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Tel. (66)2-878-5088-9 Fax. (66)2-878-5087

Website: www.ijcim.th.org eMail: charmonman@gmail.com

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Title: “A Study of Success Criterion Evaluation for Thailand Startup SME”

Authors: Taninrat Rattanapongpinyo and Tidathip Panrod (Thailand)

Dear Authors,

THE INTERNATIONAL JOURNAL OF THE COMPUTER, THE INTERNET AND MANAGEMENT (IJCIM) is delighted to inform you that your paper with the above title will be published in the Regular Issue, Volume 28, No. 3, September - December 2020.

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Sincerely Yours,

Prof. Dr. Srisakdi Charmonman

IJCIM Editor-in-Chief

Tel. 081-621-4526, 02-878-5088-89

Email: Charmonman@gmail.com

Parinna Duangduan

Member of Editorial Committee IJCIM

Tel. 080-965-6229, 02-878-5055

Email: parinnad@siamtechno.ac.th

ประกาศศูนย์ดัชนีการอ้างอิงวารสารไทย (TCI)
เรื่อง แนวทางการอ้างอิงกลุ่มคุณภาพของบทความในวารสารของศูนย์ TCI

ภายหลังการประกาศผลการประเมินคุณภาพวารสารในฐานข้อมูล TCI รอบที่ 4 (พ.ศ. 2563-2567) เมื่อวันที่ 10 มกราคม 2563 ได้มีข้อซักถามมาทางศูนย์ฯ เป็นจำนวนมาก เกี่ยวกับการอ้างอิงกลุ่มคุณภาพวารสาร (กลุ่ม 1 กลุ่ม 2 และ กลุ่ม 3) ของ TCI กับบทความวิจัย/วิชาการที่อยู่ระหว่างการประเมินและระหว่างการตีพิมพ์เผยแพร่ เพื่อนำไปใช้ประโยชน์ในการขอ กำหนดตำแหน่งทางวิชาการ ใช้เพื่อสำเร็จการศึกษาหรือใช้ในการประกันคุณภาพ ในการนี้ ศูนย์ TCI จึงขอประกาศให้ทราบ แนวทางโดยทั่วกัน ดังนี้

1. หากบทความใดได้รับการตอบรับ (Final accept) จากบรรณาธิการวารสารให้ลงตีพิมพ์ในวารสารใดๆ ก่อนวันที่ 31 ธันวาคม 2562 ให้อ้างอิงกลุ่มวารสารตามผลการประเมินคุณภาพวารสารรอบที่ 3 (พ.ศ. 2558-2562) ถึงแม้ว่า บทความนั้นๆ จะไปปรากฏในเล่มที่ตีพิมพ์หลังจากปี 2562 ก็ตาม
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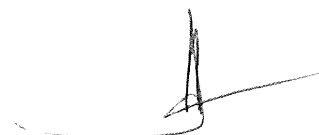
เพื่อความเข้าใจตรงกัน ขอแสดงตัวอย่าง ดังนี้

ตัวอย่าง: บทความ X และบทความ Y ได้ส่งไปขอรับการลงพิมพ์ในวารสาร A ซึ่งวารสาร A ได้รับการจัดกลุ่มคุณภาพเป็นกลุ่ม 1 ในการประเมินรอบที่ 3 (2558-2562) แต่ถูกปรับลดกลุ่มลงมาเป็นวารสารในกลุ่มที่ 2 ในการประเมินรอบที่ 4 (2563-2567)

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- Tourism Logistics Management at the Ancient Markets, Chachoengsao in Thailand

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Thailand Chapter of the Internet Society



Thailand Internet Association



Thailand Chapter of the ACM



The Association of Thai Internet Industry



Thailand Chapter of the Computer Society of the IEEE



Asia-Pacific eLearning Association



The Internet Poll Association



The Association of Thai Federation of Information Processing



FOREWORD

I am very pleased to see that the Volume 28, Number 3 of IJCIM includes selected papers as proof of our ongoing commitment to serve the community of researchers. We will continue to collaborate to making our journal better. Please carefully look at guidelines about paper format at www.ijcim.th.org and send your papers on topics of current interest in computer sciences, Internet technologies and management for the upcoming issues to me (charmonman@gmail.com). I will get your paper reviewed by experts in your field. If the initial response is favorable, I will request you to submit your camera-ready final paper as soon as possible for publication in the next edition of IJCIM.

