

PRODUCT DEVELOPMENT: IN-HOUSE INNOVATION OR INTERNATIONAL CLONE? A RESEARCH ON DIFFERENT PERFORMANCE OF TECHNOLOGY START-UPS IN VIETNAM

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Abstract:

New product development (NPD) is one critical stage deciding the nature and the success of a start-up company. This research aims to compare the effectiveness of two approaches: innovation and international clone in NPD of technological start-ups in Vietnam. The paper utilises both exploratory case study research and in-depth interview research methods and revealed that in-house innovative products perform better generally but not as stable as the copycats. This trend is obvious in revenue and compounded annual growth rate, but in profit, both kind of product fluctuated and have opposite direction. There is no guarantee of success no matter what approach entrepreneurs follow. On the other hand, qualitative findings show that there is significant intersection between innovative and copycat products that make it harder to decide which one is more efficient. However, best practice in Vietnam should be copying new concept in the short term then innovating on the copycats to match the market and win the long run. Hence, a clever combination of innovation and reference would lead to more chance of success. For sustainable development of the company and the economy, innovation is a critical approach that cannot be dismissed now and in the future. It is the heart of entrepreneurship and the new product development, too. The paper sheds more light, academically and practically, to the importance of the combination of different ways of innovation in order to improve business performance in Vietnamese context.

Keywords: *innovation, new product development, in-house innovation, international clone.*

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1. Introduction

Innovation is the key driver in the development of one country's economy. According to the World Intellectual Property Organization (WIPO), top-ranked countries in the "Global Innovation Index 2012" are also the most developed economies in the

world. World Economic Forum also ranked these countries in the "group of countries with the highest competitiveness index" over the 142 other nations. From this it can be seen that there is a positive relationship between one country's innovation index and its economic growth.

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On the other hands, “Small and medium enterprises (SMEs) are the driver of economic growth and innovation” (OECD, 2010). According to *Schumpeter Mark I* pattern of innovation, from examination of the late nineteenth century industrial structure in Europe, Schumpeter (1942) pointed out that small new firms are major drivers of innovation and argued that successful new firms usher in new ideas, products and processes. Their appearance, thus, disrupts existing arrays of organization, production and distribution and eliminates the quasi-rents, resulting from previous innovations. It is the ‘creative destruction’ as he referred. So in brief, new young firms are the huge potential source for innovation and therefore the economic boom of the country.

Nevertheless, referring to innovation in start-up businesses, new product development (NPD) process is one of key activities that cannot be ignored. At each different level, the interpretation of innovation has its own distinct characteristics. At the enterprise level, “Innovation is the use of new technological and market knowledge to offer a new product or service that customers will want” (Afuah, 2003). New product development is the initial stage where information and resources from both business’s internal factors and market’s external factors are combined creatively, in order to deliver a more optimum solution to the customers. They are both abstract, difficult but exciting activities to the company. So innovation and new product development have a strong relationship, which interact to support each other.

In Vietnam, start-ups ecosystem is developing tremendously with the appearance and distinct roles of contributing stakeholders, such as government, start-up incubator and accelerator, investors, research institutes, universities and the enterprise itself. With advantages and disadvantages, Vietnam new enterprises, especially the technology start-ups, have been introducing numerous new products and services to the domestic and international markets. Despite the number of entrepreneurs and their diversified background, their offers of solutions and services have not yet been adequate. There are countless products on the market are the copycats. They derived from proved, successful ideas and business model in the world, mainly from the Silicon Valley, USA. The number is so big that there is a stereotype that Vietnamese startups just need to copy the idea of a successful startup in the world and execute this idea for the domestic, then financial result and reputation will easily come.

However, the number of academic research on this topic is still limited, opening a research gap for this paper to fulfill. This research is expected to shed a light on the field of new product development stage of new start-up ventures. It aims to supply more insights about innovating or copying ideas to build new products: “Cloning and innovation, which NDP approach is more efficient in Vietnam technology startups context?”, “Why entrepreneurs do what they do and believe what they believe in product development”. Moreover, the research will also consider influential factors that impact on the new product development and business

model of new enterprises. By researching in both qualitative and quantitative approach, the advantages will be gained by both new start-up founders and the government’s agencies.

