Introducing the Integrated SI Center

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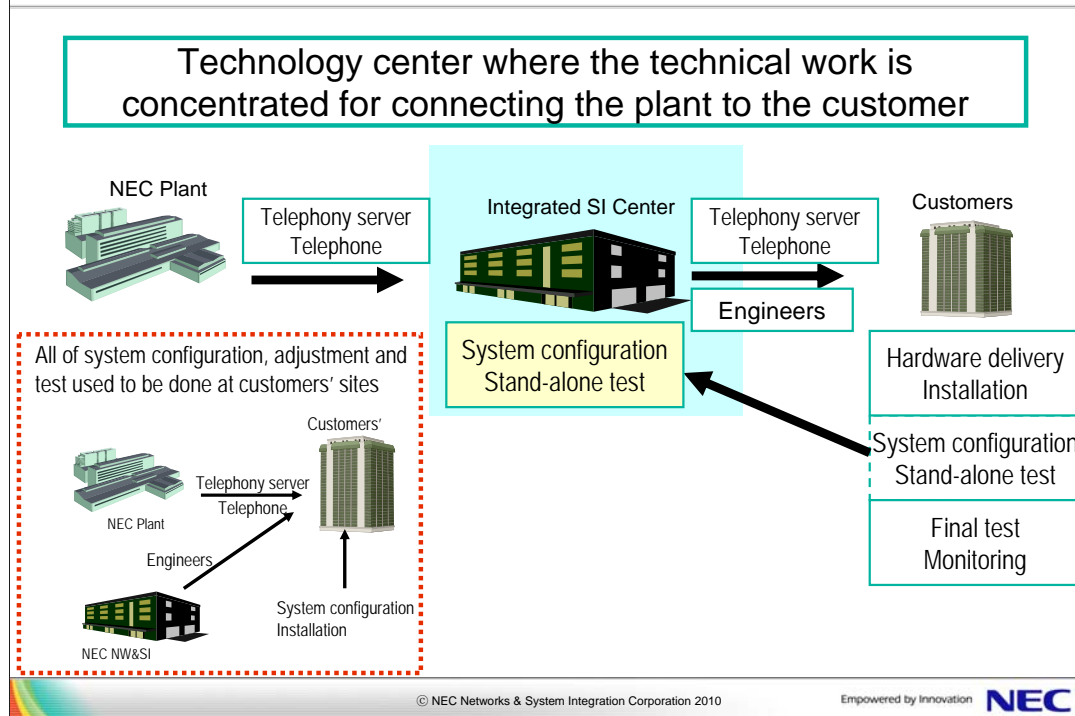
As an example of the AC-I activities, I will be providing you with an overview of the Integrated SI Center.

SI & Service Business Outline

Customers

Creation, evaluation Verification

Proposal

EmpoweredOffice Center

Support Services

nTOC/pDOC S-iDC*

Integration

Integrated SI Center (Production Innovation)

Providing total services to customers

*The names of our operation center, parts delivery center and data center

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I am in charge of the SI & Services Operations Unit, which provides corporate network systems. The unit proposes systems to customers, builds systems, and provides support services after the systems are installed. Moreover, the unit provides total services that manage the lifecycle of customers' systems, including an evaluation and analysis of the operation of the systems, and proposals for solving problems. The Integrated SI Center that I am introducing today is responsible for building systems into the workflow I have just described.

