CKGSB
长江商学院
CHEUNG KONG GRADUATE
SCHOOL OF BUSINESS

From Startups to Unicorns

Unlocking Growth Through Ecosystems

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A Cheung Kong Graduate School of Business White Paper

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Executive Summary

Ecosystems as the Future of Business

Companies no longer compete as isolated entities, but as part of interconnected ecosystems of partners, suppliers, customers, and stakeholders that drive innovation, scale and resilience.

Shifting from Firm-Level to Ecosystem-Level Competition

Ecosystem thinking enables businesses to integrate resources, foster collaboration, and co-create value. Models like JD.com's vertically integrated ecosystem and ARM's loosely-connected networks demonstrate diverse pathways to achieving scalability and operational efficiency.

Customer-Centric Ecosystems

Companies like Hao Wang Shui (beverage) highlight the importance of placing customers at the center, leveraging emotional connections, community-building, and targeted solutions to drive loyalty and long-term growth.

Comprehensive vs. Distributed Models

Ecosystem strategies differ based on market needs:

- Comprehensive models, like BYD, centralize capabilities to ensure control and accelerate innovation. Distributed models, like Apple, focus on core competencies while outsourcing production to external experts. A hybrid approach offers agility by combining in-house control with external expertise.

Navigating External Forces

Businesses face challenges, such as AI-driven disruption, geopolitical shifts, and global regulatory complexities.

- AI and digitalization enable scalability, but require strategic focus on specialized, enterprise-grade models, as illustrated by Huawei's Pangu.
- Geopolitical tensions necessitate adaptability and resilience, particularly for companies operating across global markets.

The Importance of Long-Term Thinking

Companies that anchor themselves to unchanging fundamentals—such as Costco's focus on supply chain excellence or Tesla's first-principle thinking—are better positioned to navigate shifting market dynamics and achieve sustainable growth.

Bridging Internal and External Strengths

Success in today's interconnected economy requires mastering the balance between internal capabilities and external partnerships. Ecosystem thinking is essential for scalability, resilience, and long-term competitive advantage.

Introduction

In an era marked by unprecedented technological advancements, shifting geopolitical dynamics, and profound societal challenges, the ability to scale up to and sustain unicorn businesses—startups valued at over $1 billion—has become more critical than ever. Unicorns are no longer simply symbols of innovation and entrepreneurial success; they have emerged as pivotal drivers of economic growth, social progress, and global transformation. As Cheung Kong Graduate School of Business (CKGSB) Dean and Dean's Distinguished Chair Professor of Finance, Li Haitao, highlights: the ascent of unicorns reflects not only a convergence of talent and capital, but also a deeper shift in the global economic order. Against this backdrop, CKGSB stands at the forefront of preparing the next generation of unicorn founders and global entrepreneurs to navigate these complexities and build resilient, purpose-driven organizations with leaders equipped to achieve the transformative scaling required for billion-dollar valuations.

Dean Li emphasizes that globalization has become an essential strategy for enterprises in a world of increasing geopolitical uncertainty and domestic market saturation. As businesses venture abroad they must adapt to the diverse demands of global markets while scaling rapidly. For unicorns to succeed, they must not only excel in operational efficiency and innovation, but also cultivate the global competencies needed to navigate this complex landscape, including strategic agility, cultural integration, and flexible resource allocation.

This white paper reflects CKGSB's vision to equip entrepreneurs with the tools, models, and mindsets required to achieve scalable success, and is informed by the expertise of our world-class faculty. Drawing from both theory and practice, this white paper introduces a CKGSB-created model designed to guide startups in navigating growth trajectories while addressing global challenges.

A World in Flux: Opportunities and Challenges for Unicorns

The global environment in which unicorns operate today is characterized by constant flux and uncertainty. Demographic shifts, particularly in aging societies like China, Japan, and parts of Europe, are reshaping consumer behavior and workforce dynamics. Geopolitical tensions, from trade disputes to regional conflicts, have heightened the complexity of global supply chains and market access. AI and digitalization are redefining industries, creating new opportunities while raising ethical questions about privacy, labor displacement, and decision-making transparency. Lastly, climate change has become an existential concern, compelling businesses to embed sustainability into their core strategies.

Dean Li and his research team found that AI and digitalization are empowering businesses to operate with unprecedented precision, from predicting customer demand to optimizing investment

strategies. This has fundamentally changed the landscape for unicorns, providing them with powerful tools to improve operational efficiency, enhance competitiveness, and scale globally. It also introduces new complexities around data privacy, security, and regulatory compliance across multiple jurisdictions. These challenges underscore the importance of a robust strategy that integrates technology and governance, ensuring innovation remains aligned with long-term business objectives.

Unicorns are uniquely positioned to address these challenges. With their combination of agility, innovation, access to capital, and global reach, they can pioneer solutions that not only create economic value, but also generate significant social impact. However, achieving this dual mission requires more than visionary ideas—it demands robust frameworks that enable sustainable growth, and resilience amid uncertainty.

CKGSB's Distinctive Contribution

CKGSB's contribution to the entrepreneurial ecosystem is rooted in its commitment to academic excellence, cutting-edge research, and a focus on societal impact. The faculty includes leading scholars and industry practitioners who provide insights that are globally relevant and locally actionable. CKGSB's deep engagement with China—a dynamic hub of innovation today and one of the world's largest markets—provides distinctive opportunities for entrepreneurs seeking to scale their ventures.

Empowering the Next Generation of Entrepreneurs

At CKGSB, we believe entrepreneurship is a powerful force for positive change. Through our programs, initiatives, and thought leadership, we aim to inspire and empower entrepreneurs to scale their businesses while contributing to a better world.

The insights and frameworks presented here are designed to equip founders with actionable strategies for success and a roadmap for growth that is impactful and enduring.

As you explore this white paper, we invite you to reflect on the unique role your business can play in addressing the critical issues of our time, and build unicorns that are not only economically successful, but also socially responsible. Welcome to the CKGSB vision for scaling to unicorns and beyond in an ever-changing world.

Foreword

Fostering the Next Generation of Unicorns: A Vision for Innovation and Global Responsibility

Xiang Bing

Founding Dean and Dean's Distinguished Chair Professor of China Business and Globalization

Cheung Kong Graduate School of Business (CKGSB)

We are currently living in an era of profound transformation, marked by technological, economic, social, environmental and geopolitical disruptions. Amid these shifts, the concept of the "unicorn" has evolved far beyond its mythological origins to symbolize extraordinary potential in the business world. These companies are not merely high-valued entities; they are agents of change, reshaping economies as well as the technological, social, and political landscape in significant ways.

As we reflect on the global unicorn ecosystem, it becomes increasingly important to focus on the next generation of unicorns and the critical role they will play in shaping the future. At CKGSB, we believe that unicorn companies play a pivotal role in driving economic disruption, a vital force for both economic development and social advancement.

By harnessing the power of innovation and entrepreneurship, countries and businesses can unlock their potential and establish a new competitive edge. Moreover, by fostering innovation and creating new industries, unicorns enhance upward social mobility, particularly among young people, in both developed and developing economies.

Economic disruption has been a key driver of significant growth in countries like China and the United States, especially over the past two to three decades, where these nations have excelled in transformative change. Notably, China's development has been particularly disruptive compared to that of the United States. China's rise, particularly in recent decades, has been driven by a model of disruption—a contrast to the more familiar innovation-driven economies like that of the United States. This disruption is reflected in the rapid

ascent of Chinese companies, particularly unicorns.

Between 2001 and 2023, the number of Chinese companies on the Fortune Global 500 list surged from 11 to 129, and the number of Chinese billionaires skyrocketed from just one in 2001 to 495 today. Furthermore, the number of Chinese unicorns has grown from 22 in 2015 to 169 in 2023, positioning China as the second-largest hub for unicorns globally, after the U.S.