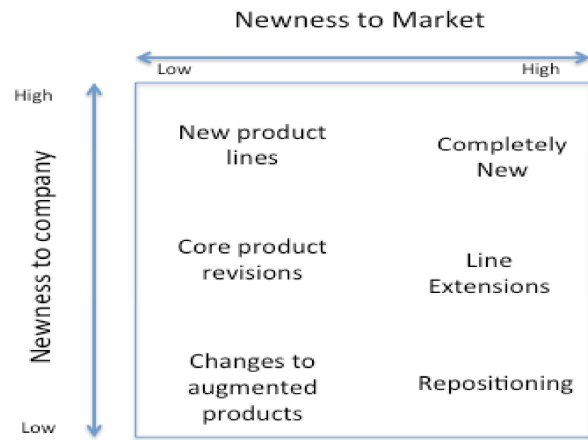
2. Literature Review

2.1. New Product Development

a. Definition

New product development is an ordered and determined set of tasks and steps that describe the method by which a company repeatedly converts undeveloped ideas into commercial products or services (Rezvani, 2009).

Upon to the degree of new appearance to the company or the market, the product development can be categorized as the following grid:



(Source: PDMA Handbook)

Figure 1: New Product Characterizations

New product development is a complex but critical process for the long-term survival of the business, not only opens new markets but also influence existing resources and the organization’s capabilities (Zhan, 1998).



(Source: Kotler, 2003)

Figure 2: New Product Development Process

b. NPD Process

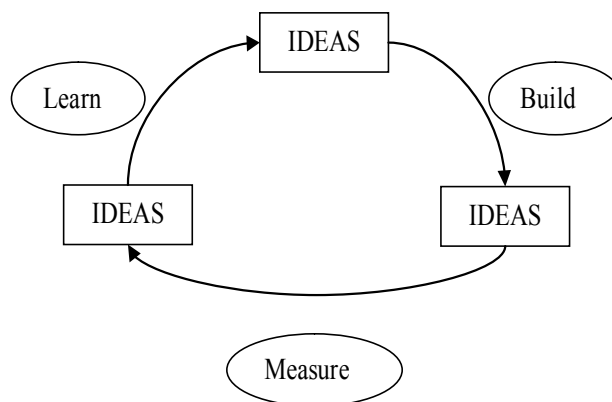
Currently, there are 2 main approaches in generating new products and ideas development. The classical approach is close approach where idea is developed inside the organization.

New product development process in this close approach usually includes 7 steps. The key defining it is close approach is the idea generation. It usually generated within the organization. Then a range of ideas is tested and developed to full product in order to commercialize later.

On the other hands, an emerging approach in NPD is “open innovation” where firms can and should use external ideas as well as internal ideas (Chesbrough, 2003). The boundaries between a firm and its environment have become more permeable; innovations can easily transfer inward and outward. Applying this approach in technology startup, a very famous study about open innovation has recently published. It is called “Lean startup”.

A core component of Lean Startup methodology is the build-measure-learn feedback loop. The first step is figuring out the problem that needs to be solved and then developing a minimum viable product (MVP) to begin the process of learning as quickly as possible. Once the MVP is established, a startup can work on tuning the engine. This will involve measurement and learning and must include actionable metrics that can demonstrate cause and effect question. When this process of measuring and learning is done correctly, it will be clear that a company is either moving the drivers of the business model or not. If not, it is a sign that it is time to

pivot or make a structural course correction to test a new fundamental hypothesis about the product, strategy and engine of growth. It will help entrepreneurs to save time, money and opportunities with the feedback of their own target customers and outside resources.



(Source: *The Lean startup methodology*)

Figure 3: Lean product development process

2.2. Innovation

a. Innovation and business performance

Research, over the last 50 years, has consistently linked innovation with business success. Innovation is shown as a major contributory factor in the growth of firms (Mansfield, 1968, 1971); new products and processes, the fastest growing product groups or ‘clusters’ (Freeman, 1974); rise and dominance of large corporations ascribed to the use of new technology (Temin, 1979); better business performance related to the higher measures of innovation (Cavanagh and Clifford, 1983); levels of competitiveness linked with the levels of innovativeness (Dosi, 1988); firms using innovation to differentiate their products from competitors, *twice* as profitable (Pavitt, 1991); innovation a key element of business success (Nonaka and Takeuchi, 1995); high growth companies

getting a higher percentage of sales from new products relative to competitors, (O’Gorman, 1997); new product development leading to greater sales volume and enhanced profitability (Kotler, 2003); innovating firms having lower probability of stagnant or declining employment in comparison to non-innovating firms (Frenz *et al*, 2003) and innovative businesses growing more than non-innovative businesses (European Commission, 2004).

b. Types of innovation

According to the Oslo Manual for measuring innovation, there are four types of innovation in business: product innovation, process innovation, marketing innovation and organizational innovation.

