

LEVEL 7 ASSESSMENT SPECIFICATION

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1 Title

Integrating 3-H Framework and "The Art of War" Principles: Enhancing Strategic Management at the Robot Institute of Hong Kong (RIHK)

2 Abstract

This study will focus on strategic planning at the Robot Institute of Hong Kong (RIHK) and explore how the integration of the 3-H framework and principles from "The Art of War" can influence management practices and business outcomes at the corporate strategy level.

This study aims to contribute to the understanding of how ancient strategic wisdom and modern strategic management frameworks can be integrated to enhance strategic planning in RIHK. It will advance management theory by providing a case study from the education sector in Hong Kong and offer practical implications for managerial decision-making.

Keywords: 3-H Framework, "The Art of War", Strategic Management, STEM Education

3 Introduction

Science, technology, engineering and mathematics (STEM) education and research have become crucial drivers of national development. Freeman, B., et al. (2019) emphasise the important role of STEM education in national development and productivity, economic competitiveness and social well-being. The rapid development of STEM education has created both opportunities and challenges for educational institutions around the world. Indeed, as technology continues to advance at an unprecedented rate, organisations like the Robot Institute of Hong Kong (RIHK) play a crucial role in shaping the future of technological education. Furthermore, according to Ouyang and Xu (2024, p.1), educational robotics have been widely used in STEM education to improve the quality of teaching and learning.

Moreover, strategic management in educational institutions requires a balance between organisational objectives and practical implementation. In this context, strategy is a set of integrated choices that positions the business in its industry to generate superior financial returns over the long run (Porter, 2015, p.3). Additionally, the complexity of managing a STEM education organisation demands a comprehensive framework that addresses both operational efficiency and long-term sustainability. Therefore, understanding these challenges through the lens of established management principles, particularly the integration of the 3-H framework (Heart, Head, and Hand) combined with traditional strategic wisdom, is significant. It offers valuable insights into organisational development.

This study aims to examine the strategic initiatives and challenges faced by RIHK through a mixed-methods approach, combining quantitative and qualitative research methodologies. This research seeks to develop a holistic understanding of the organisation's strategic position and potential areas for improvement. The investigation will focus on identifying key opportunities while addressing operational challenges in the STEM education sector.

The significance of this research lies in its potential to create a comprehensive management framework that aligns modern educational needs with traditional strategic principles. By closely examining the organisational structure and operations of RIHK, this study will contribute to a broader understanding of strategic management in educational institutions which focus on technological innovation and STEM education. The findings will not only benefit RIHK but also provide valuable insights for similar organisations.

The objectives of this study are:

1. Identify the key challenges and opportunities faced by RIHK.
2. Determine how these challenges can be managed by a holistic management framework that integrates the 3-H framework and "The Art of War" principles.
3. Construct a conceptual framework that aligns the 3-H framework with relevant "The Art of War" principles for strategic management.
4. Develop recommendations for implementing such a framework to achieve effective organisational performance at RIHK.

The research questions of this study are:

1. What are the key challenges and opportunities that RIHK is facing?
2. How can these challenges be managed by a holistic management framework?
3. How can such a framework be conceptually constructed with respect to relevant "The Art of War" principles?
4. How can such a framework be implemented to achieve effective RIHK's organisational performance?

4 Company Overview

Introduction to Robot Institute of Hong Kong

The Robot Institute of Hong Kong (RIHK) has been a pioneer in STEM education since 2003. Over the years, RIHK has trained over 30,000 students in more than 200 schools in Hong Kong. Besides, RIHK offers elite school team training courses, with students consistently achieving excellent results in competitions. The institute is certified with the ISO 9001:2015 Quality Management System, including the scope of “Design and Provision of Robotics and STEM Programmes”.

Mission and Vision

The mission of RIHK is to nurture a new generation with creativity and technological literacy. Besides, the vision of the institute is to become a premier provider of quality technology education.

Key Partnerships and Accreditations

RIHK has developed key partnerships and gained recognition in the fields of robotics and STEM education. The institute is the official organiser of the Robofest Robotics Competition in Hong Kong and Macau. Lawrence Technological University (USA) has hosted the Robofest World Championship since 1999 with teams from 30 countries.

In addition, RIHK is a Cambridge International School which is authorised to provide courses and examinations by Cambridge Assessment International Education (CIE). It is also the exclusive agent in Hong Kong for Discovery Education, a global leader in digital educational resources.

RIHK is an approved centre of Training Qualifications UK (TQUK), offering UK-accredited courses. Furthermore, its “AI Robotics Engineer Certification Programme” is certified by Education Alliance Finland (EAF), highlighting the institute’s commitment to maintaining high standards in robotics education.

Courses and Programmes

The institute provides a wide range of STEM and robotics education programmes designed for students, teachers, and schools. Its school-based curriculum includes regular STEM courses for primary and secondary schools. It combines hands-on robotics learning with basic physics and mechanical design.

School Collaboration and Events

RIHK collaborates with schools to design customised STEM curricula, covering areas such as programming, 3D design, robotics, and mobile application development. The institute also organises inter-school competitions and STEM Days which inspire students’ interest in different ways.

Robotics Platforms

RIHK utilises world-class robotics platforms to deliver high-quality learning experiences. The VEX Robotics series offers modular kits suitable for students of various skill levels. LEGO Robotics offers a diverse learning experience with its wide range of components and visual programming software.

5 Strategic Analysis of the Robot Institute of Hong Kong (RIHK)

As a leading institution in STEM education, the Robot Institute of Hong Kong (RIHK) stands at the intersection of technological innovation and education.

Using established strategic management frameworks such as SWOT, Value Chain analysis, Porter's Five Forces, McKinsey's 7-S Framework, PEST analysis, Barney's Resource-Based View (RBV), and the VRIS/O Sustainability Test. It will help to critically analyse the challenges and opportunities faced by RIHK and provide actionable insights for its sustained competitive advantage.

5.1 SWOT Analysis

The SWOT framework is one of the most common strategic management models, aiming to establish alignment between an organisation's internal capabilities and external environmental factors (Recklies, 2014). However, it is crucial to understand that SWOT is not an analytical tool in itself, but rather serves as a consolidating mechanism that synthesises findings from previous analyses. (Recklies, 2014).

Strengths (Internal Factors)

These are the internal attributes of RIHK that provide a competitive advantage.

1. Established Reputation and Proven Expertise

With a remarkable track record over two decades, RIHK's established reputation stands as a fundamental pillar of its competitive advantage in the STEM education sector. Moreover, the extensive experience built credibility and helped to deliver effective STEM programs.