Positioning of the Integrated SI Center

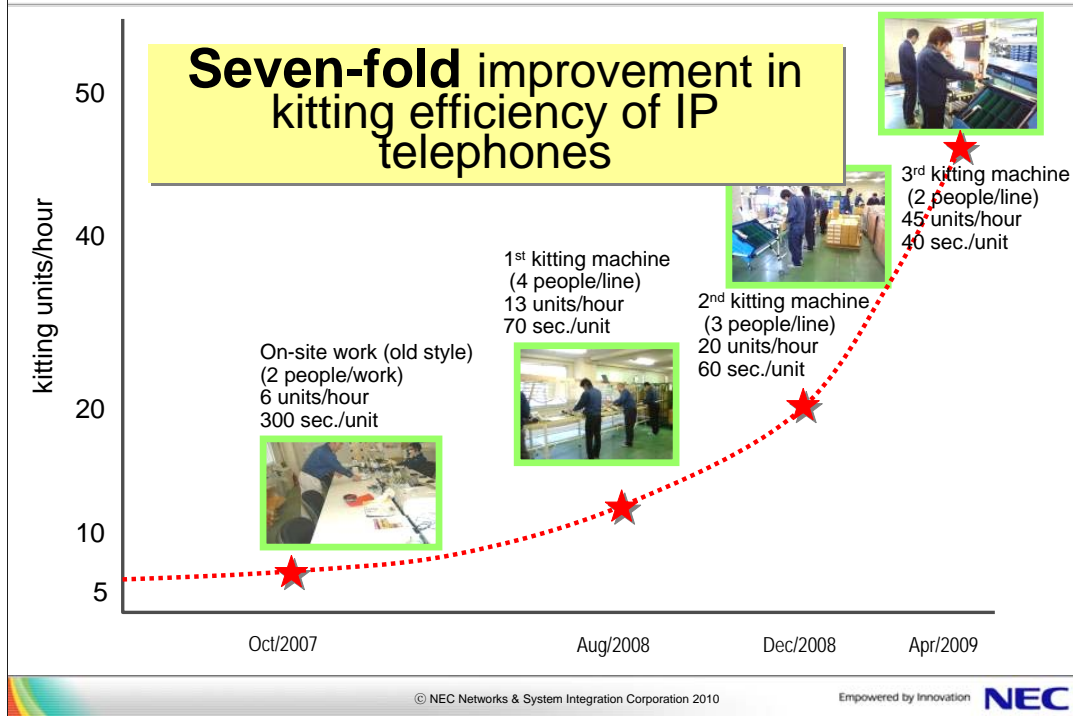Technology center where the technical work is concentrated for connecting the plant to the customer

The Integrated SI Center performs system configuration, testing, and adjustments, primarily for telephones and for PBX equipment and telephony servers with exchange functions used in in-house telephone systems. As shown in the chart in the bottom left corner, telephony servers and telephones were delivered from an NEC plant to customers' offices where the systems were installed, and engineers and technicians from NEC Networks and System Integration performed system construction, including the setup and installation of equipment, testing, and adjustments, at customers' offices. For example, information on extension numbers, which says, "The extension number of the phone on this desk is XXXX," and other data necessary for settings were all entered into telephones and telephony servers at customers' sites.

However, as system construction technologies are becoming increasingly sophisticated in association with the introduction of IP and software for equipment, cultivating and securing advanced technicians who can handle increasing numbers of projects and the expanding project scale is becoming increasingly difficult. In large-scale projects where many telephones were installed, there were differences in skill among technicians, and errors and failures occurred. In some cases, technicians were not able to work for a day, because equipment was not delivered to the site.

A number of us, including senior executives, discussed an AC-I activity to solve the problem. We concluded that we should establish a technology center that performs advanced tasks, including the setup of equipment, which was done onsite using equipment delivered directly to the site from a plant. That is, all difficult tasks should be performed at the Integrated SI Center, and only a minimum of work, such as wiring, is carried out onsite.

The delivery of equipment via the technology center appears to be a waste of effort in terms of logistics, but we have achieved results that have more than offset that apparent waste. First, experienced engineers carry out system configuration including data entry at the technology center, and as a result, quality has been stabilized, and work hours have been reduced. Second, since equipment is delivered from the technology center, a facility of the Company, to customers' sites, coordination between the technology center and customers' sites has improved, and technicians at the site no longer have to wait for equipment to be delivered. The new linear connection between customers and the plant has improved the situation significantly.

