OVERVIEW AND CLASSIFICATION OF SUCCESSFUL SILICON VALLEY START-UPS: STATISTICAL ANALYSIS AND DEVELOPMENT OF RECOMMENDATIONS

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Overview and Classification of Successful Silicon Valley Start-Ups: Statistical Analysis and Development of Recommendations

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Abstract

The relevance of the study is conditioned by the fact that today's business processes are predisposed to modernisation, which consists in the transition of the economy to an innovative path of development, in connection with which businessmen should identify and solve real consumer problems and resort to innovative activities using start-up projects. In this regard, the purpose of the study is to consider successful Silicon Valley start-ups, their industry classification, statistical analysis, and the development of recommendations. The leading approach to the investigation of this problem is a combination of synthesis and analysis, which, complementing each other, allow for a comprehensive consideration of the process of optimising the innovative activity of enterprises through the successful implementation of start-up projects. The results obtained within the framework of this study are the consideration of the essence of start-ups and the key features of Silicon Valley, the identification of statistics of their failures, familiarisation with the successful start-ups classification, and the development of recommendations for successful creation of similar ones. The results of this study and the formulated conclusions are of practical value both for students studying the features of innovation management, and for entrepreneurs whose sphere of interests covers the innovative and scalable product development, its successful implementation, which besides increase of the start-up creator income, also make a significant contribution to the development of many areas, including the sector of education, medicine, finance, security, communications, ecology, trade, and others, contributing in every possible way to technological progress anywhere in the world.

Keywords

Innovation, Scaling, Start-up projects, Start-up statistics, Silicon Valley's start-up projects

Introduction

Speaking about start-ups, it is important to understand that this is a business that is in the early stages of development. Start-up projects are characterised by two important components (Pacheco-Torgal et al., 2016), namely:

1) innovation, as an entrepreneur embodies new technologies into reality, modernises products or services in a certain market, conducts experiments, tests assumptions, which were not previously implemented by competitors;
2) scalability, since a successful start-up can give exponential growth, not linear, and the faster the project grows, the larger it becomes.

A start-up is a kind of experiment that involves testing assumptions that are not always true (Harmsen, 2019). For this reason, these projects often do not meet expectations and are closed.

According to the U.S. Bureau of labour statistics, regarding the statistics of failures among novice businessmen, it must be noted that almost 90% of new companies fail. Now, there are the following indicators for start-up failures:

1) in 20% of cases, they are rejected in the first year of existence;
2) in 30% are rejected in the period equal to two years;
3) in 50% of cases in the period up to 5 years;
4) in 70% – in the period up to 10 years.

Silicon Valley is a favourable ground for the introduction of start-ups into life. This area is notable for the fact that it combines both opportunities and funding. Businessmen with the necessary skills and abilities believe that getting rich there is a matter of time, but at the same time, it is important to have a business idea suitable for the new realities. It is also a centre where the US government, academia, and the private sector are interconnected. It was this union that gave birth to Silicon Valley, which can be considered unique (Iannarelli & O'Shaughnessy, 2014). Research centres such as Berkeley and Stanford University are in this valley, which provides a constant flow of talented minds in any field.

In modern research, the topic of start-ups is also partially considered. Most of the studies are devoted to the investigation of innovative technologies. Thus, K. Machado and P. Davim (Machado & Davim, 2022) considered the problems of production sustainability, exploring the latest technologies in the field of ecology, and methods by which it is possible to design environmentally friendly products and materials. T. Duening, R. Hisrich, M.

Lechter (Duening et al., 2020) have created a practical guide for potential entrepreneurs, which describes the process of introducing innovations to the market, helping in attracting capital, product development, and intellectual property protection.

Some authors (Phillips & Landahl, 2020) investigated of the issue of scaling, without which start-up projects are impossible, exploring business continuity planning considering many threats, including the COVID-19 pandemic. Importance (Galanakis, 2021) connected with tools considered for the introduction of technological processes and innovations in the food industry. In their book on accelerating transport innovation revolution authors (Giannopoulos & Munro, 2019) insisted on the idea that understanding the nature of revolutionary innovations is as important as creating innovations themselves. Even though in this work more attention is paid to transport innovations, the presented recommendations and concepts can be applied in other areas.

