

User Support to Maximize DX Effectiveness – Considerations in the MHLW Project

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Abstract

Although many companies are working on digital transformation (DX), few are successful, and the causes of this and possible solutions are being studied and discussed. In this paper, we will describe the challenges and responses that we have found through the vaccination facilitation project of the Ministry of Health, Labor and Welfare (MHLW) as well as their solutions, and then we will summarize the contents that we infer are necessary to maximize the results of DX. We will also introduce the DX offerings we have prepared based on our learnings.

Keywords



DX, BPO, AI, call center, data driven, data scientist, SaaS, cloud services, operations, customer success

1. Introduction

The term “DX” has become a matter of common usage. Since Japan’s Ministry of Economy, Trade and Industry’s report on digital transformation (DX) was released in 2018, many company executives have begun to embark on a variety of initiatives. According to a study by ABeam Consulting Ltd. in 2020,¹⁾ 60% of the approximately 500 largest companies with annual sales of 100 billion yen or more are investing 0.5% or more of their annual sales in the implementation of a DX strategy. On the other hand, the same survey, as shown in **Fig. 1**, was used to ask if the DX investments promoted by the companies were successful or not, and only 6.6% of the companies rated their efforts as successful.

In **Fig. 2**, the groups that have achieved success are compared with those that have not and shows the achievement gap in the 12 items regarded as necessary to achieve DX. The largest gaps are in the three areas of digital education for all employees, decision-making by a management team with digital knowledge, and knowledge of digital, business, and operations possessed by the DX organization — indicating that a lack of digital literacy is

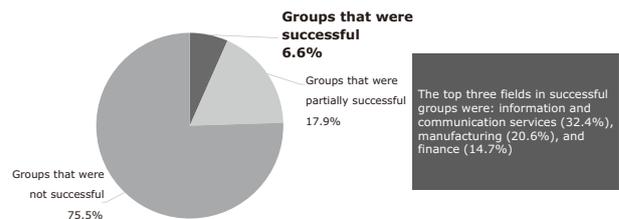


Fig. 1 Groups that have achieved success with DX initiatives.

an issue for both management and frontline workers.

In this paper, Section 2 introduces the actual challenges and solutions identified in the project awarded by the Ministry of Health, Labor and Welfare in Japan. Section 3 discusses the keys to DX success in Japan, and Section 4 introduces specific DX offerings.

2. Challenges of DX seen in a national project

2.1 Urgent national project

In early fall 2020, NEC received an order from the Min-

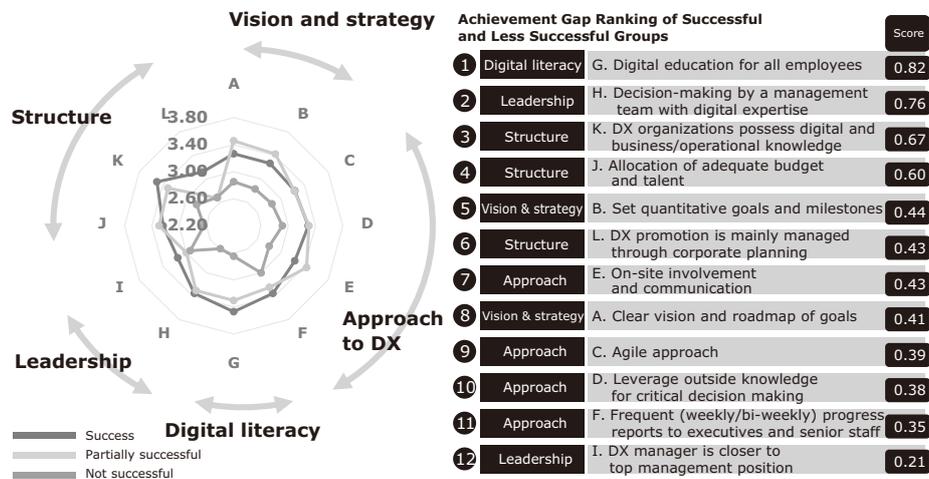


Fig. 2 Gap between Successful and Not Successful Groups.

istry of Health, Labor and Welfare (MHLW) for a vaccination facilitation system (V-SYS) to provide protection against infections caused by the novel coronavirus infection (COVID-19). The system is designed to facilitate the smooth vaccination of the public and is used to exchange information on the desired quantity of vaccines, supply, and delivery locations between private companies, local governments, and the national government. In addition to building a SaaS-based (software as a service-based) system, NEC was responsible for its operation and user support. The key point of this project was that it was an urgent project. There were various uncertainties, so an agile response was required to support the system design and establish business processes within a limited timeframe.