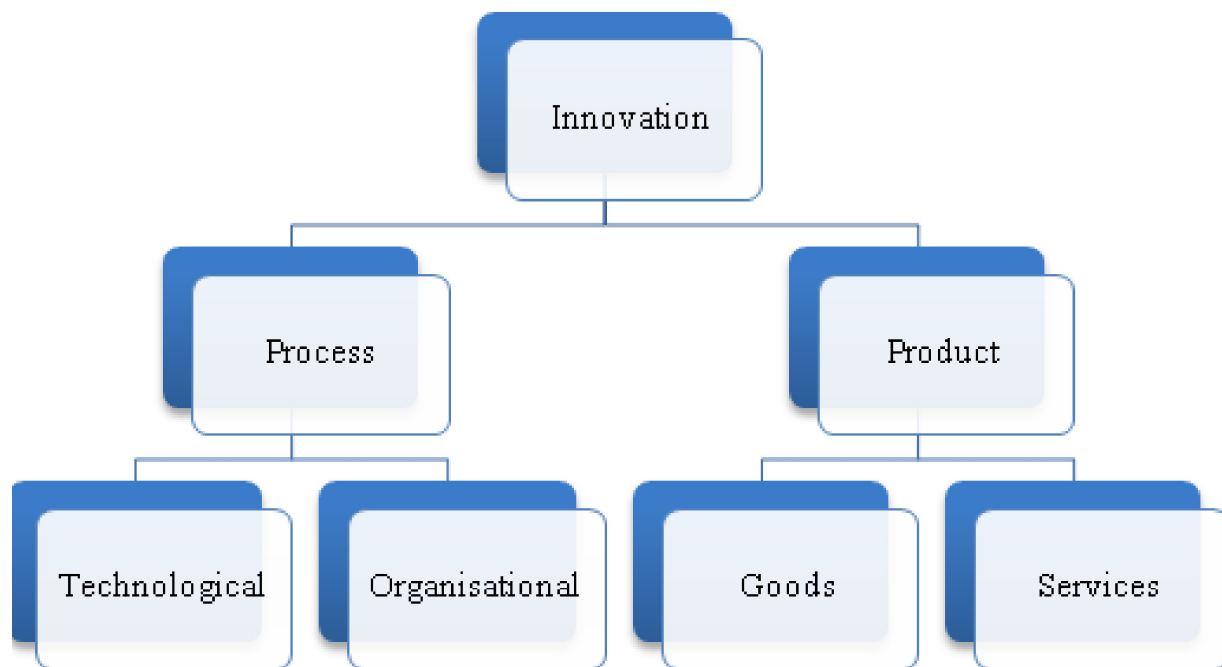
A parallel and overlapping effort to define innovation is to construct taxonomy of innovations. The creation of such taxonomy

is considered necessary and important, as disaggregation is crucial for progress with regard to identifying the determinants of innovation (Edquist, 2001).

Due to the challenging of data collection process, especially measuring technological and organisational innovation, this paper limits the scope to product innovation only, which is defined as a good or service that is new or significantly improved. This includes significant improvements in technical specifications, components and materials, software in the product, user friendliness or other functional characteristics

Research Methodology

In this study, an exploratory qualitative research has been conducted to understand the background as well as better interpreting the descriptive quantitative research later:



(Source: Edquist, 2001)