Improvement Results (in kitting process)

Seven-fold improvement in kitting efficiency of IP telephones

kitting units/hour

50

40

20

10

5

On-site work (old style)
(2 people/work)
6 units/hour
300 sec./unit

1st kitting machine
(4 people/line)
13 units/hour
70 sec./unit

2nd kitting machine
(3 people/line)
20 units/hour
60 sec./unit

3rd kitting machine
(2 people/line)
45 units/hour
40 sec./unit

Oct/2007   Aug/2008   Dec/2008   Apr/2009
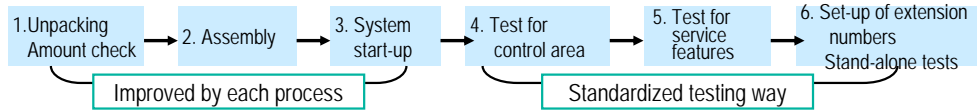
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We have been consciously establishing new workflows in the Integrated SI Center. We have been checking and reviewing the processes through day-to-day improvement activities to improve work efficiency, shorten delivery times, and enhance quality. We first improved our work on IP telephones. As shown in the graph, efficiency in the kitting of IP telephones has improved to 45 units per person per hour, or 40 seconds per unit. We have created the first, second, and third kitting work tables since October 2007. We are continuing and will continue to promote improvements.
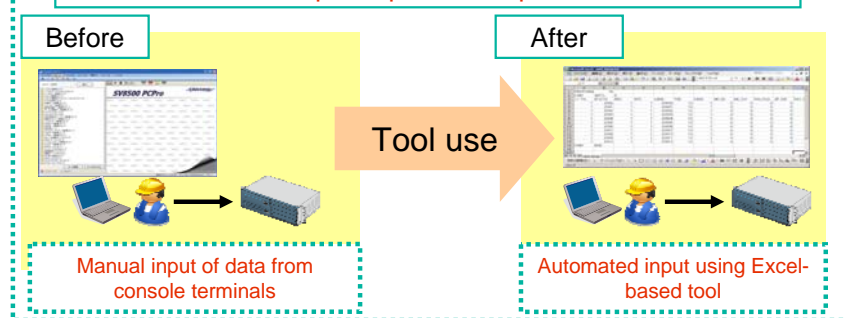
Current Efforts for Improvement

◆ Construction of linear flow for configuration process of telephony servers

<Process>

| 1.Unpacking Amount check | → | 2. Assembly | → | 3. System start-up | → | 4. Test for control area | → | 5. Test for service features | → | 6. Set-up of extension numbers Stand-alone tests |

Improved by each process   Standardized testing way

An example of process improvement

| Before | Tool use | After |

Manual input of data from console terminals   Automated input using Excel-based tool
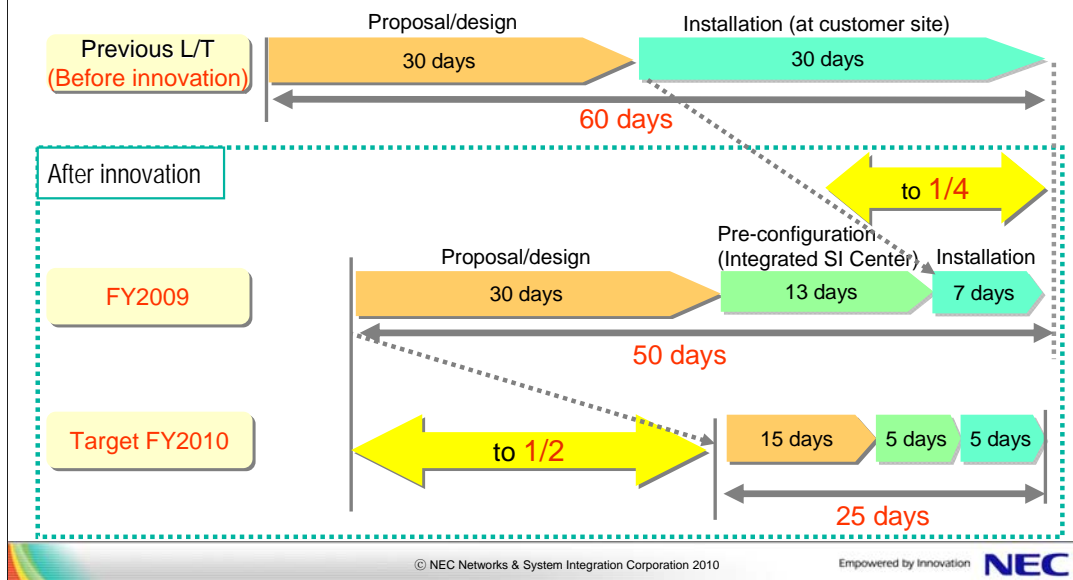
Next, I would like to talk about the improvement in the configuration process of telephony servers. In the past, a server was worked on by a single technician, and we were not able to tell where the problems and difficulties lay. We then visualized the work by having each part of the process, such as the unpacking of cardboard boxes of equipment, assembly, and system configuration and adjustments, worked on in different places. Since the process has been divided up into stages, the work line has become a little longer physically. We are shortening the line gradually by, for example, using computers to automate parts of the process and omitting other parts.

