will be a basis bolster up the still fragile substructure of venture businesses through an efficient analysis framework using the verification of SD methodology and resulting outcomes from this research.

Key Words: Venture, CSF, System Dynamics, Entrepreneur, Environment, Market, Competitiveness, Product/Service

I . Introduction

1. Objectives

Since the United States got into a cyclical economic recession in the 1980s, it had made unprecedented attempts to build up a new framework for US corporate. Among these attempts, the most conspicuous one was that the American government encouraged venture startups to establish, therefore there was the boom of venture business, which was called silent revolution . These new trends became the engine for the US economic recovery and economic booming it is enjoying today.

For South Korea, recently under the auspices of the International Monetary Funds bailout program, the same attempts are paving the way for going out of the troubled economy. Korea. Inc for the present is managed not by a handful of big corporations as it did before, which is often called chaebol in Korea, but by special firms in professional management.

In addition, Korean economy is in a transition period from one led by these professional companies to the one by venture companies. This trend means the *Softification* of the overall industries, indicating the fact that Korean industries are taking the direction of pursuing economy of scale on the front of productivity, the outcome of new technology development and on the side of service rather than seeking after economic development based on real volume of product as it did in the past. This tendency represents that unlike the past, economic development in a nation in the future will be determined by qualitative growth of improved productivity, not by quantitative growth of capital and labor.

In the face of economic turmoil during the 1997 Asian financial crisis, Korean people expected the government to take a measure to activate venture business to address economic hardships. In reaction, a lot of venture companies started to do their business and they are vitalizing Korean economy. However, we get to know the fact that as venture startups grow bigger and bigger, the CEOs of the venture firms face rapid changes both internally and externally

including fast growth problems ranging from man power and financial management and difficulties which result from the lack of management knowledge and previous experiences.

Especially for venture firms led by technicians just with professional technological knowledge, these problems are highly likely to occur. They do not recognize the importance of management, not have the ability to manage the company properly, and they usually do not understand fully how flexible venture entrepreneurs should be according to the companys development process.

Koreans were preoccupied with venture business back in 1999 than anytime before. The KOSDAQ, unfamiliar to individual investors before 1999, became one of the profitable markets. The KOSDAQ market, introduced less than five years, was in a bullish market and therefore investors reaped the real benefits from it, which took investors attention as a result. Even though some people concerned about overheated KOSDAQ market and venture business, the two hot issues already became one of the economic phenomena and they are understood to be general concepts to spread worldwide as well as Korea.

Particularly, because the information communications industry develops at a rapid speed and it is still on the rise, it is creating new markets just only by creative business idea and prominent technology. It is estimated that about 70 percentages of Korean venture firms are in the information communications-related companies. As of late June 1998, among 3,073 firms, registered in the Korean Small and Middle Business Promotion Agency, the information communications companies are outstanding 1,437 accounting for about 47 percentages.

When taking a broad view, we see that fostering information communications companies gives us two solutions to the problems we are facing now, namely, reduction in the unemployment rate to invigorate the sagging economy by creating a new industry for which people could work and positive reaction to the recent trend of intellectual information. There are many studies domestically or internationally on objective evaluation of venture

business as the overheated interests in venture business cause many downsides.

This paper's main objective is to reexamine main factors needed to be successful venture business, previously dealt with in other studies and to map out a cause and effect relationship among them using the System Dynamics Modeling. In addition, it will study objective dynamic models of main factors to be a successful Korean venture company in coming years, simulating them by various kinds of scenarios and therefore it will allow Korean venture enterprises to use them to make a policy or a decision to significantly contribute to the Korean economic development.

2. Methodology

In order to fulfill this paper's purposes, at first, we had to understand the reality of the situation by grasping the definition and the actual condition of Korean venture business and then examine main causes for successful venture business by investigating on previous documentary records overseas as well as in Korea.

At last, we organized these causes by category and carry out an opinion survey, which was answered by lead venture capitalists, key players in making investment decision. By doing so, we get to know the main factors of success in venture business, mapping out a causal relationship between variables coming from those factors by the System Dynamics Modeling process and simulation.

II . System Dynamics Modeling

We can identify variables from social phenomenon because they have, to a degree, their own spontaneous causal relationship in themselves. However it is true that, unlike social variables, discovering a variable in the actual business

world is a difficult attempt because they have very complex and various correlations.

This paper takes realistic approach to the issue. We see venture companies divided into several various types as a venture ecosystem in one big framework and try to generalize successful factors venture businesses have in common. For instance, it is quite natural to have different successful factors between biotechnology venture industry and information technology venture industry. Nonetheless, this paper tries to identify the relationship between many successful factors from the broad perspectives, rather than just discuss different features.

In order to identify the cause and effect of the issue using the System Dynamics Modeling, we, first of all, inquired into the main causes for successful venture business following examining previous documentary records, based on which we ask venture capitalists to answer to questionnaires we provide and then finally bring out major factors for successful Korean venture businesses.

