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Role of Innovation and Technology Adoption in Growth of Startups

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Abstract

Start-ups in the modern age aren't only establishing new companies; they're blazing new paths. Sustainable growth requires incorporating cutting-edge technology into every step of the business, from administration to production to distribution. Using cutting-edge technology is essential for any startup, but it does not come without its share of perils. The road ahead might be paved with success or setbacks depending on the choices taken at this point. The goal of this paper is to better understand the complex relationship that exists between the widespread acceptance of new technologies and the expansion of new business ventures. Furthermore, the aim is also to learn more about the factors that drive adoption, the roadblocks that slow development, and the solutions used to overcome these obstacles so that we may better advise startups

Keyword: Startups, Innovations, Technology adoption and Sustainability

I. Introduction

It is generally acknowledged that entrepreneurial activity contributes to the generation of wealth, the formation of job opportunities, the elimination of impoverishment, enhancement of innovations, as well as prosperity (Hassan et al., 2021; Otache, 2019). Entrepreneurship refers to the process through which an individual initiates, develops, and financially supports a new commercial enterprise. It's the act of coming up with novel solutions to meet the ever-expanding demands of a market (Cueto et al., 2022). In the fast-paced environment of entrepreneurship, new businesses known as startups emerge as the beacons of significant change and breakthroughs that bring about massive shifts in many industries. Over the course of the past several years, startups have been instrumental in both the acceleration of economic development and the acceleration of technical innovation. The use of cutting-edge technology, which gives startups the ability to tap into the game-changing potential of the digital era, is the essential driving force behind this undertaking. The recent breakthroughs in technology, such as artificial intelligence (AI), blockchain, augmented reality (AR), virtual reality (VR), internet of things (IoT), etc., have opened up new opportunities for entrepreneurial endeavours, hence increasing the potential for economic expansion. Businesses in every sector are coming to the realisation that technological change is essential to the long-term viability of their businesses as technology continues to improve. All areas of business, from sales and marketing to HR and finances, as well as R&D and customer service, are undergoing this digital transition (Antonizzi & Smuts, 2020). Technology is essential to startup creation. The integration of innovative technology has the potential to boost both effectiveness and efficacy, and it represents a significant opportunity for entrepreneurial endeavours to gain a sustained edge over their rivals (Neumeyer et al., 2021). Startups have a unique window of opportunity right now because of the rapid creation and integration of new technology to reassess business models, boost performance, and carve out their own niches in the

market. There is a wide variety of causes, constraints, and problems that emerge as new businesses strive to understand and adopt cutting-edge technologies. In the era of digitization, there are a number of factors that work against digital entrepreneurs, such as a lack of necessary skills, market-related issues with digital platforms, and poor or nonexistent internet infrastructure (Cueto et al., 2022). This discussion leads us to the following research goals for this work:

1. To examine how new developments and technological adaptation have affected the growth of startups.

2. To understand more about the many obstacles and critical success factors associated with introducing cutting-edge innovation.

The rest of the paper is structures as follow. The next part explains the review of literature for the technology adoption and innovations in the field of startups. In the 3rd section, methodology is explained. 4th sections presented the impact of integration of innovation and technology on the growth of startups. Section 5th and 6th explained the key factors and challenges that come across in the adoption of new technologies. And lastly, we concluded the paper with probable suggestion for effectively utilization of innovations and technologies in startups.

II. Review of Literature

Startups are freshly founded enterprises that place an emphasis on innovation, expansion, and the capacity to scale their operations. They frequently work in contexts that are fraught with uncertainty and fierce competition, with the goal of upending conventional industries or establishing new markets via the development of novel solutions. Innovation is the process of coming up with unique solutions to existing issues or meeting the requirements of a market in a creative way. The term "technology adoption" refers to the way in which new tools and methods are accepted and incorporated into everyday life, whether by individuals, businesses, or startups. The development of advanced and unique digital technology has had a considerable impact on the methods in which innovation and entrepreneurship are practised today. In addition to presenting new opportunities for inventors and business owners, the advent of digital technology has larger repercussions for the production of value and the acquisition of that value (Nambisan et al., 2019). There have been a number of studies in recent years that have looked at how startups use new technologies. For example, in the pandemic scenario digital technology had come in the are of startups. Cueto et al, (2022) that the use of digital technologies was essential to surviving the crisis and even prospering in the long run. This was done in the pursuit of the route to recovery. Beynon et al, (2016) studied the relationship between implementing innovation and its precursors by using a larger dataset from of 47 nations' worth of innovation-active manufacturing enterprises. Further, many facets of digital innovation and entrepreneurship were put forward by (Nambisan et al., 2019). In another piece of research (Antonizzi & Smuts, 2020), the authors used a systematic literature review to determine the features of digital business and technological change. By examining the many entrepreneurship opportunities in a defined region of India, Kumar et al, (2021) delved into social innovation as a distinct type of innovation.