While China was once seen as a hub for imitation, a new wave of innovation has taken hold in key industries such as renewable energy, e-commerce, electric vehicles (EVs), lithium-ion batteries, and 5G. Chinese firms are now global leaders in these sectors, with China leading in renewable energy capacity, dominating the global EV market, and becoming the largest exporter of solar products and lithium-ion batteries.

Beyond traditional sectors, Chinese internet companies have made major strides in the U.S. market. ByteDance, with its flagship app TikTok, has become a global phenomenon, and companies like Temu and SHEIN are rapidly growing in popularity. This wave of Chinese disruption is reshaping global markets and is a testament to the power of innovation and entrepreneurship.

At CKGSB, we believe that fostering the next generation of unicorns is essential for driving economic prosperity and social mobility. I firmly believe this must be done with a renewed focus on global responsibility, social purpose, and long-term thinking. We envision a future where businesses not only seek profit, but also address critical societal challenges, such as income inequality, climate change, and sustainable development.

In light of this observation, we launched our unicorn programs in 2015, aiming to combine the best elements of China's disruption-driven model with the innovation-driven approaches of the West. Our goal is to nurture entrepreneurs who can drive both economic growth and social impact. To date, more than 1,100 founders of companies with at least Series A funding have studied at CKGSB, including those behind 151 unicorns. Our alumni have led some of China's most iconic companies, including Tencent, Didi, Anta, Pinduoduo, and ByteDance, as well as global unicorns like Unbabel, Sword Health, and Teladoc Health.

Since 2023, we have built a global ecosystem for the next generation of unicorns and unicorn-to-be companies, which is the first global ecosystem designed and led by an Asian educational institution in history. Our unicorn programs stand out for their global reach, spanning five continents—from RCEP and GCC to Europe, the Americas, and Oceania—and have a multi-sector focus on key industries, such as AI and other future tech/deep tech, life sciences, healthcare, luxury management, and social innovation. We collaborate with top institutions like Stanford, Columbia, and UC San Diego, as well as government and multilateral organizations, to deliver a rich and interdisciplinary curriculum. Our mission is to equip entrepreneurs with the skills to scale their companies responsibly, with a focus on social purpose and long-term impact.

Looking ahead, we are committed to expanding our global ecosystem for the next generation of unicorns, forging new partnerships and collaborations to foster innovation, disruption, and scaling. Through this ecosystem, we aim to nurture a new breed of globally-minded, socially-responsible business leaders—entrepreneurs who not only succeed individually, but also contribute to a better, more sustainable future.

CKGSB's Global Unicorn Ecosystem:

151

alumni have gone on to found unicorn companies

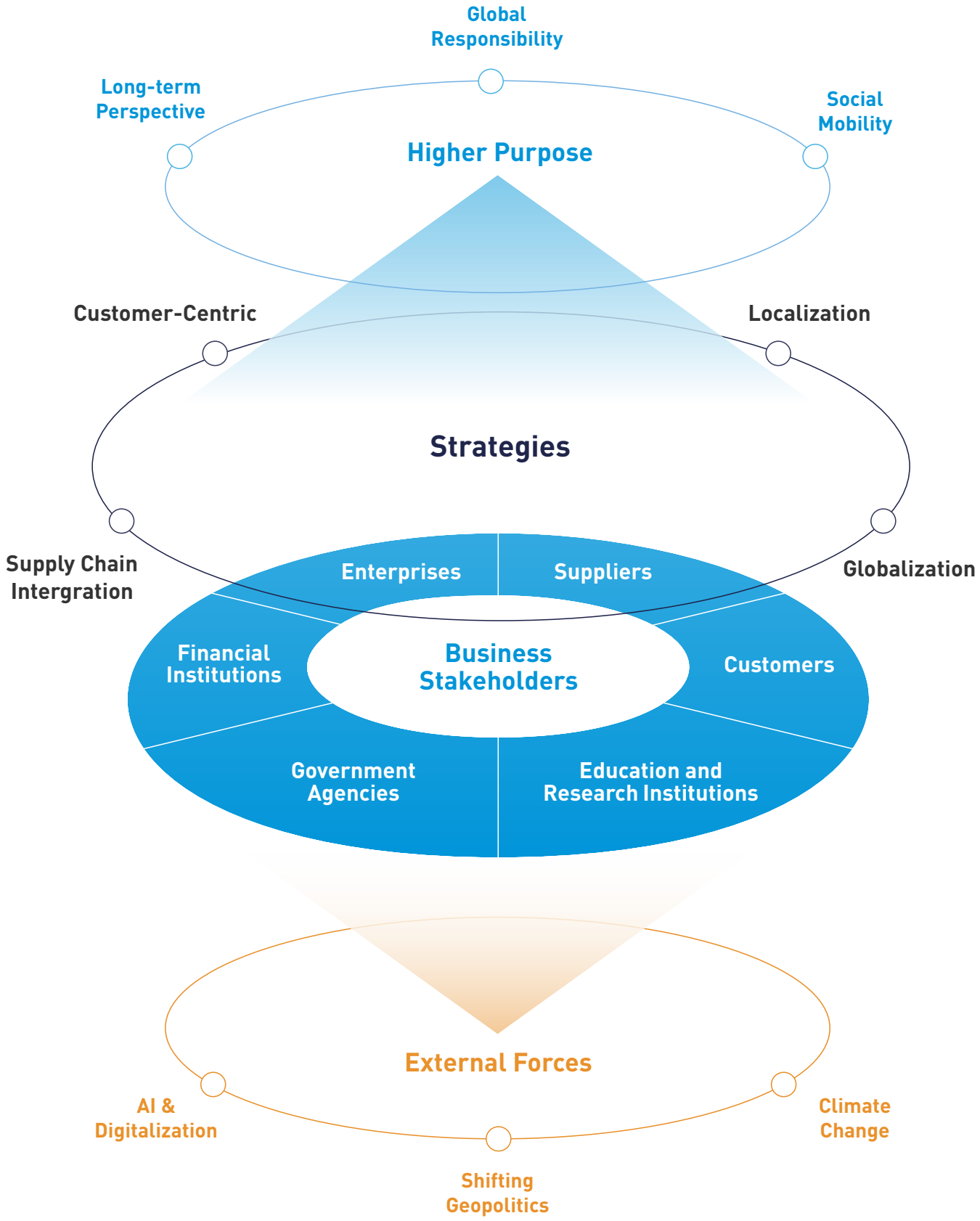
1,188

alumni are founders and co-founders of companies with Series A to more mature start-up companies

41

unicorn companies listed on CB Insights (2017-2022) are led by CKGSB alumni

A New Model for Business Ecosystems



Inside the Ecosystem: Stakeholders, Strategies, and Forces

This white paper explores a dynamic model that encapsulates the complexities of modern business ecosystems and the forces shaping their evolution. At the heart of the model are six key stakeholders whose collaboration and alignment determine the success of these ecosystems: government agencies, educational and research institutions, enterprises, customers, financial institutions, and suppliers. Each stakeholder plays a critical role in building networks of trust, fostering innovation, and driving value creation. However, their efforts do not exist in isolation; they are shaped by strategies, external forces, and overarching societal goals that require constant adaptation and foresight.

The strategies that stakeholders must adopt to thrive include supply chain integration to enhance efficiency and resilience, globalization to leverage international opportunities, localization to adapt to specific markets and build regional trust, and customer-centric approaches that ensure loyalty and relevance. These strategies are essential for building scalable ecosystems, with which companies are capable of competing in a rapidly evolving economic landscape.

