During the process of digital transformation (DX) in domestic enterprises and organizations, many of these stagnate at the verification stage. This publication acknowledges the challenges of stagnating enterprises and organizations, as well as the characteristics of advanced enterprises and organizations that develop DX and promote company-wide digital business, and through IDC survey results, outlines the points that enterprises and organizations should be aware of when aiming to increase digital business.

Overcoming Stagnation with Advanced Technology and Ecosystems: The Approach to Digital Business

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Market Overview

Digital Business Development of Enterprises and Organizations Displaying Stagnation Tendencies

IDC annually conducts the "Domestic Digital Business Support Service Demand Survey" for domestic enterprises and organizations with over 1,000 employees to track trends in domestic enterprise digital business and usage of various support services. This survey annually reviews the digital transformation (DX) efforts of enterprises and organizations and the progress of digital business (DB) initiatives in six separate phases, from the "information gathering and consideration phase" to the "continued initiative after business integration phase." Figure 1 shows the results of this survey in order from 2019 to 2024. This shows that the percentage of responses indicating "full-scale business adoption" and "continued initiative after business integration," which displayed a steady increase from 2019, did not change significantly from 2023 to 2024, suggesting that some enterprises' digital business initiatives may be stagnating. It is particularly noteworthy that enterprises in the phase of a "1-3 month Proof of Concept (POC)" or "post-POC return on investment assessment" totaled 36.4% in 2024, remaining almost equal to the previous year. This suggests the existence of enterprises and organizations that reach a standstill when the expected return on investment for the scale-up of POC initiatives is not generated.

AT A GLANCE

KEY STATS

Some domestic enterprises and organizations show a trend of stagnation in digital business transformation. A wide range of solutions is essential, including business problem solutions and the strengthening of ecosystems.

KEY TAKEAWAY

Following the model of advanced enterprises, proactive utilization of emerging technology and effective use of external resources are essential. In the "Digital Business Era," there is an increasing need for the creation and development of ecosystems to tackle a wider range of solutions to industrial/social issues through external collaboration.

Challenges of "Stagnating" Enterprises and Organizations

What, then, are the challenges faced by "stagnating" enterprises and organizations in regard to promoting a DX/DB initiative? Figure 2 shows the combined results of an inquiry into the main challenges of a DX/DB initiative, separating a "1-3 month Proof of Concept (POC)" or "post-POC return on investment assessment" (mid- or post-POC assessment phase) enterprises, and "full-scale business adoption" or "continued initiative after business integration" (past full-scale business adoption phase) enterprises. Here we see that challenges for enterprises past the full-scale business adoption phase are concentrated in "lack of leadership personnel," in contrast with mid- and post-POC return on investment assessment enterprises, which face a wide range of challenges including "lack of company or group collaboration," "lack of managerial level understanding or leadership," "lack of insight into data analysis or AI," "unpredictable business model/profitability," and "inability to collaborate or partner with external parties." For enterprises stagnating in the POC phase to be able to overcome this and strive for a full-scale digital business transformation, we believe what is necessary is not only to resolve the lack of leadership personnel, but also to address a wide range of issues through a common solution, such as developing a deeper understanding at a managerial level, building business models to solve issues, enhancing

ecosystem approaches through internal and external organizational collaboration and partnering, or strengthening the ability to utilize data analysis and AI.

