Understanding High-Tech Startup Failures and their Prevention

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Abstract:

Objectives: Most high-tech startups quit their operations within five years after establishment. This study aims to increase understanding on their causes of failures and suggest ways to prevent them.

Prior Work: Earlier studies in the context of high-tech startups have mostly looked into their success factors. They have identified a variety of organizational, individual and external determinants of success. Prior work on their failures, however, is scarce. There is need for more research on why high-tech start-ups fail, and how such failures can be prevented. This study utilizes the earlier adaptation of the SHELL model in the context of high-tech startups by Cantamessa et al. (2018).

Approach: The approach in the empirical study is qualitative. Data is collected through semi-structured interviews from a total of 16 respondents, who have established high-tech startups and experienced their failures in the United States, Canada, and Finland. Data is analyzed with the aid of codes, which are derived from the adapted SHELL model.

Results: The analysis presents a taxonomy of four types of causes of the failures of high-tech startups. These are product problems, market problems, financial problems, and managerial problems. Product problems arise due to introducing the product to the market at a bad timing, or having issues with the product design. Market problems are because of lacking proper distribution channels, or not having a large enough market. Financial problems occur due to initial undercapitalization or high debt burden, resulting in the startup's failure to meet its short-term financial obligations. Managerial problems include the lack of a competent management team as well as the occurrence of managerial errors. The study suggests ways to manage these shortcomings and prevent the failure of high-tech startups.

Implications: High-tech startups are promising for future growth and employment possibilities. Since a majority of them fail in their early years, it is important to understand their causes of failure and have remedies for them in order to reverse the trend and contribute to the fulfilment of their promise. This study provides a toolkit for this purpose.

Value: This study contributes to the scarce entrepreneurship literature on failures of high-tech startups by providing a taxonomy and suggesting ways how to prevent them.

Objectives

The high-tech industry includes innovative companies in the fields of science, technology, engineering, and mathematics, and high-tech startups aim to deliver new technology products or services to the market (Wolf and Terrell, 2016). These companies play an important role in the development of the economy because they promise future growth and employment possibilities (Suleyman et al, 2014). Innovation plays a key role in high-tech startups and their performance (Aminova and Marchi, 2021). This is inherent in the definition of the concept in that the high-tech startup aims to solve a problem that will revolutionize the market based on a technological innovation (Moroni, Arruda and Araujo, 2015). Most high-tech startups target their products and services for global markets already from the beginning of their launch (Joshi and Satyanarayana, 2014). This is because they need to grow and scale their businesses fast in order to become profitable and pay for their financial liabilities from their high investments in technology development (Blank, 2013). It is exactly due to uncertainties related to technological innovations as well as the risks of international growth that the success of high-tech startups is highly questionable (Preisendörfer, Bitz and Bezuidenhout, 2012). Statistics show that about three-quarters of high-tech startups fail during their first year of operation, and 90% quit operations after five years (Aminova and Marchi, 2021; Gage, 2012; US Bureau of Labor Statistics, 2020). The high relevance of high-tech start-ups for the economy and their high rates of failure demand investigation to understand the causes of their failure and find out possible ways to prevent them.

Earlier research has mostly looked into success factors of high-tech startups (see Santisteban and Mauricio, 2017 for a review). There is scarce but growing literature that studies failure in the context of high-tech startups (Akter and Iqbal, 2020; Cantamessa et al., 2018; Giardino, Wang and Abrahamsson, 2014). Among this scarce literature, there is not consensus what the key success and failure factors are (Santisteban and Mauricio, 2017). Besides, there is not any research that specifically aims to understand how the failure of high-tech startups can be prevented. This is the research gap that this study aims to contribute by identifying the causes of high-tech startup failures and ways to prevent them. In doing that, the study uses the SHELL model as the guiding framework for the empirical study. The SHELL model was originally developed to understand causes of aviation accidents (see Hawkins and Orlady, 1993). The empirical study employs a qualitative approach, and results are derived from the analysis of semi-structured interviews with 16 high-tech entrepreneurs, who have experienced failures in the past.

