



Innovation and Disruption Impacts on Business Models

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Abstract:

Innovation can be disruptors. Disruptors can theoretically alter or displace existing industries and companies through more efficient operations and innovative technologies. This is accomplished by identifying competitor weaknesses and using technological advancements to create cutting-edge services or products that meet consumer needs. (USC) Recent business models that have been disrupted by advanced technology are medicine, home building and the hotel industry. Technology includes 5G, Artificial Intelligence

(AI), Blockchain, Internet-of-Things (IoT), and DNA testing for diagnosis and treatment. Disruptors such as Airbnb in the hotel industry by providing more affordable and more varied lodging that offers personalization for guest expectations. 3D Printing has disrupted the Home Building industry by lowering costs and speeding delivery. In medicine, DNA testing is making strides in medical care. Genomic medicine uses a patient's DNA to guide healthcare decisions by anticipating, diagnosing, and managing disease.

Keywords: *Disruptors, business models, technology, 5G, Artificial Intelligence (AI), Blockchain, Internet-Of-Things (IoT), Airbnb, Metaverse, medical DNA testing.*

Introduction

Disruptors can alter or displace existing industries and companies through more efficient operations and innovative technologies. This is accomplished by identifying competitor weaknesses and using technological advancements to create cutting-edge services or products that meet consumer needs (USC University of Southern California, 2023). Disruptors often have a competitive advantage because they have a mindset that tests new ideas and can remain undetected by established companies (Wang, 2022). Recent business models that have been disrupted are: technology, home building, and the hotel industry. Technology includes 5G, Artificial Intelligence (AI), Blockchain, Internet-of-Things (IoT), and Metaverse. 3D printing has disrupted the home

building industry by providing more affordable and faster options for housing construction. Airbnb disrupted the hotel industry by providing less costly and more varied lodging that personalizes to guest expectations (Wang, 2022; Lund, & Kimani, 2019).

Technology

5G, the fifth generation of mobile networks, provides high-speed connectivity, high-bandwidth, real-time monitoring, and autonomous robots, which offer a vast range of new and innovative uses across numerous industries, such as healthcare, manufacturing, autonomous vehicles, Augmented Reality (AR) and Virtual Reality (VR) (Meier, 2023).



Artificial Intelligence (AI) has the potential to revolutionize many industries and disrupt traditional business models by automating tasks, improving decision-making, and creating new products and services. Some disruptive uses for AI healthcare include improved diagnosis and treatment, predicting disease epidemics, and analyzing medical data for patient outcome improvements. AI can provide customer service automation, predictive maintenance, fraud detection, personalized marketing, predictive analytics, and supply chain optimization, among many other uses (Meier, 2023).

Blockchain is a decentralized, distributed, and public digital ledger that is used to record transactions across many computers so that the record cannot be altered retroactively without the alteration of all subsequent blocks and the consensus of the network without intermediaries. It can disrupt various industries by enabling a fast and transparent means to conduct transactions and exchange information. Some uses include secure and transparent voting systems, energy management, digital art and collectibles tracking, and real estate transactions (Meier, 2023).

Internet-of-Things (IoT) integrates everyday “things” with the internet. Computer Engineers have added sensors and processors to everyday objects since the 1990s. It is a network of connected devices, sensors, and other physical objects that collect and exchange data. IoT can potentially disrupt many industries by enabling innovative ways of gathering and analyzing data (Meier, 2023; Qualcomm, 2023; McKinsey & Company, 2023).

The **metaverse** is a shared virtual world that enables users to interact with each other and digital assets in a virtual environment. The metaverse offers virtual healthcare, commerce, shopping, art galleries, tourism, education and training, hosting live events, and better gaming experiences in a shared virtual world. It can potentially disrupt a range of industries through innovative ways for people to transact and interact in the digital world (Meier, 2023).

Hotel Industry

Four hotel operating business models are: hotel management agreements, franchise agreements, owner-operators, and hotel leases (Lund, & Kimani, 2019; Zebra, 2023; Daisyme, 2023). Startups, such as Airbnb, have disrupted the hotel industry franchise business model by offering affordable accommodations to guests by listing thousands of homes or rooms (Zebra, 2023; Pecunica, 2023; Autin, 2020). Airbnb emerged as a couch-surfing style of bed-and-breakfast before becoming the home-sharing market's trailblazer. Airbnb offers lodging to rent, which can accommodate entire groups and provide personal concierge service (Pecunica, 2023; Autin, 2020). By connecting travelers with homeowners looking to rent out their extra space, Airbnb became a billion-dollar business idea that redefined hospitality (Berman, 2023).

Medicine

DNA testing is making strides in medical care. Genomic medicine uses a patient's DNA to guide healthcare decisions by anticipating, diagnosing, and managing disease. More than 6,000 diseases and disorders are caused by DNA variations (Sharman, 2021; Elsevier, 2022). Genomic medicine can diagnose genetic diseases by scanning a patient's genome to identify disease risk factors, disease carrier status, and genetic factors that may affect reactions to drugs (Elsevier, 2022).