Figure 4: Edquist’s Taxonomy of innovation

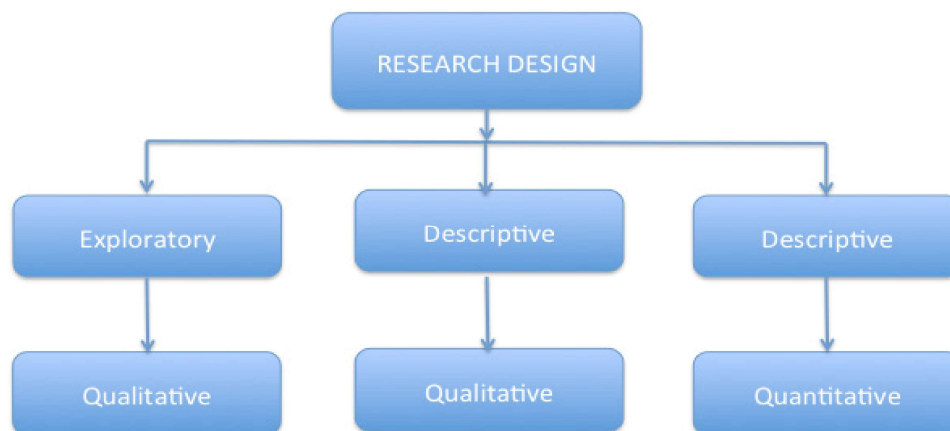


Figure 5: The research design

In stage one of research, case study analysis has been conducted in order to getting insights about the product development history in many Vietnamese startups. In stage two, we did many in-depth interviews with founders, product developers as well as venture capitalist to get their opinions about innovation, copycat and their approach in developing new products or choosing appropriate product to invest on. The interview is semi-structured, undisguised, with two main questions: (i) Cloning and innovation, which NDP approach is more efficient in Vietnam technology startups context? (ii) Why Vietnam startups are doing what they are doing? Which are the influent factors behind new product development decision?. In stage three, data collection and data analysis for the NPD performance have been done. Data gathered by interviewing the above entrepreneurs, capitalist, as well as extracting from the Deal Management System of IDG Ventures Vietnam – the biggest venture capital fund in Vietnam. The data then analyzed with the support of Microsoft

Office Suit, Excel Software. This stage has been a quantitative descriptive research.

The general research process is figured below:



Figure 6: General research process

3. Research Findings

3.1. Quantitative findings

a. Introduction about the samples

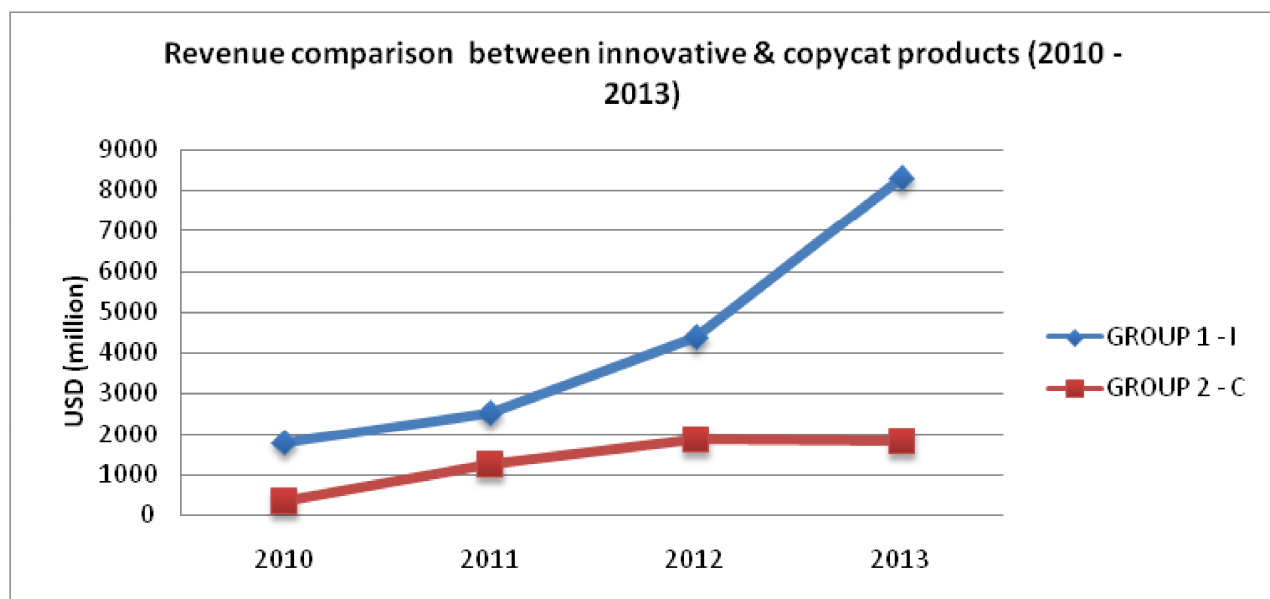
In theory, the larger the sample, the more accurate the estimation. However, for interview (qualitative) research method, one case might be enough if it could be able to help answer research questions (Tharenou et al. 2007). In other words, the question of generalisation of the sample will not be raised since this type of research method provide in-depth information on a specific matter to answer the question “how” and “why” rather than “what” as in quantitative research method. In this paper, our sampling strategy is to fulfill three aspects. First, the sample should include two group

