BUSINESS STRATEGY

E-MAGAZINE

INTERIOR DESIGNING
IS IT A BOOMING CAREER ?

Insights on Data Science for Strategy
Dr. Mythili Kolluru

Top 20 Design Institutes
in India and in World

Revolutionizing
Creativity through Graphic Design

Travel to Indian
Temples Marvel of Architecture

Luxury
interiors
by Craftmen Studio

Insights on
DATA SCIENCE FOR STRATEGY

By Dr. Mythili Kolluru

Summary

Technological advantages have paved the way for various breakthroughs in science and business over the years. Over the last decade, technological advancements have been occurring at a neck-breaking speed, ushering in an era of technology-enabled and empowered living. Data Science, artificial intelligence, and machine learning are increasingly used in decision-making. The business landscape is associated with risk and unprecedented uncertainty. Technology-infused decision-making has empowered organizations to leverage core competencies better and mitigate market risks. Data Science was ushered in with the advent of the fourth industrial revolution. Small and large businesses are leveraging data science to generate better insights. In this article, Dr. Mythili Kolluru discusses data science and decision-making in strategic management. The author elaborates her framework for integrating data science in strategic planning.

Introduction

Let us explore the nexus of data science and strategy by looking first at data science. It is an interdisciplinary discipline that involves extracting insights, perspectives, and knowledge from structured and unstructured data using scientific methods, statistical analysis, algorithms, and advanced scientific computational techniques. It combines principles and practices from various disciplines, such as mathematics, statistics, computer engineering, and artificial intelligence, to analyze large volumes of data and derive meaningful insights for business decision-making. Data science is crucial in various industries and domains, including manufacturing, education, finance, healthcare, marketing, and technology. It helps organizations make data-driven decisions, uncover hidden patterns, predict future trends, optimize processes, and gain a competitive advantage. Global leaders constantly transform, innovate, and strategize to achieve a competitive advantage in dynamic marketplaces. Organizations use extensive data to understand ingrained consumer behavior and unearth emerging consumer behavioral patterns. The question "What is strategy?" has perplexed scholars and practitioners equally. This question has many answers and has evolved from the 18th century. The word "strategy" as we know it today emerged in the late 18th century when Count Guibert, a French military thinker, introduced the term "La Strategique." Since then, the term has been widely used in military, business, and other contexts to refer to the deliberate planning and execution of actions to achieve specific goals. Organizations mostly perceive strategies to be long-term oriented. In one of my research articles, I elaborated upon one of the present challenges in the strategy space: Shortened strategy lifecycles. The lifespan of strategies is shrinking due to technological advancements, intense competition, short product life cycles, client demands, market dynamics, and supply chain challenges. The pandemic has created a new economic normal, and organizations, leaders, and strategists need to adjust to the ways of the post-COVID-19 world. The unprecedented technological advancements and disruptions influence strategic planning. Today, strategy consultants and organizational leaders are integrating and leveraging technology to provide clients with agile solutions and sustainable decision-making.

Data Science impact on strategy

Data science enables businesses to analyze large volumes of data, extract insights, and identify patterns. It serves as the basis for predictive analytics, which allows businesses to foresee future trends and outcomes. Data science can help companies accurately predict market trends, customer behavior, demand patterns, and performance metrics. This information can be used to optimize resource allocation, inventory management, and strategic planning. Data science allows businesses to model the effects of different decisions before implementing them, conduct trial-and-error tests, and make better-informed strategic choices. Companies can stay ahead of the competition by

harnessing data to make data-driven decisions. Data science can contribute to business growth by identifying new opportunities, optimizing processes, and driving innovation.

The Framework for integrating data science in strategic planning

While there is evidence that data science can significantly impact strategic planning, there is a need for a systematic approach to integrating data science into the strategic planning process. The framework shared in this article could help organizations leverage data science to make informed decisions and gain a competitive advantage in their respective industries. By following this framework, organizations can systematically integrate data science into their strategic planning processes, enabling more informed, data-driven decision-making that aligns with their long-term goals and objectives. However, it is essential to note that this framework is a synthesis based on my research of frameworks adopted by various leading organizations. Further study and customization may be required to develop it into a unique framework that aligns with an organization's specific needs and context.

Vision and Goals: Clearly define the vision and goals of the organization's strategic planning process. This includes identifying the desired outcomes and objectives that data science can help achieve. Data science can play a crucial role in defining the vision and goals of an organization's strategic planning process.

Data Collection and Management: Establish a robust data collection and management system to ensure high-quality and relevant data availability. This involves identifying the necessary data sources, implementing data governance practices, and ensuring data integrity and security.

Data Analysis and Modeling: Utilize data science techniques such as predictive modeling, machine learning, and statistical analysis to extract insights from the collected data. This step involves developing models and algorithms to uncover data patterns, trends, and correlations.