The rest of the paper is organized as follows. The next section reviews the literature and presents the framework for the empirical study. Following that, the methodology is described, and the results are presented. Finally, the paper ends with a discussion on findings in the light of previous literature, practical implications, limitations of the study, and suggestions for future research.

Literature review

The literature review focuses on factors of success and failures for startups in general and to the extent possible high-tech startups. Startups and especially high-tech startups are characterized by having little or no operating history, having limited resources, being under pressures from multiple stakeholders such as investors, customers and competitors, and operating in dynamic markets with disruptive technologies (Sutton, 2000). The success of the startup has been defined in terms of the number of jobs created (March-Chorda, 2004) and the growth of the company measured by market share, sales and profitability (Van Gelderen, Thurik and Bosma, 2005; Wong, Cheung and Venuvinod, 2005). The literature review by Santisteban and Mauricio (2017) identifies 21 success factors. Some of these factors are related to the founding team members, such as their experience in the industry, their previous experiences of establishing startups, their motivation and academic formation, their technological and business capabilities, their experience in research and development, their leadership and management skills, as well as their ages and gender. There are also organizational success factors such as organizational age and size. Finally, external factors also impact startup success. These factors are the availability of government support, venture capital and partners, the dynamism of the business environment, a sound regional science and technology policy, and clustering in the location of the startup.

In the case of a high-tech startup with a disruptive innovation, Majamäki and Akpinar (2014) suggest a variety of success factors related to the challenges of marketing the innovation, identifying the market potential of the innovation, the length and riskiness of the process, and obtaining adequate funding at the initial stages of the start-up. Success factors to overcome the marketing challenge are making the innovation easy to use, testing the innovation personally, and communicating the uses of the innovations well to the market. The ability to see beyond own preferences and evaluate the innovation critically as well a good understanding of the industry contribute to

identifying the market potential of the innovation successfully. Commercializing a disruptive high-tech innovation is a long and risky process. Having a clear vision and goals, a good faith in the innovation, realistic expectations, and tolerance for uncertainty arising from the incalculable nature of disruptive innovations help to manage the process. Finally, having a well-planned budget with realistic calculations and hiring consultant to aid in the negotiations with financiers are success factors for obtaining funding.

The startup goes through a number of development stages. These include the seed stage, the early stage, the growth stage and the expansion stage (Santisteban and Mauricio, 2017). Santisteban and Mauricio (2017) find out that different success factors are influential at the different development stages of the startup. While the founding team's experiences of establishing startups and government support are most influential at the seed stage, the availability of venture capital becomes more important at the early stage. Key success factors of the growth stage are clustering, the availability of venture capital, and technological and business capabilities of the founding team. Finally, clustering is the most influential success factor at the expansion stage.

Both internal and external factors contribute to the failure of startups. Internal factors include weak management skills, the lack of human capital, improper training, ineffective planning and organizing, as well as the lack of proper business plans and strategies (Atsan, 2016; Mehralizadeh and Sajady, 2006; Shepherd et al, 2019; Van Gelderen, Thurik and Bosma, 2005). External factors in the general and immediate environment include not having enough customers to recover recurring expenditures, an economic crisis, a pandemic such as COVID-19, sudden changes in prices or inflation, and a weak network of lenders resulting in undercapitalization (Cantamessa et al, 2018; Kuckertz et al, 2020; Ooghe and De Prijcker, 2008; Scaringella, 2017). In another classification, Akter and Iqbal (2020) suggest six types of failure factors, which are organizational factors, product factors, human factors, finance factors, market factors, and ecosystem factors. Organizational factors include the lack of strategy, poor marketing, poor management, and internal clashes among team members. Product factors are user unfriendly product and mistiming of the product, and human factors consist of lack of commitment, lack of experience, fear of failure, overconfidence, and the lack of willingness to utilize mentorship. Finance factors include the lack of cash and financing possibilities, wrong pricing, and the mismanagement of funds, while market factors are about strong competition. Finally, ecosystem factors are the failure to make use of existing networks, legal challenges, and negative customer reaction.