1: *DX/DB Initiatives in Domestic Companies with Stagnation Tendencies*

Q *How far has your company progressed with DX/DB initiatives?*

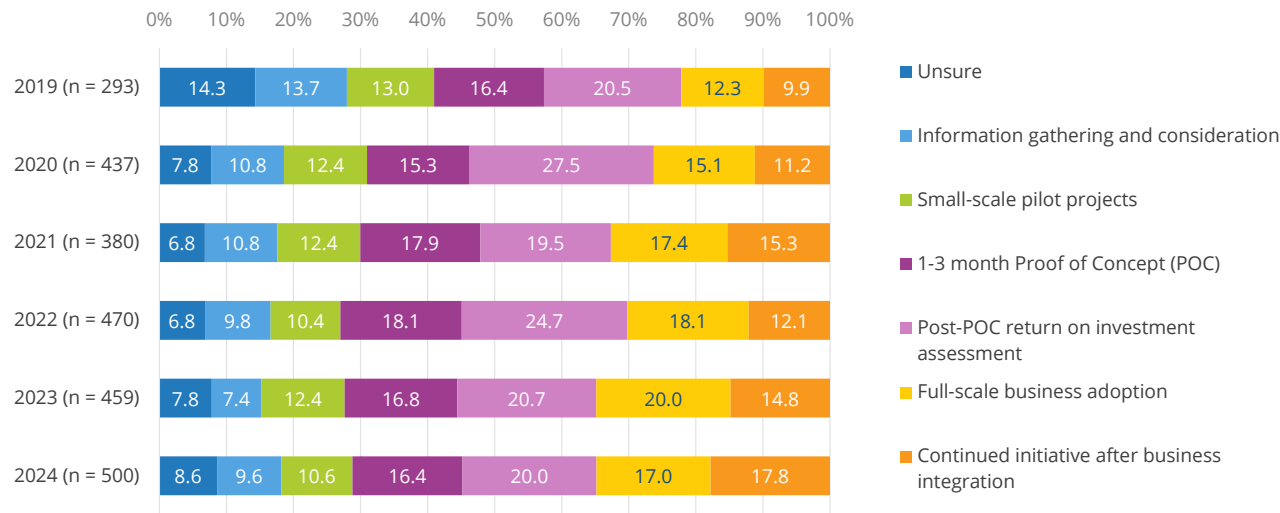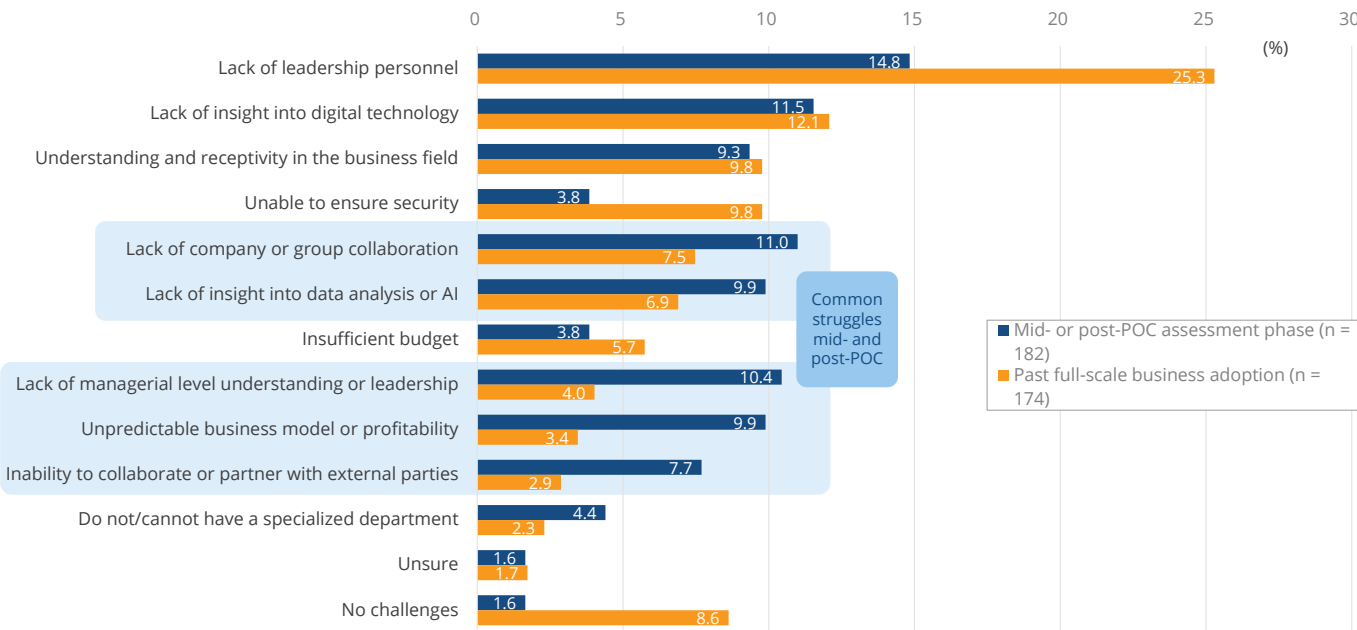|	Unsure	Information gathering and consideration	Small-scale pilot projects	1-3 month Proof of Concept (POC)	Post-POC return on investment assessment	Full-scale business adoption	Continued initiative after business integration
2019 (n = 293)	14.3	13.7	13.0	16.4	20.5	12.3	9.9
2020 (n = 437)	7.8	10.8	12.4	15.3	27.5	15.1	11.2
2021 (n = 380)	6.8	10.8	12.4	17.9	19.5	17.4	15.3
2022 (n = 470)	6.8	9.8	10.4	18.1	24.7	18.1	12.1
2023 (n = 459)	7.8	7.4	12.4	16.8	20.7	20.0	14.8
2024 (n = 500)	8.6	9.6	10.6	16.4	20.0	17.0	17.8

