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Designing a strategic financial model for digital start-ups

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Abstract

Emerging companies or start-ups are growing rapidly and their number is increasing every day so that the number of knowledge-based and start-up companies in Iran has increased from about 55 companies in 2013 to more than 5965 companies in 2021. The capital element is the main and most productive factor for the success of start-ups and choosing the right financing method to achieve success is inevitable. The start-up literature offers a number of ways to finance entrepreneurs that are often presented in other geographies (often in startups operating in the United States) and those models cannot be accepted as non-native. Developing a strategic local financing framework based on the tacit knowledge gained by emerging digital startups can address this issue. Based on this, the present study aims to fill the existing gaps by designing a strategic financing framework for digital start-ups based on local criteria in order to be effective in the success of digital start-ups. The statistical population of the quality sector includes entrepreneurs and digital business owners, 30 of whom were identified by snowball method and interviewed in a semi-authorized manner. The statistical population of the quantitative section includes 166 digital businesses operating in Tehran science and technology parks that have been selected using Cochran's formula in a simple random method. To collect data, the method of library review and interviews with experts and finally the distribution of questionnaires have been used. The analysis of the findings in the qualitative stage was performed with a thematic analysis approach and the results showed that 101 open codes were categorized in 17 sub-themes and 17 sub-themes were placed in 5 main themes. In the quantitative stage, confirmatory factor analysis and structural equation modeling with LISREL software were used. The results showed that five main factors including corporate factors, macro environmental factors, investment factors, business valuation factors and idea and product factors are effective in designing digital business financing strategy.

Keywords: start-ups; digital businesses; financing strategy; investment; business valuation.

Paper Type: Original Research

1. Introduction

The business world is changing rapidly; Extensive and fast access to high-speed Internet in Iran and around the world, the dramatic growth of social networks, the increasing diversity of content presented in the digital world, make it an attractive, growing, profitable and unique environment for the growth and development of start-up businesses. To the extent that many companies have used the advancement and development of information and communication sciences and technologies and have chosen the digital space as a suitable platform to continue their activities and maintain their competitive existence. Statistics published by international institutions confirm this claim. The volume of digital transactions in 2014 was about 1336 billion dollars and increased to 3535 billion dollars by 2019 and is expected to increase to 6542 billion dollars by the end of 2023. Meanwhile, the volume of digital transactions with mobile has increased from $ 1.36 trillion in 2017 to $ 3.91 trillion in 2021, which is expected to reach $ 4.56 trillion in 2022. The above statistics show the importance of digital space in the world and the growing number of businesses active in this field.

According to statistics, most companies active in the field of digital in our country are start- ups and knowledge-based, which have provided a very important role in the development of digital innovation ecosystem, so that the number of knowledge-based companies in our country from nearly 55 companies in 1392 to more 5965 companies have reached 1400 in the year. The element of capital can be considered as one of the main and productive factors of the success of digital start-ups. The importance of the element of capital attraction is such that the International Association of Venture Capitalists considers the success of a knowledge-based company based on their capital attraction model. On the other hand, how to finance and raise capital is the most critical challenge for the development of start-up knowledge-based companies. Start- ups have limited financing options due to their specific

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characteristics; Most of them have little or no credentials, so how to finance start- ups for digital businesses will be a problem. Faced with this dilemma, entrepreneurs are forced to choose one of several methods of financing. This is where choosing the best method in accordance with the criteria, models and organizational strategies of financing is very important and vital in the growth process of digital start-ups. Based on this and in order to answer the above question, the present study intends to study the processes and financing strategies of active and successful digital start- ups to design a strategic financing framework for digital start-ups. It seems that the output of this research can provide a strategic framework for young managers of startups in the country,so that these entrepreneurs can use it to find their financing method according to the external and internal conditions of the business. The results of this research can help Iranian entrepreneurs to save their psychological, time and money resources and respond to their needs with less search. It also helps entrepreneurs find their financing strategy. Entrepreneurs have little experience with financing methods. It should be noted that if entrepreneurs do not pay attention to the results of this research and neglect it, they will have to spend a lot of time learning financing methods and how to design its strategy, or hire consultants in this field, which will cost a lot of money. They will follow and reduce their focus from the core business that was his idea.

