



Digitalization: Driving Competitive Advantage

Emerging Opportunities for Digital
Transformation Across Industries

Abstract

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Foreword

Discovering the Second Mountain of Corporate Sustainability in the Digital Era

As the wave of the digital era surges forward, businesses are faced with dynamic and evolving challenges. Macro trends such as aging populations, declining birth rates, geopolitical instability, and supply chain vulnerabilities add layers of uncertainty and trials for enterprises. In this context, digital transformation has become key to building resilience and achieving sustainable operations.

In the conclusion, we propose strategies for digital transformation aimed at enhancing the resilience and efficiency of existing industries, and leveraging competitive advantages in the digital sector.

This publication is divided into four parts:

1. Global Perspective: Focuses on future scenarios and international trends.
2. Rooted in Taiwan: Highlights Taiwan's strengths and foundation in digital transformation, showcasing the opportunities and potential in this domain.
3. Policy Guidance: Outlines Taiwan's policies and resources related to digital transformation, providing readers with concrete guidance.

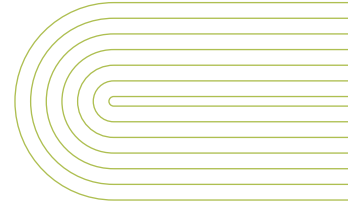


Chapter 1

Global Perspective

Global Digital Transformation Trends

In the post-pandemic era, companies are accelerating their digital transformation efforts to reach new stages of development. Against this backdrop, businesses should integrate digital transformation strategies to create new positioning, value, and business models, enabling them to navigate uncertainties and secure sustainable growth.



Proactive Planning to Strengthen Industry Resilience

As industries strive for sustainable operations and national competitiveness, they are constantly confronted with new challenges. Geopolitical tensions, which can shift investment landscapes, and unanticipated risks such as natural disasters and pandemics pose significant threats to both nations and industries. In the face of these external challenges, it is essential for countries and businesses to strengthen their resilience proactively.

The COVID-19 pandemic has significantly accelerated digital transformation investments worldwide.

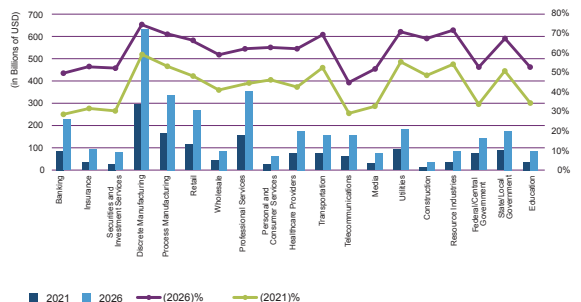
According to the 2023 World Digital Competitiveness Ranking released by the International Institute for Management Development (IMD) in Lausanne, Switzerland, the top five countries are the United States, the Netherlands, Singapore, Denmark, and Switzerland. These leading nations in digital transformation excel in Knowledge, Technology, and Future Readiness, showcasing outstanding performance in these critical areas.

Ranking	United States	Netherlands	Singapore	Denmark	Switzerland	Taiwan
Ranking	1 *	2	3	4	5	9
Knowledge	2	7	3	9	1 *	18
Technology	6	5	1 *	7	10	3
Future Readiness	2	4	10	3	6	7

Source: IMD's 2023 World Digital Competitiveness Ranking, compiled by the Editorial Department.

Accelerated Digital Investment

According to the "Worldwide Digital Transformation 2022 Predictions" released by IDC, global spending on digital transformation is expected to reach 3.4 trillion USD by 2026. The five-year compound annual growth rate (CAGR) for digital transformation investments is projected at 16.6%.



Note: The percentage here refers to the digital transformation adoption rate
(Source: 2023 Worldwide Digital Transformation Spending Guide).
Source: IDC, compiled by the Editorial Department



The industries with the largest increases in investment include traditional manufacturing and professional services. Other sectors, such as securities and investment services, banking, and healthcare, are also expected to experience stable growth, reflecting a broad commitment to digital transformation across various industries.

Technology Companies Dominate Global Market Value Rankings

In 2023, technology companies dominated the top 10 global market value rankings, with more than half of the companies in the top positions coming from the tech sector. As digital transformation trends continue to gain momentum, technology giants are expanding their investments, driving growth in related supply chains. This highlights the critical role technology plays in everyday life, its potential to transform industries, and thus creating a new global economic paradigm.