Surrounding these core stakeholders and their strategies are three transformative external forces. AI and digitalization are reshaping industries by driving automation, innovation, and efficiency. Shifting geopolitics introduces complexities such as regulatory divergence, trade restrictions, and global decoupling, which require businesses to navigate regional differences with agility. Climate change further complicates this landscape, urging companies to adopt sustainable practices and integrate environmental considerations into their long-term plans.

Beyond these immediate operational forces, the model emphasizes a higher purpose that anchors business ecosystems in values and vision. Long-term perspective ensures companies make decisions with sustainability and future generations in mind. Global responsibility highlights the importance of addressing issues such as inequality, resource distribution, and the environmental impact of business activities. Social mobility underscores the potential of ecosystems to create opportunities that enhance economic mobility and foster inclusive growth.

This model provides a comprehensive lens through which companies can understand the intricate relationships and forces that define modern ecosystems. It highlights the need for a balance between strategies, external adaptability, and a values-driven higher purpose to achieve sustainable, long-term success. As the following sections will illustrate, embracing this approach can empower businesses to navigate complexity, harness innovation, and build resilient ecosystems that benefit stakeholders and society alike. Leveraging insights from CKGSB faculty and their real-world case studies, each section offers an in-depth exploration of these forces, enriched by practical examples and evidence-based analysis.

Balancing Global Integration and Local Adaptation in Ecosystems

"The most successful globalization stories are those where companies integrate into industrial ecosystems, harnessing the collective power of the supply chain," says CKGSB Dean Li Haitao. This idea, known as industrial alignment, involves coordinated efforts across both upstream and downstream segments. For example, companies like BYD (electric vehicles), Gotion High-Tech (batteries), and Tongwei (photovoltaics) lead the charge in global markets, driving the international expansion of midstream and upstream sectors. Similarly, companies in the mining and processing space, such as Huayou Cobalt, CMOC Group, and Tsingshan Holding, have partnered to establish a robust supply chain for electric vehicle (EV) batteries in Indonesia.

Dean Li notes that as far back as the early 20th century, Japanese companies understood the power of ecosystems for global expansion. Through a model known as Sōgō Shōsha Japanese firms created early business ecosystems that facilitated overseas growth via trade, services, and investments. These firms built over 800 branches across 187 cities, employing 16,000 people to collect intelligence and support expansion.

"Before expanding overseas," counsels Dean Li, "companies should thoroughly research local market conditions, including economic development, industry dynamics, competitors, talent, and cultural habits like language, customs, and cuisine. Internally, understanding the local historical, political, and cultural landscape allows companies to identify the right talent and streamline recruitment and training processes." Familiarity with local laws and regulations is also essential, whether entering developed markets like North America and Europe or emerging markets like Southeast Asia, the Middle East, or Africa.

The most successful globalization stories are those where companies integrate into industrial ecosystems, harnessing the collective power of the supply chain."

Li Haitao Dean and Dean's Distinguished Chair Professor of Finance, CKGSB

Building Customer-Centric Ecosystems for Growth

"Creating communities and an emotional connection to brands is essential to scaling up and reaching new customers," says CKGSB Associate Professor of Marketing Li Yang, highlighting how companies that place customers at the center of their ecosystems are better positioned to scale, adapt to market changes, and maintain a competitive edge. Professor Li highlights that global brands like Coca-Cola, Nike, Hermes and Apple are increasingly emphasizing the emotional aspects of their products over the functional aspects. Professor Li explains that Chinese

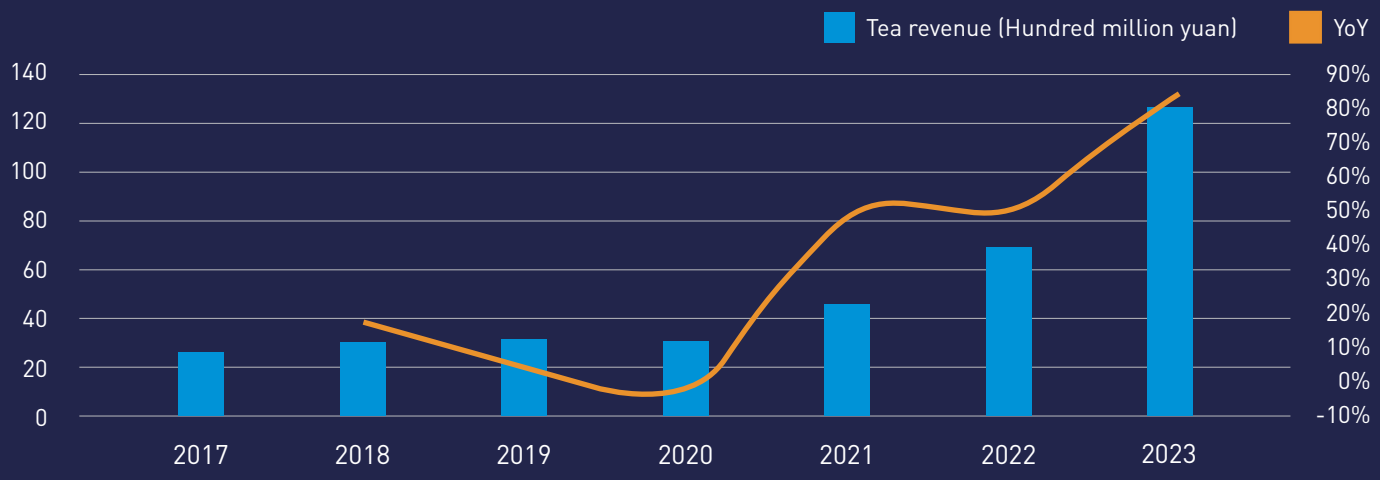
beverage brand Hao Wang Shui is a brand which places customers at the center of its business strategy. Hao Wang Shui was founded on a unique brand identity built on creating "inner circles" of loyal customers – those willing to pay a premium for high-quality products. Offering sparkling water beverages in flavors such as hawthorn, apricot, plum, and peach, the brand targeted middle-class consumers in China's urban centers who value health, tradition, and modernity.

According to Professor Li, from the outset, Hao Wang Shui created a community of restaurant partners. The brand's founder Sun Mengge, a serial entrepreneur, knew from her previous venture in the food industry that restaurants needed fresh, well-formulated high-margin beverages to increase profits, and the 10-yuan price point was perfectly suited to this demand. Leveraging the network of restaurants, Sun established her first "inner circle" of the brand and achieved early-stage sales.

Inspired by brands like Suntory and grounded in extensive consumer analysis, Hao Wang Shui expanded its ecosystem to high-end venues such as luxury hotels, coffee shops, bars, and karaoke lounges—locations aligned with the brand's image of "healthy and high-end living." The brand was no longer just a beverage brand; it was a symbol of status and good taste, further expanding the loyalty of its customer base.

Hao Wang Shui took a proactive approach in "expanding its reach," using its loyal customers and influencers to spread the brand's message beyond its core base. The company built a tight-knit community of brand advocates and partners, while expanding its reach to a broader audience through carefully curated, high-experience channels. By leveraging consumer engagement and community-building, Hao Wang Shui was able to scale quickly, maintain an intimate connection with core consumers, and establish itself as a leader in the emerging premium beverage market, says Professor Li.

China's tea beverage industry has exploded in recent years - partly due to strong consumer loyalty and community building



Source: NielsenIQ Retail Measurement Services (RMS) (across 55 monitored categories), Company Announcements, Guotai Junan Securities.