2. Theoretical literature and research background

2.1. Start-up digital company

Information technology and digital media are changing the face of the world and our lives. The rapid growth of this industry has led to the creation of new types of markets and businesses that have been able to bring a new wave of innovation and creativity into the field of global employment. The emergence of a group of technology-driven companies such as Google, Facebook and Twitter over the past two decades and their tumultuous growth introduced a new phenomenon in the field of start-ups that had the following characteristics: based on innovation and creative ideas, generally based on information technology and they are communications and they are growing fast. These attractive phenomena, which are growing rapidly in the world and have become one of the main focus of planners and sectors affecting the economic growth of some countries, were called start-up businesses (Charekhah et al., 2014).

Start-ups are temporary organizations whose business model has three characteristics: profitability, repeatability and scalability. There are three definitions of three startup thinkers, each with a different approach to the startup process.

The first definition of Powell Graham: A startup is a company built to grow rapidly.

The second definition of Stevelang: The greatest thinker in the field of startups: Startups are institutions that are made to create a new product or service in a situation of great uncertainty. In another definition, a startup is a temporary organization that is looking for a scalable, reproducible, and profitable business model.

Third Stroulder's definition: He introduces his business model as the business canvas, according to which every small and large business is created and developed in a practical way and creates value.

The definition that covers all the correct aspects of the word start-up is: a group that is in the first stage of its activity. These collections are often initially funded by their founders. Seeking to meet a need of a community or business environment, these collections seek to provide an innovative, scalable model, usually based on high-tech technology. Due to limited income or high costs, most of these start-up activities will not be sustainable in the long run without investment from venture capitalists.

2.2. Stages of investing startups

A start-up business needs more than just a great idea to succeed. Factors such as time, order, motivation, self-sacrifice and, most importantly, the right budget are some of the things that you need to think about carefully and correctly.

The figure. 1 shows the steps of investing in a startup well.