The main problem of earlier research on this topic was the lack of knowledge of successful Silicon Valley start-up projects and general recommendations for optimising the functioning of start-ups. In this regard, the main purpose of this study is to investigate the features of successful start-ups, which are implemented by getting acquainted with successful innovative companies in Silicon Valley and developing recommendations for optimising the activities of start-ups.

Materials and Methods

The basis of the methodological approach is the use of such methods as synthesis and analysis, statistical and graphical methods.

The analysis contributed to the decomposition of the subject matter into its component parts, due to which the features of Silicon Valley and start-up projects were clarified, a review of successful innovative companies was conducted and recommendations that increase the likelihood of success of an innovative product were considered. The synthesis combined the obtained analysis results into a single system, because of which the study comprehensively considered the process of optimising the functioning of start-up projects. Using the statistical method, the negative experiences of entrepreneurs related to failed start-up projects were made known. This method also helped identify the classification of successful start-ups by industry. The graphical method was used to aggregate data and visually demonstrate the results using a diagram of the industry structure of

successful start-ups. The tabular method was also used to aggregate the results obtained, due to which data on innovative companies were presented in the form of summary tables.

This study was conducted based on a pre-compiled theoretical basis, which acts as a qualitative foundation for all further research. The theoretical basis of this study is the findings of several foreign researchers who investigated a number of problematic issues related to the introduction of innovative products or services.

The research and experimental base of the study were successful and high-tech start-ups of Silicon Valley, namely: Noname Security, DevRev, FalconX, Luminous Computing, Turing, Athelas, Snorkel AI, Yugabyte, Salt Security, and Medable.

The study included three stages.

At the first stage, a theoretical basis was prepared, which was used as a fundamental factor for the implementation of further research. The key features of start-ups and their failure statistics were identified, and the attractiveness of Silicon Valley for the introduction of start-ups into life was also considered. The characteristic of Silicon Valley gives the entrepreneur and the ordinary citizen an insight into the opportunities in the environment and funding available to them.

At the second stage, the industry classification of successful Silicon Valley start-ups was investigated to determine modern consumer trends, and the leading start-up companies that specialise in various fields, starting with technological progress in the field of medicine, ending with the modernisation of the financial sector of the economy, were reviewed. At this stage, general recommendations have also been developed that can contribute to the successful introduction of a start-up to the market.

At the third stage, based on the data obtained, the final conclusions of the scientific approach were formulated, which act as the final display of the results obtained and determine the main recommendations for optimising the implementation of start-up products or services. In general, the results obtained during the preparation of this paper and the conclusions formulated on their basis can be used by specialists whose sphere of interest includes the introduction of a start-up into life and its successful implementation, which ideally can provide high income.

Results and Discussion

The amount of personal and institutional wealth in the region makes Silicon Valley an ideal place for business development. This area is rich in thousands of investors who can also act as venture capitalists, whose main goal is to monetise their money instead of annual tax payments to the US government. As a result, entrepreneurs are ready to invest in a variety of projects in the hope of high dividends from successful start-ups in the coming years. According to experts (Smelser & Baltes, 2001) Silicon Valley investors will always chase success stories, even though Silicon Valley may see many failed start-ups. In recent years, venture capitalists have poured significant amounts of money into Silicon Valley startups. Hundreds of new startups emerge in Silicon Valley every year. In 2022, according to data book, the investment volume in Silicon Valley startups amounted to over $7 billion, with over 800 new projects registered.