Like Hao Wangshui, Swedish oat milk brand Oatly's strategy in China demonstrates the power of leveraging an ecosystem of customers to scale a company, according to a case study led by CKGSB Professor of Strategic Management Teng Bingsheng. Oatly cleverly built its community in China by targeting a specific niche market. Initially, this was the lactose-intolerant consumer, offering a practical and healthy alternative to dairy milk. However, in a market where non-dairy options were already commonplace, Oatly broadened its consumer profile to target sustainability-minded, health-conscious coffee drinkers in the boutique coffee shops of Shanghai.

This strategic shift involved several key steps in community building: Oatly representatives personally approached cafes in Shanghai, emphasizing the superior quality of their Barista oat drink. This hands-on approach helped foster relationships within the coffee community.

The quality of Oatly's product spoke for itself, with baristas praising its taste and texture in coffee. Oatly encouraged cafes to offer oat milk as a premium alternative to dairy milk, using the price difference to pique customer curiosity. Oatly also asked cafe staff to subtly educate consumers about Oatly's environment and health benefits.

Within a year, Oatly had partnered with over a thousand cafes, many of them high-end establishments. This created a sense of exclusivity and desirability around the brand. After establishing its presence in boutique cafes all over Shanghai, Oatly would later introduce its product to large chains including Starbucks, Luckin Coffee, and KFC. Essentially, as Professor Teng reflected in his case study, Oatly's experience highlights the effectiveness of targeting a niche market, fostering authentic relationships within that community, and subtly promoting brand values to build a loyal following and achieve remarkable market success.

Ecosystems as Collaborative, Loosely Coupled Networks

While customer-centric ecosystems focus on building deep emotional connections and loyalty, another approach to ecosystem design emphasizes broader collaboration across loosely connected networks. These networks foster innovation and growth through shared goals and distributed value creation, making them particularly effective in industries with complex supply chains and interdependent players.

In an interview with CKGSB, Professor Arnoud De Meyer from the Lee Kong Chain School of Business in Singapore, shared insights on the ecosystem culture in the United Kingdom, much of which centers around Cambridge's so-called 'Silicon Fen', the hub for high-tech businesses in and around the area of Cambridge, England. "What we observed in the United Kingdom around the University of Cambridge, was a different approach to the entrepreneurship seen in Silicon Valley, where companies like Facebook and Google often focus entrepreneurship around one person or a small group of leaders within the organization. In Cambridge, companies were smaller, often a team was leading the innovation, and many companies were working closely together to create value," De Meyer said.

De Meyer highlighted ARM as a prime example of this collaborative, networked approach to ecosystem development. "ARM's business model relies on orchestrating a loosely coupled network of global partners to deliver value to end users." The chip supply chain involves the companies that take the design from ARM and design the chips, chip manufacturers like TSMC, chip sales and distribution companies, equipment design and testers like ASML, OEMs like Samsung or Apple that assemble the smartphones, and finally the software designers that develop and run the apps for smartphones."

"ARM orchestrates this entire value chain. They bring partners together in Cambridge to align on the future of RISC processors. Following these meetings, the companies then adjust their investments and R&D strategies to align with the shared roadmap," De Meyer explained.

De Meyer drew parallels to Alibaba, which followed similar steps in its development,

Ecosystem thinking has become a way of life for Alibaba, enabling it—and similar companies like Tencent—to scale rapidly."

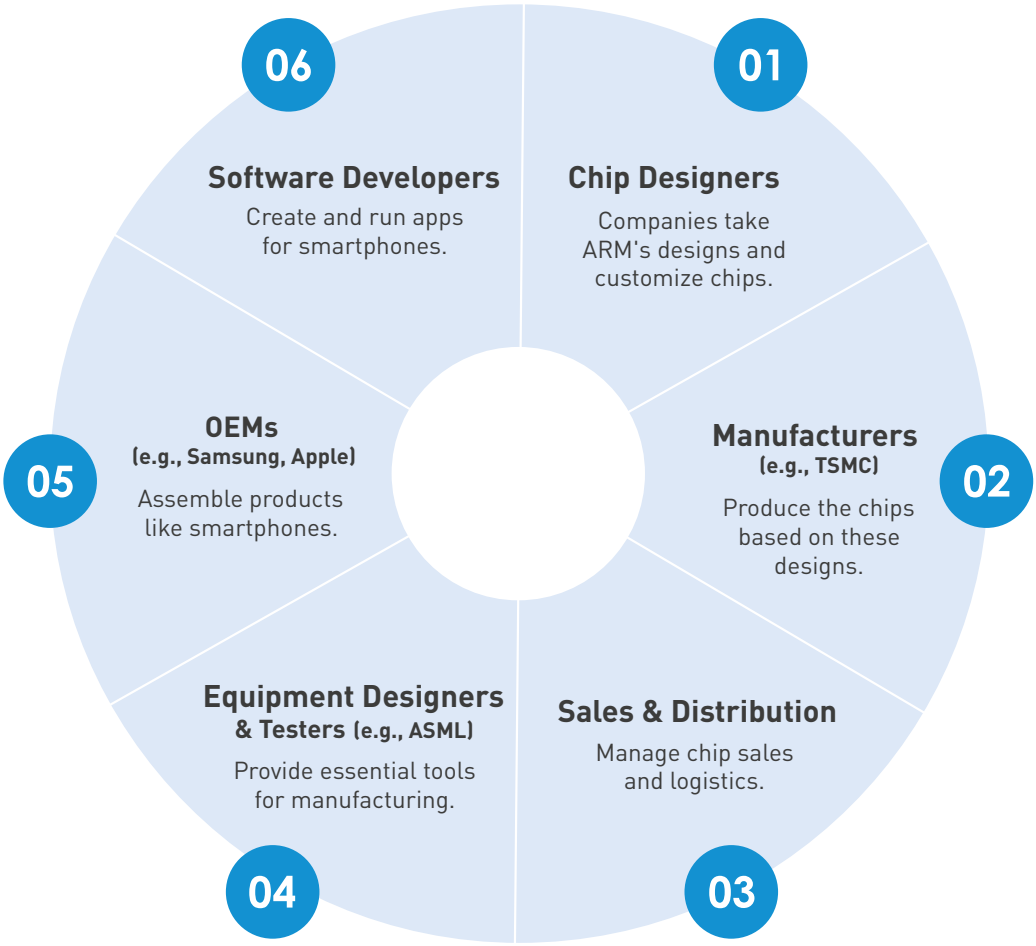
Arnoud De Meyer
Professor Emeritus of Operations Management, Lee Kong Chian School of Business, Singapore Management University

starting as a pure platform acting as an intermediary to connect Chinese producers with international buyers to becoming a service provider. "In 2001, Alibaba expanded beyond being an intermediary, offering visibility, enhancing business operations, and facilitating transactions. Ecosystem thinking has become a way of life for Alibaba, enabling it—and similar companies like Tencent—to scale rapidly," De Meyer said.

De Meyer noted that to establish itself as an ecosystem leader, Alibaba simultaneously enabled e-commerce infrastructure and became the go-to platform for consumer services. "Alibaba needed to scale, so it created a complete set of services, which includes logistics, financial and payment systems, and more, with which Alibaba connects with millions of other businesses."

De Meyer stresses companies need to find their 'keystone'—that is the aspect of the ecosystem they can own and control, on which the ecosystem depends for its ability to create value for customers. "For Alibaba it was the control over its data. For Arm it was the design of its processors." Furthermore, he explained how companies need to lead beyond their organizations. "They must become a source of knowledge for other players in the ecosystem," he said.

Key players in the semiconductor chip supply chain



Vertical integration with strategic partnerships can create a distinct ecosystem model, and is an alternative path to scalability and growth as demonstrated by the platform model."

