RISKS AND CHALLENGES OF WEB3 STARTUPS AND METHODS OF SOLVING THEM

Abstract. This article begins with setting a definition for a Startup, explaining how a startup different to an enterprise in general. Further the article lists and describes the typical risks and challenges with which startups often have to deal and proceeds with methods of how startups mitigate the risks and solve the presented challenges. In that chapter the readers can find descriptions of such risks as problems with access to finance, talent acquisition, market need, competition, planning, customer acquisition, regulatory compliance, scaling, cash flow management, and unrealistic expectations. In the following chapter the article defines the Web3 startups and describes how they differentiate from startups in general. In that chapter readers can find an overview of fundamental Web3 principles, including decentralization, blockchain technologies, and smart contracts, and an explanation, what characteristics make Web3 startups different from startups in classical sense, the article brings a list of specific risks and challenges that are met by Web3 startup founders. Classifying risks such as lack of crypto adoption, Web3-specific security risks, regulatory uncertainty, vendor management problem, the challenge of fundraising in Web3 environment and Interoperability problem – all these risks are to be considered by founders when starting a Web3 project. The final chapter provides methods of solving the presented Web3-specific risks and challenges,
taking into account that every startup is different and offering several methods of solving every described problem. Authors do not endorse any particular solutions, however they make real life examples when explaining possible solutions to such problems as legal uncertainty and interoperability problems. In general authors stress that this material is a good base for further research and Web3 founders should not take any given examples as a ready-made solutions without consulting experts or doing their own research. The article contains useful material for founders of Web3 Startups and people who are interested in studying the process of running a Web3 startup at an early stage.

**Keywords:** web3, finance, startup, fundraising, venture capital, risks, security, scaling.

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**РИЗИКИ ТА ВИКЛИКИ WEB3 СТАРТАПІВ ТА МЕТОДИ ЇХ ВИРІШЕННЯ**

Анотація. Ця стаття починається з надання визначення стартапу, пояснюючи, чим стартап відрізняється від підприємства загалом. Далі в статті перераховано та описано типові ризики та викупки, з якими часто доводиться стикатися стартапам, а також описано методи, як стартапи зменшують ризики та вирішують представлени проблеми. У цьому розділі читачі можуть знайти описи таких ризиків, як проблеми з доступом до фінансування, залученням талантів, потребами ринку, конкуренцією, плануванням, залученням клієнтів, дотриманням нормативних вимог, масштабуванням, управлінням грошовими потоками та нереалістичними очікуваннями. У наступному розділі стаття визначає Web3 стартапи і описує, чим вони відрізняються від стартапів загалом. У цій главі читачі можуть знайти огляд фундаментальних принципів, як визначає Web3 як явище, включаючи децентралізацію, технології блокчейну та смарт-контракти, а також пояснення, які характеристики відрізняють стартапи Web3 від стартапів у класичному розумінні. Стаття містить перелік конкретних ризиків і проблем, які зустрічаються засновниками Web3 стартапів. Класифікація ризиків, таких як недостатнє впровадження криптовалюти, ризики безпеки, характерні для Web3, нормативна
Statement of the problem in a general form and its connection with important scientific or practical tasks. In the early 2020’s Web3 niche started becoming more mature, beating a significant portion of skepticism towards itself and gained attention from the some of the most pioneering institutional investors. At this point it became apparent that Web3 is having its own ecosystem of startups consisting of its founders, and these founders often bring the their own experience of scaling startups of different niches to Web3 space. And as they discover certain challenges while developing their Web3 startup, they try to reiterate the same ways of dealing with similar challenges as they did with while working on their previous projects, and more often than not they learn that old methods are inapplicable because the risks and challenges have shifted in the Web3 environment, and as they classify what risks and challenges they are facing, they learn that the solutions should also adequately determined according to the changes. This article explains what risks and challenges were considered typical for classical startups of previous periods, what new risks and challenges Web3 founders have to face and what are the possible solutions to those.