The chart in the lower part of this page shows an example of the improvement of work efficiency at the technology center. We have developed a tool allowing data to be entered into the system, using Excel. It took a day to enter a set of data manually, but with the tool, the data entry is now done instantly. Using approaches like this, we are shortening the work line by correcting needless work that has become visible in parts of the process.

Current Improvement Initiatives

◆ Shortening of lead time (L/T)

▷ Target: 1/2 total L/T from order received to service complete!

	Proposal/design	Installation (at customer site)
Previous L/T (Before innovation)	30 days	30 days

60 days

After innovation

to 1/4

	Proposal/design	Pre-configuration (Integrated SI Center)	Installation
FY2009	30 days	13 days	7 days

50 days

Target FY2010	to 1/2	15 days	5 days	5 days

25 days

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When we started the operation, it took on average 60 days to build an IP telephony system. However, with the establishment of the Integrated SI Center, the period has been shortened to 50 days.

Current Efforts for Improvement

◆ Shortening of lead time (L/T)

▷ Target: 1/2 total L/T from order received to service complete!

Target FY2010 | Proposal/design 15 days | Pre-configuration 5 days | Installation 5 days

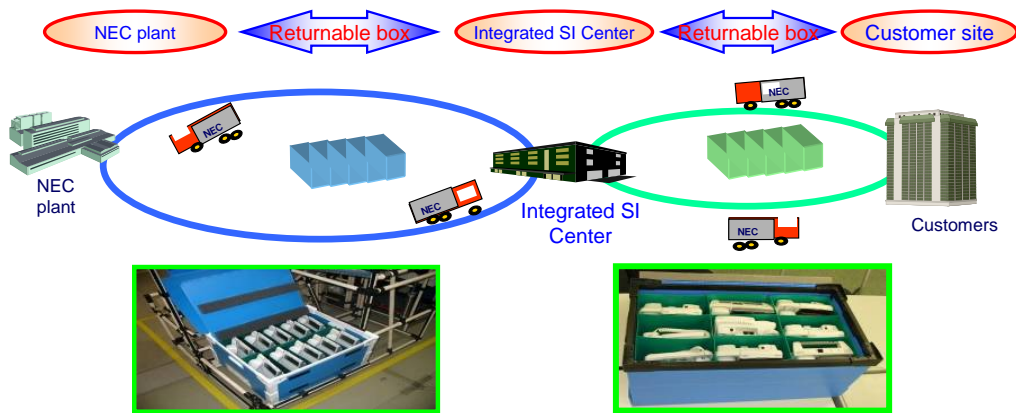25 days (1/2 of FY2009)

