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#### The Golden Triad: Risk, Investment, and Market Hype in the Space Sector

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#### Abstract

There has never been more interest and global engagement in the space economy. 102 countries are engaging with space and every day more companies, investors, and nations are entering the domain hopeful to claim their place amongst or intermixed with the cosmos. While competition, excitement, and capital are all critical factors to growing opportunities and economic stability in space, an inadvertent consequence emerging is the inverse relationship between the golden triad of risk, investment, and market hype.

The interplay between market hype and investment carries inherent risks for stakeholders. Exuberant valuations may lead to overinflated expectations, resulting in market corrections that impact investor's portfolios and their risk appetite. Furthermore, the variance of risks amongst stakeholders has implications for investment and scalability. The capital-intensive nature of space means that companies heavily rely on continuous funding making them vulnerable to fluctuations in investor sentiment. Additionally, unmet expectations, delays, or setbacks in high-profile projects can trigger adverse reactions leading to financial repercussions for both investors and stakeholders.

As the space economy becomes more interconnected, so must our understanding of these three factors and how we can measure, utilize, and influence signals from each. This paper explores the relationship of the golden triad and their various facets and create a framework of thinking for how to understand their relationship and calibrate strategies to collectively (and productively) advance the ecosystem.

Keywords: Space Market Dynamics, Space Investment, Global Space Economy, Risk, Market Hype

## 1. The SPAC Boom and Bust: Lessons from 2020-2022

"Spacs," says the *Financial Times*, "are not new" [1]. The first Special Purpose Acquisition Company (SPAC) raised \$36M in a 2009 IPO in the wake of the financial crisis, but it wasn't until 2020 that this alternative to the traditional IPO gained momentum: that year, there were almost 250 SPAC IPOs, followed in 2021 by 613, a 145% increase from the year prior [1]. The money raised by SPAC offerings also jumped, from \$83B in 2020 to \$162B in 2021 [1]. To put it another way, the *Harvard Business Review* reported in 2021 that over half of all newly listed public companies in the United States opted for public listing via a SPAC [2]. This SPAC momentum shaped the global space economy, too, and continues to have a lasting impact.

Sparked in part by Virgin Galactic's public offering via SPAC in 2019 [3], a host of space companies followed suit in SPAC-mediated IPOs in the subsequent two years. As CNBC's Michael Sheetz reports, eleven space companies followed Virgin Galactic to public markets between 2020 and 2021 [4], and these public listings were characterized by high valuations and investor buzz, what in that year the *Harvard Business Review* called "investor euphoria" and what we might characterize as hype [2]. KPMG reported in 2021 that hundreds of newly-funded SPACs sparked "soaring" demand for target companies [5]. 2020 therefore represents a turning point in the space industry commercialization held broad appeal, and more opportunities were available for private companies seeking to capitalize on the moment. Space was also perceived as more attainable: SpaceX sent its first crew into space that year [6]. This confluence of achievement and available capital created a kind of market hype that generated significant public excitement for the sector.

Bust followed closely on the heels of this boom. SpaceNews reported last year that, of space companies that announced SPAC mergers in 2021, only RocketLab exceeded revenue projections in 2022 [7]. Of these companies, Sheetz says, "look, none of them look great" [4]. To be sure, the downward SPAC trend affected more than space companies alone; in June of 2022, CNN reported that the phenomenon affected all of Wall Street: "the once hot blank-check merger trend is fading fast" [8].

While a variety of ventures felt the effects of the SPAC bust, the phenomenon seems to have made a deeper and more lasting impression on the space market in particular. SpaceNews's Jason Rainbow described a shaken market in fall of 2023: "wildly missed revenue projections cast a long shadow over space firms that went public by merging with a SPAC, or special purpose acquisition company, as their shares continue to