Jon Liao Professor of Managerial Practice, Strategy, Innovation and Entrepreneurship, CKGSB

Jon Liao, Professor of Managerial Practice, Strategy, Innovation and Entrepreneurship at CKGSB and former Chief Strategy Officer of JD.com, interviewed for this white paper, underscored that ecosystems are not limited to platform-based models. "The vertically integrated system is largely overlooked by researchers and experts," says Professor Liao. "JD.com is not like Alibaba; it is a vertically integrated model where we manage merchandise, add value-added services, and re-sell them — all within our own supply chain," Liao emphasized.

JD.com faced a strategic decision Liao frames as to integrate or be integrated. "What JD.com did is to integrate the capabilities of third-party platforms on to its own platform to enrich the customer experience," said Liao. He explained that when JD.com entered the hotel and travel market, it lacked the expertise and supply chain infrastructure. Rather than building these capabilities in-house, JD.com partnered with Trip.com (formerly Ctrip), a leading player in China's travel sector. Through this partnership, JD.com integrated Trip.com's expertise and supply chain into its platform, enabling the company to expand its offerings and access new customer segments without taking on unnecessary risks. Such an approach highlights how vertical integration with strategic partnerships can create a distinct ecosystem model, and is an alternative path to scalability and growth as demonstrated by the platform model.

Strategic Choices in Supply Chain Ecosystems

The key question for companies aiming to scale lies in determining how much control they should exert over their supply chain and producers. Striking the right balance between oversight and delegation is crucial.

Jennifer Huang, CKGSB Professor of Finance, explained that companies can either opt for a comprehensive production model, where they control most operations internally—such as supply chain, product development, and core functions like R&D —or a distributed model, whereby an enterprise leverages partners to handle parts of the process. Choosing between these models carries significant impact. BYD, a leading Chinese electric vehicle (EV) producer, is a typical example of the former. From batteries, to automotive semiconductors, to electric motors, BYD produces many of its core components in-house. BYD has built a huge ecosystem within its own company.

Professor Huang argues that the comprehensive model can lead to bloated organizations and high levels of bureaucracy. However, some enterprises adopted the comprehensive supply chain strategy to gain competitive advantage. This was the case with Lenovo chasing HP, Taobao catching up with eBay, DiDi with Uber, and BYD with Tesla. Using a comprehensive ecosystem, these fast follower companies were able to scale up quickly.

In contrast, the distributed approach to supply chain management, represented by companies like Apple, is grounded in the idea of market-regulated division of labor, where different companies handle different parts of the supply chain. Apple sources specialized components from global suppliers, allowing the company to tap into the best expertise across industries without bearing the associated costs and risks of maintaining internal operations.

"The advantage is light operations and competitive efficiency," says Professor Huang. The distributed model promotes efficiency by distributing risks and responsibilities among multiple parties. Suppliers handle the R&D and production of specific components, while the company focuses on its core strengths, such as branding, product design, or customer experience. The flexibility and scalability

If an enterprise wants to catch up, a comprehensive supply chain strategy may offer competitive advantage."

Jennifer Huang Professor of Finance, CKGSB

of this model make it particularly effective for companies in rapidly evolving markets where speed is crucial and technological expertise can be spread across many partners. For example, in the automotive industry, companies like Tesla and Xiaomi rely on external suppliers to scale quickly without overextending internal resources. Tesla's reliance on external battery makers like CATL, and encouraging competition among suppliers, incentivizes efficiency and innovation.

Comprehensive Production Model

Definition

A company controls most operations internally, including supply chain, product development, and R&D.

Examples: BYD, Lenovo, DiDi, Taobao.

Advantages

- Strong control over quality and production.
- Builds a robust, self-sustaining internale cosystem.
- Ideal for companies aiming to catch up with market leaders.
- Reduces dependency on external suppliers.

Challenges

- Risk of organizational bloating and bureaucracy.
- High costs and slower adaptability to market changes.

Distributed Production Model

Definition

A company leverages external partners to handle parts of the supply chain.

Examples: Apple, Tesla, NIO.

Advantages

- "Light" operations reduce internal costs and risks.
- Encourages competition among suppliers, driving efficiency.
- Flexibility and scalability in rapidly evolving markets.

Challenges

- Higher reliance on external suppliers can pose risks.
- Time and cost required to establish a reliable supplier network.
- Potential loss of proprietary innovations to competitors via shared suppliers.

NIO, an electric car producer in China, is another example of a company that successfully adopted a distributed ecosystem model. Recognizing the capital-intensive nature of the industry, NIO opted for a light-asset original equipment manufacturer (OEM) model, outsourcing its vehicle production to JAC Motors. This freed up NIO to focus on its core competitiveness: technology development and customer experience—while mitigating the financial risks associated with building large-scale manufacturing facilities.

Apple is one of the most high-profile examples of a company adopting a distributed ecosystem—outsourcing production to Foxconn in Taiwan and China, and enabling the company to focus on its competitive advantages: design, software, development and marketing.

Professor De Meyer told CKGSB, "Apple was a very closed company when I started working there in 1989. It was difficult to know what they were doing in terms of R&D and they were running their company as a strictly controlled supply chain. By the launch of the iPhone in 2007, they realized they needed to work with hundreds of thousands of app developers. Apple had the idea to create an ecosystem of app developers who could solve the problems customers really cared about."

For De Meyer, Apple today is a company of two faces: one is hardware, which is a strictly controlled supply chain, and the other is software where it has developed an ecosystem of suppliers."Companies can have two different approaches depending on the conditions in which they are operating", he explained.

Ultimately, the decision between comprehensive and distributive models depends on a company's strategy, resources, and market conditions. Many successful companies, particularly in fast-moving industries, adopt a hybrid model—leveraging internal capabilities for critical functions while outsourcing non-core activities to external partners.

As companies scale, they often start with a more comprehensive approach and gradually shift toward a distributed model, selectively outsourcing elements of operations to external suppliers that can provide high levels of expertise and competitive advantages. Incorporating the right balance of internal and external ecosystems can help companies achieve the agility, efficiency, and innovation needed to scale in today's highly competitive global market.

Apple today is a company of two faces: one is hardware, which is a strictly controlled supply chain, and the other is software where it has developed an ecosystem of suppliers."

Arnoud De Meyer
Professor Emeritus of Operations Management, Lee Kong Chian School of Business, Singapore Management University

Harnessing AI and Digitalization to Transform Ecosystems

This paper has covered several strategies that affect the growth of an ecosystem in today's business landscape. In addition to adopting these strategies, companies must be prepared to face some of the external forces shaping today's business landscape, such as geopolitical headwinds, AI and digitalization, climate change, and changing demographics. This section focuses on AI and digitalization, exploring how companies can effectively navigate and respond to these external challenges.

AI and digitalization are vital driving forces shaping today's global ecosystems. CKGSB Dean's Distinguished Chair Professor of Information Systems, Sun Tianshu, explains that AI and large language models (LLMs) are continuously evolving, achieving breakthroughs. He emphasized that in the long run, the business model and industry competition of enterprises will be reshaped. "What we should think about more is how to amplify the role of technologies like Chat GPT and co-exist, co-create, and even co-evolve with them. This requires us to actively embrace these models and related tools and processes in future work and education, and reshape our work, business models, and education systems," he emphasizes.

