Approach to Building of Data Utilization Platform to Realize Optimization of Customer Experience

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In many companies, digital transformation is recognized as essential to improve corporate competitiveness in the future. In particular, multi-channeling and digitalization of customer contact points has brought attention to digital marketing that makes use of customer contact point data. To improve corporate marketing capability, the customer contact point data must be utilized to deepen customer understanding from diverse perspectives to make the customer experience (CX) better. Meanwhile, many companies in Japan have yet to build the data utilization platform to achieve this. Based on its extensive experience in building the data utilization platforms with many customer companies, Fujitsu has derived an original approach to building. The data utilization platform built by applying this approach facilitates enhancement of corporate marketing and deepening of customer understanding, which leads to the optimization of CX. This paper makes clear the present state and issues to be solved in terms of building the platform to utilize data in companies and presents an approach to solve these issues.

1. Introduction

With the rapid evolution of smartphones and other digital technologies, contact points between companies and customers such as purchasing activities are becoming digital-centered. Therefore, many companies see digital transformation as essential to future corporate competitiveness. In particular, multi-channeling and digitalization of customer contact points has brought attention to digital marketing that makes use of customer contact point data.

To improve corporate marketing capabilities, the contact point data must be utilized to deepen customer understanding from diverse perspectives. To that end, it is important to put in place a data utilization platform capable of integrating and utilizing data inside and outside the company centered on customer contact point data. However, many companies in Japan have yet to build a data utilization platform to achieve this. This is thought to be due to reasons such as the difficulty in clarifying what functions to realize and what to manage by using the data utilization platform as a system.

Fujitsu has extensive experience in building data utilization platforms together with a large number of customer companies. By applying a building approach derived from this experience, a data utilization platform can be built effectively and quickly. This facilitates the enhancement of corporate marketing and deepening of customer understanding, which leads to the realization of customer experience (CX) optimization.

This paper first makes clear the present state and issues with building a data utilization platform within a company. Then it describes the building approach proven by Fujitsu's track record of building data utilization platforms promoted together with a large number of companies in order to resolve these issues.

2. Expectations for and present state of data utilization platforms

This section describes the expectations raised for data utilization platforms and present state as digital marketing is attracting attention.

Traditionally, companies have built data warehouses (DWH) that aggregate various in-house data and customer relationship management (CRM) systems for managing customer information as a system to deepen customer understanding. With the enhancement of

ICT infrastructures centered on cloud services, it has become possible to gather, store, and process in real time a wide variety of data in enormous amounts. In this way, companies expect that by utilizing data in a timely and flexible manner to improve their marketing capabilities, they can deepen customer understanding more than ever.

2.1 Data utilization platforms for enhancing marketing capabilities

In many companies, each department maintains contact point information separately instead of integrating this information. In this situation, each department handles customers in a partially optimum way, therefore not provide a consistent CX and resulting in reduced customer satisfaction.

In order to create a consistent CX, it is necessary to integrate not only individual departments' customer contact point information but also related in-house data such as inventory data, which must be used as the basis for marketing and customer service. If a marketing system is not linked to inventory data, items that are out of stock may be recommended to customers. In addition, if a customer has completed the purchase, delayed delivery may lower customer satisfaction.

One service similar to this data utilization platform is a data management platform (DMP). General DMPs provide an integrated platform for customer contact point data centered on web access intended for delivering advertisements (ads) and cannot be utilized for in-house marketing and customer service operations in general. In addition, a DMP and in-house systems often have significantly different design concepts and operation methods and are not successfully linked with each other in many cases. In this paper, we focus on a data utilization platform that integrates various in-house data, rather than a general DMP like this.

2.2 Present state of data utilization platforms

In reality, however, utilization of data by making use of data utilization platforms has not yet sufficiently advanced. According to a survey on the state of data utilization at 270 companies with 1,000 or more employees in Japan, companies that have only made progress by department or routine data collection and analysis account for 44%.[1)]

3. Issues with building of data utilization platforms

This section describes the issues companies face when building data utilization platforms which Fujitsu has identified through its experience building data utilization platforms for tens of companies in situations like those described in the previous section.

