NEC Management System Reforms

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Abstract

NEC Group is reforming its management system in order to achieve its goal of "One NEC". We are reducing and restructuring costs while strengthening internal controls. This will be achieved by steering away from our previous dispersed system to a new centralized system, standardizing our business operations (business processes, IT, codes, infrastructure), and shifting from individual ownership to shared usage based on cloud computing. Furthermore, the assets and know-how gained through these reforms will be turned into services that will play a role in maturing our cloud-oriented service business.

1. Introduction

Today's firms are in the midst of a rapidly changing business environment characterized by:

1) Increased corporate consolidations due to market reorganization and restructuring of corporate groups.

2) Stagnating domestic market growth coupled with intensified competition brought about by globalization.

3) Compliance with new legislation and regulations including Japanese version of Sarbanes-Oxley Act (J-SOX) and IFRS.

4) Abrupt changes in the economy such as a strong yen brought about by the global financial crisis

In such an environment, it is crucial for firms to take effective measures in a timely fashion. Or looking at it another way, firms that are able to take swift and effective measures may well be those that will have the upper hand amongst the competition.

At NEC Group, we are implementing thorough standardization in order to achieve "Speedy Management" and "Low Cost Management", in order to realize a more robust management and IT. By using this as the group's common base for management while maximizing the effects of cloud-oriented computing, we will be able to implement our managerial reforms to realize "IT, without owing it."

2. NEC Group Management Reforms – One NEC –

2.1 NEC's Current Situation and Challenges

Previously NEC's management activities emphasized the autonomy and independence of businesses. During that time when the market was growing enormously, each organization was optimized individually, thereby enabling us to maximize our returns and grow as a group company. However, as market growth stagnates, it becomes impossible to maintain an advantage in a severely competitive environment, nor will it be possible to grow as a group, unless the entire group unifies its efforts as One NEC to implement waste-cutting, efficient business operations. As a matter of fact, we find it difficult for sales of all NEC Group business to show high growth as it did up until the year 2000, and we are faced with a dilemma where although sales is being reduced due to business selectivity and unification, our selling and general administrative expenses (SGA) are not slimming down in commensurate fashion. It is therefore crucial we develop a system where we can maintain profitability even if sales go down (through cost restructuring), in addition to creating new businesses and expanding the market.

Moreover, when each organization moves separately, that means each one has its own way of doing things. From the standpoint of internal controls, it becomes difficult for the Group companies to offer a uniform level of quality.

2.2 NEC Group's Management Reforms – One NEC –

In NEC's management reforms, we are restructuring toward a simple-is-best type business operation that will let us show our strengths outwardly to our customers, and will also allow sharing amongst our many global organizations through total optimization (standardization).

Through these efforts we will be able to solve the issues of our internal controls while reforming our profit structure and accelerating the speed of our management.

The management reforms conceptualize management as seven elements: Strategy, Organizations, Rules & Policies, Business Process, IT, Codes & Data, and Infrastructure. To these we will be applying three integrated reforms, namely Structural Reforms, Process Reforms, and IT Reforms.

3. IT Domain's Role in the Reforms

3.1 NEC Group's IT Promotion Framework

Ever since 1973, NEC Group's IT promotional framework maintained a decentralized MIS policy, but with the adoption of One NEC this was changed to a total optimization policy in 2008.

As a result of continued pursuing of business-specific MIS, individual optimization progressed, and reforms in business processes and systems from the perspective of total optimization were delayed. This in turn made our response to compliance issues inefficient.

In order to break free from this situation, two organizational changes were undertaken when our latest reforms were executed. One of these was the founding of a new Business Process Reengineering Department within our headquarters, while the name of NEC's IT domain was changed from "Corporate IT Division" to "Management Information Systems Division". Through this, we were able to once again appeal the necessity for business process reforms to accompany IT reforms within our group. The other change was that the IT promotional functions within NEC group companies were consolidated and concentrated at our information subsidiary. This was done in order for each business supervisory group in the IT domain to be able to improve IT efficiency and apply strategic allocation of resources as part of our new reforms.

The IT domain will execute its role as leader in IT reform while supporting the process reforms.