of firms, one with innovative products, and one with cloning model. Second, the sample should include firms that are established in different years to accommodate time effect. And third, the sample should cover several business sectors. After screening the list of start-up firms, taking into account the accessibility matter, we decide that the sample includes

8 companies in Internet high-technology industry start-ups. They are all established for years and earn stable revenue. 8 companies are divided into 2 groups; each group consists of 4 companies. Group 1 is companies with innovative products. Group 2 is for companies with cloning products or business models.

Table 1: Information about the research sample

		Established year	Number of employee (End of 2013)	Sector
GROUP 1	COM 1	2009	107	E-commerce
	COM 2	2007	50	Education
	COM 3	2006	1400	Media
	COM 4	2008	320	Education
GROUP 2	COM 5	2006	890	E-commerce
	COM 6	2008	110	Social network
	COM 7	2009	98	Media
	COM 8	2006	46	Media



(Source: authors' compilation based on data provided by IDG Ventures Vietnam, 2014)

Figure 7: Revenue comparison between innovative & copycat products

The details are presented in the table below:

Finding 1: The innovative products perform better in term of revenue

We use revenue to evaluate business performance of start-ups. The reason behind is that startups normally have very high operating expense and they are not likely to expect profit in many first years. And by having stably growth revenue, start-ups can break-even and make profit in later time. Following figure demonstrates the revenue between 2 groups:

- Group 1 – I: is the coding of innovative products and companies
- Group 2 – C: is the coding of copycats ideas and localized business.

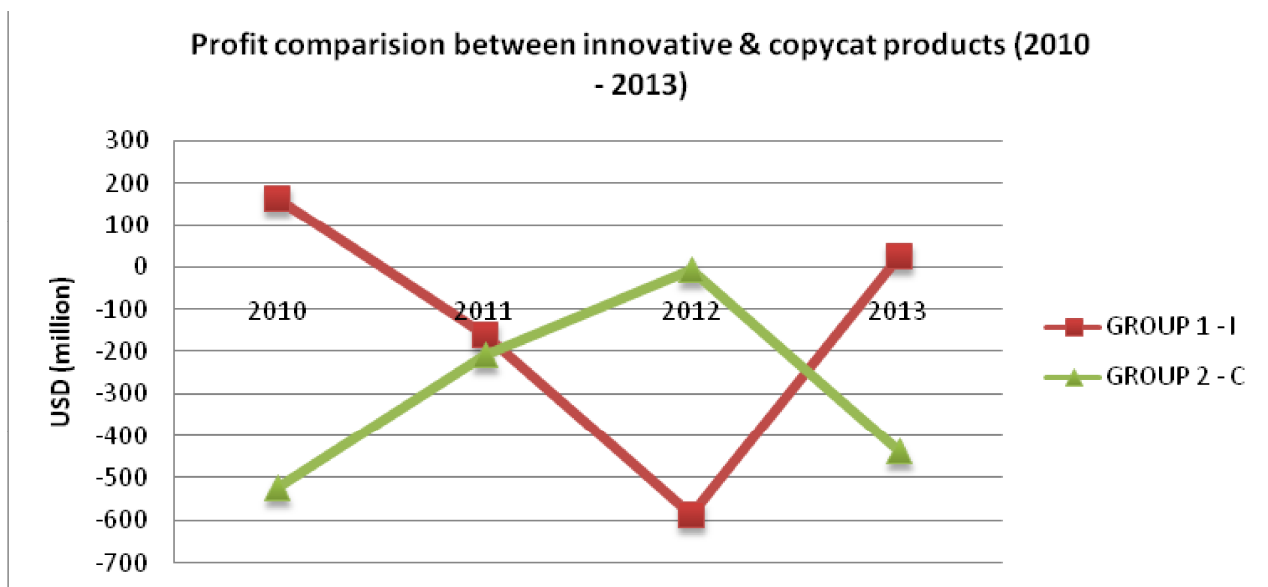
The graph shows the revenue comparison between innovative and copycat products in Vietnam high-technology startups (2010 – 2013). From the graph, it is pointed that, the revenue of innovative companies is better.