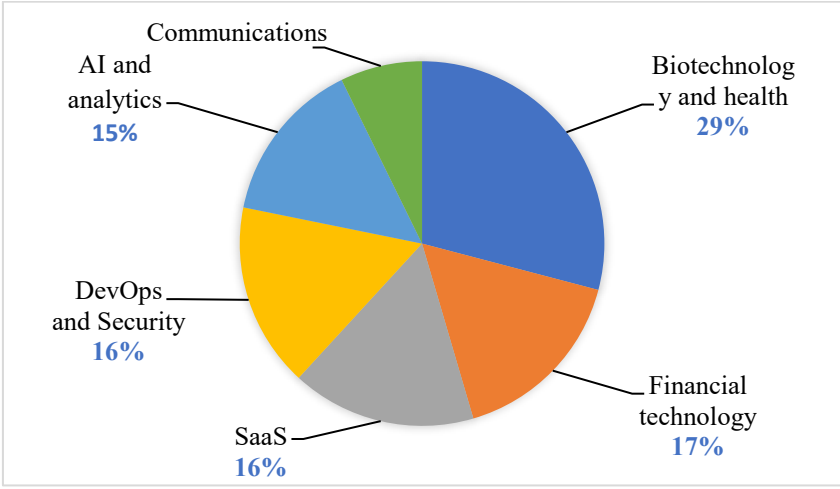
Statistics tells us the most successful industries of Silicon Valley start-ups include the following:

1) biotechnology and health;
2) financial technologies including payments, transfers, lending, blockchain, investments, insurance, etc.;
3) SaaS (software as a service);
4) DevOps (methodology for automating technological processes of software assembly, configuration, and deployment) and security;
5) AI (artificial intelligence) and analytics;
6) Communications.

Out of 55 successful start-up projects according to Growjo: 16 belong to the field of biotechnology and health, 9 – financial technologies, 9 – SaaS, 9 – DevOps and security, 8 companies are engaged in AI and analytics, 4 start-ups belong to the communications industry. This structure is shown in Figure 1.

Figure 1.

Industry structure of successful start-ups among 55 companies



Next, the study considers the 10 fastest-growing Silicon Valley companies in 2023. This rating is provided in Table 1, which is based on the growth of 2022 and on the prediction of future growth. The rating is based on a set of data such as estimates, quality, and quantity of investment, estimated profit growth, hiring announcements, current vacancies, announcements of management staff, comparison of competitors, and many other growth triggers. Silicon Valley represents fast-growing start-ups.

Table 1.

Top 10 successful Silicon Valley start-ups

No.	Name of start-ups	Classification	Financing, USD million	Staff	Staff grows, %	Revenue, USD million	Valuation, USD billion
1	Character.AI	AI	150	73	248	6.5	1
2	Inworld AI	AI	100	89	68	11.5	0.5
3	Lyten	Environmental	360	261	37	60.3	1.4
4	Pinecone	AI	138	121	128	17.5	0.75
5	Skydio	Aviation	570	656	42	196.2	2.2
6	Securly	EdTech	23	316	496	56.2	-
7	Aptos	Fintech	350	246	76	34.4	-
8	Natron Energy	Environmental	50.1	108	3	22.7	-
9	Kodiak Robotics	Transportation	165	195	6	68.8	-
10	Xage Security	IT Security	46	99	57	20.2	-

Source: (growjo.com, 2023).

Next, the study will review each start-up in more detail.

First on the list is AI (Character AI, 2023), which represents an AI chatbot application enabling users to engage in chats with virtual characters inspired by celebrities, gaming personas, and more. Additionally, users can craft and train their own AI characters, defining unique personality traits, interests, and conversational styles, thereby enhancing the realm of fanfiction. While users can develop virtual friends and AI renditions of real-life figures, Character AI implements a NSFW (Not Safe for Work) filter to ensure safe interactions. However, there are strategies available to prompt characters to engage in roleplay across various scenarios. This start-up includes many advantages, which are considered in Table 2.

Table 2.

Advantages of Character AI

Advantages	Characteristics
People-oriented	Character AI prioritizes the development of artificial intelligence that enhances human experiences, focusing on creating technology that is intuitive, empathetic, and beneficial to users.
Interdisciplinary collaboration	Within Character AI, a collaborative environment thrives, emphasizing teamwork and the exchange of knowledge among experts spanning various disciplines. This collective approach aims to develop cutting-edge AI solutions through diverse insights.
Continuous learning	At Character AI, there is a strong emphasis on continuous growth. Employees are encouraged to advance both professionally and personally, with ample opportunities for skill enhancement, research, and career progression in the dynamically evolving landscape of AI.
Innovation for Impact	The core objective of Character AI is to generate AI solutions that generate positive and substantial impacts on society. These solutions are designed to address real-world challenges, utilizing technology to enhance lives and contribute meaningfully to societal betterment.