underperform in the market" [7]. Many analysts have blamed macroeconomic conditions, such as rising interest rates and falling stock prices overall in the course of 2022, as well as continuing SEC updates to SPAC rules [9], for the decrease in SPAC favorability two years ago. While these factors are useful in delineating general causes for downward pressure on SPAC mergers, they fail to capture why space companies in particular were so vulnerable to this phenomenon. Whereas the rest of the marketplace lost one vehicle to an IPO among many, Jason Rainbow's "long shadow" comment cited above suggests that for space companies, the SPAC boom and bust brought into question the integrity of the companies themselves and the viability of new ventures in the space industry. As late as February of this year, Timur Davis of Munich Re Ventures characterized 2024 as a "year of reckoning" for space firms still working to put the SPAC bubble behind them [10]. Such a "reckoning" has not come for other markets, such as healthcare, media, and technology, favored by SPACs [5]. The space sector seemed to be uniquely vulnerable to market hype; that "euphoria" vaporized, and with it, funding and confidence did too. This dynamic points up a market principle that seems to be distinctive of the space sector: there is an essential interconnection between risk, hype, and investment in the space marketplace. Moreover, the presence of this "golden triad," the close relationship between risk, hype, and investment in the space sector, suggests that investors can better understand the sector by seeing more clearly the unique nature of risk in the space market and by using this vision of risk to engage with the market productively.

#### 2. Assessing Risk in the Space Economy

Taken to mean "exposure to the possibility of loss, injury, or other adverse or unwelcome circumstance" [11], risk is in some way a feature of every human marketplace. Risks incur costs, as Georges Dionne observes, that can be physical, economic, financial, and psychological—yet "risk management does not imply risk aversion" [12]. Efforts to manage or govern risk should not be taken as efforts to excise or avoid risk. Rather, understanding risk is the first step in a smarter investment strategy.

#### 2.1 A Risk Metamorphosis in the Space Age

A remarkable feature of the space sector is that its characteristic risk has utterly transformed over the course of the last half-century. A sector defined by technology and mission risk has transformed into a sector characterized by financial risk and exponential growth opportunity, a stunning feat in 60-odd years. Technological and mission failures characterized the race to the moon in the decade of the 1960s. For example, the Ranger program of 1961–1965 was a series of nine unmanned launches which attempted to gather images of the moon's surface [13]. Before the successful landing of Ranger 6, Ranger 1 failed due to a fuel malfunction [14], Ranger 2 was stranded in Low-Earth orbit [15], Ranger 3 missed the moon by 36,800 km due to a booster malfunction [16], Ranger 4 ceased instrumentation due to a computer malfunction [17], and Ranger 5 failed due to an unknown malfunction [18]. When Ranger 6 did finally impact the Moon successfully, a TV-system malfunction prevented it from broadcasting both video and camera data [19]. The technology, here, was very new, very prone to error, and, in a word, very risky. Since the 1960s, the marketplace has undergone a sea-change. Generally, if a company cannot demonstrate a consistently compelling business case, it won't survive, no matter how good its technology is. Pioneer Aerospace, for example, has been the industry leader in manufacturing parachutes for spacecraft since the 1960s; even as the company supplied both SpaceX and Boeing with parachutes, it filed for bankruptcy and was bought by SpaceX last year [20]. Without a rigorous and scalable business model, today's space companies will not survive in a sector characterized by careful fiscal scrutiny-even if they have the most promising technology in the business. The locus of risk in the space market has shifted, with investors balancing technology concerns with concerns about capital returns-concerns made all the more poignant following the SPAC bust and in light of the contemporary interest rate environment. Risk today focuses on the volume and timeline of financial return on technology. Smarter investing in the space market therefore depends on understanding the risk/reward landscape.

## 2.2 Risk Profile: Public Investment in the Space Sector

We can characterize government exposure to space as oriented fundamentally toward the long term. Public funding turns to space with key objectives: rather than seeking monetary return on investment, governments have concrete mission sets in mind and fund the capabilities that power them. Government spending continues to rise: The Space Report observes an 11% increase in total global government spending in 2023 as compared to 2022, for a 2023 total of \$125 billion invested [21]. Through the lens of risk, we can recognize these figures as an expression of long-term steady-stream investment; though no longer the majority of the space market, which was valued at \$570 billion in 2023 [21], the stabilizing effect of government spending is an anchor of the global space economy. Moreover, since the U.S. government is the market's single largest customer (having spent \$74 billion last year), the U.S. in particular and global governments generally also play an important role in setting priorities for space activities.