3.2 Issues Faced by NEC Group to Move IT Forward

The IT domain faces three main challenges in regards to management reforms.

1) In order to realize speedy management, requests from management strategy must be applied to IT with minimal time lag. Also, appropriate management information must be supplied at the right timing to support correct decision-making.

2) In reforming our profit structure, it is necessary to control investments by raising the variable expense ratio of our IT cost structure and minimizing the total cost of IT (new investments and running cost).

3) In executing the reforms, it is necessary to thoroughly apply internal controls as NEC Group. Also in the course of solving this issue, the concept of cloud computing must be effectively adopted.

3.3 Efforts toward Management Reform Based on Cloud Computing

Cloud computing goes beyond the physical consolidation provided by conventional servers, making virtual consolidation possible. By offering this as a service, it becomes possible for users to avoid holding surplus equipment individually, meaning they only have to bear the costs relative to actual usage results. By standardizing system functions and offering them as a service, the users will be able to use just the system functions that they need. By standardizing the items that had been owned individually, and consolidating them virtually, it becomes possible to respond to user needs more flexibly and achieve higher efficiency than before.

Moreover, standardization makes it easier to manage and control the whole IT environment, and by cohesively responding to change, it becomes possible to act more swiftly and efficiently.

By ensuring integration and standardization of our rules and policies, business processes, applications, master data, infrastructure and upper layers, we will be capitalizing on the characteristics of cloud computing, aiming to gain maximum results. However, to blindly promote standardization would only result in an "average company" devoid of any strengths. It is therefore important for each company to correctly ascertain its areas of competence and those that need to be standardized. In order to effectively utilize limited costs, it is necessary for the IT cost that is reduced through standardization to be shifted to strategic IT investment to bolster our competitive

Establishment of a cloud-oriented service provision platform which centralizes the systems within the group, while re-establishing the company's core systems

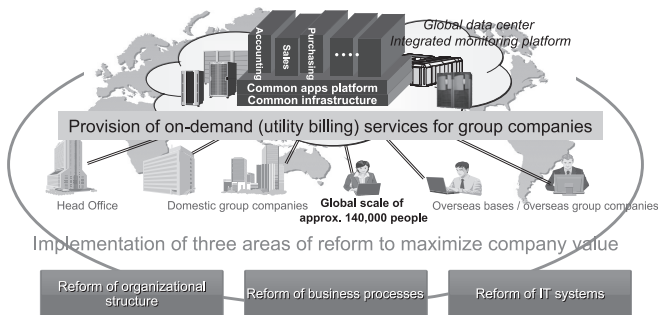Implementation of three areas of reform to maximize company value

Fig. 1 Structure of Cloud Environment that NEC is self-implementing.

advantages, and linking it to our business growth.

At NEC Group, as the first step of our shift to cloud-oriented systemization, we will be applying it to Accounting, Sales, and Purchasing, which are three management areas that minimally affect the quality of business (**Fig. 1**).

4. Efforts towards Business Process Reforms and IT Reforms

4.1 Business Process Reforms

At NEC Group, business is conducted based on the business processes that have been designed for each organization separately until now. As a result, the risk control point (RCM) that exists in the business process varies widely. In the implementation of internal controls, it becomes difficult to maintain quality and to respond efficiently.

With our latest activities, we are attempting to standardize the business process. For example, by removing the organizational elements from the more than 100 business process patterns that existed in the sales domain, we were able to consolidate the merchandise elements (products and services) and market elements (customers and channels) down to 22 processing patterns, allowing us to standardize our processing functions (order taking, logistics, sales, etc). As a result, risk point controls are unified, making it possible to maintain the quality of internal controls, as well as respond efficiently to changes. Moreover, standardizing the business process

makes it easier for staff to be relocated within different organizations, while creation of a centralized business processing center will help enforce further efficiency (**Fig. 2**).

In our activities, we appointed a process owner who is charged with deciding the standard process for each function (accounting, sales, purchasing) and business domain (SI, device, platform product, mass sales product), to facilitate the standardization of our business. Moreover, we are driving standardization based on three layers, namely global standards, local standards (specific processes associated with each area or type of industry), and company standards (processes unique to each company).