2. Strong Certifications and Partnerships

Quality assurance and strategic partnerships represent another crucial dimension of RIHK's organisational strength. The institution's commitment to excellence is validated through its ISO 9001:2015 certification. Furthermore, strategic collaborations with prestigious institutions, including Cambridge University and Discovery Education, have significantly enhanced the organisation's market credibility.

3. Comprehensive STEM Offerings

The comprehensive nature of RIHK's STEM offerings creates a distinctive market position that sets it apart from competitors. RIHK delivers a well-rounded educational experience which includes robotics education and competition training. Besides, the use of industry-leading platforms such as VEX Robotics and LEGO Robotics ensures that students can receive hands-on experience with cutting-edge technology. Moreover, RIHK's exclusive role as the Robofest organiser in Hong Kong and Macau has strengthened its brand presence and attracts high-achieving students.

Weaknesses (Internal Factors)

These are the internal limitations that prevent RIHK from competing or growing.

1. Digital transformation challenges

RIHK needs to improve its digital presence and delivery mechanisms. The institution heavily relies on traditional, in-person learning models. It reflects a critical weakness in adapting to contemporary educational needs. Moreover, while maintaining the quality of face-to-face instruction remains valuable, this traditional approach may not fully address the growing market demand for flexible and hybrid learning solutions.

2. Resource and operational constraints

The sustainability of RIHK's operations faces critical constraints in terms of both human and financial resources. Nevertheless, RIHK heavily depends on skilled instructors to ensure quality. However, this creates weaknesses in scalability and growth potential.

3. Stakeholder awareness gaps

A critical weakness lies in the communication of STEM education's value proposition to key stakeholders. Furthermore, RIHK faces challenges in effectively conveying the importance and benefits of robotics and STEM education to parents. This awareness gap could potentially limit market penetration and growth opportunities. As a result, it suggests a need for more effective marketing and communication strategies.

Opportunities (External Factors)

These are external conditions that RIHK can use to achieve growth and success.

1. The evolving educational landscape and STEM demand

The global education landscape is undergoing a fundamental shift towards STEM-focused learning. Therefore, it creates significant opportunities for specialist organisations. The rapid development of robotics, artificial intelligence and automation is driving this shift. Moreover, parents and schools are increasingly aware of the importance of STEM skills. It presents a timely opportunity for STEM education providers to expand their reach and impact.

2. Policy Support

Hong Kong's supportive policy environment provides an enabling environment for the expansion of STEM education. The government actively promotes STEM education and provides substantial funding, creating opportunities for the expansion of existing programmes. This policy framework makes it possible to collaborate with government departments and non-profit organisations. Consequently, it provides ways to expand educational reach and impact.

3. Technological integration prospects

The rapid evolution of technology creates opportunities to strengthen STEM curricula. Incorporating emerging fields such as artificial intelligence, the Internet of Things, and machine learning into educational curricula can attract advanced learners. Besides, it maintains the relevance of the curriculum in a rapidly changing technological environment.

Threats (External Factors)

These are the external challenges that RIHK must face to protect its position and growth.

1. Market competition

The STEM education market is becoming increasingly competitive. It will lead to a significant challenge to RIHK's market position. The emergence of local and international STEM education providers such as Coursera and Udemy has created a more crowded market. In addition, competitors offering online courses at lower prices will lead to a direct threat to RIHK's premium pricing model. Thus, it potentially rots RIHK's market share.

2. Economic vulnerability

The financial environment creates considerable risks for RIHK's business model and market stability. A recession or financial instability in Hong Kong could significantly affect parents' willingness and ability to invest in high-quality STEM education programmes. This economic uncertainty threatens not only immediate enrolment rates but also long-term financial sustainability.

3. Evolving learning preferences

A fundamental shift in educational preferences poses a significant threat to traditional learning models. Changing consumer expectations regarding the delivery of education are reflected in the growing demand for flexible, online, or blended learning options. Failing to adapt to these evolving preferences effectively could result in diminished market relevance and a loss of student enrolment.

Strategic Implications of the SWOT for RIHK

The SWOT analysis provides the basics for actionable strategies. Key learnings include:

1. Capitalising on core strengths

RIHK should capitalise on its strong reputation, quality certifications and strategic partnerships. It helps to reinforce its position as a premium STEM education provider. Furthermore, expanding the competition portfolio would strengthen RIHK's unique market position and create barriers to entry for competitors.

2. Address operational weaknesses

Comprehensive digital transformation initiatives, including the development of online courses and virtual competitions, should be prioritised to reduce reliance on traditional in-person delivery methods. In addition, it should develop an operational system that can enable scalable operations and maintain RIHK's high-quality standards. After that, RIHK can differentiate itself in the market.

3. Take advantage of market opportunities

The current market environment presents significant opportunities for strategic expansion and innovation. RIHK should aim for international growth through strategic partnerships. Additionally, the introduction of advanced STEM curricula such as AI and IoT will attract technology-oriented learners.

4. Countering external threats

It is important to take measures to protect RIHK's market position. RIHK should establish a dedicated R&D team to ensure continuous curriculum updates. Furthermore, developing flexible pricing strategies while maintaining premium service quality would help RIHK remain competitive in the market.

5.2 Value Chain Analysis

The value chain analysis framework developed by Michael Porter helps organisations identify the key activities that create value and competitive advantage. For RIHK, this analysis was structured through primary and support activities, providing a comprehensive view of how value is created and sustained across the organisation.

The main activities start with inbound logistics, which is the procurement and management of basic resources. To ensure consistent service quality, RIHK should maintain good relationships with suppliers of robot kits and teaching materials. Operations and outbound logistics form the core of the RIHK value creation process. RIHK commits to providing quality service, which is proved by its ISO 9001:2015 certification. Besides, RIHK aims to create a holistic educational experience for students.

Sales and service activities represent the customer-facing part of RIHK's operations. These elements require careful planning and execution. RIHK must continuously evaluate and adapt these activities in response to changing market conditions. In terms of support activities, the company infrastructure and human resources management of the RIHK play a key role in maintaining operational excellence. To foster innovation, RIHK should focus on advancing technology development and procurement. Through this comprehensive analysis, we can see how each element of the value chain contributes to the overall success of RIHK. By concentrating on these areas, RIHK can maintain its leadership position in STEM education and achieve long-term growth.