Figure note
• Created based on *2024 Domestic Digital Business Support Service Demand Survey*, IDC #JPJ50709424, March 2024

Source: IDC Japan, May 2024

FIGURE 2: *Challenges for "Stagnating" Enterprises and Organizations*

Q *What is the greatest challenge concerning DX/DB initiatives for your company?*

Challenge	Mid- or post-POC assessment phase (n = 182)	Past full-scale business adoption (n = 174)
Lack of leadership personnel	14.8	25.3
Lack of insight into digital technology	11.5	12.1
Understanding and receptivity in the business field	9.3	9.8
Unable to ensure security	3.8	9.8
Lack of company or group collaboration	11.0	7.5
Lack of insight into data analysis or AI	9.9	6.9
Insufficient budget	3.8	5.7
Lack of managerial level understanding or leadership	10.4	4.0
Unpredictable business model or profitability	9.9	3.4
Inability to collaborate or partner with external parties	7.7	2.9
Do not/cannot have a specialized department	4.4	2.3
Unsure	1.6	1.7
No challenges	1.6	8.6

(%)

Common struggles mid- and post-POC

Figure note
• Created based on *2024 Domestic Digital Business Support Service Demand Survey*, IDC #JPJ50709424, March 2024

Source: IDC Japan, May 2024

Characteristics of Advanced Enterprises and Organizations

In contrast, what are the characteristics of an advanced enterprise or organization that has overcome these kinds of challenges and has seen progress in full-scale business adoption and digital embedding into business? By comparing the results of "mid- or post-POC assessment phase" enterprises and organizations with those past the "full-scale business adoption phase," this survey reveals characteristics displayed by the latter.

» **Proactive use of advanced technology, including emerging technology**: Figure 3 shows the results of technology used in DX/DB initiatives for both segments of enterprises and organizations. This shows that enterprises and organizations "past full-scale business adoption" have high usage rates in all areas of technology. For "cloud," "AI (including Generative AI)/machine learning," "container/serverless technology," "3D printing," and "blockchain/distributed ledger technology" in particular, the percent points varied by up to ten points for usage rates between the two segments, indicating a stark difference. In addition, in nearly every area of advanced technology, including emerging technologies such as "5G/6G," "robotics/robots," "social technology/SNS," "AR/VR," "Web3," usage rates for enterprises in the "past full-scale business adoption phase" exceeded those of enterprises in the "mid- or post-POC assessment phase" by 5 points. In light of these results, we can gather that enterprises "past full-scale business adoption phase" more proactively utilize advanced technology in more areas.