Source: (Character AI, 2023).

The second start-up in the ranking is Inworld AI (Inworld AI, n.d.). It is tailored for individuals seeking a hassle-free method to create generative AI characters without the need for coding. This platform focuses on responsive storytelling by eliminating repetitive bot dialogues, enhancing narrative depth, and enabling the creation of adaptive AI characters with unique

personalities capable of experiencing emotions and formulating responses like human behaviour. The advantages of Inworld AI are listed in Table 3.

Table 3.

Advantages of Inworld AI

Advantages	Characteristics
Highly configurable	Inworld AI offers extensive customization options, allowing users to tailor their character's identity, motivations, roles, hobbies, interests, personalities, moods, knowledge (both personal and general), dialogue styles, and more. This intuitive, no-code character creation process enables users to describe characters in natural language and further refine them using drop-down menus and adjustable sliders.
Production-ready	The platform ensures the seamless integration and immediate deployment of characters into games or other immersive realities. Its comprehensive package for Unity, along with a flexible API, empowers creators to introduce their characters across a range of experiences and platforms.
Flexible and engaging	Inworld AI caters to a variety of applications, making any immersive experience more captivating and interactive. Whether it's for brands or games, Inworld-powered characters significantly contribute to creating engaging user experiences.

Source: (Inworld AI, n.d.).

The third place in the rating is occupied by Lyten (Lyten 3D Graphene, n.d.). A cutting-edge materials company is causing significant changes in the electric vehicle battery sector by unveiling its LytCell EV™ lithium-sulfur (Li-S) battery platform. This recent innovation from Silicon Valley is tailor-made for the electric vehicle (EV) market, aiming to provide a gravimetric energy density three times (3X) higher than that of traditional lithium-ion (Li-ion) batteries. Emerging from its previous stealth mode, Lyten has closely collaborated with the U.S. in this breakthrough.

The products provided by Lyten are described in Table 4.

Table 4.

Lyten Company Products

Products	Characteristics
Batteries	The Lithium-Sulfur battery stands out as the choice for widespread consumer use. It eliminates the need for Nickel, Cobalt, Manganese, and Graphite, resulting in a reduced Bill of Materials. It boasts over twice the energy density (Wh/kg), enabling a significant 60% reduction in the weight of an EV battery pack. What sets it apart is its inherent safety features, rendering it resistant to overcharge and thermal runaway, ensuring a more secure battery system.
Composites	Lightweighting: This strategy aims to reduce materials and weight by up to 50% in polymers, paving the way for more efficient and lighter structures. Enhanced Performance: The objective is to elevate performance by improving characteristics such as strength, conductivity, and stiffness. Promoting Circularity: The emphasis on circularity highlights the efforts to boost the recycled composite materials to approach the properties of virgin materials. Additive Manufacturing Advancements: The focus on high-strength additive manufacturing signifies the drive to make this technology a reality across various sectors such as automotive, aviation, industrial applications, and beyond.
Sensors	Part per Billion Multi-Gas Fingerprinting: These sensors offer the capability to detect multiple gases at concentrations as low as parts per billion. This high level of sensitivity makes them suitable for various applications. Compact and Rugged Design: These sensors are housed in a single, small, and ruggedized unit, making them highly versatile and able to operate in challenging environments. They can be deployed in various locations.

Source: (Lyten 3D Graphene, n.d.).

The fourth company in the ranking is Pinecone (see Pinecone official website). The fundamental objective behind Pinecone's inception was to offer pivotal storage and retrieval infrastructure crucial for constructing and operating cutting-edge AI applications. The founding principle revolved around providing accessibility to engineering teams of all magnitudes and varying levels of AI proficiency. This commitment led start-up to introduce a fully managed service renowned for its user-friendly nature, catering to both small and large teams, regardless of their expertise in AI.