The first paper titled “A Visual Representation Model for FMRI Activity Decoding” is written by **Piyawat Saengpetch and Luepol Pipanmemekaporn from Thailand**. This paper illustrates the differences in concepts for six types of low-level image features.

The second paper titled “Prediction System Kidney Complication of Diabetes Patients from Big Data with Data Visualization Technique” is written by **Wasun Saithong and Sooksawaddee Nattawuttisit from Thailand**. This paper uses data visualization technique to investigate kidney complication for diabetes patients.

The third paper titled “Algorithm for Detection Brown Planthopper Using Image Processing” is written by **Nutchuda Mongkolchart and Mahasak Ketcham from Thailand**. This paper declares the procedures of image processing to detect brown planthopper in simulation rice fields.

The fourth paper titled “Ontological and Sensor-Based Supporting System on Damage Prevention for Tamarind Farming: a Case Study of Phetchabun Tamarind Farms” is written by **Phimphan Thipphayasaeng and Sant Phanichsiti from Thailand**. This paper illustrates the smart farming techniques of using sensor-based supporting system with the case study of tamarind farm.

The fifth paper titled “The Development of Business Process Monitoring and Tracking Parcel Model Using BPMN 2.0 for the Institute of Community Colleges, Thailand” is written by **Supark Yimart and Sooksawaddee Nattawuttisit from Thailand**. This paper develops the new digital transformation business process to improve online resource management services for Institute of Community Colleges, Thailand.

The sixth paper titled “The Digital Ecosystem of Multilingual Augmented Reality Technology to Promote Learning and Culture Tourism” is written by **Papassara Jaisue, Jakkrit Premsmith, and Panita Wannapiroon from Thailand**. This paper illustrates the digital ecosystem used with augmented reality to promote learning and culture tourism.

The seventh paper titled “The Development of Digital Business Transformation Model for Individual Performance and Employment Appraisal Based on BPMN 2.0 with SABPP Standard” is written by **Pattira Klinhom and Sooksawaddee Nattawuttisit from Thailand**. This paper develops digital business transformation model by using BPMN 2.0 with SABPP standard.

The eighth paper titled “Creating Advantage of Perception Components Related to Creative Tourism of Lao Krang Ethnic Group in Nakhon Pathom Province of Tourists through Online Social Media Using” is written by **Apinya Supich, Winitra Leelapattana, Monshicha Inthajak, and Keerati Trakansiriwanich from Thailand**. This paper studies the advantages and attractiveness of Nakhon Pathom Province for Tourists by using social media.

The ninth paper titled “A Study of Success Criterion Evaluation for Thailand Startup SME” is written by **Taninrat Rattanapongpinyo and Tidathip Panrod from Thailand**. This paper evaluates the successful components for Thailand Startup SME.

The tenth paper titled “The Future of Competencies for Academic Support Personnel in Higher Education Institutions Under State Supervision with an Emphasis on Science and Technology” is written by **Sineenad Yomvan, Ampapan Tuntinakornkul, and Kanchana Boonphak from Thailand**. This paper emphasizes the performance of academic support personnel in higher educational institutions in Thailand by using EDFR techniques.

The eleventh paper titled “The Relationship between Organizational Resources and Capabilities: a Case Study of the Thailand Gem and Jewelry Industry” is written by **Nutnapha Lekhawichit and Chanongkorn Kuntonbutr from Thailand**. This paper evaluates the relationship between organizational resources and manufacturing capabilities by using Thailand Gem and Jewelry industry as case studies.

The twelfth paper titled “Direction of Management of Research and Development Centers of Vocational Institutes in Thailand: Systematic Synthesis” is written by **Krittiya Wanghom, Boonchan Sisan, and Pariyaporn Tungkunan from Thailand**. This paper represents of research and development centers of vocational institutes in Thailand has been done and how to develop those processes.

The thirteenth paper titled “Area Potential in Creative Tourism Management of Lao Krang Ethnic Group in Nakhon Pathom Province through Social Network” is written by **Apinya Supich, Monshicha Inthajak, Keerati Trakansiriwanich, and Winitra Leelapattana from Thailand**. This paper analyzes the significant factors that could be used for creative tourism management in Nakhon Pathom province by using social media.