Governments invest in space to further defense goals and to meet non-defense research and exploration objectives. This categorization is important to recognize because of how space is increasingly implicated in international grand strategy: increasing geopolitical tensions will drive increased space investment [21]. At the same time, a majority of public space market expenditure supported non-defense objectives—\$68 billion in this area, compared to \$57 billion spent on defense last year. Space is an important civil priority for governments, too.

#### 2.3 Risk Profile: Private Investment in the Space Sector

While government funding anchors and stabilizes the sector in important ways, the majority of the space economy is devoted to commercial activity. *The Space Report* noted a 6.5% increase in commercial revenue for a total of \$445 billion in 2023 [21]. The way the *Report* defines commercial space activity, in which "private actors take on a significant portion of the financial risk," is helpful for our purposes here because it underscores the return on investment these private players seek [21]. Unlike the extended timeline between investment and results borne by worldwide governments, private actors in general will tolerate shorter time-lapses between investment and return, and they will be less likely to seek exposure to ventures deemed "too risky."

Whereas public funding anchors the sector, private capital is more nimble. It has the capacity to close critical gaps so that technologies can become viable and scalable commercial opportunities in space. In so doing, it drives sector evolution. However, because private capital is more vulnerable to larger gaps between investment and return, investment will sometimes tend to settle toward traditional ventures with demonstrated quick-win capabilities-shying away in more uncertain fiscal climates from closing the very gaps that will further revolutionize the space economy. This behavior is a symptom of an approach to the space ecosystem that neglects to see space as a multifaceted and interconnected marketplace; investors who recognize that technology improvements in one area of space inevitably reshape other components of the economy stand to gain the most from their engagement with the marketplace.

Ultimately, while these distinctive risk profiles map the terrain of risk in the space ecosystem, private and public investment are best understood symbiotically. Often partnering to invest in the same technology, government activity responds to (and shops with) commercial innovators, while public investment helps to de-risk certain ventures for the investment community. The space market, in the last analysis, is best understood as comprised of interwoven domains of risk.

#### **3. Balancing Risk: Investment and Hype in the Space** Market

These risk profiles interact with and respond to market hype and investment to shape overall capital behavior in the space sector. As in any marketplace, this interaction also happens within the context of distinctive characteristics of the space sector itself. We will focus here on two key characteristics as they relate to members of the golden triad. On the one hand, the "growth phase" developmental stage of the space sector makes the marketplace particularly reactive to market hype. On the other, the sector's embrace of publicprivate partnerships shapes the behavior of both public and private investment. As the space economy becomes more interconnected, so too must our analysis of the components of the Golden Triad.

## 3.1 Hype and the Growth-Phase Space Sector

In general, the emerging and rapidly growing space sector tends to generate excitement and significant public interest, but such hype may not always serve young companies more vulnerable to changes in investor winds that may come with the bursting of hypebubbles. The New Space movement, characterized by "direct participation of private companies in the space sector," is just over twenty years old [22]. In many cases, then, the term "space company" is nearly synonymous with the term "startup company." Even legacy space companies like Lockheed Martin, though not startups themselves, must adapt to new competition from relative newcomers like SpaceX for NASA launch vehicle contracts [23]. Not only is the sector young and developing rapidly, but also it has developed product delivery models according to stakeholder needs, balancing fewer and more lucrative deliveries with servicing the needs of government objectives. We might consider, for example, the oft-drawn parallel between commercial aviation and commercial spaceflight: whereas the Federal Aviation Administration (FAA) manages an average of 45,000 daily flights in the United States alone [24], the Space Report notes that this year, the unprecedented 126 launch attempts through June 30 puts the space sector on track for another recordbreaking year for launch activity [21]. This is a remarkable disparity between discrete deliverables; individual space companies are hard-pressed to show the same kind of quarter-by-quarter financial data that characterizes investor communications in other sectors. It is also common for space companies to take years to bring initial products and services to market: SpaceX, for example, was founded in 2002 but didn't launch Falcon 1 until 2006 [25]. The business model of space companies, then, makes them more vulnerable to changes in investor winds. The fact of fewer deliverables makes each project more high-profile; unmet expectations, delays, and setbacks can also trigger adverse reactions, leading to financial repercussions for both investors and young companies. The product delivery model of the space sector, in concert with the capital-intensive nature of space, leaves companies like this exposed to the underside of market hype.