2.2 Challenges and solutions

While the project was moving forward with the prompt system design and system improvements, significant issues arose due to this fast-paced approach. In particular, user support was an issue. The platform was accessed by tens of thousands of users, including not only the government but also private companies and hospitals. It was extremely difficult for users to keep up with the new systems and systems that are being developed. Here we will introduce three specific issues and the solutions we implemented.

2.2.1 IT literacy

1) Issue: User literacy

On a typical day, the call center set up by NEC received more than 1,000 inquiries, 40% of which (Fig. 3) were about not being able to log in. Most of

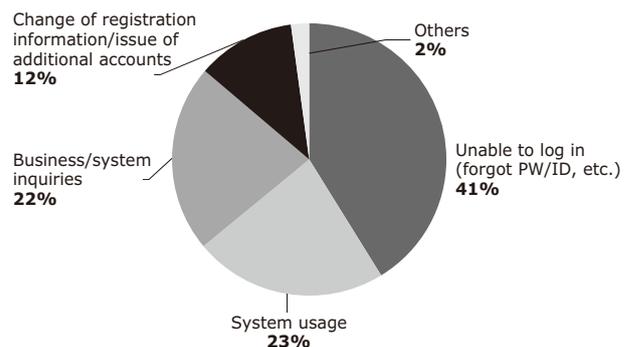


Fig. 3 Classification of inquiries to the call center.

the problems were related to IT (information technology) literacy, such as being unable to install the recommended browser or find the e-mail that contained the login information.

2) Solution: General purpose support system

Even with the user-friendly UI unique to general-purpose cloud services, such inquiries always exist. This time around, operators are prepared with basic IT knowledge to provide knowledgeable support about system operations and its surrounding environment to ensure that no user is left behind.

2.2.2 Increase in number of inquiries

1) Issue: Responding to inquiries

In response to agile business start-ups and improved processes, the number of inquiries might increase rapidly, and operator resources might be insufficient. In this project as well, more than 3,000 inquiries were waiting to be answered when users

faced workflows involving system operations or when updating the system.

2) Solution: Efficient response and appropriate resource planning

In response to this situation, NEC first classified the log of inquiries into categories by keywords, standardized the questions, and prepared a list of frequently asked questions (FAQ) along with the answers. After categorization, speed was the priority, and the FAQ appropriate for each group was emailed as an answer. As a result, the backlogged inquiries, which had numbered more than 3,000, were reduced to a few dozen in about two weeks, and the situation was successfully normalized. Also, by analyzing the number of inquiries and trends, the occurrence of similar events became possible to predict when similar events would occur and to prepare FAQs in advance, thereby successfully eliminating subsequent backlogs with appropriate resource planning.

2.2.3 System Usage

1) Issue: Reluctant users

In particular, many users in the private sector were not proactive in using the system, and the workflow was stagnant in many cases. As an example, about 30% of users had not completed the process of signing documents and sending them as e-mail attachments one week before the due date, and about 20% had not completed the process even one day before the due date.

2) Solution: Proactive support and business improvement

Based on this situation, we analyzed the status of users and reminded them of actions to be taken by phone or e-mail. We also provided individualized explanations to users who did not know how to re-

spond and thereby encouraged them to progress in their work. As such, the workflows of all users were successfully completed. In addition, the system was modified to improve the workflow for many users who had been stagnant so that they could easily complete all of the steps in the workflow.

3. Key to Success of DX Based on Actual Cases - User Support

When a company tries to digitally transform its operations, even if it designs a good system or workflow, it will fail if users do not use it. As mentioned earlier, 94% of companies that engage in DX regard it is a failure. The lack of digital literacy of management and front-line personnel is cited as a factor, but there is a limit to trying to compensate for these factors through education. Instead it would be more effective to start business operations first and then improve digital literacy by involving users and providing timely and appropriate support in accordance with their particular situations. Speed is the key to DX, and the use of cloud services are expected, but not everyone will be able to use them perfectly from the start. On the other hand, if we respond to every request, it will be cumbersome, and the requirements may change while designing it. To overcome this dilemma and maximize the effects of DX, we believe it is important to provide users with prompt and attentive support while focusing on speed to launch the system and to advance the business through an active approach. We also believe that recognizing the importance of such support in advance and incorporating it into the overall plan at the concept stage is the key to DX success.