And the common trend of the two groups is growing revenue. However, the gap between 2 groups a larger and larger over time, especially, from 2012 to 2013, the revenue of innovative group skyrocketed. The revenue of innovative group reached more than \$8 billion, which is four times more than copycats group. So in term of revenue, the innovative products are still generate more income.

c. Finding 2: Profits of both innovative and copycat products fluctuated but have the opposite direction

The figure below demonstrates the profits earned by the two groups in innovative products and copycats. Obviously, the two groups have the opposite trend. Both have unstable profit in the period of 2010 – 2013.

In many first years, companies that develop new product concepts realize loss while copycats quickly breakeven. This trend suggests that in short term it is easier for copycats to gain profit, because they can reduce expenses in R&D and



(Source: authors' compilation based on data provided by IDG Ventures Vietnam, 2014)

Figure 8: Profit comparison between innovative & copycat products

product development activities. While at the same time, innovative products have to bear those cost. However, in later years, the trend turns upside down. The profit from innovative products starts to raise dramatically when the copycats' one drop. It can be explained by the assumption that trending demand from emerging business model has been over. It left the copycats to change its original model to adapt with the situation or/and reducing revenue and profit. On the other hands,

innovative products are more familiar and essential for customers. That is the reason why the profit begins to go up.

d. Finding 3: Compound Annual Revenue Growth Rate

The following table presents the annual revenue of 8 investigated companies and its compound annual growth rate. The CAGR is calculated as:

$$CAGR = \left[\left(\frac{EndRevenue}{BeginRevenue} \right)^{\left(\frac{1}{The\ number\ of\ year} \right)} \right]^{-1}$$

Table 2: Annual revenue and CAGR

REVENUE	2010	2011	2012	2013	3 year CAGR
COM 1	1006	813	895	1296	8.8%
COM 2	137	164	290	551	59.0%
COM 3	5671	8084	14565	23053	59.6%
COM 4	226	995	1720	8930	240.6%
COM 5	0	1844	2556	3176	31.2%
COM 6	0	838	1270	1518	34.6%
COM 7	1148	1514	2958	3796	49.0%
COM 8	193	752	616	511	38.3%

(Source: IDG Ventures Vietnam, 2014)

It should be noted that, the CAGR in revenue of company 5 and 6 is only in 2 years. Because in 2010, there was no revenue, so in order to avoid dividing-for-zero mistake, the CAGR of these 2 companies only take account for the revenue generated from 2011 to 2013.

From the 3 year CAGR shown in the table, it can be seen that the innovative group has CAGR usually very high that is more than 50%. Especially company 4 has a skyrocket CAGR of 240.6% per year. However, there is 1 case that the CARG in revenue is very low (8.8% of company 1). So it can be seen that the innovative products usually have above

average growth, but the rate is really different. On the other hands, the CAGR of revenue in copycat companies seems to be relatively equal, around 30% to 50% - quite below average level. There is no exceptional CAGR; all are in a safe and acceptable zone. It must be admitted that these growth rates are fairly good for startups companies.

In conclusion, by comparing the common trend between 2 groups and noticing exceptional case, we can see that copycats companies have a relatively safe and stable revenue growth rate. Meanwhile, companies with innovative products seem to perform better with higher

revenue growth rate. But, the growth is not a guarantee. There is exceptional in both positive and negative side. Some innovative products have revenue growth very poor, while some others have extraordinary growth over the same period of time.

3.2. Qualitative findings

a. The first question: Cloning and innovation, which NDP approach is more efficient in Vietnam technology startups context?

** There is significant intersection between cloning and innovation in NDP of Vietnam technology startups*

“It will not work if entrepreneur copy everything exactly the same. There must be some “innovation” in their copycat in order to adapt with the change in time, location, customers’ preference or their own resources”, said the director of product development at Cucre.vn. So, frankly, the copycat would not become successful without innovation. There are also empirical supports to the argument that we get more innovation from having copycats rather than just a bunch of folks inventing from scratch. “Imitators often make their own improvements to the original solution, and these can, in turn, be adopted and improved upon by the originator and others”.