Market hype can sometimes color justifiably exciting ventures in space. In-Space Servicing, Assembly, and Manufacture (ISAM) is a clear example of the linear relationship between technological capabilities and advancement on the one hand and market growth on the other. According to NASA's ISAM State of Play overview, ISAM will "[change] the space operations paradigm, creating the foundation for sustainable exploration and serving as a multiplier for other capabilities like space logistics, power generation, and reusability" [26]. Every investor wants proximity to such "paradigm"-shifting capabilities; at the same time, ISAM is still in buildout mode, as the State of Play document makes clear. Until ISAM and similar sectorchanging technologies are fully integrated, investors responding only to market hype-without a more sophisticated understanding of the relationship between technology buildout and sector business opportunitieswill be disinclined from supporting such systems because of a lack of immediate return on investment. This misperception of risk, in turn, disinclined key investors from investing in the very systems poised to reshape the entire marketplace.

A final way that market hype influences the behavior of capital is through the allure of aspirational projects such as asteroid mining that depend on the systems discussed just above. The Harvard International Review reported in 2022 that two early companies founded to pursue mining projects were unable to meet costs and were subsequently acquired by other firms; at the same time, the journal notes that mining just 10 asteroids close to earth may yield profits as high as \$1.5 trillion [27]. So profitable could such ventures be, the *Review* continues, that "one asteroid, 16 Psyche, has been reported to contain US\$700 quintillion worth of gold, enough for every person on earth to receive about US\$93 billion [27]. Captivating as such prospects are, the fact of the marketplace now is that other technological advancements and additional funding are needed in order to make such ventures profitable. Market excitement, here, does not approximate what we might call present-day business feasibility.

# 3.2 Investment Behavior in a Partnerships-Based Space Economy

Public-private partnerships are a mainstay of the workhorse space economy: attending to actual investment in the space ecosystem often means recognizing the interplay between these two important funding streams. According to *The Space Report*, public space spending increased by 11% in 2023, accounting for \$125 billion invested in both military and nonmilitary concerns [21]. Increasingly, the sector is characterized by public partnerships with private ventures: NASA, for example, "is leveraging commercial partnerships in the development of its human lunar landers" [21], while the UAE is seeking to partner with private companies for launch capabilities [21]. Government funding like this helps to set priorities and parameters of the market as a whole. Government spending also targets science-based missions with longer timelines-such a dynamic has a profound impact on the commercial players in the space ecosystem because of the way that public funding is able to broaden the space horizons overall. Private funding, meanwhile, plays a critical role as well, closing technology gaps, maturing key capabilities, and scaling assets for market. Moreover, the presence of public funding in private ventures often mitigates investor perceptions of risk and is an important dynamic to consider when analyzing the effect of public investment in this particular sector.

Tracking investment in the space ecosystem also highlights the phenomenon of space-adjacency. According to McKinsey & Company, "a rising number of new entrants in the space sector have tapped into this significant and growing investor interest to pursue spinoffs, partnerships, and private-investment rounds" [28]. Private investment capitalizes quickly on the discoveries and technologies of the sector and brings these advancements to market in new and interesting ways. Contemporary space investors have remarkable freedom to curate both the extent and type of their exposure to the marketplace, and these space-adjacent investment opportunities and stakeholders form another important component of investment in the space economy.