» **Proactive use of external resources**: Promoting DX/DB initiatives requires not only internal company resources but also the ability to effectively use external resources. Figure 4 shows responses to an inquiry about the use of external party support services for these initiatives. Most used overall were "business transformation support," such as employee development support and digital strategy planning support, and "other digital technology usage support" outside of cloud and AI technology. Similarly, usage rates for enterprises and organizations "past full-scale business adoption phase" greatly exceeded those of "mid- or post-POC assessment phase" enterprises and organizations in categories of "cloud usage support," "app development/system creation support," "data analysis/AI usage/automation support," "OT (Operational Technology)/engineering support," "ecosystem creation/innovation support," and "other support." This suggests that by effectively using external party support services, advanced enterprises and organizations are able to scale up from the POC phase to full-scale business adoption of DX/DB initiatives.

FIGURE 3: *Technology Used in DX/DB Initiatives*

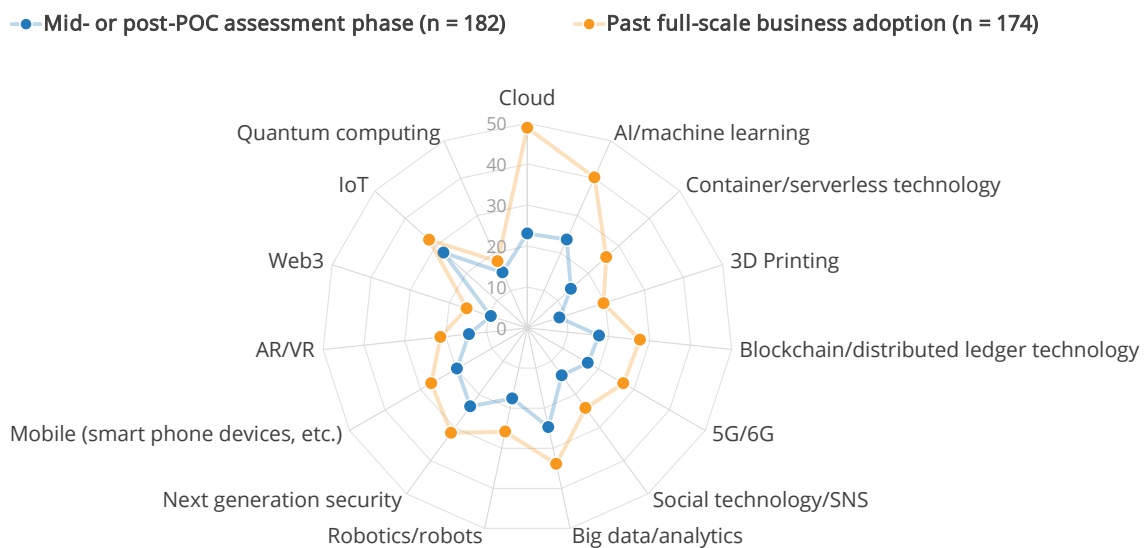Q *What technology is your company using for DX/DB initiatives?*
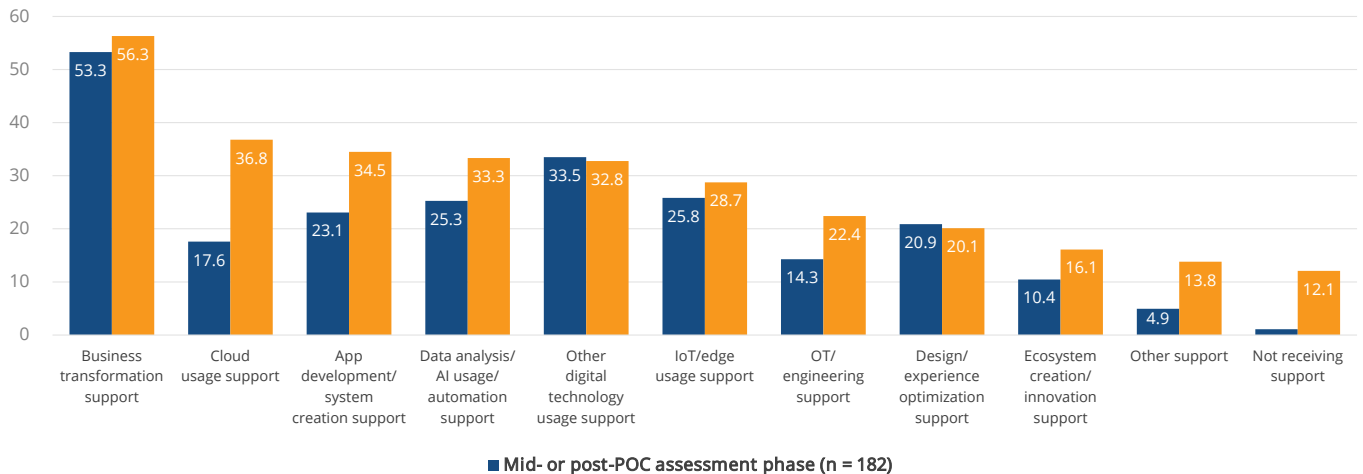