The fifth place is taken by Skydio, which specializing in the development and production of autonomous drones, which have a high degree of self-sufficiency and the ability to fly autonomously without the active

participation of an operator. The focus of start-up's work is related to creating drones capable of autonomously detecting and avoiding obstacles in real-time, making them ideal for use in various industries such as security, infrastructure inspection, video and photography, as well as in various professional fields.

The sixth company in the ranking is Securly (see Securly official website), which specializes in developing solutions to ensure digital safety in educational institutions. Securly's primary products and services include software solutions that provide control and filtering of internet content in educational settings. They offer parents and educational institutions tools for monitoring students' internet activity, filtering harmful content, and ensuring a safe online experience for young users. The solutions offered by this start-up cover several key areas, as described in Table 5.

Table 5.

Securly solutions

Solutions	Characteristics
Student Safety	The start-up develops innovative solutions aimed at ensuring student safety in the academic environment. This may include monitoring systems to prevent cyberbullying, campus security alerts, and tools to ensure overall student well-being.
Student Health	The start-up provides technological solutions to support student health. This may include online resources for physical and psychological health, tools for monitoring student health and well-being, as well as platforms for counselling and support.
Student Engagement	The company develops tools and platforms that promote active student participation in the learning process. This may include online forums, platforms for sharing ideas and projects, as well as tools for feedback and collaboration.
Technologies	The start-up uses cutting-edge technologies to achieve these goals. This includes software development, the use of artificial intelligence for data analysis, and the provision of innovative online platforms and applications to enhance the educational process and ensure student safety.

Source: (Securly official website).

The seventh successful start-up is Aptos (Aptos Retail, n.d.). The company is a leading provider of retail business solutions, offering innovative technologies for retail management. Aptos offers a wide range of software products and services that help retail companies improve operational processes and provide a better shopping experience for consumers. Key products by Aptos include software solutions for inventory management, point of sale, order management, analytics, merchandise planning, and other tools that provide comprehensive support for retail companies. Aptos specializes in providing integrated solutions that enable retail companies to efficiently manage their operations, enhance inventory management processes, and improve customer interactions. These solutions cover various aspects of retail business, from sales management to data analysis and merchandise planning.

There are several characteristics of a start-up:

1) Cloud Support with Ironclad Autonomy: The company offers cloud technologies ensuring stable and reliable operation even in autonomous mode. This enables system functionality to be maintained regardless of internet connectivity, ensuring data storage and processing reliability.

2) Mobile Devices: The company's systems are designed for use on mobile devices. This allows operation on mobile technology-based platforms, enhancing flexibility and accessibility from various locations.

3) Reliable POS Capabilities: The company's solutions provide reliable point of sale (POS) features, ensuring stability and efficiency in transactions. This encompasses payment processing, inventory management, and the provision of convenient services for customers.

4) Sell Anywhere Inside Our Store: The company provides tools for selling products and services in any part of the store. This may include mobile platform capabilities, scanning items, or conducting transactions offered in different areas of the store to enhance customer convenience.

The eighth company in the ranking is Natron Energy (Natron, n.d.), which specializing in advanced energy storage solutions. Based in California, the company is dedicated to developing and commercializing innovative

batteries based on sodium-ion technology. The key feature of Natron Energy's products is their high performance, safety, and durability. The company aims to address energy storage challenges by offering more reliable and durable energy storage solutions applicable across a wide range of industries. One of Natron Energy's primary achievements is the creation and implementation of a unique sodium-ion battery. It differs from traditional lithium-ion batteries by offering higher levels of safety and stability, with the potential to enhance energy efficiency.

The ninth successful start-up in the ranking is Kodiak Robotics (see Kodiak Robotics official website), which develops autonomous driving systems for trucks. They specialize in autopilot technologies that enable trucks to perform autonomous transportation.

The advantages of the Kodiak Robotics start-up are presented in Table 6.

Table 6.