Due to advances in genetic testing, links between primary immune deficiency disorders and inherited genetic defects can diagnose family members who may have inherited the same genetic abnormality that can result in chronic and life-threatening infections. This may lead to earlier diagnosis to provide more effective treatment options (Elsevier, 2022). Multiple genes taken from the same individual can identify a specific gene to improve patient outcomes and prevent complications (Elsevier, 2022).

The expanded DNA test is not limited to patient genomes. DNA testing can improve tracking of Salmonella food-poisoning outbreaks by quickly

distinguishing subtypes of Salmonella (Elsevier, 2022). In contrast to the cycling of temperatures required in other methods such as PCR, Multiple Cross-Displacement Amplification (MCDA) assay for each of the seven serovar (subtype)-specific targets of Salmonella has been developed to simplify and accelerate results that can be determined in approximately eight minutes from as few as ten copies of DNA (Elsevier, 2023). Traditional methods are more time-consuming as they require growing bacteria from samples and then testing them to assign them to a serovar. The MCDA test is quicker as it only needs tiny amounts of Salmonella DNA (Elsevier, 2023).

Conclusion

Disruptors provide innovative products, processes, or business models that create customer value and contribute significant change for industries and medicine. Advances in technology and competitive ideas offer opportunities for disrupting business models wide open to innovation and market domination. One competitive advantage for disruptors is that they have a mindset that tests new ideas that are unrecognized by established companies. The established companies are often taken by surprise or upstaged when a disruptor breaks through old models and achieve great and rapid success. With medicine, more discoveries about DNA testing are being made to improve diagnosis, treatment, and positive patient outcome.

References

- Autin, G. (2020). What is a hotel operator? Retrieved from <https://www.hospitalitynet.org/explainer/4101852.html#:~:text=Owner%2Doperators%2Ddirectly%20control%20the,affiliation%20to%20a%20marketing%20consortium>.
- Berman, S. (2023). How Hotels Are Adapting to the Biggest Disruptors. Retrieved from <https://www.hospitalitynet.org/opinion/4094036.html>
- Daisyme, P. (2023). How Startups Have Disrupted the Hotel Industry. Business Collective. Retrieved from <https://businesscollective.com/startups-disrupted-hotel-industry/index.html>
- Elsevier. (2022). Genetic test can diagnose certain immune system disorders. the journal of molecular diagnostics, the association for molecular pathology. Retrieved from <https://www.elsevier.com/about/press-releases/research-and-journals/genetic-test-can-diagnose-certain-immune-system-disorders>
- Elsevier. (2023). New DNA test will improve tracking of salmonella food-poisoning outbreaks. The Journal of Molecular Diagnostics. Association for Molecular Pathology. Retrieved from <https://www.elsevier.com/about/press-releases/research-and-journals/new-dna-test-will-improve-tracking-of-salmonella-food-poisoning-outbreaks>
- Lund, C., & Kimani, T. (2019). Hotel operating business models. Hotel industry. Hospitality News Middle East. Retrieved from <https://www.hospitalitynewsmag.com/hotel-operating-business-models/#:~:text=The%20hotel%20franchise%20business%20model,same%20operator%20and%20its%20brand>
- McKinsey & Company. (2023). Insights on the Internet of Things. Retrieved from <https://www.mckinsey.com/featured-insights/internet-of-things/our-insights>
- Meier, J. (2023). The Top 5 Disruptive Technologies Shaping the Future in 2023. Retrieved from <https://jdmeier.com/disruptive-technologies-in-2023/#:~:text=As%20we%20move%20towards%20the,leverage%20them%20to%20their%20advantage>
- Pecunica. (2023). What are hotel management agreements? Retrieved from <https://pecunica.com/knowledge-point/what-are-hotel-management-agreements/>

Qualcomm. (2023). Everything you need to know about 5G. Retrieved from <https://www.qualcomm.com/5g/what-is-5g>

Sharman, S. (2021). Genomic Medicine: using DNA to make healthcare decisions. Hudson Alpha Institute for Biotechnology. Retrieved from <https://www.hudsonalpha.org/genomic-medicine-using-dna-to-make-healthcare-decisions/>

USC University of Southern California. (2023). USC Annenberg. Disruptive Communication in Today's Digital World. Retrieved from <https://communicationmgmt.usc.edu/blog/co->

[innovation-disruption-communication-digital-world/](#)

Wang, A. (2022). The Next 100 Years: Innovators and disruptors shaping the future of hospitality. Cornell SC Johnson College of Business. Retrieved from <https://business.cornell.edu/hub/2022/07/15/the-next-100-years-innovators-and-disruptors-shaping-the-future-of-hospitality/>

Zebra. (2023). Airbnb statistics and host insight. Retrieved from <https://www.thezebra.com/resources/home/airbnb-statistics/>