Figure note
• Created based on *2024 Domestic Digital Business Support Service Demand Survey*, IDC #JPJ50709424, March 2024
Source: IDC Japan, May 2024

FIGURE 4: *External Party Support Services Employed for DX/DB Initiatives*

Q *Please indicate external party support services employed for DX/DB initiatives.*

■ Mid- or post-POC assessment phase (n = 182)

Figure note
• Created based on *2024 Domestic Digital Business Support Service Demand Survey*, IDC #JPJ50709424, March 2024

Source: IDC Japan, May 2024

Market Outlook

IDC believes that "in light of the market's appeal for digital business model growth and strengthened digital capability, domestic enterprises spending on digital technology will increase by 14 times the domestic economic growth rate in 2024" (see *IDC FutureScape: Worldwide Digital Business Strategies 2024 Predictions - Japan Implications,* IDC #JPJ50709224, January 2024). It is also predicted that "by 2025, 20% of domestic enterprises will market, use, and provide on-demand services through digital ecosystems, enabling new business models that leverage AI." Meanwhile, the majority of C-level executives, boards of directors, and investors have begun to expect clear business results from digital investments, requiring faster, definitive business results to be generated when promoting digital business transformation in enterprises and organizations.

Domestic enterprises and organizations must overcome the above-mentioned "stagnation" at the POC phase, scale up DX/DB initiatives, and advance their transformation toward true digital business that consistently incorporates digital technology into value generation. To this end, it is vital to collectively and promptly provide solutions to challenges surrounding business problem solutions, such as stimulating managerial level understanding or business model creation, enhancing ecosystem approaches such as internal and external organization collaboration and partnering, and data analysis and AI literacy enhancement. We believe it is essential to follow the example of advanced enterprises and organizations that have overcome stagnation by proactively utilizing advanced and emerging technology while applying the necessary and appropriate external resources to facilitate early scale-up.

Below, we introduce PwC Consulting LLC's (hereinafter PwC Consulting) "Technology Laboratory" as an example of one approach to supporting problem solutions for domestic enterprises and organizations in promoting DX/DB initiatives.