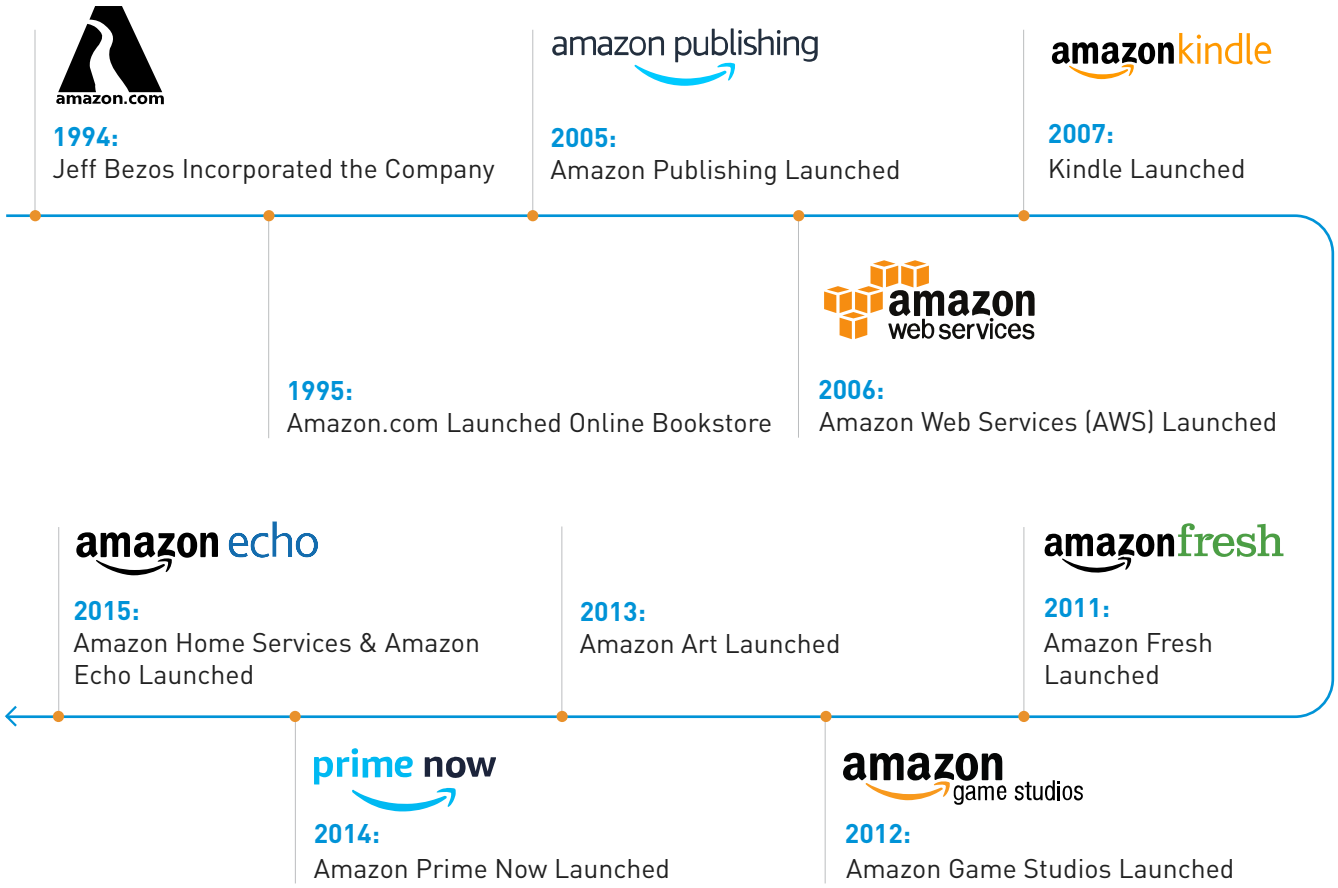
Furthermore, Professor Sun, who has advised companies such as Meta, Adobe and Alibaba, sees a stark difference between the US and China when it comes to pproaching digital innovation.

"In the US, innovation is often bottom-up," explains Professor Sun, "driven by product managers and engineers who interact directly with consumers. For example, at Facebook, innovations like the Newsfeed were developed by engineers working on the front-line business." He explains that Chinese companies often use a top-down approach, with centralized, strategy-driven innovation. This model has allowed firms like Alibaba and Tencent to experiment with new business models (such as mobile payments and social shopping), coordinating resources across multiple branches to drive large-scale innovations. This, however, doesn't mean entrepreneurs should only go with one way or the other. As leaders in their respective enterprises, entrepreneurs should be visionary, open-minded and risk-taking with embracing new technologies such as AI, while encouraging their team members to spearhead innovations in their daily work.

Chinese companies often use a top-down approach, with centralized, strategy-driven innovation."

Sun Tianshu
Dean's Distinguished Chair Professor of Information Systems, CKGSB

The Evolution of Amazon's Business Ecosystem



Professor Sun also sees another contrast between the digital ecosystems of China and the US, which is the hierarchical structure of valuations. "In the US you see SAAS companies which are unicorns or decacorns, with a tiered structure," explains Professor Sun. "Above AWS you have software platforms such as Adobe and Salesforce valued at >$100 billion; above these you have a group of data & software companies valued at >$10 billion; and at the top are a lot of startups that are unicorns valued at US >$1 billion, growing and thriving in the digital ecosystem," he notes. Moreover, Professor Sun notes that cloud computing in China is based on deployment on the private cloud, whereas in the US market, with leaders like Amazon Web Services and Microsoft Azure, the market is more focused on the public cloud. The public cloud model fosters innovation and efficiency, enabling the development of a tiered ecosystem where startups, mid-sized companies, and large enterprises coexist and collaborate seamlessly. In contrast, firms' preference and reliance on private cloud deployments leads to more localization in Chinese digital ecosystem. Private cloud solutions are often customized to specific industries or enterprises, allowing for tighter integration.

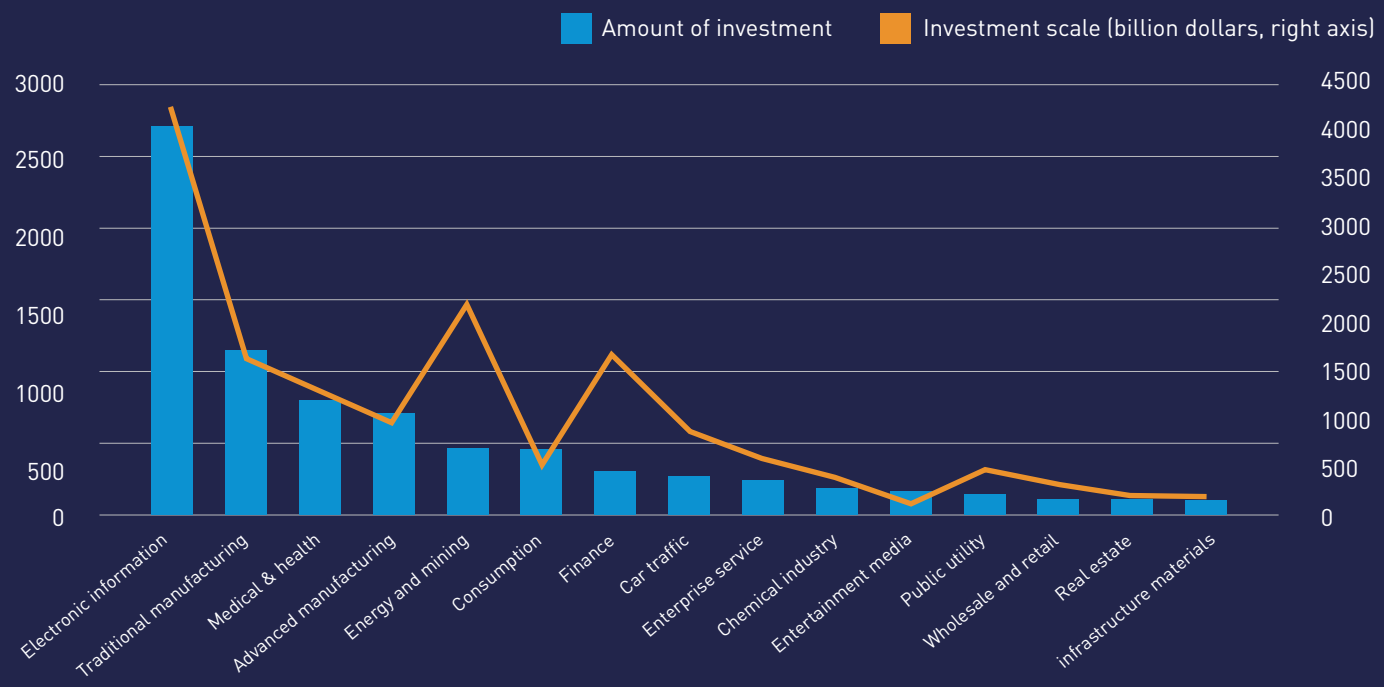
AI and digitalization are also profoundly reshaping today's investment landscape. According to Teng Bingsheng, CKGSB Professor of Strategic Management and Associate Dean for Strategic Research, startups today are no longer valued as much for 'mass entrepreneurship and

innovation' as they were in the past. Today, startups are valued for their technological capabilities and commercial scalability.

