

Innovation and Entrepreneurship in Action: A Case Study

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ABSTRACT

The purpose of this study is to explore the changes in the entrepreneurial landscape in the United States by examining the 2022 CNBC 50 disruptor companies. The study focuses on the technologies, products, and financing of these companies and aims to provide insights for aspiring entrepreneurs who want to establish innovative, data-driven, and growth-oriented businesses. The findings of the study indicate a significant shift from traditional entrepreneurship, with a move towards emerging technologies facilitated by artificial intelligence (AI), such as the Internet of Things, software-defined security, deep learning, and cloud computing. The research suggests that new ventures need to prioritize being driven by technology and talented individuals, along with a clear entrepreneurial vision, in order to succeed in this evolving landscape.

Keywords: innovation, entrepreneurship, disruptive innovation, CNBC disruptor companies, competitive advantage, AI-enabled technologies



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INTRODUCTION

Entrepreneurs have to spot and seize opportunities, as well as create new ventures. To succeed in this domain, they need to be innovative, strategic, and data-driven. The US economy, which is the largest in the world with a value of \$26.15 trillion in 2022 according to the Bureau of Economic Analysis, offers a rich environment for economic prospects and the development of entrepreneurial and other businesses. However, the competition is also high, as the number of firms with employees has grown by about 9 percent from 4,902,719 in 2000 to 5,326,121 in 2020, based on the Census Bureau data.

Innovation, especially the type that disrupts existing markets and practices, has attracted a lot of attention from academics and practitioners for its significant impact on societies. Scholars tend to explore different models and theories of innovation (Huang, 2018; Schatzberg, 2020; Jin et al, 2022), with the aim of advancing the field and helping businesses adopt innovative solutions. Practitioners, on the other hand, are more interested in turning the insights of researchers and inventors into concrete results in the real world.

According to the Merriam-Webster dictionary, invention means “creating something new; a novel idea, method, or device.” However, the concept of disruptive innovation, which Clayton M. Christensen first proposed and later developed and popularized (e.g., Christensen, 1997; Christensen and Raynor, 2003; Christensen, Clayton M. et al; 2018), has attracted a lot of attention from scholars and experts in the last twenty years because of its significant impact on business creation and disruption (e.g., Hang et al, 2011; Weeks, 2015; Colombo et al, 2015; Liu et al, 2020; Billings and Campbell, 2020; Nickle, 2020). For example, Rasool et al (2018) claimed that disruptive innovation can radically change the way businesses operate.

Instead of focusing only on the technologies, disruptive innovation is a strategic approach that leverages them to gain a competitive edge and increase market share (Christensen, 2015). The theory suggests that the approach can achieve one or more of these goals (Christensen, Raynor, and McDonald, 2015):

1. Launching new products that are affordable and innovative.
2. Developing new markets.
3. Adopting new business models.

LITERATURE REVIEW

The field of innovation and entrepreneurship studies the processes by which new ideas, products, and services are developed, and how they impact economic growth and technological progress. Innovation is the process of creating or improving upon something that already exists in order to create value for society. Entrepreneurship is the process of starting new business ventures, which involves the implementation of innovative ideas. Together, these two forces are crucial in generating new wealth and opportunities, as well as spurring the creation of novel solutions to societal problems. Companies that disrupt the market through their unique business models and operations embody both innovation and entrepreneurship. The following paragraphs will delve into the research surrounding this field.

Harvey et al (2010) view innovation and entrepreneurship as the core of the capitalist society as the entrepreneurial function is to contribute to society by introducing new products/services. Martinez-Vergara and Valls-Pasola (2021) highlighted that disruptive innovation has diverse and intricate effects on business firms and economic sectors, as customers value innovative

products and services. Skarzynski and Rufat-Latre (2021) emphasized the importance for business leaders to anticipate and address market discontinuities and unmet customer needs to foster disruptive innovation. The authors suggested that linking incremental and breakthrough innovation efforts under a shared aspiration within organizations is crucial.

Assink (2006) argued that many companies struggle to bridge the gap between their intentions and actual disruptive innovation capability. To overcome this challenge, he advocated the development of distinctive competencies integrated into a growth-oriented business strategy.

Solanki and Sujee (2022) observed that creativity and innovation have led to disruptions in various traditional industries, such as fintech, which offers financial solutions through technological advancements. Regarding digital health technologies (DHTs), Chahal and Rudnick (2019) expressed concerns about their rapid emergence as a major disruptor in the health care sector. However, they pointed out the absence of a well-established decision-making process for selecting DHTs worthy of investment in validation to ensure they are safe, effective, and cost-efficient for health-related use.