According to Blank (2013), high-tech startups do not fail because of their shortage in technology but for their inability to access customers. They either fail to integrate customer insights into product development, i.e. not getting the right problem/solution fit, or they have challenges in finding the first customers both in home country market and foreign markets, i.e. not getting the right product/market fit (Blank, 2013). Macmillan, Zemann and Subbanarasimha (1987) analyze differences between successful and unsuccessful new ventures along the dimensions of product, team, business and market. While the product dimension studies product development strategies, the team dimension checks characteristics of the people who establish the startup, the market dimension looks into customer acquisition strategies, and the business dimension investigates the business model and the profit logic of the startup (Macmillan, Zemann and Subbanarasimha, 1987). Giardino, Wang and Abrahamsson (2014) adopt these dimensions in their behavioral framework for studying the failure of high-tech startups. They divide the process of the startup into two stages: the exploration stage, where a viable solution is sought for a meaningful problem, and the validation stage, where the solution is tested in the market. Based on their behavioral framework, Giardino, Wang and Abrahamsson (2014) argue that a high-tech startup will fail if there are inconsistencies in the implementation among the product, team, market and business dimensions when the startup progresses from the exploration stage to the validation stage. Failure usually occurs when the startup starts to grow at a time when it is not yet ready for it.

This study uses the SHELL model, which was originally developed by Edwards (1972) and later adapted by Hawkins and Orlady (1993) for understanding the causes of aviation accidents, as the theoretical framework for designing the empirical study. This model has been utilized for understanding human risk factors in different sectors (see Chang and Wang, 2010; Metso et al., 2016), and it has also been adapted to the context of startup failures (see Cantamessa et al., 2018). The model consists of the components of Software, Hardware, Environment, and Liveware, which surround people, or the Central Liveware component (Hawkins and Orlady, 1993). The model focuses on the interactions of the Central Liveware, i.e. people, with each of the other four components, and it argues that failures occur as a result of mismatches between the Central Liveware and the four components (Hawkins and Orlady, 1993). According to the adaptation by Cantamessa et al. (2018), in the context of startups, Central Liveware refers to the organization, and Software refers to the intangible and nonphysical components of the startup like having a business model, positioning in the market, and product-market fit. The Central Liveware component focuses on the management of the organization. Within this component, startups will fail if there is

inexperienced or bad management, wrong scaling, issues within the team, financial issues, or lack of business development (Cantamessa et al., 2018). The Software component tells how the startup will succeed or fail to create value in the market. According to interactions with this component, startups will fail if there is a wrong business model, wrong positioning in the market, no product/market fit, loss of the original vision, no analysis of customer segments, bad marketing, or no traction (Cantamessa et al., 2018). The Hardware component is the tangible and physical component of a startup and refers to the product itself, and the Environment component defines the environment where the startup operates. According to interactions with the Hardware component, startups will fail if the product is of bad quality, not feasible, or not well-focused to the needs of the market (Cantamessa et al., 2018). According to interactions with the Environment component, startups will fail if there are many competitors which are more capable, if there is lack of funding and investors, and if there are political, legal and economic problems in the business environment (Cantamessa et al., 2018). Finally, the Liveware component refers to customers and users. According to interactions with this component, startups will fail if there are few or unfaithful customers, or if the cost of customer acquisition is high (Cantamessa et al., 2018).