Decision-Making and Strategy Formulation: Use the insights derived from data analysis to inform the decision-making process. Incorporate data-driven insights into the strategic planning process to enhance the accuracy and effectiveness of decision-making. This step involves aligning the strategic goals with the identified patterns and trends in the data.

Implementation and Monitoring: Implement the strategic plan based on the data-driven decisions made during the previous steps. Monitor the progress and performance of the implemented strategies using key performance indicators (KPIs) and other relevant metrics. Continuously evaluate and refine the strategy based on the feedback and insights from ongoing data analysis.

Collaboration and Communication: Foster collaboration between data scientists, business leaders, and other stakeholders involved in the strategic planning process. Effective communication of data-driven insights and recommendations ensures that all relevant parties understand and embrace the strategic plan.

Continuous Learning and Improvement: Encourage constant learning and improvement by regularly reviewing and updating the data science strategy. Stay updated with the latest advancements in data science techniques and technologies to ensure the relevance and effectiveness of integrating data science into strategic planning.

Data Science Integration in Strategic Planning

Dr. Bridget Irene

Implementation bottlenecks and solutions

Implementing strategies and integrating processes is mostly not a mirror of the strategy or framework

drawn on the boards; there will be challenges and unexpected eventualities that organizations must handle. Now, let us see some common challenges and ways to overcome them.

Lack of Vision and Alignment: One challenge is the lack of a clear vision and alignment between data science and strategic planning. Close alignment can be achieved by involving critical stakeholders from data science and strategic planning teams and fostering collaboration and communication.

Data Quality and Management: Another challenge is ensuring the availability of high-quality and relevant data for analysis. Organizations should establish robust data collection management systems, including data governance practices and quality controls, and invest in data infrastructure.

Data Analysis and Interpretation: Data analysis and interpretation can be complex, especially when dealing with large and diverse datasets.

Organizations should leverage data science techniques such as predictive modeling, machine learning, and statistical analysis to extract meaningful insights from the data. Invest in data science talent and provide training and resources to employees.

Decision-Making and Strategy Formulation: Incorporating data-driven insights into the decision-making process and strategy formulation can be challenging. Organizations should foster a data-driven culture and provide decision-makers with the tools and resources to understand and interpret data, such as data visualization tools, dashboards, and data interpretation and analysis training.

Implementation and Monitoring: Implementing data-driven strategies and monitoring their progress can be challenging. Organizations should establish key performance indicators (KPIs) and regularly monitor, evaluate, and refine strategies based on data-driven insights.
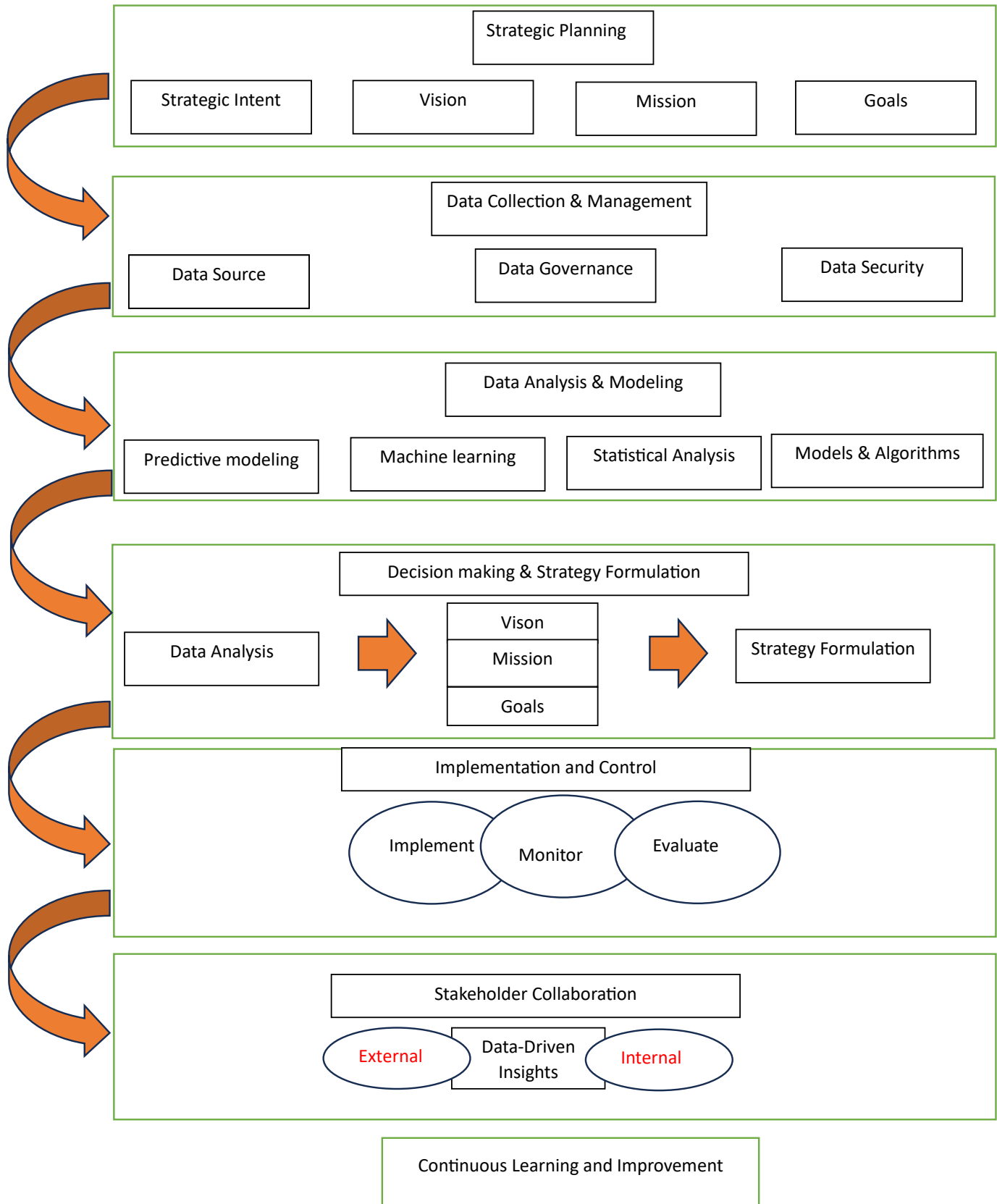
Conclusion