Priority measures

1. Improvement in proposal/design works
   -> Scheduling with a target service completion day

2. Improvement of pre-configuration work at the center
   -> Shorten L/T by improving the working stream

3. Improvement of installation work
   -> Elimination of redundancies, standardization,
                                              automation with tools

The shortening of the lead time has been achieved by improvements made in the proposal and design stage, in the pre-configuration stage including the setting of equipment, and in work at customer sites through AC-I small-group activities at each stage. We are continuing improvement through the activities, aiming to halve the current lead time in fiscal 2010.
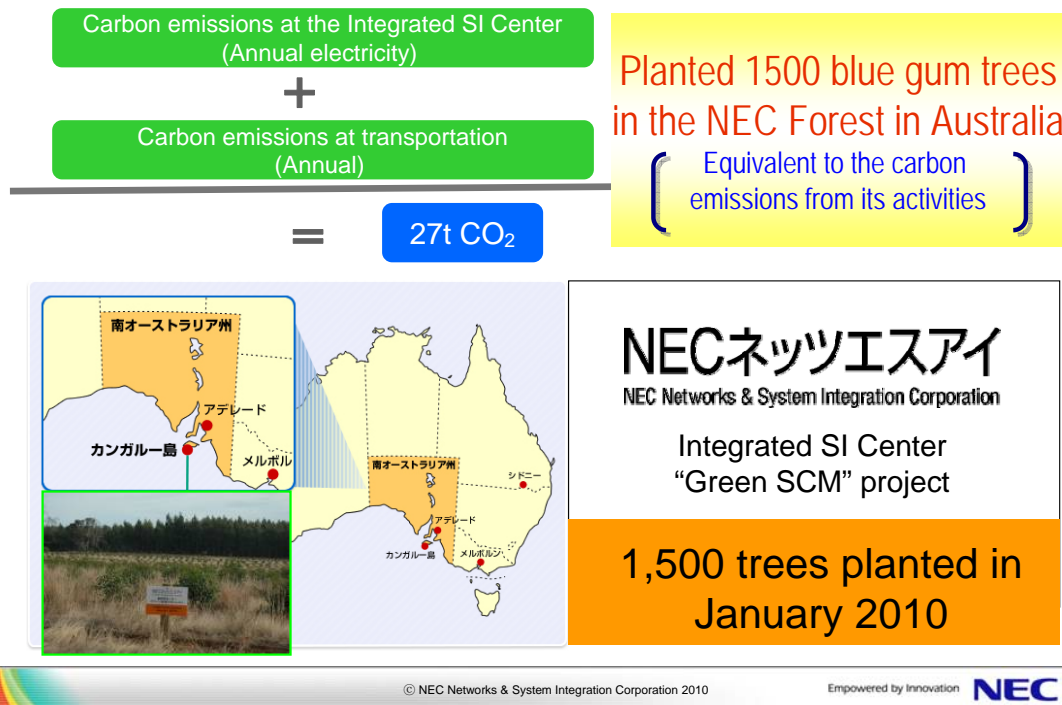
Commitment to the Environment

Green SCM

NEC plant ⟷ Returnable box ⟷ Integrated SI Center ⟷ Returnable box ⟷ Customer site

NEC plant

Integrated SI Center

Customers

1. Returnable boxes for telephones cut wastepaper by 90%.

2. CO_2 at installation was halved.

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Next, let me explain Green SCM. The Integrated SI Center uses returnable boxes, which can be reused, for the transportation of equipment between the NEC plant and the center and between the center and customers. By using returnable boxes, we have been able to reduce the volume of cardboard boxes discarded as trash after unpacking. Moreover, the use of returnable boxes has enabled us to deliver telephones and other equipment in accordance with the positions of floors and desks at the customer's site and to install telephones and other equipment, moving them along the shortest route. As a result, we have shortened the time for work and checking and have reduced errors at the customer's site.