Approach / Method

The empirical study adopts an exploratory qualitative research approach since the research on failures of high-tech startups and their prevention is emerging. This approach suits better when the objective is to gain deep insights on the phenomenon being studied (Yin, 2017). Data is collected through semi-structured interviews with founders of 16 different high-tech startups from United States, Canada, and Finland. Adhering to principles of ethical conduct, the identities of participants are anonymous. The respondents are selected based on the convenience sampling technique, based on their willingness to participate in the study, following a careful analysis of potential alternatives from the 500.co network, which is a global network of startups (see 500, n.d.). Eight respondents are from the United States, four are from Canada, and four are from Finland. 11 respondents are male, and five are female. The ages of respondents vary from 27 to 48, and the duration of their entrepreneurial experiences varies from three to 23 years. Interview questions are designed in line with the adapted version of the SHELL model by Cantamessa et al. (2018), and the interviews, which took place during 2020 and 2021 through an online video conferencing platform, are recorded and transcribed. The interviews are in length from 30 minutes to 60 minutes, and the language of all interviews is English, being the common language for the researchers and the respondents. Data is reduced and analyzed using nine codes developed from the adapted version of the SHELL model. The analysis utilizes the cross-case synthesis and thematic analysis techniques in inducing with the aid of the codes the themes and sub-themes of causes of failures and possible ways to prevent them from the 16 cases of failure (Glaser and Strauss, 2000; Yin, 2017). After the initial analysis, main findings are checked with some of the respondents as well as expert faculty on entrepreneurship in order to increase the credibility of results. Following these measures rigorously helps to increase the dependability and credibility of findings (Lincoln and Guba, 1986).

Results / Findings

The empirical study suggests four types of problems, which are positioned at the interactions between the Central Liveware and the other four components in the SHELL model (see Figure 1). The problems, their sub-themes, and ways to prevent them are presented in this section.

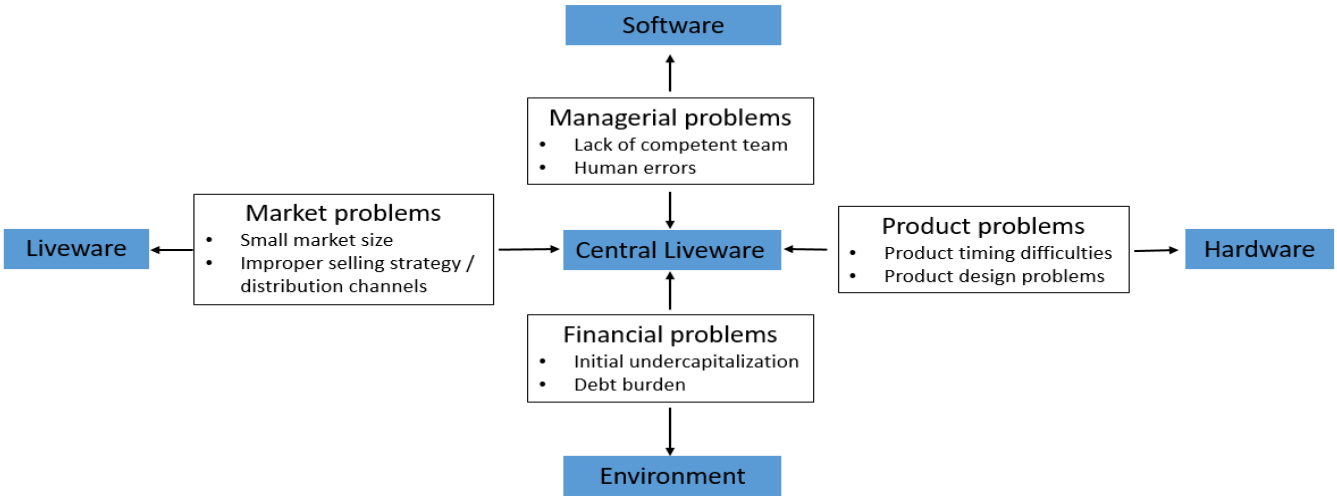

Figure 1. Causes of high-tech startup failures. Adapted from Hawkins and Orlady (1993) and Cantamessa et al. (2018).

Product problems

Product problems lie in the interactions between the Central Liveware and the Hardware components. They can be of two types: product timing difficulties and product design problems (see Figure 1).

Product timing problems are common for high-tech startups. As high-tech products become obsolete within a short period, startups that introduce products late to the market end up failing. This is because it is difficult to acquire customers from first mover competitors. Vice versa, high-tech startups can also introduce their products prematurely before the market exists and fail. In both cases, the launched product misses the chance to make an impact in the market and generate the desired cash flow. In order to prevent this, high-tech startups must be careful with the timing when to launch their products in the market. Good market entry timing of a product is a strategic decision for start-ups, and it is strongly recommended to take customers` preferences, other competitors` product launches, quality of the developed product and the marketing processes into account to launch the product at the right timing.