PwC Consulting's "Technology Laboratory" Digital Business Support
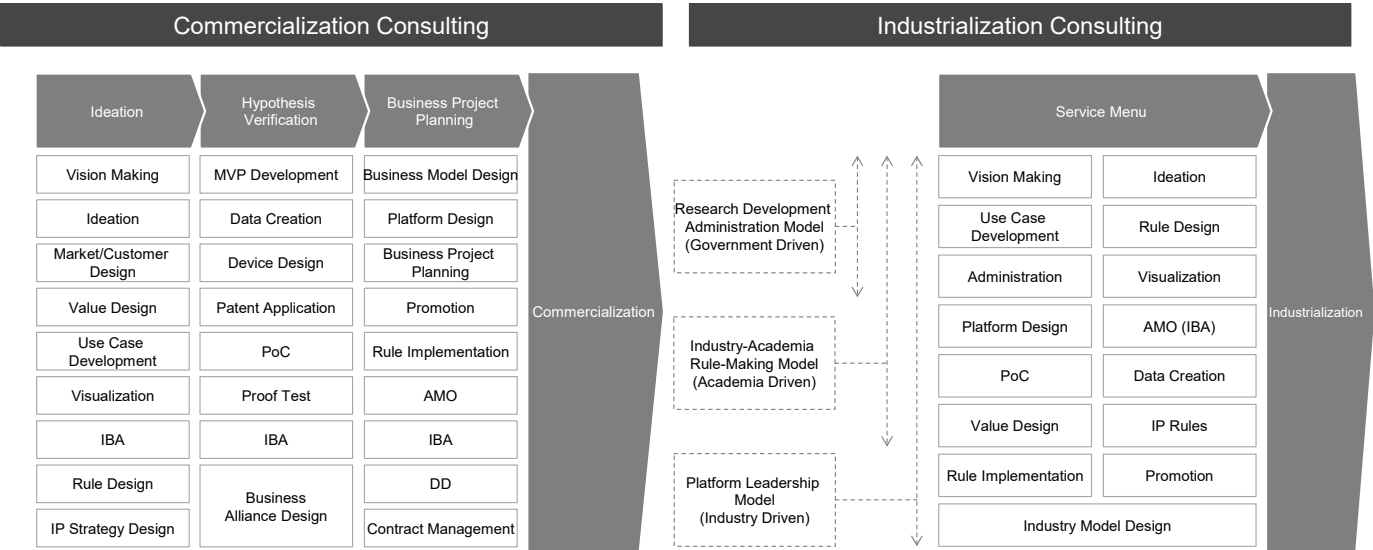## Provider Overview and Service Offerings

PwC Consulting is a firm that provides consulting services within the PwC Japan Group. PwC aggregates global advanced technology while accumulating business insights and expanding practices with physical locations to support enterprises and organizations. PwC launched "Technology Laboratory" in July 2020, and, in October of the same year, established a location in Otemachi, Chiyoda-ku, Tokyo. While most conventional DX initiatives in Japan aim to improve the efficiency and productivity of corporate operations, we are implementing a social problem-solving approach to support the creation of new businesses and new industries, and in particular, we have identified "strengthening resilience" and "wellbeing" as two of the key themes to be realized by Technology Laboratory.

The Technology Laboratory is characterized by its use of the Business eXperience Technology (BXT) approach globally advocated by PwC, which utilizes digital technology, including emerging technologies, and integrates various stakeholders, including industry, government, and academia, while implementing this process from the idea creation stage. In regard to emerging technology in particular, experts are employed from various areas such as drones, robotics, Augmented Reality/Virtual Reality (AR/VR), high-speed networks including 5G, and geospatial data, which are exhibited permanently in such a way as to allow a hands-on experience with these solutions. With the intervention of experts in various fields, the business model and scheme are designed as realistic prototypes, enabling early development and commercialization of services. By providing support services to multiple, varied user bases, including private enterprises, government and public institutions, and university and research institutions, it is also characterized by an intent to resolve not only enterprise and organization challenges but also a wider range of industrial and social issues through an ecosystem approach.

One specific type of support from the Technology Laboratory is the Social Implication Sprint Service. Social Implication Sprint Service is a service that employs the Technology Laboratory to rapidly realize everything from new idea creation to hypothesis verification, project planning, commercialization, and industrialization. Specifically, the company will provide support services to industry, government, and academia in the areas of consulting for commercialization and industrialization, respectively. Figure 5 shows the details of these support types. At PwC Consulting, a factor that sets Technology Laboratory apart in the domestic market is its high specialization (assessment skill) in hardware technology, including drones and robotics, therefore enabling "tangible" rather than overly conceptual product development. At the same time, verification of the marketability of product development is essential. The Technology Laboratory's appeal is in its product and service development, which uses PwC Consulting capabilities for marketability verification and market prediction, as well as the verification of patent status and necessary investments from the strategy planning phase.