Applying smartly to entrepreneurship, it should not be accused that copycat is illegal or innovation is the best. Because, everything has its own strengths. And it can only be objective if we analyze each case carefully with critical thinking judgments in specific context.

** In short-term, international cloning would quickly prove its effectiveness. But in long term, startups can only survive with their own innovation*

Of course, time does matter. Here in the context, innovating a total new product is quite disadvantage for Vietnamese entrepreneurs in the short-run.

It has been believed that innovation is always the spirit of entrepreneurship. However, investing in producing a total new product is very risky in Vietnam at the moment. In the next 5 years, there will be a lot of change in the market as well as start-up landscape of Vietnam. And technology is a very fast moving sector. It is possible that by the time a prototype of a product is tested, it will soon become out-fashioned by another technology.

However, it is not the end for innovative, game-changing brains. Interviewees usually agreed that in short-term it is safe to copy the ideas or business model from somewhere else in the world. But innovation is the only true source of long-term success for entrepreneurs.

So, in conclusion, it can be seen that the copycats can easily get high profit in very short period of time, while at the same time, innovative companies are fighting with loss. This fact is understandable, because innovative ideas usually require more resources and time to prove its effectiveness. While copycats just follow the trend. But later, when the trend is over, copycats are supposed to change their business model or realize lower profit even loss. Meanwhile, innovative products begin to gain market share and attention. That is the reason why innovation and copycats have completely opposite direction in gaining profit. And in long term, it would be more efficient to invest in innovative NPD.

b. The second question: Why Vietnam startups

are doing what they are doing? Which are the influent factors behind new product development decision?

By interviewing founders and directors of NPD departments, the research has identified several influent factors on the NPD decision

** Internal:*

Financial Reward: It is undeniable that financial reward is always big motivation for entrepreneurs. It means: “high risk, high return” in TamTay¹’s founder opinion. In NPD, the entrepreneurs, product managers confirmed that they not only innovate to satisfy their passion or curiosity. They innovate according to the trend or what they believe will bring a lot of money. “So no matter what the product is innovative or just a copycat, it can only be welcomed if it really helps to solve problems. New product can only make money if it satisfies the need of customer. Without demand, supply of new product is meaningless.”— the product development manager of Webtretho² shared. By offering new solutions, entrepreneurs are deserved to be rewarded.

Execution capabilities: It is sad but true that Vietnam is not an innovative country, especially in new product development and entrepreneurship field. Limited execution capability of new start-up is one of the key reasons. As mentioned earlier in the study, the influent factors that make NPD harder in Vietnam is because the quality of human resource. They are talented but not really

professional. They are hard working but still risk-averse and too passive. In analyzing, beside human resources, entrepreneurs also meet difficulty in raising funds, and defining strategy as well as value chain activities to deliver the innovation ideas to become a new product and successfully commercialize.

External:

Regulation and policy: Every company operates under the law of at least one country. New start-up is no exception. The policy is the catalyst, the reason for opportunity, as well as the barrier to protect the innovation. The policy sometimes creates new unmet market for entrepreneurs to innovate and bring new product. For example, in Education sector, Tinh Van³ Books has “published” electronic-text-books according to the agreement of Vietnam Ministry of Education. Electronic-text-books are interactive text books that have never exist in the market before. It is an innovation and passion of the company to explore a new way of selling textbooks and help the education become more exciting. However, without the permission and agreement of Ministry of Education, it would never possible for them to make the new product development successful. Last but not least, government policy that nourishes the innovation from the SME sector will be the big courage for entrepreneurs to think differently and innovate new product.

Access to finance: In the sharing and interview with the author, founder of TOPICA Education

¹ Tamtay.vn founded in 2008, TamTay is the leading social networking site for the Vietnamese youth demographic, with over 1.1 million registered users (website: www.tamtay.vn).

² Webtretho.com is a very successful technological start-up.

³ TinhVan Co., Ltd is a big firm in IT industry.

Group shared his experiences and observation in motivations of Vietnam high-tech startups. One key factor that entrepreneurs consider to develop their product is the probability of getting funded.