Product design problems are also common for high-tech startups. Many startups have initially little knowledge of their products' effectiveness to solve the designated problem. Many founders conceive their ideas from scratch and create their products through a learning process, which results in a significant number of design problems. Furthermore, some designs take longer time to actualize than planned. As a result, delays occur and operating costs increase. Given that most high-tech startups are resource-constrained, a prolonged period of designing and perfecting products leads to their failure. In these situations, some high-tech startups need to compromise from some features of their products. This alternative also leads to failure if the omission of features results in the product's underperformance against the products of competitors. To prevent this type of failure, the high-tech start-up should have the skill set for both designing the product and managing the design process. The startup should collaborate with customers and users from early stages of product design. Targeting to deliver a well-functioning minimum viable product fast to the market should be the first priority. The startup can add more features to the product over time based on feedback from customers.

Market problems

Market problems lie in the interactions between the Central Liveware and the Liveware components. They can be of two types: small market size and improper selling strategy / distribution channels (see Figure 1).

High-tech startups rely heavily on a small number of customers at their initial stages, which makes revenue generation slow. Any negative changes in the relationships with between these few customers may result in the customers' decisions to quit buying and the corresponding failure of high-tech startups. One suggestion to prevent this kind of situation is to make a proper market segmentation study before the end product is ready. The startup should assess the target groups of potential customers for its product. Doing the segmentation before the end product is ready will ensure realistic growth and revenue estimations. It is also recommended that founders design their products for a larger group of customers to avoid overreliance on a few customers. In doing that, however, startup managers should avoid unrealistic expectations. Since high-tech startups have limited resources, the market research should not take long and be limited to get an accurate enough assessment of the market opportunities.

High-tech startups, being new to the market, lack access to proper distribution channels. They also face challenges associated with their selling strategy because they do not yet know about the preferences, tastes, and reactions of their customers. They can end up selling their products in the wrong markets. Furthermore, offering a small sales commission doesn't attract talented salespeople to the startup. Lacking a qualified salesforce causes market failure. Another cause of failure is misalignment between distribution and selling strategies. It is not possible to sell a product without having the means to deliver it to the customer. Many startups often lack a selling strategy, and as a result they try to sell their product to everyone, which again is a cause of failure. One solution to avoid these problems is to develop a quick go-to-market strategy, a short-term marketing plan covering strategic choices on the mode of entry, pricing, distribution channels, and partners.

Financial problems

Financial problems lie in the interactions between the Central Liveware and the Environment components. They can be of two types: initial undercapitalization and debt burden (see Figure 1).

All high-tech startups require financial resources to cover their high initial costs required to design and develop their products. As a result, they need to attract a large pool of investors. High-tech investments, however, are highly risky. Investors do not only want to see financial gains in the short-term but also earn high returns in response to high risks. This situation may result in undercapitalization during early stages of the startup. As a result, a struggle between working within tight budgets and meeting investors' goals constrains startups' abilities to operate and causes them to fail prematurely. In order to avoid this kind of situation, it is crucial for start-up founders to be as appealing as possible to investors for fundraising purposes and to be efficient with fund management. Timing is important for asking funding. It is good to consider having several funding rounds during the growth of the startup instead of asking all the money at once from the beginning. The idea here is to continue scaling your business while improving your operational efficiency and not to lose your company shares unreasonably from the beginning. Typical amounts for the seed round funding ranges between 50 000 € to 500 000 €, and it is often spent for product building, prototypes, and market entry planning. The amount of the funding increases with the value of the business and stock price. Investors have their own funding budgets and priorities. Therefore, it is good to understand different investor types for seeking funding at different stages of the startup.