"The entrepreneurship ecosystem is now responding to these new demands presented by a rapidly changing digital economy," Teng explains. He observes that the once successful platform economy model – centered on building a strong business narrative, attracting investment, spending heavily on user acquisition, and aiming for an overseas initial public offering (IPO) – no longer works in today's environment. "Unicorns today need to adopt a more pragmatic approach to growth, as strategies driven by raising capital are becoming increasingly difficult to leverage," Teng explains that this trend reflects a slowdown in the growth of financing activities for unicorn companies worldwide, due to a combination of increasing global uncertainty, slower global growth, and geopolitical risks.

AI might be the biggest driver of transformation in entrepreneurial ecosystems today. As Professor Jon Liao explains, leveraging the power of AI at scale, is not always straightforward. "Today's environment is challenging for AI startups because, firstly, computing power is extremely limited. Regular AI startups simply do not have the same computing power as digital giants like Amazon and Meta, so they need to think about to what extent they can leverage third-party capabilities to extend beyond their value chain." He notes that these startups face a similar challenge around data. It is inconceivable that AI-based startups can compete with incumbent giants for the rich seams of data they require.

Overview of Investment and financing of major industories and major sub-tracks in China's VC/PE market in 2023



Source: China Investment Research Institute

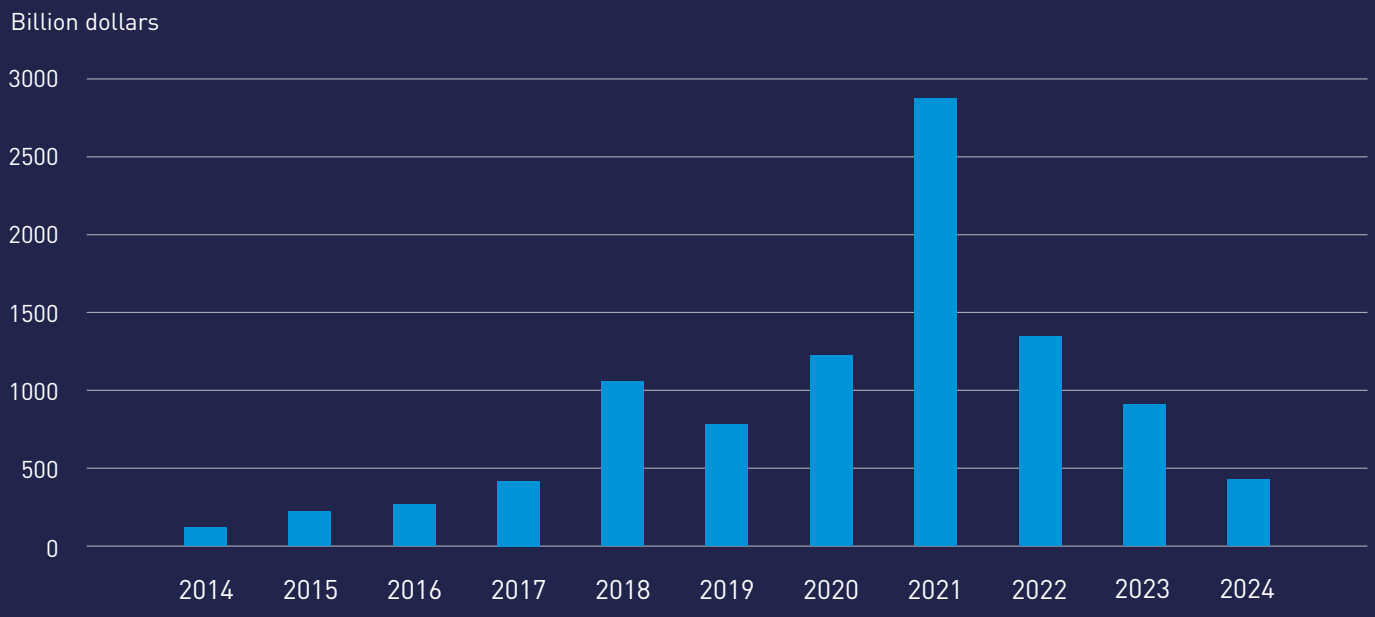
This is why, Liao predicts, AI-based startups are increasingly specializing in two areas: firstly, industry-specific solutions, such as AI for pharmaceuticals, AI for marketing, and AI for retail; and secondly, AI for edge computing.

Entrepreneurs in traditional industries should consider leveraging these AI-minded peers for more effective partnerships along their supply chain, or incorporating AI as a strategic pivot to drive their own transformation.

The once successful platform economy model—centered on building a strong business narrative, attracting investment, spending heavily on user acquisition, and aiming for an overseas initial public offering (IPO)—no longer works in today's environment."

Teng Bingsheng Professor of Strategic Management and Associate Dean for Strategic Research, CKGSB

Changes in the financing amount of existing unicorns around the world in the past ten years



Source: Crunchbase

Data constraints further complicate the challenges for startups leveraging AI. "AI-based startups need data from beyond their industry's boundaries," he says. "Take, for instance, an AI application for a mom-and-pop store. They need huge amounts of data from within the ecosystem like pricing and sourcing; but they also need broader ecosystem data, such as customer demographics, local purchasing behavior, and optimal store locations." That's why the concept of ecosystem is essential when a company is looking to scale up in an AI-driven world.

LLMs are transforming industries by enabling companies to automate their workflows and scale more efficiently. CKGSB Dean's Distinguished Chair Professor of Marketing, Sun Baohong, explains that while general-purpose language models like OpenAI's GPT-4 have opened up significant opportunities for scaling, the future lies in enterprise and industry focused models—specialized AI systems trained on a company's data or more broadly on industry-specific datasets.

Professor Sun Baohong explains, "While models like GPT-4 showcase impressive capabilities across various domains, they often fail to deliver precise, context-specific results. Their breadth makes them generalists rather than specialists, which limits their utility in scenarios demanding highly customized outputs. As a result, many companies remain hesitant to adopt them, citing concerns over data confidentiality and security. Some enterprises have outright banned the use of GPT-4 due to the sensitive nature of their proprietary data. In contrast, expert models—tailored to specific industries or enterprise needs—are gaining traction. These models provide targeted, precise solutions that address niche challenges," says Professor Sun.

Huawei's Cloud Pangu models offer a fascinating example of how LLMs can increase efficiency across business ecosystems. Not only do they consist of foundational models (L0), including natural language processing, computer vision, multimodal, prediction and scientific computing, Huawei also built another layer (L1) consisting of industry-tailored models. These models are trained on open industry datasets, including models for government, manufacturing, mining and meteorology. Huawei developed another layer (L2) on top—pre-trained for specific tasks within industries—such as lead compound screening, and typhoon trajectory screening.

