

# Improving Efficiency of Company-wide Operational Work by Applying UMS

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## Abstract

Companies are routinely encumbered by numerous labor-intensive tasks that take much time and effort to complete. By autonomously handling labor-intensive operations (primarily human resources related tasks) through application of our unified management support system (UMS), operators are improving efficiency and quality in a wide range of business areas. This article reports on the effects of implementing UMS at work sites across NTT Communications on a company-wide basis and explains our efforts to further expand UMS throughout the company.

*Keywords: UMS, operational work, efficiency*

## 1. Introduction

The Process and Knowledge Management Department at NTT Communications is the driving force behind improving operations throughout the company. This department is therefore visualizing operational processes that are duplicated or overly complex and reforming them by applying the latest information and communication technologies in areas where elements of the company value chain intersect.

### 1.1 Current status of operational work

Efforts are often made to systematize operations to improve efficiency. However, a lot of systematization work only covers certain parts of processes. Other process tasks still remain after the systematization is implemented. For example, information inquiries and information distribution between multiple systems have always been done manually by employees, and they involve labor-intensive operations such as carrying out *bucket relays* of information between operators and visually cross-checking the results.

### 1.2 Background to implementation of UMS

Cutting the workload of staff performing operations at facilities on-site requires heavy investments and long development periods spent in reviewing the specifications of large-scale systems. Consequently, the increases in efficiency achieved by staff having certain skills using applications such as Excel and Access are limited.

In view of this, NTT Communications began discussions on applying the unified management support system (UMS) on a company-wide basis in July 2012. UMS can automatically record the actions of operators at their computer terminals and automate the work of staff (such as implementing conditional branching on flowcharts) without requiring programming. Consequently, the efficiency of operations has been steadily improving as a result of operators autonomously applying UMS. Moreover, UMS is being extended for use across the entire company under the name *manual-procedures warp tool*, by familiarizing operators with it and making its adoption easier.

| Number of UMS implementations: about 130 per year (as of July 2013) |   |                                 |   |
|---|---|---------------------------------|---|
| Operational segment   | Activities concerning main automation target<br>(Blue highlights indicate operations involving large amounts of work, where the implementation of UMS is highly effective.)   | No. of scenario implementations | Savings achieved through reduced work<br>(100 m yen/year) |
| Sales/<br>service orders  | <ul style="list-style-type: none"> <li>- Drafting approvals of quotations and customer proposals (about 90,000 cases/year)</li> <li>- Issuing orders for various requested services and options</li> <li>- Surveys of service-provision areas</li> <li>- Coordinating relative prices and construction costs</li> <li>- Appraisals of many global locations (supplementary system function for appraisals)</li> <li>- Progress reports on service orders for agencies</li> <li>- Creating alarm lists for discount systems</li> </ul> | 40                              | ▲1.0  |
| Facility design   | <ul style="list-style-type: none"> <li>- Designing transmission systems/paths/circuits (about 100,000 cases/year)</li> <li>- Configuring parameters</li> <li>- Designing facility units and panel expansion</li> <li>- Designing wiring of intra-office optical cables</li> <li>- Supervising work to remove obstacles Managing relocation of communication equipment (cables or poles) due to external factors such as road construction</li> </ul>  | 40                              | ▲1.2  |
| Fees  | <ul style="list-style-type: none"> <li>- Billing-itemization inquiries/job-invoice reissuing (about 40,000 cases/year)</li> <li>- Operations for revising information concerning billing addresses etc.</li> <li>- Registration of information concerning campaign discounts</li> </ul>   | 30                              | ▲0.5  |
| Shared  | <ul style="list-style-type: none"> <li>- Conference costs/overseas business trips/ordering services/drafting goods approvals (about 50,000 cases/year)</li> <li>- Registration and stock-taking of system accounts</li> <li>- Processing due-payment requests (end of month)</li> <li>- Appropriation of arrears (last month of the quarter)</li> <li>- Registering information about staff salaries</li> <li>- Processing requests at help desks</li> </ul>  | 20                              | ▲0.3  |
| Total   |   | 130                             | ▲3.0+ $\alpha$  |

Fig. 1. Current status of implementation of UMS at NTT Communications.

## 2. Result of implementing UMS

We made an effort to get operators to willingly apply UMS while carrying out their daily work, and as a result, we successfully improved the efficiency of operations in areas such as service ordering, design, billing, maintenance and repair, and system development. The results of implementing UMS at NTT Communications are explained in Fig. 1.