According to Si et al. (2020), business firms are encountering a range of obstacles, including fierce competition, heightened market volatility, shifting consumer demands, and shortened product life cycles. In response to these challenges, the authors highlight that disruptive-based entrepreneurship is progressively emerging as a strategic approach to attain sustainable company growth and enhance competitiveness.

Botello et al (2021) emphasized that recent research findings suggest a distinctive relationship between entrepreneurship and economic growth. Contrary to conventional wisdom, economic growth is not solely determined by the sheer number of new firms entering the market. Instead, it is primarily influenced by a select group of high-growth startups characterized as innovation-driven entrepreneurial ventures. These particular startups play a pivotal role in driving economic progress and prosperity.

The disruptors

The CNBC 50 disruptor companies have a strong connection with entrepreneurship and disruptive innovation, as they are genuine industry disruptors due to their groundbreaking products and services. The subsequent sections provide a detailed discussion on their innovative offerings and the technologies they deploy.

In contemporary times, there are essential elements that drive the growth and competitive advantage of entrepreneurial and progressive companies. These elements include visionary leadership, skilled workforce, AI-enabled technologies, and adequate financial resources. The 50 CNBC disruptor companies are no different when it comes to embracing technological advancements. As indicated in Table 1 (Appendix), these companies collectively employed a diverse range of technologies such as robotics, the Internet of Things, cloud computing, machine learning, and nanotechnology. The remarkable survival and success of these companies since their establishment serve as a testament to the visionary leadership and talented workforce that effectively manage both the technologies and other organizational functions and responsibilities.

Sectors and funding

From 2010 to 2019, a total of 50 disruptive companies emerged under the CNBC banner, as detailed in Table 2 of the Appendix. These companies operate across 15 diverse economic sectors, including fintech, food, and biotech. Remarkably, their funding levels varied significantly, with a construction-related venture securing \$11 million, while a fintech venture obtained an impressive \$14 billion.

An intriguing trend among these disruptive companies is that 66 percent of them belong to four key sectors: fintech, logistics, health care, and enterprise technology. This highlights the relative importance of these sectors and the companies operating within them to venture capitalists and other investors. Particularly, fintech and logistics stand out as they received the majority of the \$73.2 billion total funding, amounting to a substantial 56 percent.

Evaluating the business success of these companies can be done through various criteria such as market share, sales, revenue, and asset growth. However, this paper primarily focuses on company valuation due to the limited available information on other factors. Significantly, based on this valuation measure, the companies' market worth has impressively soared by \$418.3 billion. For instance, their initial funding of \$73.2 billion has now blossomed into an astonishing \$491.5 billion valuation as of CNBC's updated publication in May 2023. Undoubtedly, this exceptional growth in valuation reflects the companies' remarkable success and market expansion, underlining the strong appetite of the marketplace for innovative and disruptive business ventures.

It is worthwhile to indicate that startups usually rely on venture capitalists and angel investors for funding, but they can also get money from other sources like individuals and financial institutions. However, only about 5 percent of funding requests get approved by the main funders, who have very high standards for entrepreneurs who want their money. The standard criteria include the following (e.g., Pandey and Kim, 1997; Bouzahir et al, 2018; Raza and Natarajan, 2022):

- Skills and experience of the entrepreneur and the team.
- Originality and value of the product and/or service.
- Market size and growth potential.
- Technology used and its relevance.
- Competitive edge of the startup.
- Projected sales growth and profitability of the startup.

Business activities

As a group, the 50 disruptive companies have unmistakably honed their skills and capabilities across a wide spectrum of industrial pursuits, as evidenced by their notable survival and growth. Their activities span various domains, including global logistics, facilitating streamlined merchandise transport; cutting-edge technologies customized for the trucking industry; innovative E-commerce platforms specializing in sports merchandise; and the development of plant-based alternatives to traditional meat products (Table 3 in the Appendix).

Thriving disruptors like these are strategically positioned to expand their business influence through initiatives such as diversification, integration, and differentiation strategies. These action plans empower them to achieve greater market dominance, enhance resourcefulness, and strengthen their competitive edge.

Disruptor companies, along with others in the business world, encounter various external and internal influences that significantly impact their ability to survive and grow. Internal factors encompass elements such as innovation capabilities, effective leadership, financial resources availability, and the skills possessed by their workforce. On the other hand, external factors encompass global competition, potential new market entrants, economic stagnation, and stringent government regulations.

It is important to note that the companies featured in the CNBC disruptors list represent diverse sectors, and as a result, they are likely to respond differently to these external and internal forces, which could have adverse effects on their overall performance.