Analysis of the latest studies and publications. Theoretical and applied aspects of managing a startup and methods of mitigating risks and solving challenges that arise from this have been explored by notable scholars, including A. Schmitt, Erin Griffith, Marilyn A, Uy, Maw-Der Foo, Remus Ilies, Craign Kronenberger, R. Buckminster Fuller, Elco van Burg, A. Georges L. Romme, Victor A. Gilsing, Isabelle M. M. J. Reymen, Saras D. Sarasvathy, Nicholas Dew, Stuart Read, Robert Wiltbank, Rainer Harms, Eric Ries. However, conceptual inquiries related to determining risks and challenges specific to Web3 startups require further investigation.
The importance and relevance of these questions shaped the focus and purpose of this study.

**The goal of this article.** To identify risks and challenges specific to Web3 startups and offer statistically proven methods of mitigation of such risks or solving such challenges.

**Outline of the main material of the study.** Rebeca Baldrige, an investigative writer writing for Forbes, gives us the following definition of a startup: “Startups are businesses that want to disrupt industries and change the world—and do it all at scale. Startup founders dream of giving society something it needs but hasn’t created yet—generating eye-popping valuations that lead to an initial public offering (IPO) and an astronomical return on investment.” [1]

This quote has not been selected at random. Unlike many other business media outlets, Forbes revises and updates an article titled “What Is A Startup? The Ultimate Guide”, that hints at an everchanging nature of the definition. [1]

All startups are enterprises in nature, but unlike general entrepreneurship, which encompasses all new businesses including self-employment and those not aiming to go public, startups are specifically designed to grow significantly beyond their initial solo-founder stage. [2]

In their early phases, startups encounter high levels of uncertainty and a high likelihood of failure, though a small percentage manage to achieve success and exert significant influence. [3 p. 835–859; 4]

Startups are usually initiated by a founder (solo-founder) or co-founders who aim to solve a specific problem. The founder conducts market validation through problem interviews, solution interviews, and by creating a minimum viable product (MVP) or prototype to develop and test their business models. [5 p. 375-389]

The startup process can be lengthy, requiring sustained effort over time. This sustained effort is particularly challenging due to high failure rates and uncertain outcomes. A business plan is essential, outlining the steps to take and strategies to achieve future goals, typically covering the first three to five years of the business. [6]

What does it take to get a startup to success and what are the challenges?

Startups that present as ventures often rely on design science, which employs scientific, systematic and rational design principles — a coherent set of normative ideas and propositions — to shape and build the company’s foundation. One of the initial design principles in this approach is the concept of affordable loss. [7; 8 p. 114-128; 9 p. 331-350]

One of the key characteristics of startups is that they tend to develop pioneering solutions, that always has to deal with risk and uncertainty. Hence founders more often than not follow the so-called Lean startup set of principles that if followed, should let the founders to establish and develop startups with limited resources and significant uncertainty, enabling them to build their ventures more flexibly and cost-effectively. The Lean Startup methodology is founded on the
concept that entrepreneurs can articulate their implicit assumptions about their venture’s operations and empirically test them. The empirical test aims to validate or invalidate these assumptions and gain a deep understanding of the new venture’s business model. This process involves creating new ventures iteratively through a build–measure–learn loop. Therefore, the lean startup methodology is a set of principles for entrepreneurial learning and business model design. More specifically, it consists of design principles focused on iterative experiential learning under uncertainty in an engaged, empirical manner. [10 p. 21-28]

If abridged, a Lean Startup approach suggests founders to follow these steps in the order provided below [11]:

Step 1: Identify a problem worth solving and define a solution.
Step 2: Engage early adopters to validate the market.
Step 3: Continuously test with smaller, quicker iterations.
Step 4: Develop a function, measure customer response, and confirm or refute the idea.
Step 5: Make evidence-based decisions on when to pivot and adjust your plan.
Step 6: Maximize efforts for speed, learning, and focus.