III. Research Methodology

This paper is primarily descriptive in character. We examined how entrepreneurs use and implement new technologies from a variety of angles. The secondary information was utilised for this purpose. We combed through numbers of academic journal articles, different reports, and websites to get an overview for what has previously been written on innovation and entrepreneurship.

IV. Impact of innovation and technology on growth of startups

Innovation and entrepreneurship have long been seen by academics and policymakers as having the ability to create new pathways for promoting economic growth, employment, and the efficient and equitable delivery of services, particularly in emerging economies (Surana et al., 2020). The following are examples of how innovations in technology have contributed to the expansion of existing startups:

Helpful in tapping markets: Adopting new technologies successfully may lead to a rise in demand from a startup's target demographic, which in turn can lead to an expansion of the startup's market share and income. The source of this expansion potential is the higher customer value proposition that is provided by the new innovative solutions.

Higher Revenues: Startups may be able to improve their potential profits by providing new products and services that are enabled by new technologies. When new businesses implement cutting-edge technology, they frequently achieve a competitive advantage, which enables them to provide customers with distinctive goods, services, or solutions that set them apart from current rivals.

Enhanced Scalability and improved operational efficiency: A key factor in the success and quick expansion of the startup ecosystem is the incorporation of cutting-edge technology and new ideas. Integrating new ideas and cutting-edge tech into the startup ecosystem boosts scalability without bloating overhead, allowing for exponential expansion. In the case of technology-driven start-ups, operational activities may be automated to gain greater efficiency.

Useful for building Customer Engagement Strategy: Every firm nowadays cares about retention of customers and satisfaction. Innovation and new technologies attract new consumers and provide compelling tactics to maximise customer satisfaction. Startups may increase profitability by providing individualised services and experiences to their clientele. because cutting-edge tech usually helps new businesses learn more about their customers' wants, requirements, and habits, paving the way for more specific advertising and individualised service. Consequently, it aids in the development of strategies for retaining those customers.

Helpful in new product development plans: The needs and preferences of consumers are taken into account in the development of a new product thanks to technological advancements. Startups frequently make use of cutting-edge technologies to develop ground-breaking goods and services to answer unmet market demands or address issues that have not previously been addressed. This development, which is mostly attributable to innovation, has the potential to position companies at the forefront of their industries and pave the road for continued business success.

Helpful in gaining competitive edge: The use of cutting-edge technology into a startup's production and operational processes can help an emerging business provide a unique offering to its consumer. This creates a one-of-a-kind competitive edge for that particular business and assists new businesses in distinguishing themselves in extremely competitive marketplaces. This edge over competitors can help startups develop more quickly and capture a larger portion of their target market.

V. Factors effecting on adoption of innovation and technology

Several critical aspects contribute to breakthroughs in the process of adopting innovation and technology. These considerations have a major impact on the choices that entrepreneurs make regarding the efficient implementation of these drastic changes. Here are a few of the most important reasons why startups are so open to new ideas and cutting-edge technologies:

Finance: A healthy financial situation is essential to the success of every business endeavour. Startups typically have limited financial resources, making it challenging for them to implement new technologies owing to concerns about the associated costs. Upgrading technology comes with a hefty price tag due to the many expenditures it entails, including licencing fees, the purchase price of new equipment, and the expense of training new personnel. Startups with limited resources should prioritise high-yield technologies and look for ways to reduce costs wherever possible, such as by using cloud computing and open-source software.