Conventional information systems such as DWHs have been built mainly for aggregation operations based on specific requirements such as the purpose of use, types of users, and target data. In many cases, however, fact-finding surveys conducted for marketing and other operations departments on demands concerning a new data utilization platform based on the current information utilization platform do not provide specific requirements. As a result, the information systems department only puts in place a platform for collecting in-house data. However, data collected without a clear purpose of use may not be stored in the state and form of data suitable for the purpose, which results in making the platform difficult to utilize effectively.[2)]

In addition, too often BI tools,[note 1)] which have become increasingly widespread recently, are introduced but databases required to make use of the tools are not sufficiently put in place. Furthermore, the operations department using such tools need to ask the information systems department to do work such as add and process data every time the data is required. Therefore, the information systems department is obliged to deal with these requests individually. As a result, the operations department is unable to use data in a timely fashion.

In this way, even companies that successfully identified the requirements and targets of systematization from existing operations often have difficulty with a data utilization platform in making clear what to systematize and manage. As a result, they end up being unable to clarify what effect the building of a new data utilization platform has on operations and unable to move forward with data utilization, either.

note 1) Business intelligence tool: A tool that collects, stores, and analyzes data inside and outside a company to use for purposes such as management decision-making.

4. Resolution of and approach to issues in building of data utilization platforms

This section describes Fujitsu's approach to resolving issues with the building of a data utilization platform that reliably brings about operations transformation.

This approach has been proven by the process of building data utilization platforms promoted by Fujitsu together with a large number of companies. Companies that applied this approach saw their marketing plan-do-check-act (PDCA) cycle that makes use of data become effective. As a result, the companies that adopt this approach are able to realize enhancement of marketing and optimization of the CX.

4.1 Formulation of grand design for operations and systems

In order to realize the expectations for data utilization to improve corporate marketing capabilities, first the present state is made clear and the grand design for operations and systems to aim for is formulated.

Then, for the individual businesses of the target company, the table shown in **Figure 1** is used to classify the operations for which the data are utilized. In this figure, the levels of data utilization for corporate operations are arranged on the vertical axis, and the classification of effects produced at the respective levels is assigned to the horizontal axis. In addition to the conventional perspective of efficiency improvement and enhancement of operations, the customers' perspective is used as well for organizing the operations. The building of the data utilization platform is then scheduled so that progress will be made in steps of "data visualization," "customer analysis," "optimization of operations" and "enhancement of customer strategy" (**Figure 2**).

The operations transformation plan formulated in this grand design may have a major influence on corporate activities. Therefore, it is important to make clear who the responsible person and the promoter are. In fact, most companies whose transformation of operations has been slow have not clarified the responsible person. The responsible person and promotor are required to be knowledgeable about data utilization and ICT in addition to familiarity with the operations of the respective departments in the company. But in reality, such human resources are limited.