Notwithstanding, experts have identified several key success factors that play a decisive role in determining the survival and progress of business firms, including disruptor companies. These factors include (e.g., Hisrich et al, 2013; Thompson, Jr. et al 2005; Scarborough and Cornwall, 2019):

- Industry experience.
- Sufficient capital.
- Cost control
- Patent protection.
- Meticulous cash management.
- Top-quality service or reliability.
- Superior technology.
- Accurate market forecasting.
- Talented workforce.
- Short-delivery-time capability.
- Quality products and/or services.

CONCLUSION

The dynamic landscape of entrepreneurship is undergoing a profound transformation, primarily fueled by the rapid emergence and widespread adoption of AI-powered technologies, platforms, and innovative business models. A compelling testament to this paradigm shift can be found in the CNBC 50 disruptor companies. Recent strides in entrepreneurial practices hold a crucial message for aspiring entrepreneurs: to channel their efforts into well-planned business ventures that harness the potential of AI-driven technologies, fostering the creation of groundbreaking products and services that cater strategically to ever-evolving consumer needs. Embracing innovation and strategic thinking can indisputably play a pivotal role in unlocking economic opportunities.

The realm of innovation and entrepreneurship revolves around generating novel ideas, products, and services that leave a lasting impact on economic growth and technological advancement. Innovation involves cultivating fresh concepts that deliver value to society, while entrepreneurship entails the launch of new enterprises that incorporate these innovative ideas. Companies that disrupt markets through unique business models exemplify the powerful synergy of both innovation and entrepreneurship.

Disruptive-based entrepreneurship is increasingly recognized as a strategic approach to achieving sustainable company growth and maintaining competitiveness, even in the face of challenges like intense competition and shifting consumer demands. Moreover, research has demonstrated a significant relationship between entrepreneurship and economic growth,

primarily driven by a select group of high-growth startups characterized by their innovation-driven entrepreneurial ventures, rather than simply the sheer number of new firms entering the market.

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APPENDIX

Table 1
Main technologies deployed by 50 disruptor companies

Cloud computing	AI	Software-define security
Machine learning	Blockchain	Edge computing
Autonomous vehicles	Deep learning	Nanotechnology
Deep neural networks	Decentralized finance (deFi)	No code/low code software
Internet of Things (IoT)	Robotics	Explainable AI

Source: compiled from the 2022 CNBC Disruptor list.

Table 2
Funding of aggregate companies in each sector
(b: \$ billion; m: \$ million)

Sector	Number of companies	Total funding	Funding as % of Total	2023 Valuation (billion)	Value Increase (billion)
Fintech	9	23.6 b	32	211.5	187.9
logistics	10	17.5 b	24	58.3	40.8
Retail	2	7.6 b	10	32.1	24.5
Enterprise technology	6	7.0 b	10	103.1	96.1
Health care	8	6.6 b	9	22.5	15.9
Cybersecurity	3	3.0 b	4	15.9	12.9
Transportation/ aerospace	3	2.6 b	4	13.6	11.0
Food	1	2.0 b	3	7.0	5.0
Media	1	1.1 b	2	14.7	13.6
Insurance	1	881 m	1	4.0	3.1
Defense	1	835 m	1	4.6	3.8
Education	1	379 m	0.5	3.8	3.4
Construction	2	114 m	0.2	N/A	-
Agriculture	1	81 m	0.1	280 m	199 m
Biotech	1	27 m	0.0	120 m	93 m
Total	50	73.2 b	100*	491.5 b	418.3 b

Source: Calculated from the 2022 CNBC Disruptor list.

*Total may not add up due to rounding.

Table 3
Disruptors' main line of business activities

Enhancing global logistics for efficient goods transportation.	Strengthening cybersecurity measures.
Empowering startups with financial management software and credits.	Technology provider catering to the trucking industry
Providing temperature-controlled storage solutions for perishable goods.	Technologically-driven healthcare treatments.
Intuitive graphic design software for easy creation.	Environmentally-friendly electric tractors.
Enabling companies to offer debt-free job-related training and degrees to employees.	E-commerce platform for sports merchandise.
Establishing networks and facilitating bitcoin transactions.	Facilitating small loans lending.
Streamlining commercial payments for businesses.	Utilizing AI in military technology.
NFT transactions for NBA collectibles.	Automation of business processes.
Revolutionizing transportation with robo taxis.	Online supermarket for convenient shopping.
Convenient banking services accessible through websites and smartphones.	Teaching organizations to implement AI models effectively.
Advancing digital health services and clinical trials.	Plant-based alternatives to meat products.

Source: gleaned from the 2022 CNBC Disruptor list.