As a result, we get to summarize factors mainly into six variables. The characteristics of startups CEOs are considered as one of the important features for success, which was discussed in another previous studies. Especially for smaller venture companies than others, the team characteristics are also regarded as main factors. Another four causes for success are the development process of a venture company, external factors such as the number of individual investors, special features for the market the venture firm would enter, and sustained advantages of goods and services the company produce.

Finally, we analyzed those factors on the base of opinion investigation we carried out so that we were able to build a basic structure for the examination on specific factors in detail. After that, we picked up carefully sub-variables well representative for the main factors, on which we became to tease out the relationship between variables. For example, when we examine the characteristics of CEOs as one of the factors, personal ages and educational

backgrounds are excluded because they make a relatively low contribution to the importance analysis.

We obtain trust and validity in this research to overcome limitations the system dynamics approaches always have, by carrying out an opinion survey and by confirming that the existing sub-variables from other theoretical studies are also main features for Korean venture companies with success. Feedbacks coming from main factors are mainly divided into two categories; feedback from internal causes like the development stage of venture companies and one from external causes. We describe dynamic modeling for analyzing factors and basic framework for relationship between those factors and resulting performances in a diagram 3-1.

First, feedback resulting from features of a CEO, a team, products and services can be summarized into one, in the center of which there is a company's development stage from the beginning of the firm. In other words, this feedback consists of relationship between CEOs characteristic and teams, which is determined by CEOs quality and ability. Particularly, a CEOs qualification usually is most important thing to raise seed money or other early funds from venture capitalists and angels.

These features of products and services determine the direction of the early

research and development and the item selection. Products and services with fair and sustained advantages are determining factors in tangible outcome or profit or success in the KOSDAQ market. So this products and services are composed of external feedback, making up correlation with external feedback. These feedbacks allow CEOs or members of the Board of Director to make a strategic decision by showing objectively correlation between internal and external relationships to maximize the value and the outcome of an enterprise. They develop according to a basic development stage of venture business.

Unlike the first feedback, the second feedback consists of external causes of the company or products and services. They are specific features of market, legal or contract factors, circumstance factors. Their purpose is to maximize the outcome of a company or to promote a success. To begin with, specific features of market, for example, specification of entry market or market share, have significant influences on products and services. In this process, CEOs or other decision-making directors take an action to revise their previous determination. For venture business, outstanding features of products and services have a close relationship with raising fund because venture companies main purpose is to maximize their profit with small amount of capital and competitive technology. In addition, several legal contracts including patent-related issue should be in a level investors demand and a necessary condition. We also show the relationship in a diagram 3-2.

Ⅲ. SIMULATION

The flowchart of this research is constructed on the six fundamental main success factors as central elements. In case of founder factor, the flowchart was formed on the basis of education level and acquaintance bondage with business capability of founder, level of leadership and management techniques as subordinate variables.

And team characteristics and environmental elements were included in the formation of flowchart on the basis of main factors based on inquiry survey. Needless to say, although the combination of various forms of cause variables in venture business is possible, the flowchart was basically filled up with basic and main success factors forming venture business. This basic model is thought to be able to be extended through the addition of variables

reflecting characteristics of each type or growing stage of venture company. In terms of validity and credibility, basis on inquiry survey over Korean venture capital managers for better reflection of features of Korean venture industry will help to overcome subjective limits of variables.

Through the flowchart above, whether six individual key variables has significance as success factors of venture business is manifested through simulation and relative importance of each factor can be verified through the linkage to performance index of venture company. Various forms of features of venture businesses was simulated on each scenario, executing comparative verification with the past behavior.

1. Verification of Success Factors

Simulation results of six key success factors selected by venture capital managers as index for performance maximization of venture business are as pictures. At first simulation was done through the variation of education level, price stability, organization forming ability, the numbers of joint investors and the degree of management intervention of investors which are the most important among subordinate variables into 1,3 and 5 as each rather than direct variation of each success factor.

From result, in realm of linkage to performance it was revealed that the higher the level of six variables including founder the larger the amplitude of performance. Such a result can be interpreted as that while the higher level including founder factor means the performance maximization the intrinsic risk of venture company also goes higher. Among the success factors which appeared in the existing document survey and inquiry survey, in case of founder factor and market feature factor, those showed different postures with other factors' movement which means in case of venture business as the movement of venture company performance goes larger, in other words, the larger the amplitude, leadership of founder, business performance ability, market size, and growth rate decrease.

This is due to the grandization of organization and the deepened competition which

are the byproducts of growth of venture businesses. And viewing the existing Korean venture industry, those problems are discovered in several places. In case of venture company Korea Dot Com the object of this research, the derailment of venture spirit by few immoral venture entrepreneur caused the anti-venture spirit which led venture businessmen to money game.