The fourteenth paper titled “A Study of Factors and Indicators of Media Literacy for Undergraduate Students” is written by **Kattakamon Pislai-Ngam, Sirirat Petsangri, and Krissana Kiddee from Thailand**. This paper illustrates factors and indicators of media literacy for undergraduate students from Valaya Alongkorn Rajabhat University.

The fifteenth paper titled “Tourism Logistics Management at the Ancient Markets, Chachoengsao in Thailand” is written by **Ladawan Sawangarom from Thailand**. This paper explores factors affecting ancient tourism satisfaction as well as value of tourism logistics management in Chachoengsao province, Thailand.



(Prof. Dr. Srisakdi Charmonman)
Senior Editor-in-Chief of IJCIM
Srisakdi Charmonman Institute,
Siam Technology College

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A Study of Success Criterion Evaluation for Thailand Startup SME

Taninrat Rattanapongpinyo¹
and Tidathip Panrod²

Faculty of Management Science,
Silpakorn University, Nakhon Pathom, Thailand

¹taninrata@gmail.com

²tidathip@ms.su.ac.th

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Abstract - Nowadays, Thailand SME go on the road to startup way like other countries although there are many obstacles. The research objectives were to study definition and components of startup way, then to find out factors affecting to startup way of Thailand SME and finally, to explore the criterion for evaluation a success startup firm. Data has been collected by questionnaire and interviewing from 400 local entrepreneurs in the western provinces of Thailand and analyzed in the forms of mean, standard deviation, percentage and frequency, testing hypothesis by Multiple regression analysis and Pearson's correlation coefficient. Research results displayed that startup way means a philosophy that replaces the old-fashioned template currently holding so many companies back, providing a new blueprint of how a modern company should work to create sustained growth through continuous innovation. It composed of Continuous innovation, Startup as atomic unit of work, Entrepreneurship, Change in organization's structure and Continuous transformation consecutively. For Thailand SME, the startup way was impacted by Startup ecosystems, Leadership factors, Management factors, and Forces of change. And a success startup firm might be evaluated with the criteria of Return on investment, Idea and Business model as the first three ranking important factors.

This research was recommended that the government should determine a well-fitting

and distinct policy for startup SME future development plan. Meanwhile all of these firms must work with cooperation not only for know-how transferring but also for bargaining power of marketing approach. Moreover, commercial banks ought to play essential role in financial contribution for them.

Keywords - Startup Way, Startup Ecosystems, Success Startup Firm, SME

I. INTRODUCTION

A startup company (startup or start-up) is an entrepreneurial venture which is typically a newly emerged, fast-growing business that aims to meet a marketplace need by developing or offering an innovative product, process, platform or service. A startup is usually a company such as a small business, a partnership or an organization designed to rapidly develop scalable business model. Often, startup companies deploy technologies, such as Internet, e-commerce, computers, telecommunications, or robotics. These companies are generally involved in the design and implementation of the innovative processes of the development, validation and research for target markets. While start-ups do not all operate in technology realms, the term became internationally widespread during the dot-com bubble in the late 1990s, when a great number of Internet-based companies were founded. Start-ups have high rates of failure, but the minority of successes include companies that

have become large and influential.

While it's not possible to tell what is the exact beginning of "the startup era" it's safe to assume that it has a lot in common with the emergence of the Silicon Valley business ecosystem. Thus, it's also safe to assume that the first startups are the Silicon Valley companies, like, for example, International Business Machines (better known as IBM.) IBM was founded in 1911. Since then, it has grown to become one of the biggest hardware, middleware, and software manufacturers in the world. (In fact, comprising of four consolidated major companies of its time, IBM was big even in 1911 but let's not delve too deep into the details here.) Even if it's not the first actual startup nor does it meet the aforementioned startup's definition in all its aspects it's good to consider it one of the first.

Apple is another great example. One could also have mentioned Microsoft. Even better example is Google, which emergence have created a whole market niche for all the now-blooming SEO companies. Google was founded in 1998. The basis of its famous search engine was created in 1997, however, as a part of its founders, Brin and Page's, Ph.D. course. Soon enough, the two have understood its full potential and decided to launch the company.

Startup Thailand is a national startup promotion platform implemented to support and encourage startup growth and startup ecosystem in Thailand leading by the Ministry of Science and Technology (MOST) of Thailand. The policy is initiated by National Startup Committee (NSC) in supporting startup activities in Thailand. In Thailand, Startup is viewed as New Economic Warrior (NEW) as it is the new energy is driving national economy. Thailand aims to position itself as a nation with science- and innovation-driven economy has established a national level policy to make Thailand as an open area for startup in Asia region. NSC is appointed by General Prayuth Chan-ocha, the Prime Minister to establish grand strategy for startup support and building of startup ecosystem in Thailand in 2016, administrated by MOST.