Advantages of Kodiak Robotics company

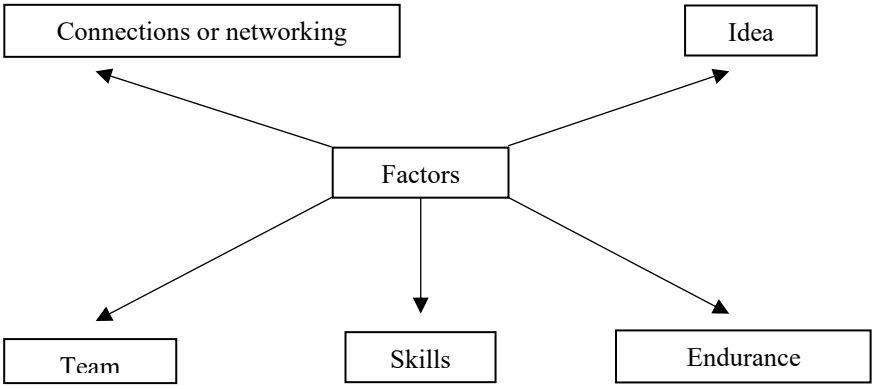
Advantages	Characteristics
Autonomous Technology	The company integrates cutting-edge autopilot systems, enabling trucks to operate without direct driver involvement. This enhances transportation efficiency and reduces the risks associated with human errors.
Enhanced Safety	Kodiak Robotics' autonomous systems are designed to ensure safe transportation. They can monitor the surrounding environment and react to road changes, reducing the likelihood of accidents.
Improved Efficiency and Cost Savings	Utilizing autonomous technologies can enhance transportation efficiency through more precise route planning and continuous movement, reducing fuel costs and operational expenses.
Innovative Developments in Logistics	Kodiak Robotics presents an innovative approach to cargo transportation, transforming traditional logistics methods and promising efficiency and convenience in cargo delivery.

Source: (Kodiak Robotics official website).

Xage Security (Xage Security, Company Profile, n.d.) closes the top ten successful start-ups. It is a leading provider of cutting-edge cybersecurity solutions that specifically target the protection of both industrial and

corporate networks. The company's specialization lies in the proficient and strategic application of blockchain technology, offering robust and innovative security measures that effectively safeguard the integrity and privacy of industrial environments. Through the implementation of blockchain, Xage Security ensures the creation of decentralized, tamper-proof networks that fortify against cyber threats, providing a secure foundation for the intricate systems within industrial settings. This approach not only guarantees protection against external attacks but also ensures the uninterrupted and secure flow of data critical to the operations of various industries, including energy, transportation, manufacturing, and other crucial sectors.

Figure 2.
Start-up success factors



It is important to develop recommendations for the successful creation and implementation of start-ups. Figure 2 suggests the main factors influencing the success of creating such projects.

As for networking, communications and the environment play one of the key roles in creating start-ups. To create a new innovative and scalable product or service, it is important to adopt the experience of people who have already succeeded or are succeeding in this field, therefore, it is important to attend events that are dedicated to the topic of start-ups, entrepreneurship, and innovation. Getting to know more people and sharing ideas at different events can partly bring a start-up closer to success.

The second factor of successful start-up creation is the idea (Reichmuth & Ewald, 2022). It is important to study the market to understand whether this idea has already been implemented by someone. If this product or service has already been implemented in the market, it is possible to modernise the idea and weigh the pros and cons. It is necessary to follow the trends in technology and innovation. Ideas can arise as solutions to any problems. The more competent a person is in a certain area in which they want to create a start-up, the more complete a picture of the list of previously unsolved problems may arise. These are things that can be addressed through the creation of a start-up.

The team also plays a key role in the creation of start-ups (Phillips & Landahl, 2020), because the independent introduction of a product or service to the market can take a lot of time. Start-ups should develop quickly because scalability is one of the main features of such projects. A good team will support the start-up at all stages of the development of the product or service being implemented. The employees in the team should not only be competent, but also acceptable in terms of character and communication.