## 4. Navigating Risk in the Space Economy

Two years ago, the SPAC bust highlighted the perils of a golden triad—risk, hype, and investment—out of balance. Space companies and investors who adopt risk strategies will employ a more calibrated approach to the marketplace. As we noted above, "risk management does not imply risk aversion": adopting an approach to risk need not imply an overly conservative or adventurous posture. Rather, keeping in mind the golden triad is perhaps the crucial first step for more sophisticated engagement with the space sector.

#### 4.1 Approaches to Risk for Space Companies

Socrates said that the beginning of wisdom is to know thyself; the same is true for space companies. While SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis has been a mainstay of business analysis, the *Harvard Business Review* published a refreshed approach a few years ago that emphasizes how "threats and opportunities can come from within as well as from without — and that not just your own capabilities and deficiencies but those of other players matter" [29]. Companies should therefore conduct a rigorous assessment of their own weaknesses, and they should couple that analysis with a look at the larger space ecosystem. The growth phase of the market means that creative destruction will be a key feature of the landscape as the sector matures, and companies who seek to communicate clearly with investors with respect to the risks they face should seek to provide a holistic analysis of their firm's role in the ecosystem.

Coupled with a rigorous assessment of internal and external threats and opportunities, companies should also seek as much as possible to translate business activities into comprehensible and tangible quarterly reports, covering such topics as growth plans and setback mitigation strategies, as well as rigorous performance assessments. While it is the case that the space sector contemplates a different frequency of deliverables than do many other markets, companies who seek to remain competitive should seek to deploy the language and approach of the legacy business landscape, particularly their in corporate communications. While many companies set aspirational product or service goals, they should couple these with providing realistic return on investment (ROI) expectations quarter by quarter. Companies can also focus on educating investors, keeping them up to date on actual technology and system progress and possibilities for future financial returns. This insistence on rigorous, realistic reporting-gone are the days of quick slide deck presentations-can mitigate boom-andbust cycles by tying aspirations directly to deliverables.

While realistic company and market assessment is indispensable for space companies, they can take further advantage of the space market's permeable boundaries by creatively patenting and monetizing spinoffs and adjacent revenue and value streams. This diversification positions companies to tolerate disruptions in one or more discrete product lines and sets them up in a stronger position with respect to capital risk. Companies that manage risk in this way can also use this approach to fund high-cost high-reward projects while maintaining a favorable earnings-report position quarter by quarter.

#### 4.3 Approaches to Risk for Investors

If risk in the space market is best conceptualized as a phenomenon of overlapping and cooperative domains, investors who best understand the developing capacities of the marketplace will be best positioned to engage with the marketplace. A robust sense of the way that space technologies interlock, so that one enables the next (e.g. ISAM), helps investors see particular ventures as less risky and, indeed, as an essential component of the larger ecosystem. Practically, investors who attend to public investment will gather a sense of market priorities and tradewinds: often, government investment sparks a host of commercial opportunities. Moreover, this vision of the marketplace helps investors to recognize the phenomenon of adjacency in the ecosystem itself and in investment portfolios: this too can help reduce an inflated perception of risk.

In part, we can explain the SPAC boom and bust as a miscalibration of risk, investment, and market hype, and (at the risk of oversimplification) we can express this relationship algebraically, where I stands for "investment" and H stands for "hype." In the years leading up to 2022, the following expression held:

In other words, investment pretty nearly tracked market hype. To reverse the expression, the average investor took market hype as a good barometer for investment exposure. As 2022 demonstrated, such a relationship failed to take account of risk and of key features of the space sector, and the bubble burst.

We might consider a more nuanced approach for investors seeking a good tool for calibrating their exposure to the global space ecosystem. An algebraic approximation might look something like this:

$$\mathbf{I} = (\mathbf{P} + \mathbf{M})(\mathbf{F}) / \mathbf{R}$$
 (2)

In this expression, I stands for "investment," P stands for "product," M stands for "monetization," F stands for "feasibility," and R stands for "risk." Investors, in other words, should consider both a company's product andtaking account of the special features of the permeable boundaries of the space sector-monetizable applications of that core product beyond the main usecase as well as the larger impact to the ecosystem. They should relate this result to a measure of the feasibility of a particular venture. Then, investors should compare that product to their perception of the company's riskmetric. Such an approach could employ a tool such as a rubric, with every variable described above assigned a value between 0 and 5 (recognizing, of course, that investors would acknowledge that no investment is ever truly risk-free and would therefore not render the equation undefined by assigning a value of 0 to the "risk" variable). See Appendix A for an example rubric describing the rationale an investor might employ in assigning values to the above variables.