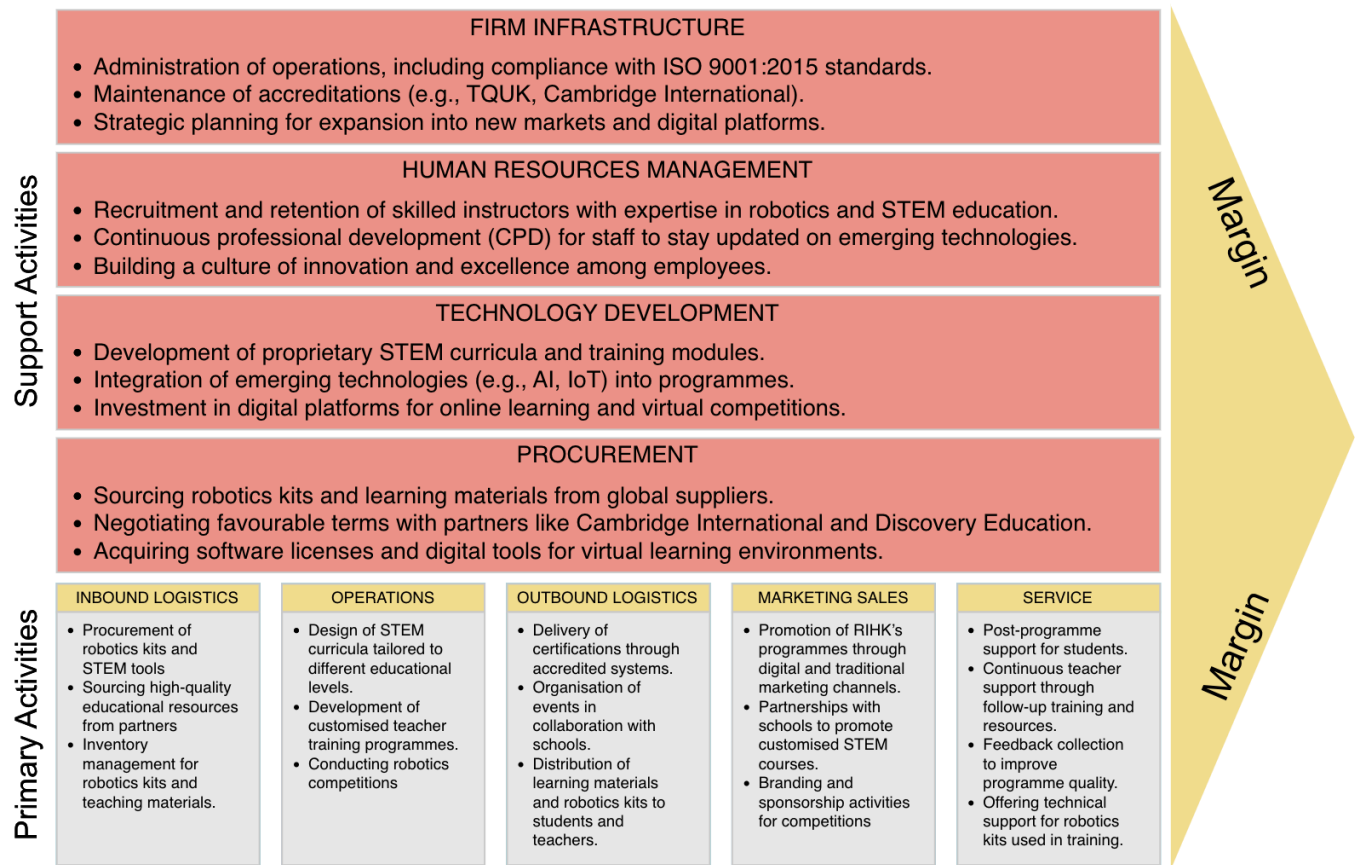


Figure 1 Value Chain Analysis for the Robot Institute of Hong Kong (RIHK)

5.3 Porter's Five Forces Analysis

Porter's five forces framework is the most powerful tool available for analysis of the business environment to this day. (Stonehouse & Snowdon, 2007, p.258). Although Porter's Five Forces model was developed in the late 1970s, it cannot be considered outdated. The basic idea that each company operates in a network of buyers, suppliers, substitutes, new entrants, and competitors is still valid. (Dälken, 2014). However, the three new forces (digitalisation, globalisation, deregulation) have changed industry structures but haven't made Porter's model invalid.

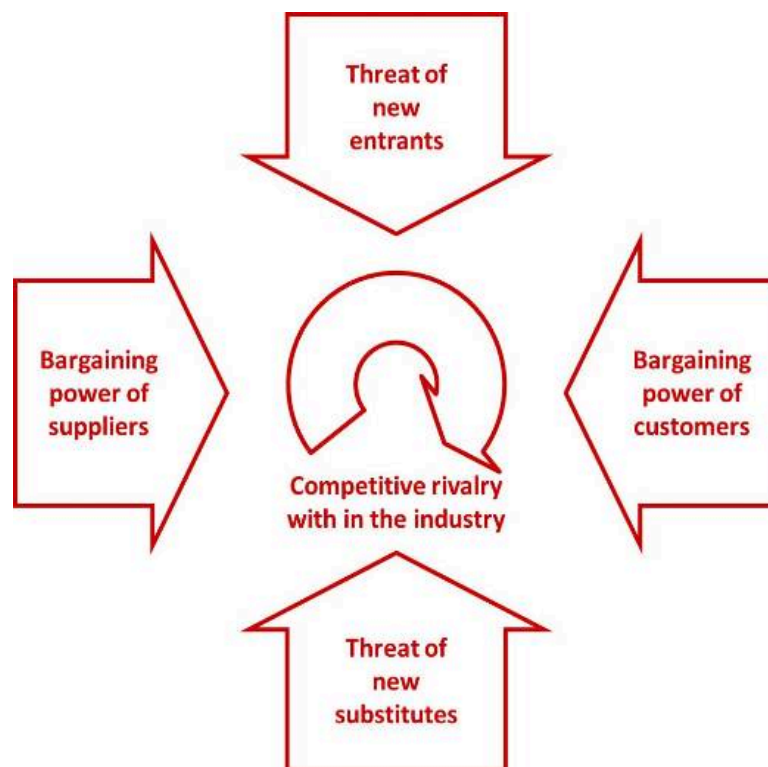


Figure 2 Porter's Five Forces Analysis

Threat of New Entrants: High

In Hong Kong, the STEM education sector is becoming increasingly attractive due to the growing demand for robotics and technological skills. Moreover, the entry barriers to this industry are relatively low, especially for small-scale operators who can offer online courses or workshops. However, RIHK's established reputation and partnerships with Cambridge University and Discovery Education create moderate entry barriers for high-quality competitors.