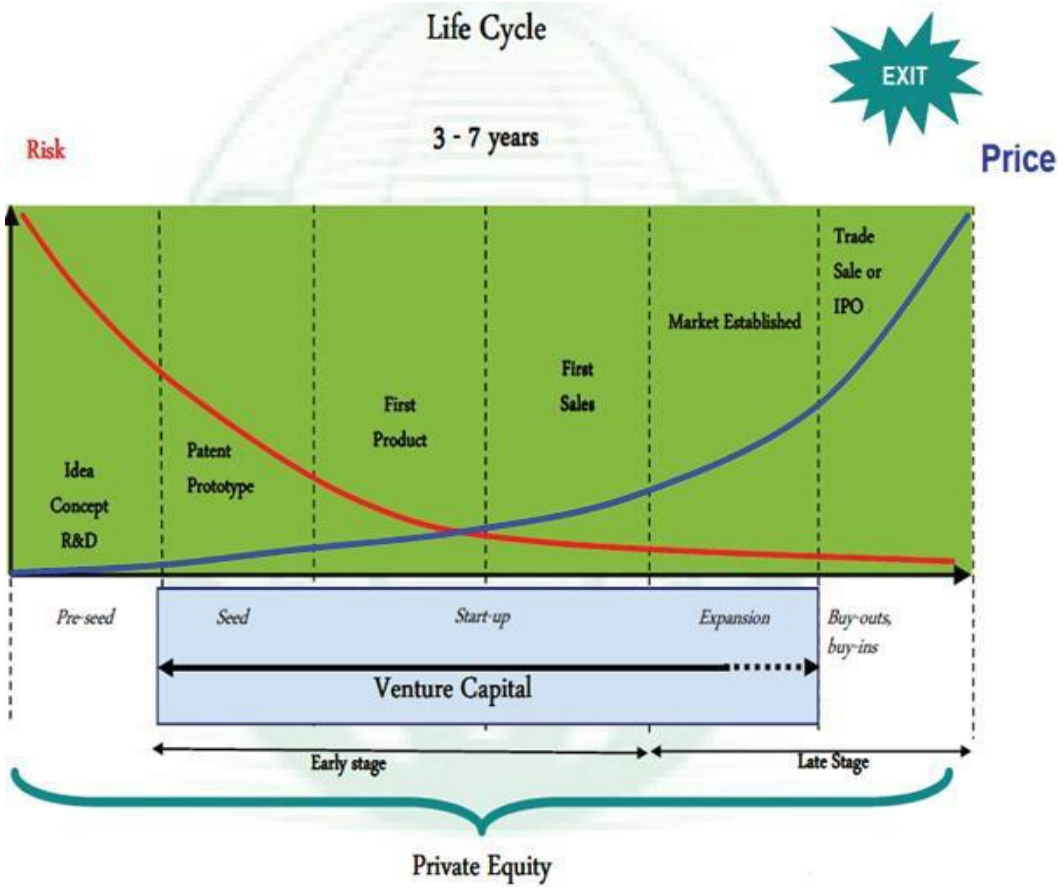

Figure.1. the steps of investing in a startup

2.2.1. The Pre-seed funding

The first level of the startup financing process takes place before the idea is planted or the seed is invested. This stage occurs so early that it is often not even considered as a separate stage of financing. To simplify the concept of financing, consider it when a startup is just starting out. Given that there is virtually nothing to offer the investor at this stage (other than a unique idea with commercialization potential), it is likely that investors will not be willing to invest and finance a startup, even if they have stocks. The pre-planting financing stage of an idea is generally called Bootstrapping. This means that you use the available resources to determine the scale of your start. The founders invest from their own pockets and with the same capital, try to grow in the best possible way.

At this level, potential investors will fall into the following three categories:

- Owners and founders
- Friends and family
- Microfinance assets

2.2.2. Seed funding stage

This level can be considered as the first stage of formal levels of startup financing. Note that, according to statistics, approximately 29% of startups fail because they run out of capital while launching (pre-financing). This statistic illustrates well the importance of financing the previous phase, although the previous phase is not part of the formal levels of fundraising for startups. Startups rely on self-government in the first phase. At this stage, they use their savings, family support, loans and small incomes to advance their idea. The first sponsors of startups are investors in the idea cultivation phase. At this stage, the investor buys a part of the company's stock (start-up business) according to the rules and formats accepted in the market. The company is initially valued and then capital is raised. Seed capital means seed.

That is, the investor helps the business to reach the initial income or prepare for subsequent investments. At this

stage, startups are still searching for their customers, discovering the market and extracting their ultimate business model, hence the name, search.

Common investors investing and financing startups at this stage are:

• Friends and relatives

• Angel Investors

• Micro-risky investors

• Collective investment (Ebrahimi 1398).

2.2.3. Series A financing stage

This level of financing can be considered as the first inflow of structured venture capital into the business. At this stage, the startup has a product and a customer base with a relatively stable revenue stream. Now is the time to invest in Series A and start scaling up the business in different markets. In a Series A financial cycle, having an action plan for long-term profits is very important. Potential investors for Series A financing are:

• Accelerators

• Super Angel Investors

• Venture capitalists

2.2.4. Series B financing stage

Startups build a remarkable user base as well as a steady stream of profitability by surpassing previous levels. They have proven themselves to be early investors and have shown that they can succeed at higher levels as well. Investors at this level can help startups increase their market share by funding market access activities. Expand operations teams such as marketing, business development and customer success. This is extremely important in competitive markets and industries. In terms of core processes and activities, this level of investment is very similar to round A investment, except that your key investors lead and assist the financing process to attract new investors.