Commitment to the Environment

Carbon emissions at the Integrated SI Center
(Annual electricity)

+

Carbon emissions at transportation
(Annual)

= 27t CO_2

Planted 1500 blue gum trees
in the NEC Forest in Australia
[Equivalent to the carbon
emissions from its activities]

NECネッツエスアイ
NEC Networks & System Integration Corporation

Integrated SI Center
"Green SCM" project

1,500 trees planted in
January 2010

南オーストラリア州
アデレード
カンガルー島
メルボル
南オーストラリア州
アデレード
カンガルー島
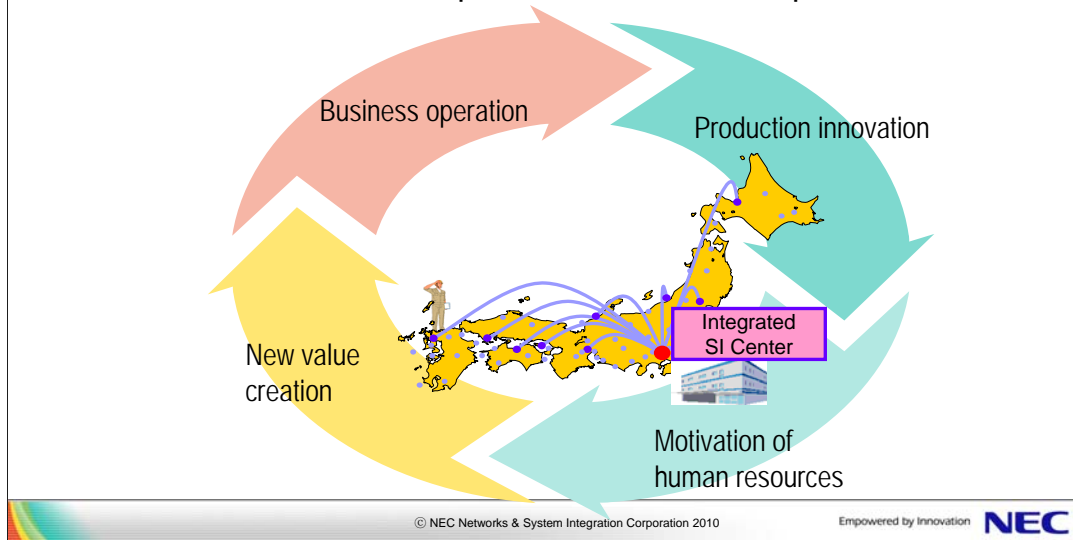メルボルシ
シドニー

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Even though we reduce waste by using returnable boxes, the Integrated SI Center uses electricity in the installation of telephones and telephony servers and emits CO2 in transportation. We have planted 1,500 blue gum trees in the NEC Forest, that is equivalent to the amount of CO2 emitted in relation to the activities of the center. We aim to build IP telephony systems related to the Integrated SI Center that are almost free of CO2.

In Conclusion

We introduced the concept of production innovation in plants to the configuration process as AC-I$^+$ activities. ("SI factory") We will continue to increase the number of products we deal with and expand the scale of our operations.

Business operation

Production innovation

New value creation

Integrated SI Center

Motivation of human resources

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As I have just described, we are pursuing production innovation in telephony system configuration through the AC-I activities. The Integrated SI Center is focusing on telephony systems but will expand the scope of operations to include network equipment and servers, while expanding target areas from the Tokyo, Nagoya, and Osaka areas to other areas. We are undertaking activities that competitors are not tackling, and will take the lead in those activities. We will enhance the quality of our operations through AC-I activities in our unique system configuration process.

Cautionary Statement

The results forecasts contained in this document are future estimates and are thus inclusive of risks and uncertainties since they are not based on definite facts. Please be aware that a variety of factors could cause actual results to differ materially from those projected. Major factors influencing actual results include the economic climate and social trends surrounding the business of the Group, changes in consumer preferences concerning the systems and services offered by the Group, as well as pressure to lower prices and the ability to succeed in an increasingly competitive market.

Factors affecting results are not limited to those described above.

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