In theory, the Lean Startup approach should maximize the chances of the Startup’s survival at an early stage, at least until the Minimum Viable Product is ready. However, if we check for the real statistics of success among Startups, we’ll find out that over 90% of startups fail over ten years time. Only about 40% become profitable, and ultimately less than 1% of startups receive Venture Capital investment. (It would be important to note here, that not all startups aim to be funded by Venture Capital (VC) firms, but since VC firms are institutional investors that make their statistics more structured and more available for procedural reasons, the data on them is usually the most reliable and most comparable, hence the example). [12]

Interestingly enough, the statistics also tell us that luck plays a huge role in running a successful startup, at least when comparing first-time founders against those who failed with a startup again previously, because the former has about 18% chance of success, while the latter – 20% that proves the point that experience gained at previous failures does provide reiterating founders with the significant upper hand. Those founders, who have managed to launch a once successful startup or more, however, have a 50% chance of success, and that proves that skill also matters, but we should not exclude the factors of networking and fame that come alongside successful exits or closed funding rounds. [12]

Among the challenges that startup founders typically meet the most common ones are access to finance, talent acquisition, market need, competition, planning, customer acquisition, regulatory compliance, scaling, cash flow management, and unrealistic expectations [13; 14]

Each of these challenges have typical solutions, which of course can not be applied in any particular case, but should be considered nonetheless:
The challenge of **access to finance** is considered as a challenge of access to institutional investors or lack of their interest. Typically institutional investors are either VC firms, funds and family offices. There are several other forms of funding that is accessible and often even preferable by early founders. These are Angel investors – Angel investors are private individuals who use their own funds to invest in startup companies, receiving equity in return; and Crowdfunding – through which, startups seek small investments from numerous individuals, usually via an online platform. In return for their contributions, backers often receive rewards like products or experiences associated with the startup. [13]

The challenge of **talent acquisition** can be understood as another financial problem, not only as a reputational one. It may seem rather obvious that a startup can hire required professionals by offering competitive salary. The problem often lies in the lack of financial resources. Hiring interns can be a good solution when one requires more personnel to complete jobs that do not require too much skill, but every startup requires senior experts, and it is not always the case that the founders can fill in. The stock options is often the tool to attract high-level professionals who would otherwise require a higher salary than the founders can afford in the beginning. Stock options enable employees to buy company shares at a predetermined price in the future, providing them with an incentive to contribute to the company’s growth and benefit from their investment. [13]

The risk of **market need** or market validation risk. This risk can be understood as a potential lack of demand and can be mitigated via the market research and choosing right parameters. There are agencies that can do market research for the founders, however it should be taken into account that the agencies are usually not the experts in the niche, hence the parameters should be provided to them very carefully in order to avoid significant errors in the results. When evaluating parameters, keep your analysis qualitative. Rank the factors you’re considering based on their relative importance in decision-making. Quantify Soft Parameters: Assign scores to soft evaluation parameters. This helps you objectively assess their Impact on market validation. [15]

**Competition risks** are mitigated by surveying the market and determining the market for your good or service and the suppliers of a good or service that satisfies the same needs. While entering a market with fierce competition can be devastating, it is rather good to have competition to some extent – it is also very difficult to create demand for a market that does not exist at all. Look for patterns within your customer base. Keep an open mind and consider all market segments. Understanding customer behavior helps you tailor your approach effectively. [14; 15]

Without a solid, actionable plan, the business may face negative consequences. Businesses should develop both short-term and long-term **plans**, outlining where they expect to be in the coming months and years. It’s crucial to include measurable goals and results. To steer the business toward success, incorporate to-do lists with specific dates and deadlines.[16]
Customer acquisition risks refer to sales. A Startup may be in a market with sufficient demand and low competition, but if its potential customers are unaware of your product or service. Entrepreneurs often operate on a limited budget, making it difficult to reach a large customer audience. Additionally, potential customers tend to prefer established firms over new market entrants. However, founders should be aware that, with a few exceptions where mass production is at play, products and services delivered by large firms are expensive. As a result, customers are seeking businesses that offer lower prices while maintaining high-quality work. You can capitalize on the quality aspect. [14]