Bargaining Power of Suppliers: Moderate

Robotics kit suppliers such as VEX Robotics and LEGO Robotics have a certain strength due to their unique product offerings. However, RIHK can mitigate this through supplier diversification and leveraging its organisational size to obtain better prices.

Bargaining Power of Buyers: Moderate to High

There are many other STEM courses in Hong Kong, and schools and parents, as the main customers, have increasing bargaining power. Therefore, RIHK must differentiate itself through tailor-made courses, excellent training quality and competitive prices.

Threat of Substitutes: High

Digital platforms offering online coding and robotics courses at a lower cost are major alternatives. To counter this, the RIHK must emphasise practical, experiential learning and its certification to maintain its competitive advantages.

Industry competition: High

The STEM education industry is intensely competitive, with both local and international companies offering similar programmes. Therefore, RIHK must maintain its leadership position through innovation, collaboration and diversity.

5.4 McKinsey's 7-S Framework

McKinsey's 7-S Model was developed by Tom Peters and Robert Waterman, who were consultants at McKinsey & Co. It is a comprehensive framework for analysing organisations, examining seven key elements that are interconnected within a company. These elements are divided into 'hard' and 'soft' components. The hard elements include strategy (planned response to external changes), structure (organisational alignment) and systems (operating procedures). The soft elements, which are more challenging to measure but equally important to success, include style, culture, people, skills and shared values. While organisations usually focus primarily on the hard elements, the model emphasises that all seven elements are mutually interdependent (Channon & Caldart, 2015, p. 2). This systematic approach helps organisations assess their current situation, identify areas for improvement and effectively implement strategic change.

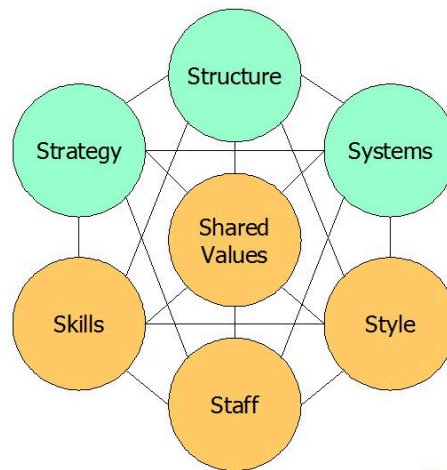


Figure 3 Seven elements of the 7-S model

1. Strategy

RIHK provides robotics education and organises international competitions such as Robofest. It aligns with RIHK's mission to foster creativity and technological literacy. However, RIHK must further integrate digital delivery methods to remain competitive.

2. Structure

The RIHK's organisational structure supports collaboration with schools.

3. Systems

The RIHK's ISO-certified quality management system ensures the consistent delivery of high-quality programmes. A continuous improvement mechanism should be implemented to adapt to technological changes.

4. Shared values

The institute's commitment to innovation education is fundamental to its operations. Promoting these values through corporate social responsibility (CSR) could further enhance its reputation.

5. Style

RIHK's leadership is visionary and customer-focused. However, with increasing competition, an adaptive leadership style will become vital.

6. Employees

RIHK's reliance on skilled instructors is both an advantage and a weakness. It is important to expand the teacher training programme and retain talent through competitive salaries.

7. Skills

RIHK's expertise in robotics education, competition organisation and STEM curriculum design is a core strength. Up-skilling staff in emerging technologies such as AI and IoT will be beneficial for the future.

5.5 PEST Analysis

The PEST tool can be used to analyse companies, business segments, industries, particular product markets or whole economies (Recklies, 2015). This framework provides a structured way to identify and assess political, economic, socio-cultural, and technological factors that impact the organisation's external environment.

Political Factors

1. Government Support for STEM Education

The Hong Kong government actively promotes STEM education through funding, curriculum integration, and policies aimed at encouraging innovation and technology. This creates a favourable environment for RIHK to expand its offerings.

2. Educational regulatory landscape

Changes in education policy or standards may affect the alignment of RIHK and school curricula. For example, the requirement to incorporate STEM into the school curriculum may increase the demand for RIHK services.

Economic Factors

1. Economic Growth in Hong Kong

Hong Kong's position as a global financial hub provides a stable market for RIHK's high-quality STEM education services.

2. Increasing Demand for Skilled Workforce

The demand for robotics and AI professionals is growing rapidly in Hong Kong and around the world. This trend creates new opportunities for RIHK to play an important role as a key organisation in developing STEM talent.

Socio-Cultural Factors

1. Emphasis on Education in Hong Kong

Hong Kong parents place a high value on education, particularly in future-facing fields like robotics, AI, and STEM. It aligns with RIHK's offerings.

2. Growing Awareness of STEM Importance

There is increasing awareness among parents, schools, and students about the importance of STEM skills for future job prospects. For that reason, it helps to drive the demands for RIHK's programs.

Technological Factors

1. Advancements in Robotics and AI

Rapid developments in robotics, AI, and automation present opportunities for RIHK. It is important to update the curriculum and offer cutting-edge programs which can maintain RIHK's competitive edge.

2. Digital Transformation

In a post-pandemic era, digital education has become a norm. Therefore, the shift to online and hybrid learning models creates opportunities for RIHK to expand its reach through virtual classes and competitions.

Strategic Implications of the PEST Analysis

The PEST analysis highlights several opportunities for RIHK from its external environment.

1. Leverage Government Support

RIHK should capitalise on Hong Kong's government policies promoting STEM education. For example, RIHK can collaborate with schools to apply for funding to support innovation and expansion.

2. Expand into Digital Learning

By investing in online platforms and virtual competitions, RIHK can target a broader audience and compete with emerging EdTech players.

3. Embrace Technological Advancements

RIHK should continuously update its curriculum to reflect advancements in robotics and AI. It ensures that the courses offered remain relevant and attractive to students.

By aligning its strategies with these external drivers, RIHK can strengthen its market position and achieve sustainable growth.

5.6 Barney's Resource-Based View (RBV)

The Resource-Based View (RBV) is a critical framework in strategic management, particularly in understanding how firms achieve and sustain competitive advantage.