FIGURE 5: *Technology Laboratory: Social Implication Sprint Service*

Commercialization Consulting						Industrialization Consulting		
Ideation	**Hypothesis Verification**	**Business Project Planning**				**Service Menu**		
Vision Making	MVP Development	Business Model Design	Commercialization	Research Development Administration Model (Government Driven)		Vision Making	Ideation	Industrialization
Ideation	Data Creation	Platform Design				Use Case Development	Rule Design	
Market/Customer Design	Device Design	Business Project Planning				Administration	Visualization	
Value Design	Patent Application	Promotion		Industry-Academia Rule-Making Model (Academia Driven)		Platform Design	AMO (IBA)	
Use Case Development	PoC	Rule Implementation				PoC	Data Creation	
Visualization	Proof Test	AMO				Value Design	IP Rules	
IBA	IBA	IBA		Platform Leadership Model (Industry Driven)		Rule Implementation	Promotion	
Rule Design	Business Alliance Design	DD				Industry Model Design		
IP Strategy Design		Contract Management						

Note: IBA stands for Intelligent Business Analytics. It's a tool that uses AI to extract and analyze value chains with a high affinity toward intellectual property owned by clients, then performs a business/skill assessment of latent alliance companies.

Source: PwC Consulting, May 2024

The Technology Laboratory's Business Outcomes

Since its establishment in 2020, the Technology Laboratory has averaged several dozen customer visits from national and public institutions, private enterprises and plants, and university and research institutions, allowing idea creation with a variety of participants. Over 100 PwC consulting members are currently affiliated with the Technology Laboratory. The Technology Laboratory performs not only ideation (the process of drawing out ideas) but also the development of mockups and fixed-scale prototypes. As mentioned above, stationing a diversity of experts provides the merit of directly developing prototypes and explaining exhibits. Besides resident-style projects, the Technology Laboratory has a record of accomplishing projects for a period of several months. At its establishment, the Technology Laboratory served as a "learning opportunity" for many visitors, but in recent years, an increasing number of users have been aiming for more specific business building, and the Technology Laboratory is increasingly utilized for its practical initiatives, such as determining how to reflect this in their strategies.

Looking at the enterprises and organizations employing the Technology Laboratory support services by industrial field shows that its usage originally spread through government and public institutions, but from 2023 onwards, private enterprise usage has increased. In turn, usage by private enterprises such as assembly manufacturing, healthcare, and consumer goods has increased, and the customer base is becoming progressively diverse. Recent years have shown a trend toward expanded use by Business-to-Consumer (B2C) businesses.

Future Strategies

PwC has globally set a core technology area called the "Essential 8," referring specifically to AI, Augmented Reality (AR), Advanced Robotics, Blockchain, Internet of Things (IoT), Neuromorphic Computing, Quantum Computing, and Virtual Reality (VR). The Technology Laboratory has established AI, AR, Blockchain, Drone, IoT, Robotics, VR, and 3-D Printing as its Essential 8 in light of the needs and challenges in Japan's market, but support for these most essential technologies is advancing. Through collaboration with overseas locations such as the United States and Dubai (UAE), it is strengthening the exhibition of solutions and provision of services by its global partners. Meanwhile, the aforementioned solution support for industry, government, and academia, as well as the Next 5 emerging technologies (Spatial Information, Web3, AgeTech, Human Augmentation [improving human capabilities], and Material Informatics) currently being tackled by the domestic market, are being enhanced as initiatives unique to Japan. Such technology support services aligned with Japan's market traits are unique even within PwC Global, and rather than employing global core technologies domestically, the Technology Laboratory aims to cooperate with its customers and stakeholders to develop specific use cases and products.

PwC Consulting recognizes the Technology Laboratory as an essential base for cross-industry collaboration and digital initiatives, and effort is concentrated on orchestrating initiatives for government and public institutions and private enterprises to aid in handling industrial and social issues. Through these approaches, support services directed toward industry generation and social issue solutions can be expanded.