Perceived corporate values: The perceived value of a technology to a business depends on how it is used to alleviate problems, improve processes, and boost the company's competitive position. The potential value that a new technology delivers to a startup's company should be evaluated before investing in it. Therefore, it is suggested that startups are more inclined to adopt technologies that give apparent and immediate commercial benefit, such as enhanced productivity, more customer satisfaction, or lower costs.

Integration Into the Present System: Compatibility of new technologies with the tools, processes, and systems that are already in place at a startup is another element that is considered to be of the utmost importance. The failure to integrate newly developed technologies with an already established ecosystem of startup companies can result in issues, the destruction of data, and further integration issues.

Acceptance of risk and a willingness to innovate: Startups are known for their daring spirit and openness to new ideas. However, not all startups are equally prepared to take risks when it comes to using cutting-edge technologies. New enterprises with a greater appetite for uncertainty are more inclined to invest in disruptive new technology. On the other hand, more conservative startups may prefer safer, more established technology. It is therefore recommended to weigh the potential benefits of the new technology against the risks involved in using it.

Ease of Use and Pleasurable User Experience: The degree to which a new tool is intuitive also plays a role in determining how quickly it will be adopted. Technologies that are straightforward to use are more likely to be accepted by startup teams, leading to quicker deployments with fewer hiccups. Technological innovations that boost startup employees' happiness and productivity with little to no learning curve are highly sought after.

Factors related to Legislation and Regulation: In addition to this, it is essential for each startup company to take into account the many regulatory regulations that govern the use of new technology. Adoption of new technology is vital for startups in order for them to not only improve their operations but also satisfy the requirements of applicable laws and regulations. Failure to comply may result in financial fines, damage to one's credibility, and challenges in day-to-day operations.

Market Competition and Emerging Trends in the Industry: Competing forces and industry dynamics are also significant factors influencing the rate at which startups embrace new technologies. The adoption of technologies that are in line with the expectations of the market and that are more advanced than those of rivals can be a competitive benefit. Maintaining a competitive advantage by anticipating changes in the market is one factor that can help to long-term development.

VI. Challenges in adoption of innovation and technology

In addition, it is essential to perform an in-depth analysis of the numerous obstacles and problems that must be overcome by a startup business in order to successfully implement innovation and cutting-edge technology. The explanations for the most important issues are as follows:

Limitations on availability of capital: Money is the lifeblood of a company, as was previously said. There is a strong correlation between financial resources and the rate of technological advancement. Startups may have to delay or reduce their technology adoption if they don't have enough capital. It might be challenging to invest in state-of-the-art solutions due to the high price tag associated with their acquisition, implementation, and ongoing maintenance.

Low tolerance for changes: The willingness to adapt to changing circumstances is the single most crucial aspect of a successful innovation integration and technology adoption strategy. This acceptability might come from the perspective of the manufacturer, the workforce, the buyer, the government, or the general populace. Startup workers may be hesitant to accept new technology because of apprehension about the future, anxiety about losing their jobs etc. Efforts to embrace new technologies can be hampered by unwillingness to change, which in turn can cause unproductive operations.

Inadequate technical knowledge: In order to successfully implement new technologies and innovations, technical expertise is required. However, it is often acknowledged that startups typically have small personnel that is not optimal in all technical areas. In those circumstances, it might be intimidating to integrate and manage sophisticated technology. The adoption process might be slowed down and implementation issues can arise when there is a lack of technical skills on staff.

Threats posed by cutting-edge tech: During periods of rapid technological advancement, startups often gravitate towards technologies that have not been thoroughly tried and tested. Compatibility problems and other technological

hiccups are a real possibility. This sort of practise can further result in lost precious resources and time, which can have a negative impact on the overall success of startups.

Concerns regarding the privacy and safety of data: Deployment of new technology presents yet another hurdle for start-ups, particularly in the areas of data security and privacy concerns. It is of the utmost importance to safeguard confidential customer and company information, especially when one considers the possible negative effects on one's legal standing and image. Concerns about hacking or abuses of privacy might slow down the process of adopting new technologies.