Another key factor for the successful creation of start-ups is skills. For example, the opening of a start-up offering a new solution in the field of medicine should be associated with expertise and experience in this field. If a start-up relates to the development of an application that can help students in learning, then it is important to be a student with knowledge in the field of programming. Since a start-up includes not only innovation, but also scaling, it is necessary to have basic knowledge about the work of the real market, business, and economy.

A final factor influencing the success of start-up projects is endurance (Reichmuth & Ewald, 2022), as start-ups are mostly about innovation. Before the creators of such projects, there are always risks that a start-up may be hard to perceive by the market. Start-ups may face a huge number of problems in their way of life, which it is important to solve quickly, since modern realities are highly competitive. Active participation in contests, weekends, and events can bring a correct understanding of the product or service being implemented, as well as feedback.

Comparing the modern achievements of scientists with the results of the analysis of the development of recommendations for the successful creation of start-up projects, it is worth noting that in addition to such ways of

optimising innovative and scalable activities as networking, idea, team, skills and endurance, the authors have identified others. Some experts (Clayton, et al, 2018) highlighted a recommendation for the creation of start-up projects in university offices, because technology transfer can contribute to their success in every possible way in their work. The main part of the university ecosystem for developers are technology transfer offices that provide support in various fields. To take advantage of the resources that are available at the university, educational institutions encourage and motivate the founders of start-ups to promote science within the university. A strong IP (interconnection protocol) is one of the advantages. The research team also noted that scientists who are in a familiar environment become more productive. Many universities also provide their students with lectures, courses, rich training programmes and other things related to the topic of start-ups. These educational institutions help scientists delve into the topic of commercialisation and provide students with the knowledge necessary to create a start-up at an early stage of the company's development in this ecosystem.

In addition, these scientists investigated the topic of incubators as another recommendation for optimising the work of start-ups. Often firms are placed together with other firms in incubators, the number of which has grown significantly. A group of researchers also identified the concept of "open access incubators", which consist in supporting and developing individual businesses and the market. The economists highlighted other topics in which they showed that the offered training and intensive communication have a positive effect on formal acceleration programmes.

This group of researchers also emphasises the need for a lawyer to contact a venture firm, because now firms are the most studied intermediaries of this ecosystem, providing professional services that include servicing many types of enterprises. An entrepreneur needs a lawyer mainly for reasons related to technology transfer offices. Lawyers act as gatekeepers, business consultants of the ecosystem, and persons helping to conclude transactions, since their position determines the business norms of local entities. Some providers have personal referral networks. Special attention is paid to firms with venture capital. Such firms provide enterprises with trust and accessibility to their own networks, which have proven themselves well as providers of services and knowledge. More specialised firms that provide professional services entail more complex access.

In his dissertation, author studies a large amount of literature devoted to important problems faced by start-ups (Weber, 2017). The researcher highlights overcoming managerial pain points as an important recommendation for optimising the activities of start-ups. These include the obligations of smallness, novelty, and adolescence. The economist summarises studies on problems related to both the distribution of team obligations and the assumption of new roles, emphasising the importance of a high level of trust in the organisation. The scientist also conducted an in-depth investigation on the importance of advisory boards, which include scientific advisory boards and boards of directors that require high managerial skills for growth and navigation.

Comparing the results with the study of success (Verloop, 2013), it is worth noting that the author highlighted not only the factors influencing the success of start-ups, but also the factors leading to failure. According to the economist, most innovative projects fail, but innovation can be managed through the identification of factors that push them to failure. The researcher attributed the lack of risk management and cost reduction to the main factors that negatively affect start-ups. J. Verloop also highlighted positive external and internal factors for the activities of innovative companies. According to the economist, success factors are favourable, supportive circumstances, which are conditions, tools, platforms, or agents. The author attributed to positive factors: patents, investors, strategic partners, subsidies, and the innovation environment.

Discussing the study results with the research of project planning (Melton, 2007), it is important to say that in the recommendation of optimisation of innovation-related activities, the economist highlighted not the factors affecting the activities of start-ups, but the correctness and necessity of planning on specific points:

1) business planning;
2) installation planning;
3) control planning;
4) project implementation plan.