Government regulations and bureaucracy can be challenging for young companies trying to establish themselves. Moreover, in some industries, especially such as food and beverages and healthcare it regulations require certain procedures to be completed, they may also be a heavy burden on an early startup’s budget. Nothing beats a good private legal firm’s advice, but fees for that can get pretty hefty. In some countries, to address this, many governments offer programs to help startups navigate the regulatory landscape. You can also save some resources on a legal advise by being diligent and following several recommendations such as: staying informed about the latest government regulations and policies by subscribing to relevant newsletters, attending industry conferences, and reading online resources; documenting everything related to your business—from the amount of funding you raise to the number of employees you hire. [15]

Scaling your business is a positive step, but only if the timing is right. Premature scaling, such as hiring too many employees before there’s enough work or overspending on advertising and marketing, can be detrimental. It’s crucial to wait for the right moment to push for growth. The primary reason most startups fail is a lack of market demand for their offerings. Many companies develop products or services to address a problem or need that is either too small or already well-served by existing solutions. Ultimately, success hinges on offering something that stands out from what is already available to consumers. [16]

Cash flow management risk is probably the one that is generally applicable to all kinds of businesses as much as Startups in particular. There are a few suggestions on how to mitigate these risks: doing financial modeling like estimating future sales, expenses, and margins; maintaining sufficient financial resources in reserves; optimizing payment processes, such as extending the average periods of covering creditor’s liabilities and contracting the average periods of covering debtors liabilities to always have more liquid cash on hand; monitoring expenses closely and cutting expenses when necessary; managing inventory; establish diversification of revenue streams; consider benefitting from available financial services, such as taking a low-interest loan or local programs for startups; consider taking professional financial advise. By adopting these strategies, you can more effectively manage your startup’s cash flow and mitigate the risks associated with financial instability. [17; 18; 19; 20]
Finally, startups often get caught up in chasing unrealistic expectations, especially after experiencing some initial success. This can lead to overspending on staff recruitment, overburdening employees, and accumulating unwise debts. The best approach is to set realistic goals based on available resources, growth potential, and market dynamics. Avoid stretching your startup into failure with unrealistic dreams, but also don’t let it stagnate due to a lack of innovation. Maintain a proper balance between the two and learn to handle challenges as they arise. [14]

What is a Web3 Startup and how does web3 startup differ from an ordinary Startup

Now, as we have laid a foundation for our comparison and learned typical risks and challenges faced by startups in general, we should explain how Web3 startups differ to realize what unique risks and challenges are faced by Web3 startups if any. But first, let’s define Web3 by tracing the evolution of the internet, starting with the Web1 environment. Known as the “read-only web,” Web1 is characterized by static content, limited interaction, and simple visuals. The internet during Web1 consisted of static information linked together, often found on websites. Users primarily shared information using URLs. [21]

In the early 2000s, Web2 emerged, focusing on user experience and social interactions. Platforms like Instagram and Twitter curate algorithm-driven data feeds, allowing users to actively engage by sharing, liking, reposting, and commenting. Web2 builds on the features of Web1, enhancing them with social connectivity. [22]

With the development of blockchain technology and Decentralized Apps (Dapps), Web3 emerged. Web3 represents an environment where users not only create content, as in Web2, but also own it and have more tools to monetize it or manage ownership rights. It is a decentralized web where information is linked through a public ledger, often a blockchain. Unlike Web2, where tech companies control data, Web3 empowers users by removing intermediaries and emphasizing transparency. [23]

There are a few common traits to a certain extent relatable to all Web3 startups. These are: decentralization, tokenization, being community-driven, transparency of interactions, security in design, and data ownership shifted to the user [24].