Ranking	Company	Market Value (USD)	Industry
1	Apple	\$ 2.88 trillion	Technology
2	Microsoft	\$ 2.47 trillion	Technology
3	Saudi Aramco	\$ 2.07 trillion	Oil & Gas
4	Alphabet (Google's parent company)	\$ 1.57 trillion	Technology
5	Amazon	\$ 1.29 trillion	Technology
6	Nvidia	\$ 1.01 trillion	Technology
7	Tesla	\$791.80 billion	Automotive
8	Meta Platforms	\$695.31 billion	Technology
9	Visa	\$467.88 billion	Financial Services
10	LVMH	\$440 billion	Luxury Goods

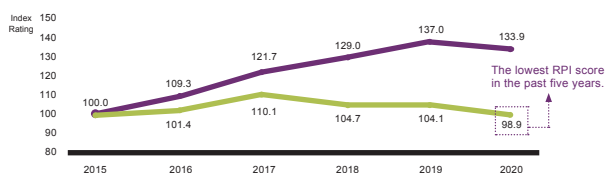
Source: Statista, compiled by the Editorial Department

The Rise of e-Commerce and its Impacts

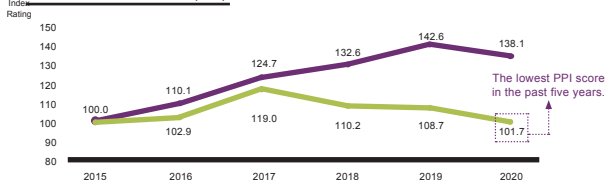
The shift in consumer behavior has prompted the retail industry to rapidly adopt digital transformation. IDC's analysis of the financial performance of the top 200 global retailers from 2015 to 2020 reveals the critical impact of digital transformation. Companies that have adopted digital transformation saw their Revenue Performance Index (RPI) increase from a baseline of 100 to 133.9 in 2020, while their Profit Performance Index (PPI) rose to 138.1. In contrast, companies that did not undergo digital transformation experienced a decline in their RPI to 98.9, with their PPI barely maintaining at 101.7. This clearly demonstrates the importance of digital transformation in driving profitability and revenue growth in the retail sector.

Revenue and Profitability of Digital Retail have Shown Consistent Annual Growth

Revenue Performance Index (RPI)



Profit Performance Index (PPI)



Source: IDC, compiled by the Editorial Department

Digital Non-Digital



Sustainable Growth Requires Continuous Adaptation

Governments and global enterprises are vigorously embracing digital transformation for three main reasons: changing consumer habits, demographic shifts, and external environmental challenges.

A new consumer market has emerged, with digital natives now forming the core of this landscape. Companies must acknowledge the growing reliance of this generation on digital technologies and respond appropriately by adapting their strategies to align with the preferences and expectations of this tech-savvy demographic.

According to United Nations projections, the proportion of the global population aged 65 and above is expected to increase from 10% in 2022 to 16% by 2050. The key to enhancing productivity in the face of this demographic shift lies in digital transformation.

Geopolitical instability, climate change, resource sustainability, and pandemics are all testing the resilience of industries worldwide. Through digital transformation, companies can not only strengthen their competitive advantages but also develop "digital resilience," enabling them to recover swiftly from adversity and maintain their competitiveness.



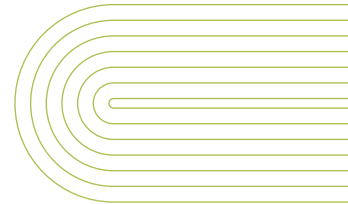
To thrive in today's unpredictable environment, global companies must cultivate digital resilience alongside leveraging their industry strengths. This resilience is essential for withstanding various challenges and ensuring sustainable growth.



Rooted in Taiwan

Finding Opportunities Amidst Challenges

The economic landscape is undergoing rapid and profound changes. Consumer habits have already shifted significantly. Taiwan, with its strong foundation in technological development, is well-poised to navigate these changes and meet the next wave of economic challenges head-on.



Taiwan's Digital Transformation Journey

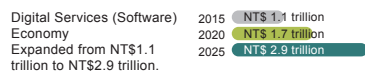
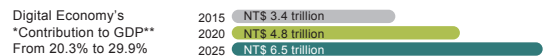
Since the 1990s, Taiwan has been proactive in developing its digital infrastructure, starting with the National Information Infrastructure (NII) plan, followed by the 2017 Digital Nation and Innovative Economic Development Program (DIGI+). These initiatives have transitioned industries from automation to smart technologies, focusing on seven key emerging technologies: artificial intelligence, data science, AR/VR, Internet of Things, 5G broadband, cybersecurity, and semiconductor development. These advancements are driving innovation across agriculture, manufacturing, and service sectors.