The committee is chaired by the Permanent Secretary of Finance and composed of representatives from related organizations and agencies. The main objective of this committee is to mobilize government agencies related to startup support in order to realize the startup promotion plan from this committee.

The startup community-building stage commenced in October 2010 with Bar Camp IV and continued until the opening of HUBBA Co-Working Space in June of 2012. During this time there was no community conscious. There were several separate groups who envisioned how it would be like if a startup community could be developed. At this stage the Thai startup community was experiencing its teenage years whereupon it was quickly trying to develop a self-identity. The community would remain dysfunctional until November of 2013 when another catalytic event would occur. Until then local startup could benefit from the individual bootstrapping opportunities available. By the year 2014, the local startup ecosystem had expanded to the point that collaboration amongst the various community members was becoming a common occurrence and real positive results were being realized in terms of the success being achieved by local startups and the enhanced branding the Thai startup community was enjoying. During the year 2015 the startup community would benefit from strong dynamics that was the result of growing collaboration relationships that were developed during the previous year.

However, the startup ecosystems developed at smaller speed within the larger national startup ecosystem that cater to specific categories of startups. In Thailand there is a thriving social entrepreneurship sub-ecosystem that initially developed independently. Like the other three factors; Leadership factors, Management factors, Forces of change, Startup Ecosystems influenced to the Startup Way. This is why the researcher concentrated in the study about these variables and its effect include how to identify who is a success startup firm among all Thailand SME.

II. RESEARCH OBJECTIVES

The objectives of this research were to study:

- 1) Definition and components of startup way of Thailand SME.
- 2) Factors affecting to startup way of Thailand SME.
- 3) Criterion for evaluation a success startup firm for Thailand SME.

III. SCOPE OF THE STUDY

Leadership factors include Create space for experiments with appropriate liability constraints, Fund project without knowing the return on investment (ROI) in advance, Create appropriate milestones for teams that are operating autonomously, Provide professional development and coaching to help people get better at entrepreneurship as a skill, Provide networking and matchmaking in and out of the company, so people understand their new identity, Put the right person on the right team and Create new incentive and advancement systems.

Management factors include People, Resources, Culture, Process and Accountability.

Startup Ecosystems include Incubators, Accelerators, Co-working spaces, Crowd sourcing / Crowd funding and Strategic partnerships.

Forces of change include Anywhere liquid workforce, New work order, Connected and engaged customer, Era of the maker, Sharing economy and New creative economy.

Startup Way include Continuous innovation, Startup as atomic unit of work, Entrepreneurship, Change in organization's structure and Continuous Transformation.

Success startup firm criterion include Idea (Customer + Product), Team, Business model, Funding, Timing and ROI.

Population and area scope: 400 samples of local entrepreneurs in the western provinces of Thailand who had potential to upgrade their business to a startup firm.

Period study scope: This research has done the survey for 6 months from February 2018 – July 2018 and implemented in the later month.

IV. RESEARCH ASSUMPTIONS

The Research assumptions were:

- 1) Leadership factors have affected to Startup Way of Thailand SME.
- 2) Management factors have affected to Startup Way of Thailand SME.
- 3) Startup Ecosystems have affected to Startup Way of Thailand SME.
- 4) Forces of change have affected to Startup Way of Thailand SME.
- 5) Startup Way have related to Success startup firm criterion of Thailand SME.

V. CONCEPTUAL FRAMEWORK

By reviewing related literature, Leadership factors (Ries, 2017), Management factors (Ries, 2017), Startup Ecosystems (Shelters, 2016), Forces of change (Fisher & Duane, 2016), Startup Way (Ries, 2017), and Success startup firm criterion (Pattanagul et al., 2017), the researcher could synthesize the research conceptual framework as shown in the figure 1 below:

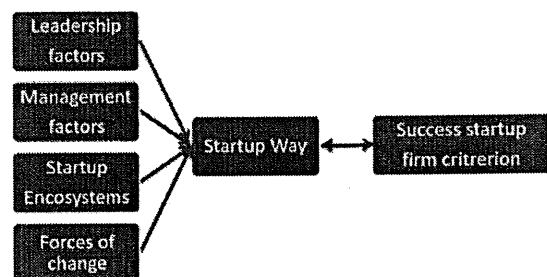


Figure 1. The Conceptual Framework

VI. LITERATURE REVIEW

The major related research were:

Khokmor (2018) researched in Awareness, preparation and social context that affect to development and become to Start-up business around Bang Phae district area in Ratchaburi and found that Awareness is the most affective factor to Start-up business development. By Readiness, attitude is the most affective. For Start-up business development, happiness and satisfaction in their job is the most valuable and for the expectation effect, redution of chemical and promoting of organic agriculture is the most valuable.

Baimai (2017) studied about Startup: Definition, Importance, and Research Guidelines and showed that “startup” is a subset of “entrepreneurship,” and the important issue of “startup” is innovation-related inventions in various aspects. Furthermore, innovation transferred through entrepreneurs positively leads to an increase in the rate of economic growth in the long run. “Startup” can be established by an individual, a group of entrepreneurs, or a spin-off from different types of firms. Based on the resource and capability framework, these various aspects of “startup” lead to the research question: “How do capabilities of resource allocation management affect the survival and the economic growth of different types of startup?” This idea needs to be further developed and empirically examined in the future.

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do capabilities of resource allocation management affect the survival and the economic growth of different types of startup?” This idea needs to be further developed and empirically examined in the future.

Dutta (2016) researched in Start-up Initiative and found that various government policies, plans, schemes and strategies related to start-ups will be discussed. Start-up is one of the scorching event this era which everyone is talking about. This campaign is particularly based on enhancing the bank financing for the start-ups to encourage the entrepreneurship and job availability in India.

Salamzadeh (2015) studied in Startup Companies: Life Cycle and Challenges. This paper tries to conceptualize the phenomenon, i.e. “startup”, and recognize the challenges they might face. After reviewing the life cycle and the challenges, the paper concludes with some concluding remarks.

VII. RESEARCH METHODOLOGY

A. Source of Information

This study was a quantitative research. It was studied in the form of survey research. The sample group was selected from the SMEs entrepreneur’s population in the western provinces of Thailand, including Tak, Kanchanaburi, Phetchburi, Prachuap Khiri Khan, and Ratchaburi, that classified by Ministry of Interior and distributed at firms’ ratio of 15.3, 26.5, 14.5, 19.5, and 24.2 in respectively.

Based on the total population number SMEs in Western Provinces of Thailand (including Tak, Kanchanaburi, Phetchburi, Prachuap Khiri Khan, and Ratchaburi) are 111,969 firms. This research determined the sample sizes by Taro Yamane’s approach that calculated to about 400 samples as a result. The data collection used questionnaire to gather primary source information. Besides, the researcher also gathered the secondary source data from literature review such as researches, books and academic articles.

B. Data Analysis

The researcher used questionnaires and interviewing as tools to collect data from the SMEs entrepreneurs. In the questionnaire structure, it divided to 7 parts that composed of Leadership factors, Management factors, Startup Ecosystems, Forces of change, Startup Way and Success startup firm criterion for the closed-end part and the other related suggestions for the open-end part. This questionnaire developed from the related researches and tested by 40 SMEs entrepreneurs in Central Area provinces. In addition, the return research tools were calculated by Cronbach's Alpha Coefficient, the outcome was 0.92 for confidence interval of overall questionnaire parts.

All of questionnaire data were calculated by the SPSS, the results were analyzed and shown in the forms of percentage, mean and standard deviation for descriptive statistics. Then the mean values were taken to interpret the meaning by being based on criterion that divided to 5 levels for Leadership factors, Management factors, Startup Ecosystems, Forces of change, Startup Way and Success startup firm criterion. Besides, this research had hypothesis testing: firstly, for Leadership factors, Management factors, Startup Ecosystems affected to Startup Way were tested with Multiple regression analysis, and secondly for Startup Way related to Success startup firm criterion was tested with Pearson's correlation coefficients.

VIII. RESEARCH RESULTS

A. Definition and Components of Startup Way of Thailand SME

Startup way of Thailand SME studied by Western area provinces means a philosophy that replaces the old-fashioned template currently holding so many companies back, providing a new blueprint of how a modern company should work to create sustained growth through continuous innovation. By the survey of samples' opinion, it composes of Continuous innovation (32%), Startup as atomic unit of work (25%), Entrepreneurship (20%), Change in organization's structure (14%) and Continuous transformation (9%).