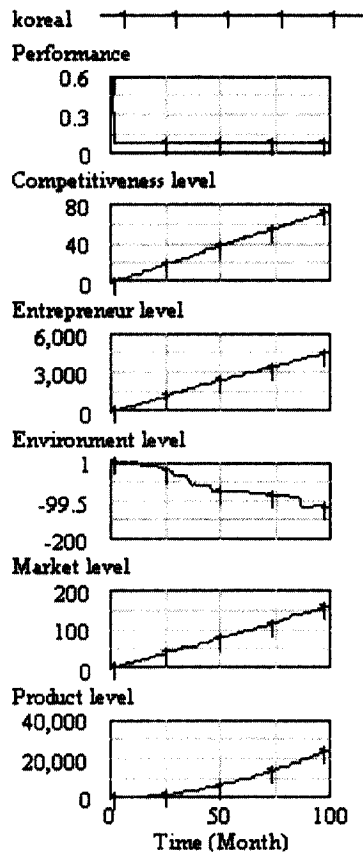
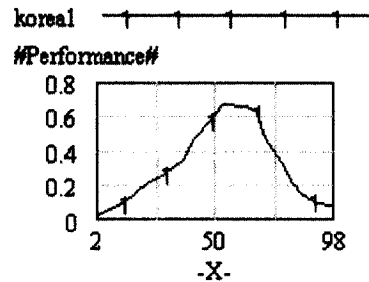
And in the case of succeeded venture businessmen the business expansion into unrelated business areas or the indulgence in stock investment led the survival of venture business itself to a dangerous state. In case of market itself, though technical competitiveness of goods and services or prospective technique development and technique level are still very high only the retainment of high technical ability does not reach to the enhancement of venture performance. Namely the lack of ability to commercialize and market such techniques and services invited the current recession.

As the results of simulation showed, if economic recession, financial hazard, and unstable NASDAG which are the causes of venture recession are deleted, derogated general venture level summarized into the extinction of venture spirit of founders and problems due to drastic market overexpansion without healthy business models can be dwindled into venture recession. The results of inquiry surveys these factors should be admitted that they are valued as very important factors as success factors but venture companies armed with entrepreneurship and technical power will finally be suggested as alternatives to true Korean economy.

2. Recession of Korean Venture Business

The quantitative increase of Korean venture companies were mostly dependent upon galloping growth of KOSDAQ. With the boom of KOSDAQ in 1999, many venture business proceeded into KOSDAQ market and this imprudent investment became the reason for the formation of bubble of venture businesses. But this bubble induced many problems along with the collapse of KOSDAQ market entering the year of 2000. In order to verify the causes of Korean venture recession after defining the movement of indexes of venture industry dynamic movement of performance index this research simulated it.

As shown in pictures in case of #Performance# the results are same with the movement according to the movement mean for 120days of monthly indexes among venture indexes of KOSDAQ indexes from 1992 to February of 2001. This intended to reflect recent venture indexes as possible and at the same time show the dynamic movement of early age. After reflecting the dynamic transition on the model, in case of performance among the six key variants by inquiry survey five factors except team feature factor which was analyzed as one of key factors by founder characteristic were regarded as direct performance of venture business. Therefore regarding Eigen value of each variants as the weighted measure of each variant this research took into account the weighted measure influencing the variation of performance by success factors of venture business.



This approach is a way of avoiding the variations resulted from exogenous variants existing venture indexes hold. General inference of endogenous effects into 40% in explaining the variations of venture indexes became the standard of this research in setting the influence of venture indexes and the remnant 60% was assumed as exogenous variants explaining the venture indexes by domestic market situation or extra short-run situations.

According to the results of simulation, it is found that the dynamic transition of #performance# moves in accordance with real movement and direct performance of venture business drastically downturns. The downturning point is identical with the point when environment variant among five factors downturns. And it is also found that performance by direct success factors of venture businesses downturns from the point when the level of exogenous factors such as the growing stage set as environment factor, investment of venture companies, and credibility and so on drastically downturns not much influenced by venture indexes.

In other words, for three years since 1992 the evaluation of Korean venture business was overestimated and which suggests that the fact that real sales performance does not coincide with inside performance has its own validity. Although this research did not cover, as environment variant government is a very important. Although Korean government has poured about 2 trillion won of venture promotion fund and intended to activate venture business, it succeeded in attaining the external growth of venture business but it also induced the side-effects of the weakened natural growing power of venture company.

But the fact that founder spirit, market, and the level of goods/techniques which venture company should have except environmental variants continues to increase as in the results of simulation will enable to evaluate the future of Korean venture business in a positive way.

IV. DISCUSSION

Currently, venture businesses in Korea collapses in a fast speed. They were evaluated as a fresh alternative of Korean economy which objective and rational alternatives are desperately required in the 21st century. Profitless venture business model, liquidity crisis due to credit choking from venture capital reduction and the vulnerable venture infrastructure are suggested as the causes of venture recession and yet still active solutions are not on hand.

In case of Korean venture company while the market is not mature and in an embryo stage when sales and profits do not spring in a full scale Korean venture businesses are required to restructure itself. In many decision-making in many areas for successful settlement of venture business, SD approach has a very strong advantages in respect of giving useful information.

Generalized causality map of this research needs to be segmented and extended vertically later with various forms. Through consideration into various types of venture businesses and the construction of causality map taking into account more extended variables, this research will contribute to more sophisticated decision-making.

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