Potential investors for Round B investing include:

- Venture capitalists
- Late-stage VCs

2.2.5. Series C financing stage

At the C-Series financing level, investors are willing to provide the capital needed for successful startups. They will hopefully reap far greater benefits from the investment. To summarize the purpose of the C-Series investment, it can be said that this level of financing focuses on increasing the scale of a startup in the fastest possible time.
Potential investors for C Series investing include:

- Final level venture capitalists
- Companies with private shares
- Hedge Funds Limited Liability Fund Banks

2.2.6. Series D funding and beyond

Many startups do not need to go to this level of investment. D-Series investing allows entrepreneurs to raise capital for a particular situation. Financing at this stage offers the most sustainable solutions and allows start-ups to negotiate the terms of acquiring another startup and merging with each other.
Potential investors for Series D include:

- Final level venture capitalists
- Companies with private shares
- Risk hedge funds
- Banks

2.2.7. Initial public offering (IPO)

The initial public offering of shares is the last stage of financing startups, which allows them to transfer part or all of their ownership to interested parties through the sale of shares.

3. Research methods

This research is of mixed (qualitative- quantitative) type. In terms of purpose, this research is applied research and in terms of implementation path, it is survey research that has an exploratory approach. By studying the literature in the field of start-up and digital business financing and using the opinions of experts, the researcher identifies the underlying factors affecting the financing of start-up businesses in Iran. The statistical population in the qualitative section includes entrepreneurs and owners of digital start-ups, which were sampled using the snowball sampling method. The study sample includes 30 entrepreneurs and digital business owners. The statistical population in the quantitative part includes managers, experts and thinkers active in digital businesses located in Tehran science and technology parks, from which a sample size of 166 people was randomly selected. In the qualitative part, the content analysis method has been used to collect data and through this, the initial model has been designed. The quantitative part has been done in two descriptive and inferential stages. The data collection tool at this stage is a questionnaire from the resource content analysis method with a seven-point Likert scale.
In order to validate the results, four procedures of self-coding test, using independent coders, receiving feedback from the interviewees, while providing a rich description and recording the details of the surveys, were used. In order to determine the reliability of the interviews and the results obtained, the coding was performed first by studying the desired data sources line by line. Then the results of these two coding are compared with each other and Holstey method is used to measure the reliability of these two coding methods.
According to the above explanations, the content analysis method has been used for data analysis in the qualitative part and the structural equation modeling method with LISREL software has been used in the quantitative part.

4. Findings

In the content analysis approach, first the coding is done according to the format of the themes and based on library resources and the results of interviews with experts. This information is categorized in line with the objectives and research questions in the relevant tables and is analyzed by calculating frequency, percentage and average.
In this study, the six steps of theme analysis with the approach of Clark and Brun (2006), were performed as follows. First stage: familiarity with data, second stage: creating primary codes, third stage: search for selective codes, fourth stage: formation of sub-themes, fifth stage: defining and naming main themes and sixth stage: preparing a report. In the data familiarity stage, factors and components were extracted and meanings and patterns were searched, then the open coding stage began. The result of this process are notes that were considered as raw data from which concepts were extracted. In the selective code search step, the encoded data summaries were analyzed and sorted, and after removing incomplete, irrelevant and duplicate codes, 101 selective codes were obtained. In the sub-theme formation stage, open-source code was categorized into 17 sub-themes. Finally, 17 sub-themes were categorized into 5 main themes. Table 1 shows the main, sub-themes and open-source themes influencing the design of digital start-up financing strategies.