B. Factors Affecting to Startup Way of Thailand SME

In Thailand SME case, the startup way was influenced by Leadership factors, Management factors, Startup ecosystems and Forces of change. Among these factors, Startup ecosystems play major role in determining startup way of Thailand SME as shown in figure 2.

Factors	r	sig
Leadership factors	.773	0.00
Management factors	.701	0.00
Startup ecosystems	.869	0.00
Forces of change	.694	0.00

Figure 2. Pearson's Correlation Coefficient Analysis for Important Factors

And when took all of variable factors into consideration by Multiple Regression Analysis, the result was displayed in the following figure 3.

Model		Unstandardize d Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.276	.254		4.627	.000
	Leadership :x ₁	.191	.069	.188	2.780	.006
	Manageme nt:x ₂	.379	.072	.421	5.289	.000
	Ecosystem : x ₃	.142	.075	.141	1.986	.043
	Changes: x ₄	.185	.058	.136	1.873	.027
a. Dependent Variable: Startup way b. F = 48.529 , Adjusted R Square = 0.617 , P < 0.05 , Sig. = 0.10 *, 0.05 **, 0.01 ***						

Figure 3. Multiple Regression Analysis of Factors Affecting to Startup Way of Thailand SME

From the figure 3, it could show in the Equation model as: $y \hat{=} 1.276 + 0.191x_1 + 0.379x_2 + 0.142x_3 + 0.185x_4$

Learning from the equation, dependent variable factors could explain startup way of Thailand SME 62% at 0.05 significant level.

And none of these factors had auto correlation problem by Durbin-watson statistics at 1.72.

C. Criterion for Evaluation a Success Startup firm for Thailand SME

And a success startup firm must be evaluated with the criteria of Idea, Team, Business model, Funding, Timing and Return on investment or ROI. All of them are vital elements and have a closed up relationship to startup way of Thailand SME by 0.823 Pearson’s correlation coefficient (r). For the important of each criteria, it was demonstrated in the Figure 4.

Criteria factor	Mean	Definition
Idea	0.43	Innovative and creativity Idea
Team	0.38	Efficiency Teamwork
Business model	0.41	Effective and suitable Business model
Funding	0.34	Accessibility to Funding sources
Timing	0.35	Appropriated Timing and Flexibility
Return on investment	0.47	Sustainability Business Performance

Figure 4. The Important Criteria for Evaluation a Success Startup Firm for Thailand SME

Interpretation from the above figure, a success startup firm must be terminated by the criteria of Return on investment, Idea and Business model as the first three ranking major factors.

IX. RESEARCH DISCUSSION

The significance of Startup ecosystems as a factor affecting to startup way of Thailand SME conformed to Nair (2017) that researched in Start-up’s & Model Start-up Ecosystems. And for Leadership factor, this study was supported by the research in Factor Shaping Entrepreneurial Ecosystems and the Rise of Entrepreneurship: A View from Top Management Journal (Aleksi, 2017) that emphasized in Leadership role for a Startup way.

In considering criterion for evaluation a success startup firm for Thailand SME, there are many researches concerned about this like The Influence of Innovation and Entrepreneurial

Self-Efficacy to Digital Startup Success (Dessyana & Prihatin Dwi, 2017) that pay attention to the Idea criteria. And The Critical Factors to Success of Startup Business (Pattanagul et al., 2017) that explained five important factors leading to the success of the startups exclude Return on investment that this research discovered.

X. CONCLUSION AND RECOMMENDATION

A. Conclusion

A chance for Thailand western provinces SME on the road to startup way were defined by Success startup firm criterion. But for startup way, there are many factors affecting it, one of the major factors is Startup ecosystems.

B. Recommendation

The research was suggested that the government should determine a suitable and obvious policy for startup SME future development direction. Meanwhile all of these firms must work with cooperation not only for knowledge transferring but also for bargaining power of marketing orientation. Moreover, commercial banks ought to play major role in financial support.

As regards the next research, the interested researcher is advised to keep studying on how to determine suitable government policy in supporting Startup ecosystems. Another useful research is the study about how to promote outstanding SMEs to the startup SMEs or upgrade them to the bigger size firms in appropriate time.

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(Arranged in the order of citation in the same fashion as the case of Footnotes.)

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