4.2 IT (Application) Reforms

As stated in chapter 3, NEC Group's IT was diversely managed. As a result, separate systems exist for each function and organization, totaling over 1,400 systems. The number of systems for function specifications, architecture, equipment, and operational specifications, is equal to the number of units that are being managed.

For improving the quality of operation and enhancing the efficiency of development/operation business, increasing the ratio of standardization to accelerate the effective usage of cloud computing will have a major effect.

Through these latest reforms, we are building a standard system based on SAP, with a prerequisite of implementing a standardized business process for the three domains of Accounting, Sales, and Purchasing, and applying it globally.

The standard system will be composed of SAP+One. In domains where the standard business process cannot be achieved by SAP, we will implement a workflow application as a standard tool, or integrate with current base system functions, as the "+One" factor. Through these methods, excessive functions will be removed and the minimum necessary functions will be attained. Taking actual conditions into consideration, the implementation policy for each company involved will differ in Japan and overseas. For implementation in Japan where there are many cases in which the systems of each functional unit are integrated into the current system, we will replace the Accounting, Sales and Purchasing functions with a standard system, and construct I/F HUB to enable integration with data from other systems. By contrast, for overseas implementation, there are many cases where systemization has already taken place at small-scale systems or ERP. Therefore, we will be encouraging a total system change and providing functions such as CRM and project management in addition to those

We have standardized business processes through seven steps in reforming NEC management systems.

- Costs associated with back-office sections to be reduced by more than 20%
- Accelerated management cycle (gauging of orders / sales day by day)
- Further improvement in accuracy of business performance management (management of business performance on a weekly basis)
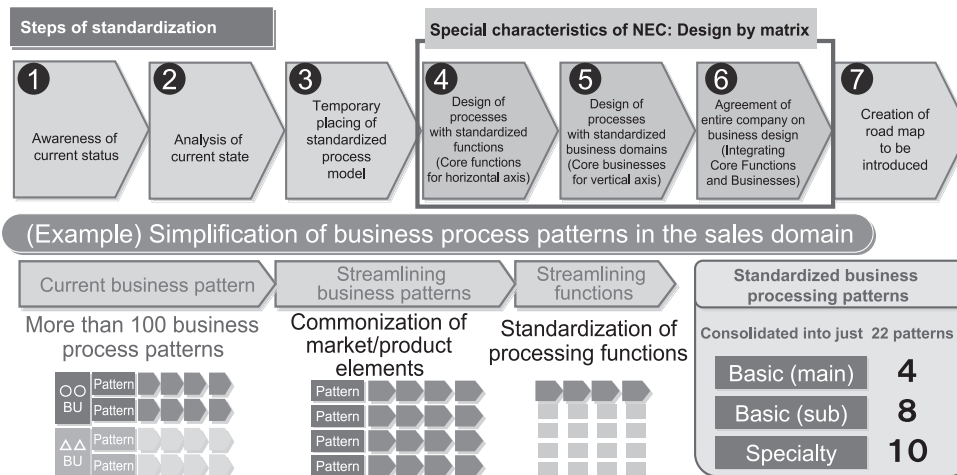
Steps of standardization

Special characteristics of NEC: Design by matrix

1 Awareness of current status

2 Analysis of current state

3 Temporary placing of standardized process model

4 Design of processes with standardized functions (Core functions for horizontal axis)

5 Design of processes with standardized business domains (Core businesses for vertical axis)

6 Agreement of entire company on business design (Integrating Core Functions and Businesses)

7 Creation of road map to be introduced

(Example) Simplification of business process patterns in the sales domain

Current business pattern	Streamlining business patterns	Streamlining functions	Standardized business processing patterns
More than 100 business process patterns	Commonization of market/product elements	Standardization of processing functions	Consolidated into just 22 patterns

○○ BU Pattern Pattern
△△ BU Pattern Pattern

Basic (main) 4
Basic (sub) 8
Specialty 10

Fig. 2   Business process standardization activities.

for the above three areas to meet overseas requirements.