Table 1. Main, sub-themes and open codes affecting the design of a strategic financing model for start-up digital businesses

Sub-theme code	Sub-themes	Open source
B1	Human resources and team building	Suitable job market for IT professionals all over the world Adequate income for IT professionals all over the world Working as a freelancer for IT professionals Immigration due to higher income Lack of skilled and skilled personnel in the field of IT Insufficient expertise of entrepreneurs Lack of commitment of entrepreneurs and immigration The importance of team building and the presence of specialized anstrong peo-ple in the team Perseverance and involvement were present in the team Roadmap for team members The technicality of the team members The importance of the team's motivation and willingness to succeed in raising capital Problem solving and team building in the early stages
B2	Macro ecosystem factors	The culture that encourages startups to start Macroeconomic factors and conditions of the country Tax and insurance restrictions Existence of effective legislative bodies Lack of familiarity of legislators with the space and culture of startups Culture of Sovereignty
		High inflation and macroeconomic factors Political risk Manpower risk Low sales in the market due to inflation and liquidity problems Market size to assess market suitability Growth rate to assess market suitability Impact of market and industry environment on investment acceptance Ecosystem problems and lack of proper role-playing for actors Legal and regulatory restrictions and political factors that affect the entry and exit of investors Lack of useful and effective government institutions Lack of proper financial flow from financial institutions to start-ups The need for industry experts Incomplete banking rules in providing facilities
B 3	Guarantees and business obligations	Initial financial guarantees to guarantee the continuation of the work
B4	The charm of the idea and business model	The charm of the initial business idea The charm of business models and business plans
B5	Business revenue generation	Ability to monetize business plans How to make a business plan Ability to turn business into capital in the future Increase the volume of business transactions in the future
B6	Predict the future of the market and business	Possibility of business growth in the future Possibilities of development and segmentation of the market in the future Ability of business to be destructive
B7	Capital required	The number of resources and capital needed to cover the needs of the business The amount of cash outflows or outflows of liquidity in the business The amount of capital needed to grow
B8	Business Features	Business kpi feasibility Direct correlation of business revenue source with inflation Its vision and credibility in investing in startups Product marketing for promoters against competitors Operational capability and product development in the preliminary stage Cost of marketing and product retention Ability to scale up and grow the business Existence of growth levers in different stages Business knowledge and learning capacity in the early stages of growth Accurate and objective evaluation scale and index Existence of strong documentation to convince the investor to achieve the goals and rate of return set in the previous steps Continuous pursuit and effort for many years to achieve the goal Mismatch of competencies and executive roles Lack of accumulated knowledge in government institutions Presence of people responsible for market development and team

		Existence of strong logistics for startup growth The need for a strong infrastructure to scale up the business Shareholder composition of startups Positive relationship between team stock and willingness to invest more by Fonder The importance of financial statements and investor justification in higher stages of investment Management and infrastructure capacity of companies to receive high volume of investment Unbalanced growth of startups if they receive high investment
B9	Former Business Trade	Time period and history of startup activity Periods and rounds of capital raised The importance of the performance history of the start-up team and its previous managers in choosing an investor to invest
B10	Successful foreign examples	Existence of successful foreign examples Having the depth of the initial idea and the existence of a successful external example Misrepresentation of domestic financing instruments from abroad
B11	Ecosystem services	Existence of complementary services such as financial, legal, tax, etc. in the ecosystem of startups Existence of a dominant and specialized mentor
B12	Alternative and complementary investment methods	Reduce operational risk with joint ventures or coinvest Reduce misconceptions with co-investment Existence of other investors in the next rounds of investment Existence of investor and buyer of the product in the next round in exchange for the current success Presence of experts and investors in the form of wrist fund or venture partner Creating a private investment fund and networking Angel presence of successful investors in the industry
B13	Financial factors	Risk balance and rate of return on investment The importance of positive cash flow in the short term High financial costs of money and reduced liquidity in the ecosystem Prioritize the existence of financial leverage and money in the growth stages
B14	Investor characteristics	More willingness to invest in business than ideas The need for a large and successful investor to work with a startup to succeed Proximity of investor culture and atmosphere with start-ups The ceiling of cash flow and expected income from the business Investment uncertainty due to lack of liquidity and money in the market Lack of capital in the market due to reduced upstream income opportunities When and how to pay the next investment round Lack of suitable investment options for investors Investor investment material Previous investor experience in that industry and market Ability to design an exit strategy Existence of investors willing to invest The first stage investor strategy to accept partnerships and key people to invest in the next stages and growth Achieving the desired kpi is the definitive criterion for continuing to invest in vc
B15	Features of competitors	Inability to compete with competitors if invested by a small fundraiser Competitors' entry speed in case of positive cash flow High impact of strong competitors in unsuccessful startups
B16	Business valuation	Improper business valuation and misplaced investment expectations Non-native and unrealistic valuation methodologies regardless of market realities, governance and law Lack of proper evaluation methods for valuing startups Proportion of the startup's valuation and the amount of its monthly income in determining the amount of investment required
B17	Product and service features	The importance of creating a great and distinctive experience from competitors Identify the target audience Focus on a specific segment of the market Create a unique identity for the product The need for a serious need for the product Why the customer uses the product Attractive value was made for the customer Build a deep and valuable relationship and make people dependent on the value created Build a community and community of people Build a valuable scalable friendship Tangibility of goods and services provided Existence of a strong and developed product Impact of work type on financing method Characteristics and value-driven needs of early adopters Habit of the audience in finding the product