The Resource-Based View (RBV) emphasises leveraging unique resources to achieve a competitive advantage, with a focus on human capital and eco-innovation for STEM education organisations like RIHK. Ployhart (2021) highlights that human capital, such as that of educators and curriculum developers, is valuable when aligned with strategy-specific goals. It enables RIHK to deliver innovative STEM programs and maintain its leadership in STEM education. Furthermore, eco-innovation, as discussed by Portillo-Tarragona et al. (2018), offers a competitive edge and sustainability by integrating green technology into curricula. It aligns with global sustainability trends.

Sheehan (2006) demonstrates how RBV can be applied in educational contexts through experiential learning. RIHK can adopt robotics competitions to foster critical thinking and strategic resource management among students. However, Sanchez (2015) critiques RBV for its challenges in identifying valuable resources and linking them to outcomes. To address this, RIHK could implement robust metrics to evaluate resource effectiveness, ensuring alignment with performance improvements and strategic objectives. These strategies position RIHK to leverage its resources for sustainable growth and competitive advantage.

The valuable resources of RIHK are as follows:

1. Brand Reputation: RIHK is recognised as a leader in STEM education.
2. Partnerships: Collaborations with Cambridge University, Discovery Education, and TQUK enhance credibility.
3. Intellectual Property: Customised STEM curricula and competition training modules are key resources.

5.7 VRIS/O Sustainability Test

The VRIS/O framework (Value, Rarity, Inimitability, Substitutability/Organizational Exploitability) is a tool used to assess an organisation's internal resources and capabilities. It helps to determine whether they provide a sustainable competitive advantage.

Key Insights from VRIS/O Analysis

1. Sustainable Competitive Advantage

RIHK's exclusive role in Robofest, long-standing reputation, and global partnerships provide it with a sustainable competitive advantage. All these are valuable, rare and difficult to substitute.

2. Focus on Differentiation

To further strengthen its position, RIHK should continue leveraging its unique offerings. Besides, it should expand its digital presence to counter potential substitutes like online EdTech platforms.

3. Exploitation of Strengths

RIHK is well-positioned to exploit its competitive resources and capabilities. Moreover, RIHK should enhance its international reach.

By aligning its resources with strategic opportunities, RIHK can maintain and expand its competitive edge in the STEM education industry.

5.8 Key Challenges and Opportunities faced by RIHK

As a leading organisation in STEM education, RIHK plays an essential role in nurturing young minds with creativity and technological literacy. However, RIHK faces several challenges and opportunities as it continues to grow.

Key Challenges

1. Evolving Educational Needs

The field of STEM education is rapidly evolving, with emerging technologies such as artificial intelligence and the Internet of Things (IoT). It requires constant updates to curriculum content. Keeping pace with these changes demands significant investment in research and development, as well as continuous upskilling of teaching staff.

2. Competition in the STEM Education Sector

In Hong Kong, the STEM education market is highly competitive. Numerous organisations offer similar services. Therefore, it is essential for RIHK to differentiate itself from competitors through innovative programmes and strategic marketing.

3. Resource Constraints

Developing and maintaining high-quality STEM programmes often requires significant financial and human resources. As a result, balancing affordability for schools and students while ensuring sustainability remains a key challenge for RIHK.

Key Opportunities

1. Growing Demand for STEM Education

As the global economy becomes increasingly technology-driven, the demand for STEM education continues to rise. Parents, schools, and governments are recognising the importance of equipping students with technological skills. It creates a significant growth opportunity for RIHK to expand its reach.

2. Expansion into International Markets

RIHK's expertise and certifications, such as its Cambridge International School status and TQUK accreditation, position it well to expand into international markets. This could include offering online courses or collaborating with schools and organisations in other countries.

3. Leveraging Technology for Online Learning

The rise of online education platforms and virtual learning tools presents an opportunity for RIHK to deliver STEM programmes to a broader audience. Virtual competitions, workshops and certification programmes can attract students from overseas.

The RIHK is well-positioned to leverage its leadership in STEM education to overcome challenges and seize opportunities. Moreover, by adapting to technological advancements, fostering partnerships, and aligning with global and local trends, RIHK can continue to play a transformative role in cultivating the next generation of innovators. In conclusion, strategic planning, resource optimisation and stakeholder engagement are critical to the RIHK's continued growth and success in the highly competitive STEM education sector.

6 3H Framework

6.1 Background of the 3H Framework

The 3H Framework is a holistic management approach that integrates three interrelated dimensions—Heart (H1), Head (H2), and Hand (H3)—to manage people and organisations effectively and efficiently. Yu (2024) introduced the 3H framework as a response to the increasing complexities faced by organisations in dynamic business environments. It emphasises the need for a comprehensive approach to address both human and organisational challenges. Managing people and organisational issues requires a holistic approach. This comprehensive perspective considers all aspects of workplace dynamics and human interactions. If implemented effectively, it will enhance both individual employee performance and the overall success of the organisation.

The 3H metaphor represents the core dimensions of management:

1. Heart (H1): Emotional and motivational aspects of leadership and management.
2. Head (H2): Strategic and cognitive aspects of planning and organisational alignment.
3. Hand (H3): Competence and task-oriented skills required for execution.

Yu (2024) argues that excellence in only one or two dimensions is insufficient for achieving sustainable success. Instead, the intersection and synthesis of all three dimensions are critical for creating effective and efficient organisational performance.

6.2 Explanation of the 3H Framework

The 3H Framework provides a comprehensive methodology for managing people and organisational challenges, ensuring alignment across emotional, strategic, and operational domains. According to Yu (2024), the integration of these dimensions is essential for achieving optimal performance:

1. Heart (H1): Emotional and Motivational Dimension

The Heart dimension focuses on the human aspects of management, including motivation, trust, leadership, and organisational culture. It emphasises the following:

- Building trust and commitment among employees.
- Inspiring and motivating individuals to align with the organisation's goals.
- Developing strong leadership that fosters engagement and emotional connection with employees.
- Concepts like transformational leadership emphasise inspiring employees with a shared vision and purpose (Burns, 1978).

Yu (2024) highlights that the Heart dimension is often the most challenging to manage, as it involves changing attitudes and behaviours. Without addressing this dimension, strategic plans and operational goals are likely to face resistance, which leads to failure.

2. Head (H2): Strategic and Cognitive Dimension

The Head dimension represents the logical and strategic aspects of management. It focuses on:

- Strategic planning and organisational design.
- Aligning organisational structure with business goals.
- Using tools like macro and industry analysis, resource-based view (RBV), and value chain analysis for decision-making.