In addition to the ongoing DIGI+ program, Taiwan is enhancing industry innovation and digital transformation through digital governance and regulatory alignment. Complementary initiatives such as the "Taiwan AI Action Plan" and the "Taiwan 5G Action Plan" leverage the country's strengths in semiconductors and research talent. These efforts, combined with the 5+2 Industry Innovation Plan, are building new industry models and progressively realizing the policy goal of a "Digital Nation, Smart Island."

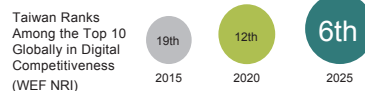
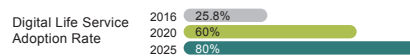
As global economic conditions slow market demand and technology continues to advance, alongside trends such as the push for net-zero emissions, changing consumer behaviors, and labor shortages, presents significant challenges. For SMEs, which are constrained by scale, resources, and traditional operating models, accelerating digital transformation is not just an option but a necessity for survival and growth.

DIGI+ Achieving Record-Breaking Performance Year After Year

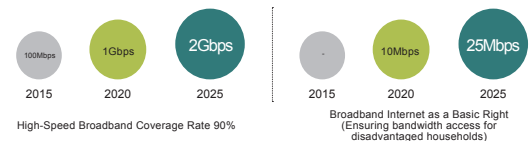
Innovative Digital Economy



Active Online Society



Robust Broadband Environment



Note*: Scope of the Digital Economy: Includes the gross production value of digital manufacturing industries (such as electronic components and ICT digital product manufacturing) and digital service industries (including ICT product sales and equipment repair services, media, telecommunications, and information services). It also encompasses e-commerce transaction volumes, including online retail (B2C), agricultural e-commerce, online finance, online travel, and digital learning.

Note***: 2018-2025 GDP Forecast is estimated based on a compound annual growth rate (CAGR) of 3.0%. Source: Compiled by the Executive Yuan Board of Science and Technology, compiled by the Editorial Department.



In March 2021, the Executive Yuan passed a reorganization bill establishing the Ministry of Digital Affairs, demonstrating the government's commitment to accelerating the nation's digital transformation. In the digital era, the emergence of new and emerging digital economies, in response to changing business environments, particularly in sectors such as the sharing economy, data economy, experience economy, circular economy, and the Internet of Things (IoT) economy, have significantly impacted and revitalized traditional economic activities.

Taiwan's Robust Digital Competitiveness

Taiwan possesses robust digital competitiveness. According to the IMD's "2023 World Digital Competitiveness Ranking," Taiwan ranks 9th out of 64 major countries and economies worldwide. Additionally, Taiwan has achieved top-three global rankings in seven individual indicators, highlighting its exceptional performance in the digital realm.

Taiwan Ranked 9th Globally in the 2023 World Digital Competitiveness Rankings,

Ranking	Country	Score
1	United States	100
2	Netherlands	98.1
3	Singapore	97.4
4	Denmark	96.93
5	Switzerland	96.24
6	South Korea	94.8
7	Sweden	94.12
8	Finland	94.05
9	Taiwan	93.73
10	Hong Kong	93.64
11	Canada	91.68
12	United Arab Emirates	88.86
13	Israel	87.7
14	Norway	85.96
15	Belgium	85.95
16	Australia	85.28
17	Iceland	84.94
18	Estonia	84.77
19	China	84.41
20	UK	83.12
21	Ireland	81.48
22	Austria	81.1
23	Germany	80.86
24	Czech Republic	79.42
25	New Zealand	79.08
26	Luxembourg	78.73
27	France	78.65
28	Lithuania	77.23
29	Qatar	77.01
30	Saudi Arabia	76.99

Source: IMD, compiled by the Editorial Department

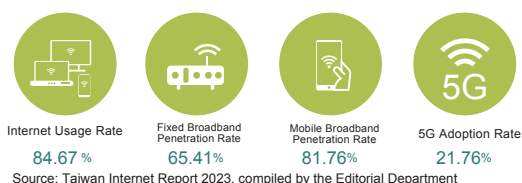
Taiwan has achieved the top global ranking in "companies' proficiency in using big data analysis to support decision-making." This reflects the country's economic structure, which is predominantly composed of SMEs that are agile and quick to respond to changes. The government's subsidies for digital transformation across various industries, as well as initiatives promoting cloud computing and data analytics, have proven effective in driving technological innovation and enhancing competitiveness.