In the inferential analysis stage, after performing two default tests of data normality and correlation between structures, confirmatory factor analysis was performed to investigate the factor load and validity of the indicators (open source). The results of confirmatory factor analysis showed that all items with a factor load greater than 0.7 had sufficient validity to participate in the continuation of inferential analyzes and therefore the construct validity was confirmed for all indicators and indicates that these indicators are appropriate factor structures. Have been provided to measure the studied dimensions in the research model. The

parametric t-test was used to confirm the identified codes. In t-test, the mean of the variables is compared with the hypothetical mean, which in this study is equal to 3. Table 2 examines the t-test for these sources and calculates the mean of the factors.

Table 2. The results of t-test are a sample to check the current status of the study variables

Theoretical average = 0.3					
P	Degrees of freedom	Amara t	Standard deviation	average	variable
0.000	305	28.108	0.431	3.69	Corporate agents
0.000	305	21.194	0.391	3.47	Macro-environmental factors
0.000	305	26.264	0.491	3.73	Investment factors
0.000	305	22.22	0.321	3.57	Ideas and business valuation factors
0.000	305	25.24	0.488	3.76	Idea and product factors

In the last step, to ensure the significance of the impact of each of the five identified levels and the intensity of their impact on the strategic financing model of digital start-ups, the structural model in LISREL software is used, the results of which are presented in Table 3.

Table 3. Results of the effect of component factors on the design of a strategic financing model for start-up digital businesses

Result (Confirm or reject the main hypothesis)		Meaningful numbers		Result	Meaningful numbers	Impact rate	variable Dependent	code	Independent variable
				confirm	19.448	0.161		Human resources and team building	
				confirm	22.882	0.208		Business financial strength	
				confirm	11.137	0.102	Strategic model of	Guarantees and business obligations	
				confirm	14.168	.138	financing digital	Business Features	
confirm	The main hypothesis	11/926	0/66	confirm	13.242	0.157	start- ups	Former Business Trade	Corporate agents
				confirm	12.695	0.168		Business financial strength	
				confirm	5.050	0.047	Strategic model of	Macro ecosystem factors	
				confirm	10.207	0.067	financing digital	Ecosystem services	Macro- environmental factors
confirm	The main hypothesis	12.32	0.32	confirm	7.85	0.058	start- ups	Features of competitors	
				confirm	6/38	0.093		Capital required	
				confirm	3/887	0.100	Strategic model of financing digital start- ups	Alternative and complementary investment methods	
confirm	The main hypothesis	4.8	0.42	confirm	5/31	0.116		Investor characteristics	Investment factors
				confirm	19.448	0.161	Strategic model of	Business valuation	Ideas and business valuation factors
confirm	The main hypothesis	18.32	0.56	confirm	22.882	0.208	financing digital start- ups	Successful foreign examples	
				confirm	14.819	0.182		The charm of the idea and business model	
		12.3		confirm	11.30	0.125	Strategic model of financing digital start- ups	Product and service features	Idea and product factors
confirm	The main hypothesis		0.55	confirm	10.62	0.185		Ability to generate business ideas and models	