The Head dimension ensures that the organisation is equipped with a clear, logical plan to achieve its goals. Yu (2024) explains that without a sound strategy, even the best leadership and employee commitment (Heart) cannot guarantee success.

3. Hand (H3): Competence and Operational Dimension

The Hand dimension refers to the practical execution of tasks and competencies within the organisation. It includes:

- Developing the technical and functional skills required for operational excellence.
- Ensuring employees are trained, rewarded, and equipped to perform their tasks effectively.
- Implementing practices such as performance management, compensation systems, and coaching.

Yu (2024) emphasises that while the Hand dimension is critical for execution, it must work in harmony with the Heart and Head dimensions to achieve long-term success.

6.3 Holistic Integration of the 3H Framework

The 3H Framework argues that the intersection and integration of all three dimensions—Heart, Head, and Hand—are necessary and sufficient conditions for achieving effective and efficient organisational performance. Yu (2024) states that failing to integrate these dimensions can lead to organisational failures, as seen in cases such as Kodak and Thomas Cook.

The algebraic expression of the framework is as follows:

$$OP = f(H1 \cap H2 \cap H3)$$

Where:

- OP = RIHK's Performance (dependent variable)
- H1 = Heart (people and emotional aspects)
- H2 = Head (strategic and cognitive aspects)
- H3 = Hand (competence and operational aspects)
- $\cap$ = The intersection of the three domains.

Yu (2024) argues that the degree of synthesis among the three domains determines the level of organisational performance. The more effectively these dimensions are integrated, the better the organisational outcomes.

7 Principles of “The Art of War”

7.1 Introduction to "The Art of War"

"The Art of War" principles are listed in the following table:

Principles	Meanings
Wisdom	strategic insight and planning
Morality	leadership and the ability to inspire
Benefit	understanding advantages and opportunities
Ritual	organisational culture and protocols
Destiny	timing and adaptability
Fire	energy and motivation
Earth	logistics and resources
Law	structure and discipline

The Art of War by Sun Tzu, an ancient Chinese military strategist, is a deeply insightful discussion on strategy, leadership and resilience that reaches beyond its original military context. Its principles are rooted in timeless wisdom. Besides, it offers guidance when facing challenges in different areas, such as war, business and personal decision-making. In addition, wisdom is at the heart of its philosophy, emphasising strategic insight and careful planning. Success begins with a deep understanding of yourself, your opponent and your environment. This principle emphasises the importance of being forward-looking, so it should carefully prepare to ensure that every step is considered. This is complemented by ethics, which emphasises the role of

leadership in inspiring loyalty, unity and purpose. A leader who demonstrates integrity and moral courage can inspire their team.

According to The Art of War, it is essential to recognise and exploit 'benefits', which refers to the ability to identify opportunities and advantages in any situation. This principle ensures that each decision can maximise potential gains. Similarly, Rituals reflect the importance of organisational culture, protocols, and discipline. Organised teams are more likely to succeed because rituals provide a basis for coordinated action. However, success also depends on destiny which is the ability to adapt to changing circumstances and catch the right opportunities. Furthermore, timing is crucial. The ability to take prompt action in the face of external forces often determines the result.

The remaining principles align with the practical aspects of execution. Fire, symbolising energy and motivation, highlights the need for passion and momentum to drive efforts forward. Besides, Earth represents logistics and resources, emphasising the importance of a solid foundation to support success. Finally, Law embodies structure and discipline, ensuring consistent behaviour, a sense of responsibility and order. Whether in war, business or life, these principles together form a coherent framework for victory.

7.2 The integration of ancient strategic wisdom with modern strategic management frameworks

The integration of ancient strategic wisdom with modern strategic management frameworks provides a way to enhance strategic planning within organisations. As educational organisations struggle to cope with rapidly changing technology and increasing competition, the need for effective strategic planning becomes more significant. However, traditional management theories may fail to address the complexities and unique challenges faced by organisations in the STEM education field.

Ancient strategic philosophies, such as the works of Sun Tzu and Confucius, offer timeless insights into leadership, decision-making and organisational dynamics. For example, Sun Tzu emphasises the importance of the adaptability of strategies, which can provide valuable lessons for modern managers navigating the complexities of the STEM education environment. Similarly, Confucian principles highlight the importance of interpersonal relationships and ethical leadership; it can also provide a reference for contemporary management practices that value cooperation and integrity. Eastern and Western management philosophies differ significantly in their core values. Chinese management emphasises collective harmony and group success over individual achievement. Garratt (1981) This collective approach is efficient in STEM education, where collaboration and teamwork are essential for learning and innovation.

Contemporary strategic management frameworks, such as the Resource-Based View (RBV) and Porter's Five Forces provide structured methodologies for analysing organisational capabilities and competitive environments. Griseri (2013) discusses the significance of these frameworks in identifying key organisational elements, including leadership, work, and the nature of the organisation itself. Drucker (2017) further emphasises the necessity of a coherent "Theory of the Business," which outlines a firm's assumptions about its operations, markets, and customers. This theory is crucial in ensuring that organisations are not only reactive to change but proactively shape their strategic direction.

The challenges faced by organisations in strategic planning can be numerous, including resource allocation, stakeholder engagement, and integrating diverse perspectives. Ancient strategic wisdom provides timeless principles that are still relevant today. When combined with modern strategic theory, organisations can create a more complete and flexible approach. This fusion of old and new perspectives helps to develop flexible strategies that can adapt to an ever-changing business environment. In summary, integrating ancient strategic wisdom with modern management frameworks can lead to more informed decision-making, improve strategic planning processes, and ultimately lead to greater organisational success in the complex contemporary educational environment.

The integration of the principles from "The Art of War" with the 3-H framework can enhance strategic management by providing a comprehensive and culturally informed approach to leadership, strategy, and execution. Here's how each principle from "The Art of War" can influence the components of the 3-H framework:



Figure 4 3H Framework & The Art of War

Heart (H1): Emotional Intelligence, Leadership, and People Management

- **Morality (Leadership and Inspiration):** According to "The Art of War," a leader's ability to inspire and motivate is crucial. This aligns with the Heart dimension, where emotional intelligence and leadership are key. Besides, leaders who embody morality can foster loyalty, commitment, and a shared vision among team members, which are essential for the successful implementation of strategic plans.
- **Benefit (Understanding Advantages and Opportunities):** This principle emphasises the importance of recognising and leveraging strengths. In the context of the Heart dimension, it translates to leaders understanding the unique capabilities and potential of their team members, which can be harnessed to achieve strategic goals.