Debt burden is also a common financial problem for high-tech startups. When startups are not able to generate their forecasted cash flows, they may end up not being able to pay back their financial obligations. For a startup, cash management is highly important. In comparison to receivables or inventory, cash is more liquid and thus enables to act fast when a problem occurs. Therefore it is vital to keep a reasonable amount of cash available at all times. Financial planning also necessitates scenario analysis. Startups should be conservative in their planning and ask for loans in their good days. They should not wait to enter financial problems for seeking financial help. In the worst case, a restructuring of financial loans may be needed. Having a financial expert in the team and realistic cash flow management are highly recommended to avoid this problem.

Managerial problems

Managerial problems lie in the interactions between the Central Liveware and the Software components. They can be of two types: lack of competent team and human errors (see Figure 1).

Founders of most high-tech startups have engineering background, and they lack management and marketing skills. The absence of qualified personnel and consultants in the management team makes founders of high-tech startups vulnerable to making mistakes related to financial management, product development, marketing and sales. Startups also often lack competent advisors on legal matters. As a result, incompetent teams end up making bad decisions that lead to the failure of their high-tech startups. In order to avoid such situations, it is recommended to employ experts from diverse fields either as members of the team or as external consultants.

Human errors are also common at startups, given that founders and employees operate through a learning process. These errors can be of different types. Due to lack of experience in doing businesses, some entrepreneurs fail to transform their ideas into successful businesses. In addition, most high-tech startups do not have appropriate measurement or monitoring tools. As a result, they make numerous errors like hiring unqualified people, mismanaging funds, and having no defined business objectives. These errors lead to the use of resources inappropriately and in extreme cases to their exhaustion. In order to avoid such errors, it is important to employ competent team members who have entrepreneurial experience and also establish mechanisms for measuring and monitoring performance.

Value / Implications

This study aimed to increase understanding on the failure of high-tech startups and suggest possible ways to prevent them. In doing that it utilized an earlier adaptation of the SHELL model to the context of high-tech start-up failures by Cantamessa et al. (2018). Drawing upon data collected via interviews from 16 high-tech startup entrepreneurs who had failure experiences, the study presents a taxonomy of the causes of high-tech startup failures and corresponding remedies to prevent them. This taxonomy is the contribution of this study to the growing literature on the failure of high-tech startups. The suggestions from the study on how to prevent the causes of failures offers a toolkit for high-tech startup managers to avoid failure.

Product problems is the first type of the four causes of high-tech startup failures. They are related to the timing of product launch and product design. Launching the product too early, i.e. providing solutions to problems that do not exist, or too late can be fatal for the high-tech startup. Notably, companies such as Facebook and Twitter succeeded because they entered the social media market at the right time. The startups that entered the market late, such as Google Buzz, Meerkat, Friendster, and Google Plus failed because customers had adapted to services and products that Facebook and Twitter offered. In line with Atsan (2016), late entrants find themselves acting as copiers of what already exists. As a result, late entrants are unable to draw customers from existing competitors. Timing influences the quality of the offered product. If the launch has been made too early without proper product development, the life cycle of the product may be short. Therefore, it is important to make a pilot rollout and develop the product until it is well-defined for the target market (Aulet, 2013). The best time to launch the product is when the minimum viable product is ready, as this version starts to generate cash flows and customer feedback for further development of the product (Aulet, 2013). Synchronization of product launch and marketing efforts is also crucial for success. Bad launches are often recognized by poor marketing strategies (Anand et al., 2014)The design of high-tech products requires cutting edge technologies and equipment (Giardino, Wang and Abrahamsson, 2014). Lacking these technologies requires longer time for product development and delays the launch. Errors in product design also increase operational costs, leading high-tech startups into financial troubles and failure (Giardino, Wang and Abrahamsson, 2014). In such situations, high-tech startups can opt to compromise from some features of their products. If the released product does not perform well, it will result in low sales and lead to the failure of the startup. The suggestion to launch the minimum viable product and add features over time is in line with Moogk (2012) and the lean startup method of product development by Ries (2011). On the one hand, it is important to validate the product`s value and growth potential by testing the product with its minimal version, and on the other, it allows that the product is profitable also during the development stage (Moogk, 2012).