4. DX Offerings

Based on the information we have provided so far (Sections 1–3), NEC has developed a DX offering to

		Description	Method & Tools	PDCA	
High Customer digital literacy Low	Customer support services	Contact center	Responds to customer inquiries and requests	• Telephone (customer-help hotline available) • E-mail • Web form • AI Chatbots	Build an FAQ knowledge base in accordance with the analysis of inquiry trends and the improvement of AI chatbot scenarios.
		Proactive Contact Center	Individualized customer support services • Individualized instruction • Individualized contact/reminders • Conducting surveys	• Phone • E-mail • Online conferencing • Onsite support	Identify silent customers and provide appropriate support based on customer insight analysis
		Agency	Work on behalf of the customers • Application procedures on behalf of the client • System operations on behalf of the client • Data patches for information and other tasks	• Online • Onsite • Robotic process automation (RPA)	Detect errors in customer's information by data cleansing. Ensures accurate and up-to-date information
Database construction and data-driven decision support services		(Construct customer database in accordance with the logs of this service in general as well as related systems. Database analysis and reporting by data scientists.	[Database construction] • Based on the assumption of cloud services	Support the design and management of various KPIs from the aspect of customer database analysis and ultimately the fast PDCA cycle of the entire DX.	

Fig. 4 Basic plan details of DX-BPO (tentative name).

maximize the effectiveness of DX. Section 4 provides an overview of this DX offering and its features.

4.1 Overview

NEC offers a service for business process outsourcing (BPO) that is tentatively called DX-BPO and that focuses on maximizing DX results. First, we listen to learn about the client's business and its objectives, define the support needed to achieve those objectives, set key performance indicators (KPI) as necessary, and propose an optimal plan that combines these KPIs by considering multifaceted support that goes beyond simply requiring to inquiries. The basic plan includes (1) contact center (receiving/answering inquiries from customers), (2) proactive contact center (active support by phone or e-mail in accordance with customer situations), (3) work on behalf of customers (document preparation and system operations on behalf of customers), and (4) database construction (including analyzing inquiry databases to extract customer insights) (**Fig. 4**). In addition, optional plans include (5) provision of educational content for users and (6) system operations on behalf of the client, whereby a staff member with expertise in education or operation can propose initiatives to promote user understanding and reduce the operational burden of the client.

4.2 Characteristics

In contrast to a typical call center or business process outsourcing, the features of NEC's DX-BPO service are as follows.

4.2.1 Synergies from System Design and BPO

As shown in the examples in Section 2, providing system construction and BPO as an integrated service can create synergy and be a driving force for DX promotion. When NEC provides everything from system design to operations and user support, we can propose practical and effective solutions to issues based on our thorough knowledge of system constraints and scalability. One of the values that NEC hopes to provide is the creation of an efficient improvement cycle that integrates systems and operations and includes the immediate reflection of user insights in business operations.

4.2.2 User analysis by data scientists

As mentioned in Section 2, when the number of users is large, appropriate approaches and their targets can be identified by analyzing the following user behavioral

data:

- User login status
- Business progress by screen and function

The example in Section 2 describes a situation in which the user did not perform the required action by the due date. The data scientist was therefore able to check the system log for work status, identify the delay at an early stage, and contact the Proactive Contact Center to complete the urgent task.

Other analyses by data scientists might be used to visualize statistical trends that are difficult for individual personnel to notice and provide assistance to decision makers (in conjunction with business intelligence (BI) tools and others to present a comprehensive view of the overall business situation).

In addition, because contact center conversation logs contain vast amounts of natural language data, it is difficult to manually check all of them and notice trends. Data scientists therefore analyze the data and add frequently asked questions to the FAQ list or identify points that lead to major dissatisfaction and result in changes in the system. In addition, by implementing chatbots and enhancing the content of the automatic responses of the chatbots in accordance with the analysis results of contact center conversations, the overload of calls to the contact center can be reduced even when the number of users increases.

Rapid DX implementation can easily create urgent and flexible changes in operations, which can cause confusion for users. In addition, the decision makers can check the status of DX sequentially, enabling a rapid PDCA cycle. By providing the aforementioned items such as the visualization of business progress through log analysis, analysis of inquiry content using natural language analysis technology, and other methods to the DX-BPO (tentative name) plan, NEC will be able to provide a DX-BPO service that is more efficient than conventional ones. We support the realization of continuous improvement activities.

5. Conclusion

The term DX has become a keyword that is becoming more and more familiar to many people. On the other hand, quite a few users are resistant to the term because of its broad and abstract nature. NEC not only contributes to DX for our customers with cutting-edge technologies but also provides support to reluctant DX users. NEC acts as a partner to truly transform business for our customers. We are responsible for providing total support.

Reference

- 1) SAITO Gaku, KUMAGAMI Tadashi: Significance of Digital Transformation for Japanese Business, ABeam Consulting Ltd., 2020 (Japanese)
https://www.abeam.com/jp/sites/default/files/in-line-files/WP008_DX_for_Japanese_companies_1.pdf

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