Decentralization in this context means that Web3 startups leverage decentralized networks, typically utilizing blockchain technology. Unlike traditional startups that depend on centralized servers and databases, these ventures operate without a central authority. [24]

Many (but not all) Web3 startups utilize tokens to incentivize users and foster a network effect. These tokens can be employed for accessing services, voting on governance matters, or engaging in the platform’s economy. [24]

Similarly, Web3 startups frequently prioritize community involvement, encouraging users to actively participate in the platform’s development and
This approach fosters a strong sense of ownership and commitment among users. [24]

Due to how blockchain networks operate, they typically provide a high level of transparency, enabling users to observe platform operations, transaction processing, and governance decision-making. There are few exceptions, however, as there are blockchain networks built with extra privacy and traceability in mind, but they are rather the exception and their market capitalization share in the market capitalization of the whole Web3 sector is negligible. [25]

As for security concerns, technology-wise Web3 startups usually offer enhanced security thanks to the inherent features of blockchain technology, which make them less susceptible to hacking and other security threats. [24]

With regards to the shift of data ownership to the user, it is probably the key value of Web3 industry as a concept. In Web3 models, users retain ownership of their data, enhancing privacy and minimizing the risk of data breaches. This contrasts with traditional startups, where data is typically controlled by the company. It also allows for more methods of monetization of this data for users themselves. [26]

We should understand that all these traits, that differentiate Web3 startups from startups in general play a significant role in how Web3 startups develop and unravel and cause new types of challenges and risks in that regard.

Challenges and risks of Web3 startups

While many of the risks and challenges with which Web3 startup founders should deal with derive from the risks and challenges common for startups in general, that we described two chapters above, they obtain new forms in Web3 environment and require and similarly require new approaches for their resolution or mitigation.

The first challenge that emerges when building a Web3 startup is the challenge of lack of Adoption, often referenced as “Crypto Adoption”. It means that the population behaves as if it is not yet ready to massively utilize the benefits of Web3 solutions. It can be explained by the fact that Web3 applications typically present a steeper learning curve compared to traditional web applications. This can impede user adoption and retention, as the technology may be challenging for users to understand and navigate. [27]

Regulatory uncertainty is another risk often associated with Web3 startups. While founders of startups in general should be aware of regulatory challenges typical to their market, as we discussed above, in Web3 the regulatory framework is so volatile and uncertain, that it is often hard to make reliable predictions, about whether a solution will be legal at all by the time it’s ready to be marketed. [27]

Security concerns also do not vanish when going for blockchain technology. While blockchain alleviates lots of problems of centralized solutions, new problems arise. Among the most common ones are bugs in the smart contracts, re-entrancy attacks and the potential to other exploits. Also, the human factor still allows for

phishing attacks, when victims are being misled into providing hackers access to the data. [27; 28]

There is also a challenge of Vendor management. As Web3 startups frequently depend on multiple vendors for services such as node running, wallet management, and storage. This reliance can result in vendor lock-in, making startups dependent on specific vendors and potentially leading to higher costs and reduced flexibility. [27]

The interoperability problem, is probably one of the most typical, to Web3 startups as it derives from the very principles of blockchain networks. To put it simply – blockchain network do not communicate with one another. At the same time, in order to easily move assets and information across blockchains and cryptocurrencies, interoperability is essential. However, the widespread use of blockchain protocols and cryptocurrencies is hindered by the lack of standards and interoperability. This limitation reduces the overall usefulness and simplicity of adoption, as users often face challenges when transferring assets between platforms or conducting cross-chain transactions. [303]

And, of course, the matter of funding. Securing funding can be more difficult for Web3 startups because of the perceived risks and uncertainties surrounding the technology. Additionally, resource allocation can be challenging, as startups must balance between developing the technology and marketing their product. [27]

How do Web3 founders solve challenges and mitigate risks

As we have explained above, Web3 startups do face certain challenges that differ from the ones typical to startups in general.

Each of the challenges, that we named in the previous chapter, are being addressed by the founders in order to increase the attractiveness of their products or services as well as the interest of investors.

In the same order as we presented these challenges in the previous chapter we will now explain how they are being mitigated.