Technological developments are occurring at an unprecedented speed. Advancements like artificial intelligence (AI), Internet of Things (IoT), Robotics, and Data Science have far-reaching benefits and risks for businesses and humanity. Data science is a blessing as companies grapple to maneuver market risk and geo-political uncertainty. Data science has entered the realm of decision-making. Data science, which is interdisciplinary, has proved beneficial in various industries and domains. Data science can potentially analyze vast volumes of data and empower leaders to make better strategic choices. This article has discussed the infusion of data science in strategic planning through my framework.

References

1 Strategic Thinking Institute. (2020, July 1). The Origin of Strategy. Strategic Thinking Institute. https://www.strategyskills.com/the-origin-of-strategy/

2 Ansoff, H. I. (1989). The Origin of Strategy. Harvard Business Review. https://hbr.org/1989/11/the-origin-of-strategy

3 Heuser, B. (2017, November 26). The Meaning of Strategy, Part I: The Origins - Texas National Security Review. Texas National Security Review. https://tnsr.org/2017/11/meaning-strategy-part-origin-story/

4 Ansoff, H. I. (2014, August 1). The Origin of Strategy. Harvard Business Review. https://hbr.org/1989/11/the-origin-of-strategy

5 Excitant. (2018, March 14). The origins of the word Strategy and its variations (Good draft). Excitant. https://www.excitant.co.uk/the-origins-of-the-word-strategy-and-variations/

6 Think Insights. (2021, March 30). Origins - How Did Strategy Evolve Through History? Think Insights. https://thinkinsights.net/strategy/origins-of-strategy/

6 Strategic Thinking Institute. (2020, July 1). The Origin of Strategy. https://strategicthinkinginstitute.com/the-origin-of-strategy/

7 Strategy Skills. (2014, August 1). The Origin of Strategy. https://www.strategyskills.com/the-origin-of-strategy/

Strategic Planning

| Strategic Intent | Vision | Mission | Goals |

Data Collection & Management

| Data Source | Data Governance | Data Security |

Data Analysis & Modeling

| Predictive modeling | Machine learning | Statistical Analysis | Models & Algorithms |

Decision making & Strategy Formulation

Data Analysis → Vison / Mission / Goals → Strategy Formulation

Implementation and Control

Implement — Monitor — Evaluate

Stakeholder Collaboration

External — Data-Driven Insights — Internal

Continuous Learning and Improvement

About The Author

By Dr. Mythili Kolluru

Dr. Mythili Kolluru is an esteemed assistant professor in the Management and Marketing department at the College of Banking and Financial Studies in Muscat. Holding a doctorate in strategic management and being a certified strategy planning professional, she also serves as the chief strategy officer of Funkeyb, a London-based management consultancy firm. Dr. Kolluru is a prolific writer with numerous publications in reputable journals and business magazines and has presented her research on several international platforms. Her mentorship extends to over 100 students, and she is a respected corporate trainer. She has a robust digital presence with over 20K LinkedIn followers. Dr. Kolluru is a highly accomplished scholar and practitioner renowned for her analytical acumen in strategy and business. She can be reached at professormythili@gmail.com