Solid Digital Infrastructure to Support Industry Upgrading

Taiwan is actively strengthening its domestic digital infrastructure. According to the National Development Council's "Smart Taiwan Program," the government allocated NT\$43.98 billion for the Forward-Looking Infrastructure Development Program 1.0 (2017 - 2020) and plans to invest an additional NT\$95.4 billion in Program 2.0. These funds will be used to advance network infrastructure and promote industry digital transformation. Furthermore, NT\$49 billion has been designated for 5G development, focusing on widespread adoption, cross-sector applications, and the localization of equipment, with 5G as the driving force behind Taiwan's digital transformation.

Taiwan's strengths in areas such as "workforce diversity," "industry clustering," "patent innovation," and "R&D expenditure" position the country as an innovation leader. With a robust digital infrastructure, Taiwan is well-equipped to support SMEs facing the challenges of digital transformation, enabling them to connect with international markets and collaborate with global enterprises, ultimately driving industry transformation and upgrading.

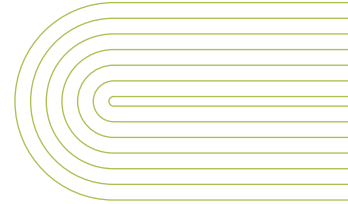
Taiwan's Strong Dependence on the Internet



Policy Guidance

Digital Transformation Across Industries

In the aftermath of the COVID-19 pandemic, industries across Taiwan have faced significant digital transformation challenges. To help businesses overcome these barriers, the government has developed a range of initiatives to lower transformation thresholds, enabling businesses to move forward and thrive in the digital era.



Cultivating Digital Talent

As industries across all sectors actively engage in digital transformation, the availability of talent and resources becomes pivotal to success.

To address the digital talent gap, the Ministry of Digital Affairs launched the “Cloud Generation Industry Digital Transformation Program,” targeting non-IT university graduates and job seekers. Through 30 hours of foundational training and the “Digital Youth T Ambassador” initiative, participating companies offer 20-week internships to nurture young digital talent, equipping them with essential skills for the workforce.

Ministry of Digital Affairs is committed to nurturing the next generation of digital talent through the Digital Youth T Ambassador program



Source: 2023 Digital Youth T Ambassador Program, compiled by the Editorial Department (2021 - 2023)

Enterprises Embrace Digital Transformation with Government Support

The government fully supports digital transformation efforts by positioning TCloud Marketplace as the initial step in Taiwan's digital transformation journey. Businesses can complete the entire process online, from application, matching, procurement, and implementation to verification, significantly

reducing paperwork and enhancing administrative efficiency.

The TCloud Marketplace offers a quick consultation service via phone. If businesses' needs cannot be resolved through initial consultation, they are matched with experts in specific fields for online consultations, helping them overcome the challenges they face during digital transformation.

Additionally, TCloud Marketplace proactively reaches out to potential businesses. By analyzing backend data, the platform identifies companies with high order volumes, significant self-funded investments, a smaller number of industry members, or unique purchase plans. Through targeted interviews, TCloud collects and studies diverse transformation cases from various industries to better understand their needs. Through these varied business case studies, TCloud Marketplace showcases the benefits of digital transformation on organizational structure, processes, and services, enhancing the drive for digital transformation across industries.

Beyond cloud resources, various government agencies introduce numerous guidance programs and initiatives annually to support businesses and professionals in swiftly leveraging government-provided resources and tools. These agencies consolidate and update information on support resources to make it easy for businesses and the public to find suitable solutions.



The TCloud Marketplace initiative is helping businesses across all sectors take their first steps toward digital transformation.

Empowering Digital Transformation Across Industries

More than **58,000** Applications Submitted

Businesses across all industries and regions have actively applied for digital solution points and implemented transformation plans. Moving forward, the focus will be on strengthening the following key areas:

- The initiative now includes long-term care institutions and clinics.
- IT service providers and expert consultants are being deployed to remote regions, extending the reach of digital transformation support to underserved areas.

Wide Variety of Effective Solutions

Over **2,000** Cloud Solutions Available to Date

The platform has established rigorous listing criteria to ensure high-quality digital application services, helping businesses select the best digital solutions for their needs.