Solving the crypto adoption is the ultimate goal of the whole Web3 ecosystem, however even at a scale of a single startup, there are lots of actions that can be undertaken in order to make the product more appealing to the market. Founders should consider the following: improve scalability. For that they can consider choosing more scalable blockchain networks, and it is even possible to adapt a product to operate on another one for that reason. Stabilize volatility of the token by taking some hedging measures or creating a reserve consisting of less volatile assets. Simplify the user experience by developing more user-friendly interfaces. Finally establish the education, so that more people are interested in exploring and utilizing Web3 solutions and spreading the word. [31]

When solving the risks posed by the regulatory uncertainty, Web3 founders should dedicate time and resources to studying the so-called “crypto-friendly” jurisdictions. These are countries that are officially recognizing companies dealing with the crypto assets, while simultaneously being known as ones having high
standards of following the legal procedures and protecting the rights of business owners. We are not giving any sort of legal advice in this research, but for the sake of the example we may provide several such jurisdictions: Switzerland, Lithuania, Malta. [32]

While security concerns of Web3 startups can be quite unique in nature, the methods by which they are alleviated are similar if not the same as the ones employed by startups in general. Web3 founders should, of course, consider security as priority when designing their product’s code, but there are few more measures that can and should be undertaken regularly and sometimes interchangeably in order to ensure the continuous resistance of their product to hacks and data breaches. These are: regular security audits by specialized companies that conduct the audit of the product’s code; implementing bug bounty programs, that incentivize white hackers to try and breach the security of the product to obtain a declared reward; implementing Multi Factor Authentication procedures where applicable and educating users in safeguarding their private keys as well as recognizing phishing attempts. [33; 34]

The vendor management risk mitigation and vendor lock-in avoidance should be reached via planning ahead and achieving diversification of vendors, adoption of open-source standards, negotiation of more flexible contracts with the existing vendors that can’t be easily replaced, and ultimately develop exit strategies that would be implemented in cases when vendor lock-in scenarios remain possible. [30; 35]

The interoperability problem is solved with a selection of technical innovations that are available for integration. We by no means do not recommend any particular solutions in the scope of this study, but for the sake of the example, we can name such protocols as Polkadot, Cosmos, and Chainlink that offer solutions to establish communication between blockchain networks. Alternatively, founders can adopt the interoperability standards. Among the most common are ERC-20 and ERC-721. Among older Web3 solutions we can also mention cross-chain bridges. [36]

While the problem of funding may be harder to solve in Web3 environment through classical means, like Angel investors, VC firms, crowdfunding platforms and family offices, the Web3 industry allows for a few groundbreaking methods of fundraising. Web3 Startups can consider going for an Initial Coin Offering, Initial DEX Offering or Liquidity Bootstrapping Pools. Each of these methods are operationally similar to crowdfunding, as they all rely on free access of non-professional investors, but instead of receiving shares of the company or samples of the product (as is often the case with crowdfunding platform), investors receiving the tokens of the startup.

Below you may find the diagram that better illustrates, what types of challenges are typical to Web3 startups, and the methods of their mitigation.
Fig. 1 Classification of challenges specific to Web3 startups and solutions to them

Conclusions. In the early 2020’s it has become evident that traditional startup principles and challenges, such as those defined by the Lean Startup methodology—focusing on funding, market validation, and regulatory compliance—are not entirely applicable to the unique landscape of blockchain. Web3 startups prioritize decentralization, tokenization, and user data ownership, aiming to transform digital interactions fundamentally. They face distinctive hurdles including crypto adoption, regulatory uncertainties, security vulnerabilities, and interoperability issues across blockchain networks. To mitigate these risks, Web3 founders are advised to concentrate on scalability, adhere to regulatory frameworks in crypto-friendly jurisdictions, implement robust security protocols, manage vendors diversely, and utilize specialized funding avenues such as Initial Coin Offerings (ICOs) and Liquidity Bootstrapping Pools. This comprehensive strategy seeks to equip Web3 startup founders with insights into both traditional and Web3 startup paradigms, illuminating their distinct approaches to innovation and survival in competitive markets.

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