Mathematicians—and observers of the space economy—may well take issue with the particular relationships expressed above. The larger point, here, is that investment in the global space market ought not be based on a single variable alone; rather, investors seeking sustainable exposure to the marketplace should weigh the special characteristics of the sector in seeking to unlock its financial potential.

One variable, "hype," is present in the first expression but entirely absent in expression two. Granted, some capital in the space market will inevitably behave in response to hype no matter how carefully other funding streams calibrate their investments: space is an increasingly important sector in the global economy and, no longer an enthusiast's economic sector, will become increasingly subject to worldwide economic tradewinds. While hype (or its opposite) will always explain some measure of capital behavior in the space sector, a robust analysis of the space market should still include it as an important feature of sector assessment.

Hype is important not so much as an investment cue but rather as a measure of public appetite for future commercialization. It is a bellwether, in other words, for potential market activity. Hype often distracts investors from the real risks posed by particular ventures in the present, but it is an invaluable tool for blueprinting coming market phenomena because of the way it captures public interest, excitement, and desire assuming, of course, a more tolerable assessment of risk in the future.

The important window that hype provides makes it a key member of the golden triad in the space marketplace. In 2022, market hype offered a glimpse of the real appetite for space companies in American capital markets. Companies in the intervening two years have worked to deliver less risky investment opportunities by returning to good business fundamentals; in this way, market hype not only drove investment in 2022 but helped the entire sector recalibrate business practices as a result. As the space economy continues to grow and to become ever more interconnected, careful frameworks for thinking about the relationship between investment, risk, and hype will become important tools in advancing the ecosystem as a whole.

## Appendix A: Quantifying Judgments about Investment Variables

Below are example rubrics for assigning quantities to judgments about investment variables in space. Investment decisions are ultimately subjective: these rubrics are designed to capture and clarify *perceptions* rather than hard-and-fast fiscal and technical rules. As such, investors informed by different assumptions about particular variables may well generate vastly different investment strategies.

Plugging in judgments about particular variables leads to what we call an I-score, shorthand for a number standing for recommended investment exposure as perceived by the investor. The highest possible I-score, 50, will be the result for only the most extraordinarily reliable and profitable investment opportunities. In order to find an investor's *subjective* favorable I-score range, we suggest completing the equation based on investments that the investor has made or plans to make as a way of highlighting an Iscore range optimized for that individual.

Above all, our hope is that this exercise will highlight the importance and priority that investors should give to the multiple and interwoven aspects of any given investment in the space marketplace. Refer to equation 2 above.

Table 1: Quantifying "Product"

1	The value of this product or service is not obvious, whether due to its redundancy with other products or services, its unreliability, or a lack of clear monetizable avenues.	
2	This product or service is an interesting proposition, but market impact, market demand and/or a customer base is not in line with its use-case at this time.	
3	This product or service has some uncertainty, but it fills a clear and demonstrable role and need in the marketplace.	
4	Except for further technological development, the need for this product or service makes it an important addition to the marketplace.	
5	This product is technologically reliable and strategically poised to deliver near-term and outstanding results with a clear growth path towards customers and revenue.	