- Compliance with six core technical attributes: high concurrency, extensive computation, uninterrupted service, flexible resource allocation, cloud load balancing, and data/personal information protection.
- Service Level Agreement (SLA): Requirements include system availability, customer support hours, etc.



- ✓ Cross-unit coordination enables applications to be completed in just 10 minutes.
- ✓ Development of 8 Industry-Specific Guidelines
- ✓ In 2022, over 130 successful case studies were compiled, and in 2023, more than 170 case studies were published.
- ✓ The initiative has provided online expert consultations to 905 companies, including 1,528 support cases.
- ✓ By selecting the right digital tools, businesses have collectively increased their revenue by NT\$2.6 billion.

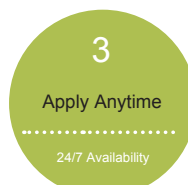


Cloud-Based Office Collaboration	e-Commerce Platform	Multiple Online Payment Options	Production Management
Cloud-Based Customer Service	e-Invoicing	Inventory Management	Financial and Accounting Management
Information Security	Carbon Emission Calculation & Analysis	Marketing Technology (Martech)	Energy Management System (EMS)
Enterprise Resource Planning (ERP)	Customer Relationship Management (CRM)	Human Resource Management (HR)	Cloud-Based Cash Register (POS)

Source: Administration for Digital Industries, Ministry of Digital Affairs, (July 2021–December 2023)

Four Key Features for Streamlined Applications

The streamlined procedure takes just 10 minutes to complete, with fully digital application and verification, making it convenient, paper-free, and eco-friendly.



Source: Administration for Digital Industries, Ministry of Digital Affairs; Compiled by the Editorial Department

Conclusion

In Uncertain Times, the Most Certain Solution



Digital transformation is manifested in the concrete strategies of the knowledge economy. From small street food vendors in the service industry and logistics companies delivering goods, to agriculture, forestry, livestock, fishery, and high-tech industries, every sector that embraces digital transformation will continuously explore solutions to address specific industry challenges.

Moving forward, the government will leverage policies to support digital transformation through four key processes: Standardization, Scaling Up, Internationalization, and Branding. This will involve strengthening existing cloud solution platforms to guide industries towards accumulating knowledge capital and achieving digital transformation in a systematic and autonomous manner.

Standardization

Encourage businesses to adopt public or hybrid cloud solutions to establish a foundational level of cybersecurity protection. At the same time, ensure that all solutions on the platform comply with security certifications such as ISO 27001 and ISO 19086. This approach guarantees that the quality of cloud-based digital transformation solutions procured by enterprises is reliable and secure.

Scaling Up

The concept of “scaling up” involves expanding the reach of digital transformation to a wider range of entities, including businesses, public sectors, and various industries. This expansion goes beyond SMEs and registered businesses to encompass social innovation organizations, cooperatives, long-term care facilities, clinics, and rural enterprises. By doing so, it promotes continuous evolution among organizations with diverse operational goals across Taiwan.

Internationalization

In addition to developing overseas markets through software distribution, Taiwan’s digital service industry can collaborate with international Taiwanese businesses to form strategic alliances. These alliances can serve as key intermediaries, facilitating connections between companies and international markets, including financial and logistics channels. This approach not only enhances market penetration but also creates synergies that amplify overall effectiveness.

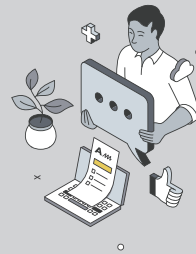
Branding

Building up and branding Taiwan’s digital transformation services helps increase recognition both domestically and internationally. A strong brand presence not only accelerates the adoption of these services within Taiwan but also raises their visibility in global markets, paving the way for international expansion.



Seize the Moment, Reach Greater Heights

Innovation not only solves today's challenges but also equips businesses with the agility and resilience to face the uncertainties of tomorrow. As the government rallies the nation's efforts to steer the grand vessel of "industry digital transformation," guiding businesses toward new digital horizons and forging a resilient, future-ready economy, shouldn't you, as an SME owner, seize this pivotal moment? Rise to the occasion, ride this transformative wave, and redefine success—laying the foundation for a legacy that thrives through generations!



For enterprises, seizing the opportunity for digital transformation can pave the way for future growth and prosperity.

Digitalization: Driving Competitive Advantage

Abstract

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