Exposure to Uncertainty: Adopting new technology is risky for a startup because of the unknown effects it will have on the company's bottom line. Adoption might be slowed by uncertainties about the technology's usefulness and its potential financial impact. further Due to the unknown effects of this shift, new businesses may be hesitant to accept new technology.

VII. Conclusion and suggestions

Innovation and technology adoption affect startup growth in many ways. It has an effect on the development of new businesses that is multidimensional. It enables businesses to acquire a competitive edge, which in turn helps companies achieve greater client retention rates and more income. It also improves the startups' scalability and efficiency of their processes. However, in order to effectively leverage the transformational potential of innovation, new businesses need to carefully manage their efforts to embrace new technologies and connect those efforts with their business goals. In order to acquire technical competence, it has been advised that startups make investments in training or outsource certain tasks. Further to integrate new technology into the corporate environment and resolve compatibility issues, proper planning, stakeholder engagement, and evaluation are needed. In addition, because brand-new technologies can be easily exploited, new businesses must adhere to transparent data management practises and place a high priority on implementing comprehensive cybersecurity precautions, as well as complying with relevant legislation. Startups have a responsibility to guarantee the timely and effective application of innovation. Timeliness, realism, and concentration in project management are all essential. Moreover, entrepreneurs should do in-depth cost-benefit evaluations, seek out case studies, and learn from other entrepreneurs in the sector to reduce uncertainty about the returns of deploying innovations.

References:

Antonizzi, J., & Smuts, H. (2020). The Characteristics of Digital Entrepreneurship and Digital Transformation: A Systematic Literature Review. In M. Hattingh, M. Matthee, H. Smuts, I. Pappas, Y. K. Dwivedi, & M. Mäntymäki (Eds.), *Responsible Design, Implementation and Use of Information and Communication Technology* (Vol. 12066, pp. 239–251). Springer International Publishing. https://doi.org/10.1007/978-3-030-44999-5_20

Beynon, M., Jones, P., & Pickernell, D. (2016). Country-level investigation of innovation investment in manufacturing: Paired fsQCA of two models. *Journal of Business Research*, *69*(11), 5401–5407. https://doi.org/10.1016/j.jbusres.2016.04.145

Cueto, L. J., Frisnedi, A. F. D., Collera, R. B., Batac, K. I. T., & Agaton, C. B. (2022). Digital Innovations in MSMEs during Economic Disruptions: Experiences and Challenges of Young Entrepreneurs. *Administrative Sciences*, *12*(1), 8. https://doi.org/10.3390/admsci12010008

Hassan, A., Anwar, I., Saleem, I., Islam, K. M. B., & Hussain, S. A. (2021). Individual entrepreneurial orientation, entrepreneurship education and entrepreneurial intention: The mediating role of entrepreneurial motivations. *Industry and Higher Education*, *35*(4), 403–418. https://doi.org/10.1177/09504222211007051

Kumar, R. R., Singh, K. P., & Ete, L. (2021). Social Innovation and Entrepreneurship in Arunachal Pradesh: Opportunities and Challenges. *Space and Culture, India*, *8*(4), 48–59. https://doi.org/10.20896/saci.v8i4.924

Nambisan, S., Wright, M., & Feldman, M. (2019). The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes. *Research Policy*, *48*(8), 103773. https://doi.org/10.1016/j.respol.2019.03.018

Neumeyer, X., Santos, S. C., & Morris, M. H. (2021). Overcoming Barriers to Technology Adoption When Fostering Entrepreneurship Among the Poor: The Role of Technology and Digital Literacy. *IEEE Transactions on Engineering Management*, *68*(6), 1605–1618. https://doi.org/10.1109/TEM.2020.2989740

Otache, I. (2019). Enhancing the effectiveness of entrepreneurship education: The role of entrepreneurial lecturers. *Education + Training*, *61*(7/8), 918–939. https://doi.org/10.1108/ET-06-2018-0127

Surana, K., Singh, A., & Sagar, A. D. (2020). Strengthening science, technology, and innovation-based incubators to help achieve Sustainable Development Goals: Lessons from India. *Technological Forecasting and Social Change*, *157*, 120057. https://doi.org/10.1016/j.techfore.2020.120057