Head (H2): Cognitive Processes, Strategic Thinking, and Decision-Making

- **Wisdom (Strategic Insight and Planning):** Strategic insight is the ability to foresee and plan for various scenarios. Integrating this with the Head dimension enhances strategic thinking. In addition, it is done by encouraging a proactive approach to identifying opportunities and threats and developing contingency plans.
- **Law (Strategic Planning and Structure):** This principle from "The Art of War" refers to the importance of having a structured approach to warfare, which can be applied to strategic planning in organisations. Moreover, it supports the Head dimension by emphasising the need for clear strategies, well-defined roles, and disciplined execution of plans.

Hand (H3): Practical Actions, Execution, and Operational Capabilities

- **Fire (Energy and Motivation):** Fire symbolises the energy and passion needed to execute plans effectively. In the Hand dimension, this translates to the drive and motivation required to transform strategic plans into actionable steps. Besides, it should help to maintain momentum throughout the execution phase.
- **Earth (Logistics and Resources):** Effective logistics and resource management are essential for operational success. Aligning this with the Hand dimension ensures that the necessary resources are allocated efficiently. Consequently, operational capabilities are aligned with strategic objectives.

8 Discussion

The study will measure each H domain's proxy constructs (e.g., H1 Leadership, H2 Strategy, H3 Competence) with related principles of "The Art of War," converting these principles into assumptions and interview questions. Data will be collected through surveys and semi-structured interviews with key stakeholders at RIHK.

Proxy Constructs and Corresponding "The Art of War" Principles are summarised as follows:

1. H1 Leadership (Heart)

Proxy Construct	Emotional intelligence and people management capabilities of leaders.
Corresponding Principle	Morality (the ability to inspire and lead with integrity)
Assumptions	1. Leadership at RIHK that demonstrates the principle of Morality will have higher levels of employee satisfaction and engagement.
	2. Leaders who practice Morality are more effective in crisis management and decision-making.
Interview Questions	1. How do you incorporate the principles of integrity and trust in your leadership style?
	2. Can you provide examples where moral leadership has influenced team performance or project outcomes?

2. H2 Strategy (Head):

Proxy Construct	Strategic thinking and decision-making processes
Corresponding Principle	Wisdom (strategic insight and planning)
Assumptions	1. RIHK's strategic planning is more effective when it aligns with the principle of Wisdom.
	2. The integration of Wisdom in strategy leads to better anticipation of market trends and competitor actions
Interview Questions	1. How does your team utilise strategic foresight in planning?
	2. Can you describe a situation where strategic insight has significantly impacted a decision at RIHK?

3. H3 Competence (Hand):

Proxy Construct	Operational capabilities and execution of strategic initiatives
Corresponding Principle	Fire (energy and motivation)
Assumptions	1. High levels of operational competence at RIHK are associated with motivated and energetic teams
	2. The principle of Fire, when applied to operations, enhances the efficiency and effectiveness of project execution
Interview Questions	1. How do you maintain motivation and energy in your team during the execution of strategic projects?
	2. Can you discuss a time when operational efficiency directly contributed to the success of a project?

By integrating the 3-H framework with "The Art of War" principles, this study aims to provide a deeper understanding of how these frameworks can enhance strategic management practices at RIHK. The research will offer actionable insights for improving leadership, strategy, and operational competence, ultimately contributing to the organisation's performance and sustainability in the STEM education sector.

The following diagram shows the relationship between the 3-H framework and "The Art of War" principles.

3H FRAMEWORK	PRINCIPLE	CHAPTER	MEANING/EXPLANATION
Heart (H1)	Morality (Leadership and Inspiration)	Beginning of Planning	The leader's qualities—wisdom, trustworthiness, benevolence, courage, and sternness—are key to motivation.
	Benefit (Understanding Advantages)	Beginning of Calculation	Identifying and exploiting advantages through careful planning and strategic deception.
Head (H2)	Wisdom (Strategic Insight)	Military Form	Strategic foresight involves making yourself invincible while waiting for the enemy's vulnerability.
	Law (Planning and Structure)	Beginning of Planning	Planning, structure, and organization ensure effective execution and alignment of resources.
Hand (H3)	Fire (Energy and Momentum)	Military Situation	Momentum is key to exploiting the enemy's weaknesses, just as water shapes itself to the terrain.
	Earth (Resources and Logistics)	Operations	Success depends on resource management and logistical efficiency to sustain action.

Figure 5 The relationship between the 3-H framework and "The Art of War" principles

The integration of these principles can enhance strategic management by:

1. Enhancing Leadership and Motivation (Heart): Leaders who understand and apply the principles of morality and benefit can inspire their teams, creating a motivated workforce that is essential for achieving strategic goals.
2. Improving Strategic Thinking and Planning (Head): By incorporating wisdom and law into strategic thinking, organisations can develop more robust and adaptable strategies that account for various structured and disciplined planning.
3. Strengthening Execution and Operational Efficiency (Hand): The principles of fire and earth ensure that organisations have the necessary energy and resources to execute their strategies effectively. As a result, it leads to improved operational outcomes.

Applying the Integrated Framework to the strategic management of RIHK.

1. Heart (H1) - Emotional Intelligence and Leadership:

- Morality: RIHK's leadership can inspire and motivate its team by stating a clear vision that aligns with the institute's morals. As a result, teams can focus on the ethical development and application of robotics.
- Benefit: By understanding the strengths and opportunities within the field of STEM education, RIHK can inspire its workforce to develop innovative projects.

2. Head (H2) - Cognitive Processes and Strategic Thinking:

- Wisdom: RIHK can use their strategic insight to anticipate technological trends and plan for future scenarios. It ensures that its research and development efforts are aligned with emerging opportunities.
- Law: RIHK needs a well-structured strategic planning process with clearly defined roles and responsibilities. This disciplined approach ensures order and accountability throughout the organisation. It facilitates the effective execution of its strategic initiatives.

3. Hand (H3) - Practical Actions and Execution:

- Fire: RIHK must maintain a high level of motivation and energy among its staff. It helps to drive the execution of strategic projects, especially in a competitive and rapidly changing field.
- Earth: Effective logistics and resource management are crucial for RIHK. It ensures that its operational capabilities can support its strategic objectives

By integrating the 3-H framework with "The Art of War" principles, RIHK can develop a strategic management approach that is not only grounded in modern management theory but also enriched by ancient strategic insights. As a result, it provides a comprehensive framework to address its unique challenges and opportunities in the field of STEM education.