Accordingly, a business intelligence competency

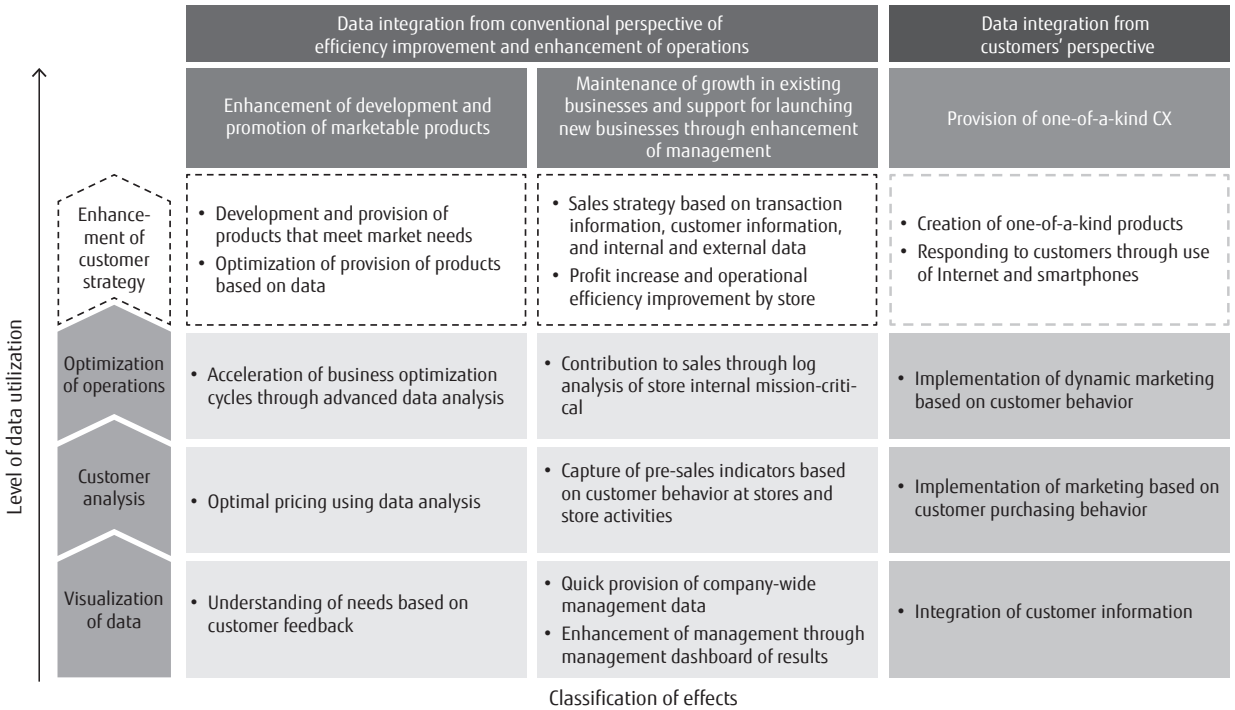

Figure 1
Classification of data utilization levels and effects in corporate operations.

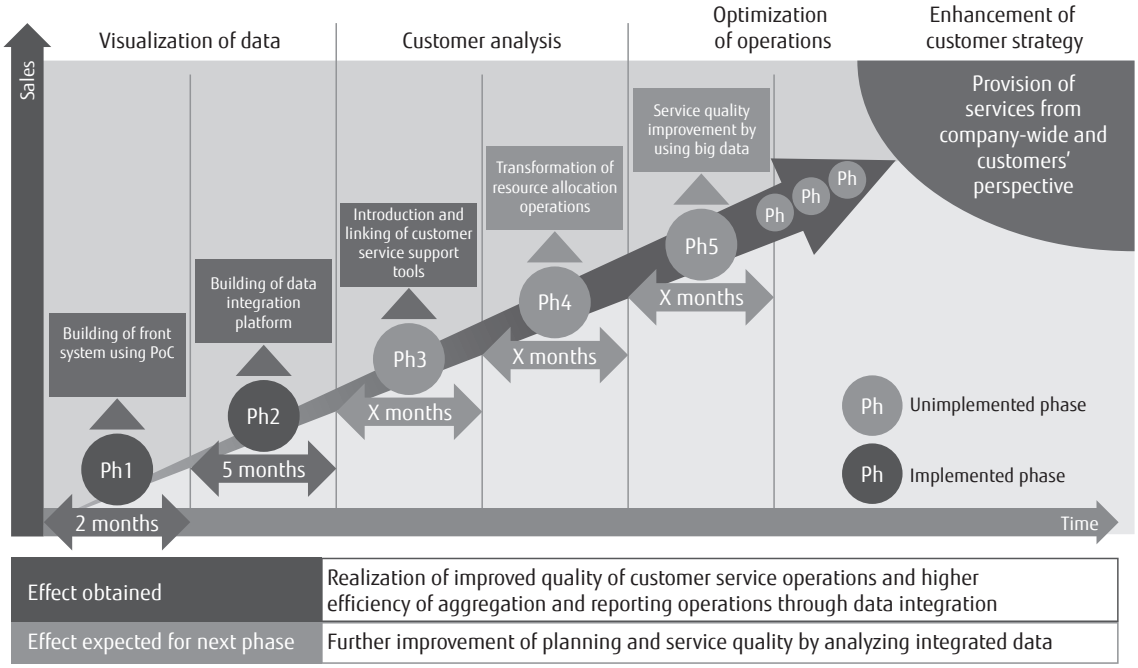

Figure 2
Schedule for building of a data utilization platform.

center (BICC) is often put in place as a promotion framework on the part of the company. This is a cross-departmental organization consisting of persons with the knowledge as described above gathered from the respective departments, so that the organization is familiar with both ICT and operations of the respective departments. Therefore, the BICC plays the role of a control tower that leads complicated in-house issues to solution based on field knowledge and data utilization from the perspective of the entire company.

Fujitsu has also prepared a consulting framework to support the launch of the BICC, which is responsible for both ICT and operations of the respective departments. This is also utilized for grand design formulation.