Market problems is the second type of the four causes of high-tech startup failures. They are related to having a small market and lacking proper sales strategy and distribution channels. Most high-tech startups suffer from a few or one "big customer" trap. Heavy reliance on a few customers makes high-tech startups highly vulnerable and limits their abilities to expand their operations (Giardino, Wang and Abrahamsson, 2014). In line with the suggestions of this study, Aulet (2013) recommends that high-tech startups should aim for segmenting the market for identifying potential customers. Startups can then narrow down the list by assessing the target customers' need for the product and the existence of competition in target segments (Aulet, 2013). The importance of having good sales strategy and proper distribution channels is recognized in earlier literature (see Bruno, Leidecker and Harder, 1987; Huffman, 2018). The best products do not always attract customers if they do not pursue right distribution channels (Huffman, 2018). As Bruno, Leidecker and Harder (1987) note, expensive products like high-tech products suit better to direct sales rather than marketing through trade shows, which unfortunately many high-tech entrepreneurs prefer. It is recommended to spare efforts for a good sales strategy and choose the right distribution channels.

Financial problems is the third type of the four causes of high-tech startup failures. They are related to initial undercapitalization and debt burden. The challenge of initial undercapitalization emerges from the fact that few investors want to invest in risky high-tech startups, which lack clear-cut products or business plans (Richter et al., 2016). In addition, investors also seek short-term returns on their investors, which restricts the possibilities of high-tech startups to develop their products over time. As high-tech products have short life cycles, the inability to develop products over time leads to underperformance against the products of competitors and the failure of the high-tech start-up. Debt financing is a challenge for most high-tech startups as it takes a while before they start making profits (Bruno, Leidecker and Harder, 1987). As Beverly (2017) suggests, startups need at least three months of cash burn available in order to be able to survive without income generation. Conservative forecasting, good cash flow management, fundraising in successive rounds, and borrowing surplus cash at good times will increase the chances of the high-tech startup's survival.

Finally, managerial problems is the fourth type of the four causes of high-tech startup failures. These problems can arise due to lack of a competitive team and human errors. Giardino, Wang and Abrahamsson (2014) argue that high-tech startups can fail due to failures to organize and motivate team members, having friends and relatives who lack qualifications in the team, and lacking communication channels between the team and important stakeholders such as external consultants. Lack of diversity in the team, especially in fields of financial management, sales, marketing, and product development, is another reason for failure (Giardino, Wang and Abrahamsson, 2014). Another issue is that most high-tech startups hire few and cheap workers because of their budget constraints (Bruno, Leidecker and Harder, 1987). As a result, these workers are overburdened, and they are more likely to make mistakes. Bruno, Leidecker and Harder (1987) further pinpoint to the error that founders and employees can lose sight of what the business needs in the excitement of running a business. Previous entrepreneurial experiences of the management team are valuable to prevent them from falling into trap of former success. Having a good team with competent members is essential for the survival of a startup. According to Stevens and Campion (1994), there are several knowledge, skill, and ability requirements for creating a good team. These include conflict resolution, collaborative problem solving, communication, goal setting and performance management, and planning and task coordination. Management can encourage these skills through training and apply diligent recruitment procedures to hire the most competent team members. Good knowledge management can also impact on the success of a startup by reducing human errors (Mahdi, Almsafir and Yao, 2011).

This study is subject to one limitation, which offers two possibilities for future research. The limitation is that it is based on the perceptions of founders of 16 high-tech startups. In line with Greener (2018), some of these founders may have been untruthful about the causes of their high-tech startups failures or overstated their experiences. There may be some unrevealed information about high-tech startup failures. As the first avenue for future research, it is recommended to test the findings of this study with a suitable sample of high-tech entrepreneurs using the survey method. The second avenue for future research related to this limitation would be to interview other stakeholders, such as workers, investors, creditors, and customers of high-tech startups. This would not only validate the findings from this study but also provide further insights.

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