5. Discussion and conclusion

The aim of this study was to design a strategic financing model for digital start-ups in Iran. For this purpose, the factors affecting the design of a strategic financing model for digital start-ups were identified through content analysis. Based on this, it can be expected that designing a strategic model for financing digital start-ups will be influenced by five main factors, including corporate factors, macro- environmental factors, investment factors, idea and business valuation factors, and idea and product factors. The results of the confirmatory factor analysis of the questionnaire also showed that all the factors of the identified indicators and items have sufficient validity to attend the continuation of the analysis and implement structural models.

According to the results and findings of the present study, the following suggestions can be used in the formulation of digital business financing strategy:

Since individuals and members involved in businesses are the most important element for investors to evaluate a business and ultimately invest in it, so it is recommended to employ specialized human resources by providing appropriate working conditions such as pay. Or involve them in creating and developing a business, apply a strong team building strategy and value the knowledge and experience of people and put them in the right place, persevere and follow the people in the team, pay attention to the roadmap and career future Considered by team members; Create a cohesive team so that by integrating them, they can attract the favorable opinion of investors in the process of raising capital and financing.

The start-up ecosystem, like other active institutions, is affected by environmental factors and forces, so awareness and aristocracy about the problems of business environment and team management for the appropriate role of actors is one of the most important factors that should be considered in developing a financing strategy. To be placed. Employing competent people to respond appropriately to environmental changes as well as exploiting opportunities and capacities such as identifying the right financial flows from financial institutions to startups from the serious needs of startups to succeed in financing and designing a successful financing strategy And it's work.

The third factor influencing the financing of digital start-ups and attracting investors is spending time and energy to make the business more empowering and the initial idea, business model and business plan more attractive. Suggestions that can be made to make the business more attractive and deeper are: Existence of successful foreign examples, the ability of the business to be descriptive and the possibility of its growth in the future, the business vision, its credibility for investors, the operational capability of the business and product development, product marketing to promote against competitors, cost Product maintenance, strong logistics, infrastructure suitable for business upgrading, management and infrastructure of the company, time and history of the company, the importance of the performance of the startup team and its previous managers, focus on the product and customers to create A great and distinctive product experience, building a deep and valuable relationship and making people dependent on the value created, paying attention to the characteristics and value-driven needs of the early adopters.

Paying attention to the correct business valuation methodology to avoid creating unrealistic expectations for investment, as well as the proportionality of the startup's valuation and the amount of its monthly income in determining the amount of investment required are other important factors in the capital attraction phase. One of the reasons for the failure of many businesses is improper valuation, the need to attract high capital and ultimately the inability to finance, which leads to the business going out of business. Therefore, using the knowledge and expertise of experts in this field and preventing the ambition of business owners can be required for companies to successfully pass this stage and attract capital.

Various dimensions of investment and financial resources required, such as how to generate business plan income, and the ability to convert business into capital in the future, the amount of capital and resources needed to cover business needs, the amount of cash outflows or liquidity in the business other factors influencing financing strategy are related to the outside dimension of the investor's characteristics.

The last dimension influencing the digital business financing strategy is the need to attract the attention and cooperation of a large and successful investor in a startup. Investor investment type, investor's previous experience in industry and market, investor culture and atmosphere with startup, investor standards such as required documents and financial statements, investor return rate and finally standards and guarantees Influential factors in this dimension.

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