We found that a great number of manual operations are performed across the entire company; in other words, they are not limited to operation systems. Moreover, we demonstrated that in addition to improving the efficiency of operations, UMS reduces the amount of checking work required (by improving accuracy and quality) as well as the amount of investment in system development. Furthermore, we demonstrated that standardization work along with UMS implementation is an effective approach that helps in creating flow-through processes and in optimizing the creation of scenarios.

### Example 1: Improving efficiency of operations for configuring parameters

Operations for configuring parameters must be carried out manually circuit by circuit, and the operators who do that configuration work must be continuously stationed at operation systems. Consequently, UMS is applied so as to automate those network-opening operations (see Fig. 2). In concrete terms, the conventional configuration time required per circuit has been reduced from 10 minutes to 2 minutes by implementing UMS.

### Example 2: Improving efficiency of making final decision about customer proposals, estimates, etc.

Final decisions on proposals and estimates given to customers must be manually drafted on electronic decision-making systems on a daily basis. Applying UMS improves the efficiency of drafting final decisions and correcting technical flaws by conducting checking, reworking, and other such tasks. In concrete terms, the time spent on these operations has been reduced from the conventional 60 hours per item

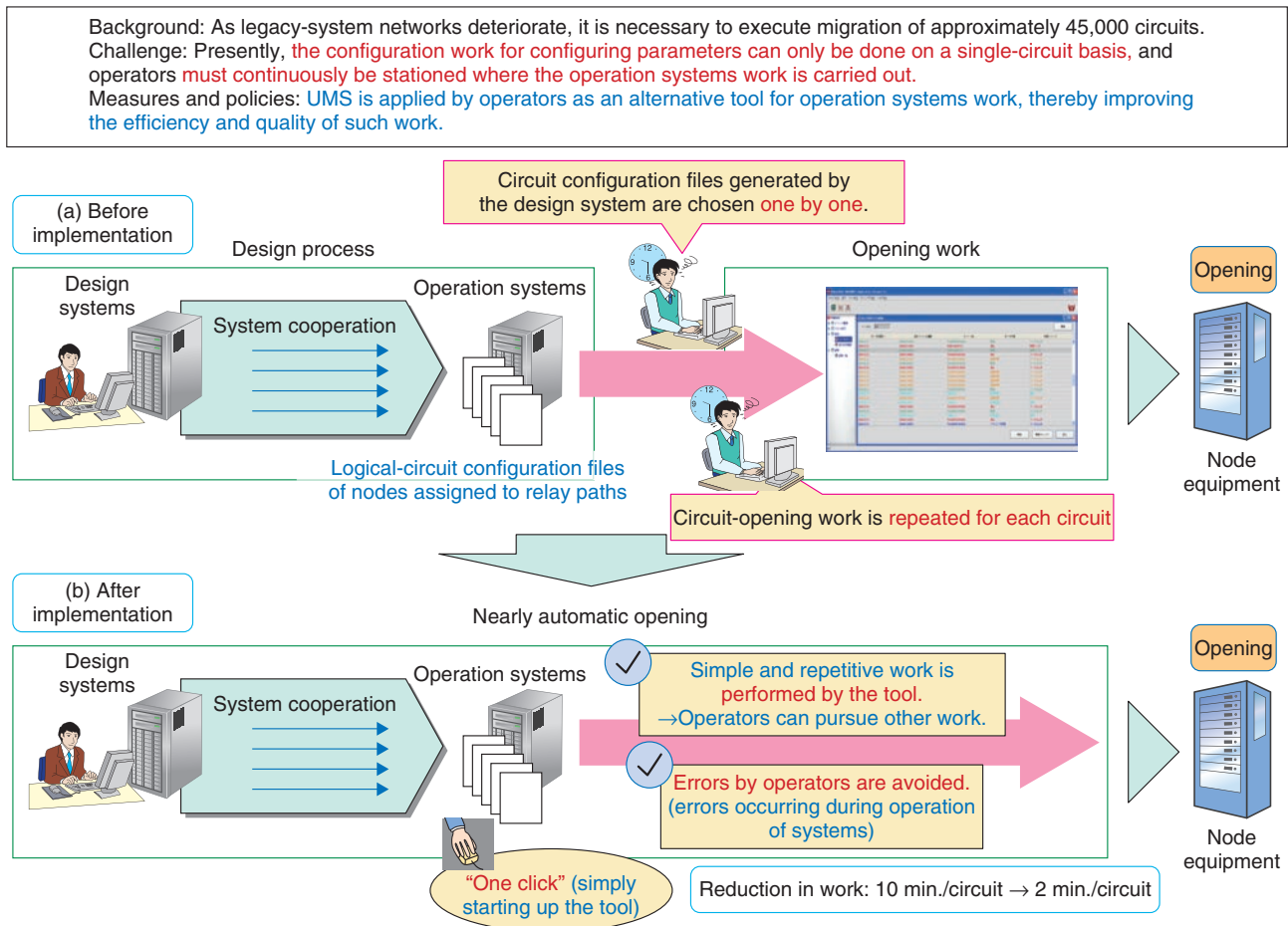


Fig. 2. Improving efficiency of configuring parameters.

to only 30 minutes per item.

**Example 3: Improving efficiency of updating customer information**

When customers notify NTT Communications with information concerning changes to contract names or the names of places of business, etc., those changes must be confirmed, copied and pasted one by one, and then input into customer-management systems (while care is taken to avoid selection oversights and input errors). Implementing UMS makes it possible to improve the efficiency of updating customers’ information, conducting identity checks, etc., while creating a paperless process. Specifically, time spent on such application work has been cut from 20 minutes per order to 10 minutes per order, and the amount of paper consumed has been reduced by about 10,000 pieces per month.