Why access to funding is so important to NPD of new technology startup companies? Getting ventures funded means the investors are putting their money for entrepreneurs with the expectation to earn extremely high return ratio. The venture capitalist will only invest in proved business or product with defined market, big enough demand, and obviously scalability. The product must show its potentials. Even in their most recent activity, the most effective Vietnam accelerators – TOPICA Founder Institute has named their event as “2014: What product to start in order to get funding?” The event has received the attention of the whole technology startup community. So, it is quite obvious that getting funded is always a proof of successful new product development.

Market’s characteristics: Market’s characteristics are always critical factors for entrepreneurs to customize their products to serve their target market perfectly. As Vietnam is a developing country but rapidly change in technology application level, it is open opportunity for high-tech startup to develop new products based on the current situation of the market.

First of all, it must be admitted that Vietnam technology business infrastructure is still limited. Unlike America or other developed countries, Vietnam businesses are still in lack of many critical links in the value chain. One of

very good example is Cucre.vn⁴. The website was first launched as a Groupon like website where customers can buy promoted deals by the buyer’s collectivism power. However, the lack of professional online payment, user’s habits and cultures has hindered the original business model. Then Cucre.vn must open offline stores and change its business model. As the co-founder of Project Lana said: “In Vietnam, if you are offline, you go online, but if you are online, you need to go offline”. The statement has demonstrated the situation of lacking infrastructure and difference in user’s habits have impacts on startups’ business.

3.3. Future orientation on NPD

The interview has concluded the percentage of agreement on the future orientation of NPD. The first option is innovation is the bright way to develop new products; the other is copycat with suitable application of local execution.

80% of entrepreneurs agree that there are plenty of room for them to make new product with their own innovation. Technology is now moving fast with the trends that everybody is talking about. In Vietnam, there has been 3 waves of technology start-up, and now, people is looking for the 4th to come.

In the field of information technology, Vietnam is not going after the developed countries too much. It is a playground for international developers and Vietnam is contributing its voice to the world. One recent example is Flappy Bird – a mobile game that made in Vietnam. After this phenomenon, the media has discussing about how Vietnamese is teaching the world about making mobile

⁴ Cucre.vn is a successfully technological start-up, providing a platform for trading in the Internet ecosystem.

game. It is a big inspire for entrepreneurs to innovate and become more encourage to challenge the current situation.

The other 20% is still confirming that they think copycat is more efficient. The purpose is not bringing the newest solution, but the most effective one for the problems. So instead of burning energy and resource for incubating new ideas, it is better to execute international ideas to solve local customers' pain. They also added that, copycat is not purely copy other people's idea, business model or products. It must be trying to creative in the given condition. In order to win in copycat battlefield, there must be huge concentration as well as creativity.

4. Conclusion and suggestions

New product development is risky and costly but could provide great competitive advantage for a company. New product development is also a stage of innovation and execution, so we wonder whether in-house generated ideas or international cloning ideas are more effective to apply in the context of Vietnam high technology start-ups nowadays.

The findings of the research have pointed that depending on the time frame in which each NPD approach will work more effectively. In short term, international cloning has more advantages and less risky for entrepreneurs to implement. However, in long term, the innovative NPD from new enterprise will gain benefits and prove its effectiveness, even if the fact that it is more costly and risky. And one highlight for the NPD of Vietnam high-tech start-up is there is no absolutely true method, each method has an overlap during product development process.

From these findings, there are various implications for managers, entrepreneurs. For example, In Vietnam current context, open approach in developing new products or services is more effective. Entrepreneurs ought to pay attention to the external changing economic world as well as doing business environment to seek and spot opportunities. Manager, founder or product developer should understand correctly and apply wisely the terminology of innovation and copy. Clever combination of innovation and reference can save time and resource for start-ups. Last but not least, for sustainable development of the company and the economy, innovation is a critical approach that cannot be dismiss now and in the future. Founders, product managers should consider and appoint appropriately both time and resources for the innovation and creativity stimulation activities. And at the same time have the vision, plan for both formal and informal application of innovative ideas.

Even the source of data is objectively reliable and the research is relatively comprehensive in both qualitative and quantitative findings, the quantitative data is not diverse enough and have some missing part. New product development stage was also only investigated within grounded start-ups. It did not reach many groups of emerging, unknown entrepreneurs or many young firm in the start-ups world. So there are rooms for improvement and deeper study in the field of new product development in Vietnam technology start-ups and its relation to innovation or international clones.

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