4.2 Prototyping to share the idea of transformed operations

For companies, data utilization-based operations are often new activities. Therefore, it is vital to proceed while forming a specific idea by having a prototype checked by management and staff from the field. At this time, sample design materials are sometimes used to check screen layouts and items for developing data visualization and analysis screens. However, materials alone may not provide specific ideas of operations and data, which not only hinder customers' decision-making but also often causes rework to become necessary to make corrections after development is complete.

To provide more realistic prototypes to be checked by customers, Fujitsu offers templates for screens and data utilization platforms that have been previously built. Utilization of templates that have already been proven allows users to form specific impressions of operations at an early date. In addition, templates for the same category of business often have similar business key performance indicators (KPIs) and data sources. This provides a high degree of applicability for templates, which results in faster building of high-quality screens and a data utilization platform. Accordingly, verification in terms of business as well as functionality can be accelerated and, as a result, speedup of the PDCA cycle can be realized.

Fujitsu has prepared more than 100 templates (**Table 1**) that can be used for different operations of various companies based on the past results of building data utilization platforms for tens of companies. By making use of these, data utilization platform building

Table 1
Data utilization platform templates.

Operations	Templates (excerpt)
E-commerce management	PV/UU/CVR trends, sales/unit price trends (YOY), ABC analysis
Business management	Preliminary sales report, budgeting support, YOY budget by customer
Finance	ROIC, ROIC breakdown, ROIC by product and customer
Production control	Production operation forecasts and results, quality performance
Sales management	Order intake forecasts and results

ABC analysis: A method of analyzing products by their importance
CVR: Conversion rate
PV: Page view
ROIC: Return on invested capital
UU: Unique user
YOY: Year-over-year

projects have successfully been launched quickly to realize the promotion of projects through high-speed PDCA cycles that include business aspects.

4.3 Agile development for operations transformation

Data utilization platforms often have parts whose requirements are unclear, which obliges the use of agile development. Conventionally, agile development was applied to systematization of unclear in-house operations of companies. One point to note in the development of data utilization platforms is that, as compared with that of conventional systems, a strong awareness of business requirements is necessary for development, particularly concerning the improvement of CX. Without such awareness, the development tends to end up with a data utilization platform that is not utilized, as described in the previous section.

For example, in developing a function to analyze the targets of direct mail delivery, development should be carried out starting with the function for extracting the segment with high opening rate. The key points of agile development are as follows.

1) Embodying based on business requirements

To embody requirements, it is vital to start first with business requirements–CX improvement in particular–rather than system requirements. Due to the nature of a data utilization platform, study of system requirements such as data storing methods, access rights, and data capacity is often given priority, with the information systems department at the core. However, these requirements are not the primary purposes of the data utilization platform. It is necessary to embody the requirements of a data utilization platform with the focus on the marketing and other operations departments as well as the information systems department and the operations and business requirements leading to CX improvement.

2) Promoting while confirming results

The embodiment of the operations and business requirements should be carried out in an agile manner while making sure that sufficient CX improvement and business results will be achieved by realizing the requirements on the data utilization platform. This allows requirements to be embodied smoothly.

If the individual departments and persons in charge are asked to list the requirements for the data utilization platform, different departments and persons in charge often give different requirements. Accordingly, the milestones agreed on in the grand design as described earlier should be taken into account to first develop the requirements confirmed to bring about CX improvement and business results. This facilitates consensus building, allowing the development to be reliably promoted.

The business results here may be requirements intended to reduce costs in a similar way to conventional operations systems, such as reducing total person-hours. However, it is better to focus on requirements that will potentially be effective in improving CX, such as clarification of targets with a high conversion rate (CVR)[note 2)] and listing of targets.

Specifically, a clear business goal will be set for each iteration[note 3)] of agile development and the results evaluated for each iteration to proceed while making

note 2) The rate of target values, such as the number of purchases against the number of visits on e-commerce sites. Used to measure efficiency.

note 3) A development work cycle in agile development.

modifications.

5. Conclusion

This paper described the efficacy and effects of data utilization platforms for enhancing corporate marketing by presenting the building approach created by Fujitsu based on its proven building track record.

A data utilization platform is different from conventional DWHs and DMPs in functionality and development system, and is often difficult for ICT vendors and ad agencies that adopt conventional development styles to realize. Fujitsu aims to be the best partner capable of supporting the improvement of business performance through the enhancement of the marketing capabilities of customers by using this building approach to build data utilization platforms.

References

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