"Startups simply do not have the same computing power as digital giants like Amazon and Meta; so they need to think about to what extent they can leverage third-party capabilities to extend beyond their value chain."

Jon Liao

Professor of Managerial Practice, Strategy, Innovation and Entrepreneurship

Navigating Ecosystems Amid Geopolitical Shifts

Geopolitics is another fundamental force shaping today's ecosystems, with a series of shifts making it much harder for companies to scale globally—from the US to China, from China to the US, and elsewhere. "The most difficult part for scaling companies is the massive variation that exists in global regulations," says CKGSB Professor Sun Tianshu.

Professor Sun Tianshu observes that recent geopolitical tensions across the globe are placing significant pressure on Chinese tech companies, particularly in their attempts to expand internationally. "As a result of geopolitical pressures on Chinese companies, you see a very strong effect of '*Neijuan*' or intense domestic competition among platforms in China. Chinese platforms are forced to diversify aggressively across industries," he explains.

Professor Sun notes that platforms like ByteDance and Kuaishou, both video sharing platforms, are also competing with e-commerce platforms like Alibaba and JD.com. Similarly, ByteDance and Tencent are fierce rivals in advertising and gaming, while Meituan and DiDi overlap in ride-sharing and food delivery. In comparison, he observes how giants such as Meta and Amazon operate at a large scale but rarely compete directly. Moreover, Professor Sun notes that US platforms have successfully embraced globalization, benefiting from lower expansion costs and a first-mover advantage.

For many companies, globalization is an active and passive strategic option. Professor Teng found through his research that unicorn companies, given their stronger market status, show more initiative to explore the global market, whereas traditional manufacturing enterprises are more reactive to globalize their business when they relocate part of their production capacity to another country. In the long run, it is key for startups to build a strategic niche in the global ecosystem. As startups identify disruptive technologies with growth prospects and gradually incorporate them in their business models to scale up, it is important to observe which models can form competitive advantages.

According to Professor Jon Liao, when it comes to headwinds like global decoupling, we often talk about adapting our business models, but this is not always the best approach. He explains, "In the startup environment, the whole process is fluid: it's not about adaptation; it's about an evolving business model that's in the DNA of the startup to begin with."

"The most successful company that can go through many cycles is not one that focuses on adaptation, but one that is focused on what will remain unchanged," he explains. Professor Liao cites Costco as an example—"From day one, Costco focused on something that remained unchanged—what I call the strategic constant of its supply chain. Costco became extremely competitive with its supply chain, regardless of evolving trends in e-commerce or AI; and consequently,

the company has been able to weather many different cycles."

"We always ask the question: what will change over the next few years. What we should also be asking is: what will remain unchanged for the next ten years? This is what I call a long-term perspective. It goes back to Elon Musk's first principle: what is the fundamental of the company that will drive value for its customers? There is a reason why Musk built the electric car in 2004-2005—he knew an energy crisis would be coming. The same applies to AI. What will remain unchanged is the value created for customers. This will enable your startup to achieve long-term, sustainable growth."

Summary

This white paper underscores a fundamental truth of today's business environment: no company thrives in isolation. As the world becomes increasingly interconnected, businesses must embrace ecosystem thinking—integrating with partners, leveraging external capabilities, and co-creating value—to scale effectively and adapt to external forces. The insights gathered from CKGSB's faculty and case studies demonstrate that ecosystems are now the defining strategy for success in a complex, competitive landscape.

CKGSB Dean Li Haitao points to the evolution of competition—no longer between individual firms but between ecosystems. This shift requires companies to strategically align themselves within networks of suppliers, customers, governments, and industry partners. Companies like JD.com highlight how ecosystems can be vertically integrated to retain control and enrich customer experiences, while models like ARM demonstrate the power of orchestrating loosely coupled networks. In each case, the ability to integrate—whether upstream, downstream, or across industries—has proven vital for scaling efficiently and achieving sustainable growth.

The choice between comprehensive and distributed supply chain models is equally pivotal. Companies like BYD leverage in-house capabilities for rapid innovation and operational control, while others, such as NIO and Apple, thrive by outsourcing production and focusing on their core competencies like design, customer experience, and technological innovation. For many firms, a hybrid approach emerges as the most practical, allowing them to maintain critical internal functions while leveraging external expertise to remain agile and competitive.

At the heart of every successful ecosystem lies the customer. Professor Li Yang emphasizes that emotional connections and community-building are essential for scaling up and retaining loyalty. Hao Wang Shui demonstrates how targeting specific consumer needs, fostering brand communities, and strategically positioning products in high-experience channels can drive intimacy and growth. In a competitive marketplace, companies that prioritize customers at the center of their ecosystems are better positioned to adapt to shifting demands and maintain their competitive edge.

Amid these ecosystem strategies, external forces such as AI, digitalization, and geopolitical shifts are reshaping the business landscape. Professors Sun Tianshu and Sun Baohong highlight how digital ecosystems differ between China and the US, offering lessons in adaptability and innovation. Geopolitical shifts add another layer of complexity, particularly for companies attempting to scale globally. Professor Jon Liao's perspective provides a key takeaway: companies must focus not on short-term adaptation, but

on identifying the long-term constants that drive customer value. By anchoring themselves to unchanging fundamentals—what Elon Musk refers to as "first principles"—companies can weather external challenges, from geopolitical headwinds to technological disruptions.

Ultimately, thriving in today's ecosystems requires businesses to adopt a long-term perspective, focus on customer-centric strategies, and choose the right balance between internal capabilities and external collaboration. Whether a company scales through industrial alignment, digital ecosystems, or global partnerships, the ability for founders, entrepreneurs, and business leaders to think and operate as part of a broader ecosystem will determine its success. In a world defined by complexity and change, companies that harness the power of ecosystems will not only scale efficiently, but also achieve sustainable, long-term growth.

Acknowledgements

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About CKGSB

Established in November 2002, Cheung Kong Graduate School of Business (CKGSB) is China's first privately-funded and research-driven business school. The school aims to cultivate transformative business leaders with a global vision, sense of social responsibility, innovative mindset, and ability to lead with empathy and compassion. Today, CKGSB stands apart for its world-class faculty, research excellence, original insights and unparalleled alumni network.

Most of our 55 world-class professors held tenured positions at world-leading universities – such as University of Chicago, Columbia University, Darden School of Business, University of Michigan, MIT, Wharton and Yale - prior to joining CKGSB. They are uniquely positioned to understand and interpret digital transformation across the US, China and Asia, and they combine management theory with deep industry experience.

Since its establishment, CKGSB has focused on companies' top decision-makers, such as chairmen and CEOs of the most influential companies and iconic entrepreneurs. As a result, more than half of our 23,000 alumni today are at the CEO or chairman level and, collectively, they lead one fifth of China's most valuable brands. Over 4,000+ global senior executives at multinational companies have also chosen to study at CKGSB, so as to understand and navigate through the global complexities brought by technological disruptions and geopolitical instability.

Innovating beyond the traditional boundaries of business school, CKGSB is the first business school, since 2015, to offer programs specifically designed for unicorn and soon-to-be-unicorn founders. CKGSB aims to build a global ecosystem for the next generation of unicorns with a focus on global responsibility, social purpose and long-term perspective. Through our programs, offered in partnership with companies like Alibaba, Amazon, Baidu, Bytedance, JD.com and Tencent, as well as world-leading schools like Columbia, Stanford and Johns Hopkins, we have nurtured 1,188 founders of companies with at least Series A funding, including the founders of 151 unicorn companies, 41 of which are listed on CB Insights (2017-2022).

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