According to the researcher, business planning is what connects the project with the business. This relationship is carried out through the relationship of the project sponsor and the customer, and through the relationship between the project manager and the project sponsor. The business plan should

include a reliable methodology that would help realise the business benefits, and whose implementation will prove that the economic justification has been fulfilled. Any project requires a manager who clearly understands the goals of the work, business problems that are important to solve, and a sponsor who owns not only problems, but also successful solutions, end users and customers. It is important for the project manager to build relationships and communicate effectively, putting together a detailed plan for the implementation of all benefits corresponding to the approved economic justification. The manager should use consulting tools and behave like a consultant to facilitate the construction of key relationships that will contribute to the development of all aspects of the business plan.

The installation plan helps in the development and management of the relationship that arises between the project team and the manager. If there are common goals between the manager and the team, then the probability of success of the project increases. In this type of planning, the focus is on the ability to achieve a certain amount by attracting the required capabilities of personnel. Crucial to the success of project installation planning is the choice of a manager that meets the needs of the project, which are usually described in terms of the size, type, importance, and complexity of the project for the business.

Considering the control plan, T. Melton pointed out that this plan supports the management and development of the relationship between the project manager and the project team. It is important that they have common and coordinated management processes, because this is how the team led by the manager optimises the start-up's activities. The management plan acts as a tool for monitoring, planning, and forecasting the activities of an innovative project, which the start-up team will use not only for planning individual workload, but also for the workload of a subgroup. The main purpose of the control plan is to control the project to maximise confidence in its own results. According to the economist, the manager needs to determine a way to manage uncertainty within the project, using a suitable combination of risk management tools for a specific project, developing management strategies for an innovative company.

The last paragraph describes the development of a reliable and comprehensive project implementation plan that defines the way the project is implemented and the achievement of project and entrepreneurial goals. The purpose of the development plan is to ensure that strategies that are implemented, developed, built, and communicated based on best project

management practices act as guarantors of compliance with the needs of an innovative company. The PDP (preliminary development plan) defines the purpose and objectives of the project, the implementation strategies, the organisation of the team and the results necessary to ensure success and compliance with business needs. The preliminary development plan must be updated at regular intervals. According to the economist, this will ensure that as strategies are refined and developed, they will be coordinated in achieving benefits for businesses and their goals. The main recommendation of the researcher is the development of the initial PDP, which should be developed and approved before the start of the project implementation phase, and then used by the project manager and the project team throughout the implementation.

Thus, there are many approaches to optimising the activities of companies that are related to innovation and scalability. Every entrepreneur who introduces start-up to the market should be guided not only by own intuition, but also know well the modern basis of economists in this field, namely their recommendations for success.

Conclusions

Start-ups differ from ordinary business projects in scalability and innovation. A statistical review showed that not all start-ups are successful, and investment in such projects decreases with the increase in the life of projects. Now, Silicon Valley belongs to one of the favourable regions for the creation and implementation of start-ups. An analysis of successful Silicon Valley projects has shown that the most successful start-ups are developing in such areas as biotechnology and health, financial technology, SaaS, DevOps and security, AI and analytics, and communications.

The research paper developed recommendations that would favourably influence the creation and implementation of start-ups. Such recommendations included the development and analysis of ideas, the need for communication and networking, the importance of skills and endurance, and the creation of a good team. The lack of risk management and cost reduction were attributed to negative factors for start-ups. The positive factors included patents, investors, strategic partners, subsidies, and the innovation environment. To improve the work of start-ups, it is important to create them in university offices, and the functioning of the company in incubators, which would facilitate technology transfer. The paper emphasised the need for a lawyer to communicate with a venture firm and

overcome managerial pain points, which include the obligations of novelty, adolescence, and smallness. Optimisation of business planning, control planning, installation and project implementation were also recommendations for achieving success in innovation.

The materials of this study can be useful for teachers of financial management who are adapting to the new conditions of professional activity in the field of education, for specialists in the field of entrepreneurship who want to launch their start-up, focusing on the positive experience of successful start-up projects in Silicon Valley. The areas of further research may be the investigation of other favourable regions for the creation and implementation of start-ups, the study of their key features and statistics.

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