Based on the conceptual framework that integrates the 3-H framework with "The Art of War" principles, the following hypotheses can be formulated to guide the research and evaluate the effectiveness of this integration at RIHK:

1. Hypothesis 1: Leadership Effectiveness (H1)

The integration of 'The Art of War' principles, particularly Morality and Benefit, with the Heart dimension of the 3-H framework, will enhance leadership effectiveness at RIHK by improving employee motivation and alignment with the company's strategic goals.

2. Hypothesis 2: Strategic Decision-Making (H2)

The application of Wisdom and Law from 'The Art of War' within the Head dimension of the 3-H framework will improve strategic decision-making at RIHK by fostering a more insightful and structured approach to strategy formulation.

3. Hypothesis 3: Operational Efficiency (H3)

By integrating the principles of Fire and Earth from 'The Art of War' with the Hand dimension of the 3-H framework, RIHK will experience increased operational efficiency and better resource management in the execution of its strategic plans."

To effectively measure the impact of the integrated framework, a comprehensive mixed-method approach should be adopted. This approach combines quantitative and qualitative data collection methods. Moreover, it provides a solid understanding of how the framework affects the RIHK's organisational performance and strategic management.

Quantitative data collection will rely primarily on structured surveys that measure employee motivation, leadership effectiveness, and operational efficiency. These surveys will use Likert scale items, supplemented by open-ended questions. In addition, historical data from internal reports and strategic plans will provide valuable baseline information for comparative analysis.

To gain qualitative insights, semi-structured interviews will be conducted with RIHK leaders, managers and staff members in various roles. These interviews will explore leadership styles, strategic thinking processes and the impact of the structure on day-to-day operations. On the other hand, case studies of selected strategic initiatives will provide detailed examples of the practical application of the structure.

Statistical and qualitative methods will be used in the data analysis phase. Statistical analysis using appropriate software will identify trends and correlations in quantitative data, while thematic analysis will be used to process qualitative data from interviews.

Ethical guidelines will be strictly followed throughout the research process. This includes obtaining informed consent from all participants, ensuring the confidentiality of responses, and protecting sensitive RIHK information through appropriate anonymous procedures.

9 Limitations

Existing research often shows significant contextual limitations, particularly in terms of considering cultural factors. It affects the application of strategic wisdom and management frameworks. However, understanding the cultural context of these philosophies is essential to bridging ancient strategic wisdom with modern management practices. For example, Garratt (1981) discusses the challenges of transferring Western management concepts to a Chinese cultural context, highlighting the significant differences in the basic assumptions about people and organisations in various cultural contexts.

When Western and Eastern management practices are compared, this difference may lead to misunderstandings and affect the effectiveness of an integrated approach in different cultural contexts. Therefore, the applicability of ancient strategic wisdom and contemporary frameworks may be limited due to the lack of cultural adaptability.

In summary, addressing these limitations is important for advancing the discussion on integrating ancient strategic wisdom with modern management frameworks. Future research should prioritise contextually relevant methods. At the same time, it needs empirical validation to enhance the robustness and applicability of findings in real-world organisational settings.

10 Conclusion

The integration of ancient strategic wisdom with modern management frameworks provides promising ground for future research, especially in the context of STEM education. Such explorations can enhance strategic planning and execution in educational organisations. As a result, it can promote a more holistic approach to management challenges.

Furthermore, empirical studies that evaluate the outcomes of applying ancient strategic principles can bridge the gap between theory and practice. By conducting case studies or action research within educational institutions, researchers can gather data on the effectiveness of integrating these ancient strategies with modern management frameworks. Consequently, it could lead to innovative practices that improve educational outcomes. Finally, it is also worth exploring how technological advances may reshape the application of ancient wisdom in contemporary strategic management.

In summary, the integration of ancient strategic wisdom with modern management strategies can make a significant contribution to the existing body of knowledge in this field. This hybrid approach not only enhances strategic planning but also promotes a deeper understanding of the cultural and philosophical foundations of management practice. As organisations in the field of STEM education continue to face new challenges, leveraging ancient insights and modern frameworks will be essential to achieve continued success and innovation.

11 References

- Casadesus-Masanell, R. and Brennan, N.H. (2015) 'Introduction to Strategy', Teaching Note 8098, Harvard Business School Publishing Corporation, Boston.
- Channon, D. F. and A. A. Caldart (2015). "McKinsey 7S model." Wiley encyclopedia of management: 1-1.
- Dälken, F. (2014). Are porter's five competitive forces still applicable? a critical examination concerning the relevance for today's business, University of Twente.
- Drucker, P. F. (1994). "The theory of the business." Alfred P. Sloan: Critical evaluations in business and management 2(2): 258-282.
- Freeman, B., et al. (2019). An international view of STEM education. STEM Education 2.0, Brill: 350-363.
- Garratt, B. (1981). "Contrasts in Chinese and Western management thinking." Leadership & Organization Development Journal 2(1): 17-22.
- Griseri, P. (2013). "An introduction to the philosophy of management."
- Hafeez, K., et al. (2002). Core competence for sustainable competitive advantage: a structured methodology for identifying core competence." IEEE transactions on engineering management 49(1): 28-35.
- Hlavatý, J. and Ližbetin, J. (2021) 'The Use of the Art of War Ideas in the Strategic Decision-making of the Company', Transportation Research Procedia, 55, pp. 1273–1280.
- Ouyang, F. and W. Xu (2024). "The effects of educational robotics in STEM education: A multilevel meta-analysis." International Journal of STEM education 11(1): 7.
- Sheehan, N. T. (2006). "Understanding how resources and capabilities affect performance: Actively applying the resource-based view in the classroom." Journal of Management Education 30(3): 421-430.

Stonehouse, G. and B. Snowdon (2007). "Competitive advantage revisited: Michael Porter on strategy and competitiveness." *Journal of Management Inquiry* 16(3): 256-273.

Sun Tzu (2023) *The Art of War* (Pocket Edition). Translated by James Trapp. Illustrated edn. Amber Books.

University of Wales Trinity Saint David (2024) HKBM7018 Visions for the Future – Theoretical Perspectives on Management: Course Materials. Prepared by Prof. Eddie Yu. Available from: University of Wales Trinity Saint David course resources.

Wee, C.-H. (2002) Sun Zi Art of War and SWOT Analysis: Perspectives and Applications to Business. *Asia Pacific Management Review*, 7(2), pp. 267–286.