Challenges for PwC Consulting and the Technology Laboratory

IDC recognizes support services through the Technology Laboratory as striving to provide end-to-end support necessary for stagnating enterprises to tackle resolution of a series of challenges, such as ecosystem approach enhancement (internal and external organizational collaboration and partnering, etc.), business problems (stimulating managerial level understanding and creating business models), and data analysis and AI literacy enhancement. The Technology Laboratory is also perceived as a "platform" for the accumulation of capabilities to effectively promote the use of advanced technologies, including emerging technologies, advanced enterprises/organizations are pursuing.

Meanwhile, effective use of these support services depends first on proper recognition and understanding from the market (customer enterprises and organizations in industry, government, and academia), followed by promotion and efforts to increase customer maturity. In particular, active participation by stakeholders with first-hand experience is essential for ecosystem approach-based commercialization and industrialization, in which multiple enterprises and organizations collaborate on innovation generation. We expect that spreading recognition among external stakeholders and enhancing approaches to promoting public awareness will be critical challenges for the Technology Laboratory. In addition, the Technology Laboratory must ensure that the "assessment skill" regarding technology, which it claims as its differentiating factor, does not stop at an individual level with specific technical experts. In anticipation of the future expansion of the Technology Laboratory, if this "assessment skill" becomes more scalable and the abilities and resources (including personnel, methodology, and tools) provided by the organization are enhanced, more effective support of larger-scale industrial and social issues will become possible.

Conclusion

IDC marks 2023 as the beginning of the "Digital Business Era" of the global market. Developing from the era of DX executed by specific departments and specialized organizations, we consider this to be an era where digital business transformation and industrial and social digitalization advance widely across all enterprises. At the same time, initiatives of domestic enterprises and organizations tend toward a relatively slower pace than global peers, and many likely face the challenge of overcoming DX "stagnation" and the wider promotion of digital business transformation. The demand for support services to help properly face and overcome these challenges is expected to continue, and in the anticipated period until 2027, we predict high growth in the domestic digital business professional services market. Consequently, the support required from these services will also change. Specifically, from the perspective of technical support for the use of digital technology such as cloud and AI, the range of support is expanding to include business problem solutions as well as support for external stakeholder relationship building to enhance ecosystems and open innovation support. We believe that PwC Technology Laboratory can seize this market opportunity if it is able to provide support services to properly accommodate this shift in demand.

For domestic enterprises and organizations to solve a wide range of issues to overcome "stagnation," and to expand the scope of transformation from the individual department or division to the overall enterprise or organization, overall industry, or overall society, effective use of not only internal but also external resources becomes increasingly critical. This does not end with simply "using external support services." From the perspective of the private sector, through collaboration with external stakeholders such as other companies and government/academia and from the perspective of government/public institutions and universities/research institutions, through collaboration with private enterprises and other institutions, the importance of building or contributing to the development of an ecosystem to address a broader range of industrial and social issues will also increase. We believe that enterprises and organizations in the "Digital Business Era" can contribute to new business, industry, and social value generation through this ecosystem approach, thereby ensuring their own indispensable value.

About the Analyst

Takuya Uemura, *Software & Services Group Manager, IDC Japan*

Takuya Uemura's role is in the domestic IT services market as well as business consulting and Business Process Outsourcing (BPO). As an analyst, he is responsible for forecasting the market, analyzing end-to-end user trends, and analyzing the competitive landscape of major vendors by service segments and industry areas. In recent years, he has focused on analyzing the digital business trends of domestic enterprises and the support services market for digital businesses.

MESSAGE FROM THE SPONSOR

The continued evolution of technology is inevitable. And moving forward, technology use will continue to advance in ways that adapt to the sense of purpose that enterprises strive for. By integrating deep specialization for a variety of technologies, PwC Consulting's Technology Laboratory takes a scientific approach to paint a better future for all and to support its actualization. For more details, please see https://www.pwc.com/jp/ja/services/consulting/technology-consulting/technology-laboratory.html.

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