**3. Activities for supporting expansion of UMS**

As part of our aim to get the entire company involved in applying UMS to improve efficiency, we have introduced various activities to support the expansion of UMS. These include increasing in-house visibility, applying human resources, giving commendations to staff working on automation, promoting recognition of UMS, and so on; they are explained schematically in Fig. 3. A questionnaire was given to more than 400 students attending a course on UMS, and the responses indicated that 30% of students said they would “immediately try” it, while 50% said they would “look into work applicable to UMS”. Moreover, many answers mentioned the ease of use of UMS, its effectiveness in regard to on-site work, and the students’ willingness to adopt UMS. Some of the responses are summarized below:

(a) One-day training course (AM: classroom lectures; PM: trying out posting automation adapted to work of class members)

⇒ Expandable to cover NTT Group companies

By attending one-day training course, students acquire UMS skills and put UMS into practice.

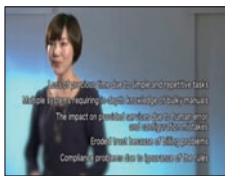
On-the-job training to improve skills/class achievements

- Number of times held: 30
- Number of attendees: 400 (including center operators)



(b) Lateral expansion

- Extension to group companies: UMS is especially effective for group companies involved in labor-intensive work.
- Global extension: English version of UMS tool will be provided at each overseas site; UMS is currently being used for making estimates. Remote support is provided in addition to explanatory videos and manuals.



(c) Commending persons making superior efforts—through presidential awards, online journals, dedicated websites, etc.—enhances motivation of workers.

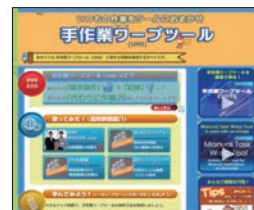


Fig. 3. Activities for supporting implementation of UMS.

- “I now understand that automation (which I have come to accept as inevitable) can be accomplished simply by using UMS”.
- “Great precision is required in avoiding input errors during copying and pasting etc., so I will definitely give UMS a try”.
- “I want to apply UMS to system-verification work. If we implement it successfully, it will be possible to perform validation work on the weekend without the need for any staff”.

**4. Future expansion of UMS**

From now onwards, while continuing to help

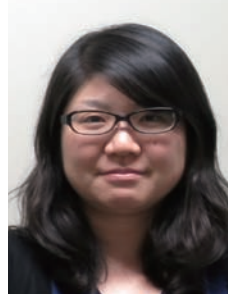
improve the efficiency of operations across the entire company by applying UMS, we will focus our attention on expanding the application of UMS on a global basis to our overseas branches. At the same time, we will do our utmost to put the accomplishments of our research laboratories (starting with UMS) to practical use. Moreover, we presume that work-intensive operations are challenges faced by many kinds of businesses—both domestic and overseas. We believe that UMS can help solve problems that our customers may face, and we therefore want to expand application of UMS in a strategic manner to the general marketplace.



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