4.3 Code/Data Reforms

Until now, code configuration at NEC Group was done by each section in charge of managing business. For example, the section code that is unique to each section is governed by many different coding systems depending on the managing section. As for the company codes that are assigned uniquely to companies we do business with, the same coding scheme is not necessarily used among Sales, Maintenance and Purchasing. For data, since the definitions vary, even if data having the same labels are compiled and compared, it may not yield the desired results. In some cases, one might not even realize that the resulting information is not what was being looked for. In our code/data reforms, we will be tackling the three challenges of "standardizing the code management business process," "unified global control of major codes related to transactions," and "unified administrative information for transparency of management." Through this, we will achieve increased transparency of business management information, increased transparency of prospective profits through various perspectives such as by market/customer/function, and increased efficiency of

code management jobs enabled by the elimination of repetitive work.

Our main subjects for standardization are as follows:
1) Items that must meet SAP standards, international standards or industry standards (account title codes, country/currency/unit/transaction term codes, etc.), in order to achieve our ultimate goal
2) Items that must be newly redefined based on SAP (organization codes, consolidated subsidiary, segment, plant, sales organization, purchasing organization, etc.) in order to achieve our ultimate goal
3) Items required for profit management on a corporate level (key customer code, supplier code, business category code, sales channel code, area code, etc.)
4) Items that require code conversion in order to integrate with other systems on a transaction level (product code, part code, etc.)

In the code standardization effort, code owners were specified, who set the code structure on a code unit basis, as well as master/maintenance/process, in order to realize the unification of code definitions in conjunction with the business process owners. During this, we adopted external standards that have eliminated the irregularity of the company. And by adopt-

ing a "no-meaning serial number" system, we are also seeking to improve the scalability of the system to respond to changes in the business world.

4.4 Infrastructure Reformation

Concerning the possession and operation of servers within NEC Group, various styles had been adopted based on decisions made by each system's administrator, after having assured compliance with security measures for the equipment and operation standards. A number of divisions are operating various data center services within their companies. Under such circumstances, activities aimed at reducing running cost and improving operational quality were beginning to surpass their limit.

Through standardization and deployment of common services, our latest reforms free our companies from having to protect their information equipment separately. Furthermore, by increasing the level of standardization, we can virtualize various aspects (infrastructure design, running design, architecture, applications, system functions, codes/data), making it possible to consolidate servers which had been hampered by individual differences, as well as further reduce running costs (**Fig. 3**).

To make this a reality, we will be swiftly adopting new products based on REAL IT PLATFORM Generation 2, NEC's new platform concept that stresses visualization, automation, and eco-friendliness. For example, to optimize the network within the data center, we are introducing network equipment that utilizes new "open flow" technology to increase the value of our operations.

5. Conclusion

Adopting cloud computing in our new reforms enables us to set our goals at an over-20% increase in operational efficiency, a reduction in TCO, and a bolstering of internal controls (with a drastic reduction in the number controls in our business process). By not only achieving these goals, but also by offering that know-how packaged as various services, we will be helping to resolve the business challenges of our customers.

*SAP is a trademark or registered trademark of SAP AG in Germany and/or other countries.

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Consolidating Accounting/Sales/Purchasing at Main Data Center
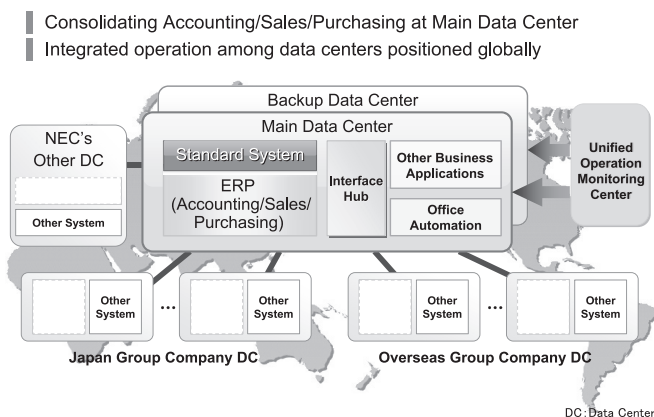Integrated operation among data centers positioned globally

Fig. 3   IT reforms system consolidation image.