Table 2: Quantifying "Monetization"

1	This product or service is very niche without clear reference to other markets, scale, or a diverse customer base.		
2	This product or service could conceivably be brought to market, but the technical barriers, path to scale and profit, and timeline to operationalize are too significant.		
3	With further development and potential adaptations, this product or service may provide interesting use- cases and impact. There is a vision for a consistent role in the space market.		
4	This product or service could play a significant role in the space sector and serve as a facilitator/integrator/catalyst for other players,		

	services, and/or capabilities. There is a path towards customers and growth.	References
5	This product or service would make clear and significant contributions to space and potential other markets. There is a demonstrable need, immediate customer base, and clear path towards profit.	<ul> <li>[1] William Cohan, The Spac bubble and bust is one for the history books, 24 November 2023, <u>https://www.ft.com/content/83f0feba-5168-44da-90d7- b0aa11030cf0</u>, (accessed 15.08.2024).</li> <li>[2] Max H. Bazerman, Paresh Patel, SPACs; What You</li> </ul>
Та	ble 3: Quantifying "Feasibility"	Need to Know, July–August 2021,
1	It is not clear how this product or service would enter the realm of the possible.	https://hbr.org/2021/07/spacs-what-you-need-to-know, (accessed 15.08.2024). [3] Jasper Jolly, Virgin Galactic launches (on the New
2	While this product or service is theoretically possible, practical or technological barriers make it not a feasible offering within an acceptable amount of time.	York stock exchange), 28 October 2019, https://www.theguardian.com/science/2019/oct/28/virgi n-galactic-spce-launches-new-york-stock-exchange- richard-branson, (accessed 15.08.2024). [4] Michael Sheetz, Investing in Space: A reality check
3	This product or service would be possible to deliver within an acceptable amount of time assuming that expected capability developments, both internal and external to the company, keep to a projected course.	on SPAC frenzy revenue projections, 12 October 2023, <u>https://www.cnbc.com/2023/10/12/investing-in-space-a-reality-check-on-spac-frenzy-revenue-projections.html</u> , (accessed 15.08.2024). [5] John Lambert, Sarmed Malik, Why so many
4	This product or service would be straightforward to deliver with some slight retooling or further development of current capabilities.	companies are choosing SPACs over IPOs, 2021, https://kpmg.com/us/en/articles/2022/why-choosing- spac-over-ipo.html, (accessed 15.08.2024). [6] SpaceX, Crew-1 Mission, 2024,
5	The capabilities for this product or service have been demonstrated and primarily need capital (not further technology development) to become operational and/or scale.	https://www.spacex.com/launches/crew-1-docks-to-iss/, (accessed 20.09.2024). [7] Jason Rainbow, How wrong were space SPAC projections? 6 October 2023, https://spacenews.com/how-wrong-were-space-space-
Та	ble 4: Quantifying "Risk"	projections/, (accessed 15.08.2024). [8] Paul R. La Monica, Wall Street's blank-check boom
1	It is difficult to perceive how adverse occurrences beyond the extraordinary would make both the technology itself and the market applicability for this product or service not valuable.	has gone bust, 8 June 2022, https://www.cnn.com/2022/06/08/investing/spacs- canceled-blank-check-stocks/index.html, (accessed 15.08.2024). [9] U.S. Securities and Exchange Commission, SEC
2	This product or service seems consistent and solid with favorable market conditions.	Adopts Rules to Enhance Investor Protections Relating to SPACs, Shell Companies, and Projections, August 2024, https://www.sec.gov/newsroom/press-
3	This product or service raises questions and requires ideal conditions for profitability; however, there is belief in transformative impact to the ecosystem and/or profitable future.	releases/2024-8, (accessed 15.08.2024). [10] Jeff Foust, Venture-backed space companies face "year of reckoning," 6 February 2024, https://spacenews.com/venture-backed-space- companies-face-year-of-reckoning/, (accessed
4	Growth for this product or service raises a lot of questions; in exceptional circumstances, there is possibility for its success.	15.08.2024).[11] Oxford English Dictionary, s.v. "at risk to' in risk(n.) sense P.3," June 2024,https://doi.org/10.1093/OED/2698784569, (accessed)
5	The technical viability and/or profitability of this product or service would depend on the alignment and technical progression of a host of factors that are difficult to control and harder to predict.	15.08.2024).[12] Georges Dionne, Corporate Risk Management:Theories and Applications, Wiley, 2019.[13] Dave Williams, Ranger (1961–1965), 22September2005,

https://nssdc.gsfc.nasa.gov/planetary/lunar/ranger.html, (accessed 16.08.2024).

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