Assessment Method
– Making IT Services Visible –
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1. Introduction

NEC has promoted an approach and implementation methodology called GIM\(^1\) (Global IT Management) as a framework for IT governance within global companies.

In a nutshell, GIM is a means of maintaining and managing the quality of IT services while the company’s business operations are expanded globally.

A key element for success with GIM is setting management goals. For the organization to successfully promote GIM, management criteria and accompanying goals must be set. By defining goals, the impact of IT expenditures—an area that is often difficult to see—can be debated and performance can be managed. Moreover, it is crucial that management goals be set in a quantitative manner using numerical values.

NEC has developed a unique assessment method for quantitatively grasping the state of IT services and has successfully used this method with many clients to gain a grasp of their IT services.

This assessment method includes an operations assessment intended for general IT services operations and a security assessment targeting information security.

This paper gives an outline of this assessment method and its characteristics and presents the merits of the GIM approach using this same assessment method.

2. Making IT Services Visible

To quantitatively set goals and grasp the actual state of IT services, it is helpful to use a method for numerically expressing the results from evaluation of capabilities in services and management. In other words, an assessment method is critical to making the IT services “visible.”

By evaluating the actual state of IT services and employing an assessment method for quantifying the results, the following merits may be enjoyed.

- **Understanding the State of IT Services**
  When IT services can be evaluated and expressed in a numerical manner, the current state of the IT services can be more easily grasped.

- **Aligning Goals between Business and IT Services**
  It is critically important that the goals for the business and those for IT services are well-aligned. By numerically expressing the results of the IT services evaluation, it becomes easier to set goals and have them match up with business goals.

- **Continuously Measuring the Quality of IT Services**
  Numerically expressing the results of the IT services evaluation allows service quality to be captured continuously within the IT service PDCA cycle (see Figure 1).

- **Continuous Improvement of IT Services**
  When the current state of IT services is expressed numerically, it becomes easy to set ultimate goals and evaluate, study, and develop measures for improvement (see Figure 1).

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\(^1\) Refer to the white paper “Global IT Management.”
In the context of IT services, the PDCA (Plan → Do → Check → Act) cycle is conducted as follows:

**Plan:**
When commencing a PDCA cycle for IT services, use the assessment method to gain an accurate understanding of the current state of the IT services and then set goals to be attained or maintained.

While the PDCA cycle is ongoing, use the assessment method to gain a grasp of IT services and then review goals in light of the evaluation and analysis results.

**Do:**
Engage in the provision of IT services with the aim of attaining or maintaining set goals.

**Check:**
Monitor and measure the current state of IT services and review results.

**Act:**
Based on the results from the above review, consider areas for improvement and take steps to modify processes or add resources as needed.

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**3. Assessment Method**

The assessment method developed by NEC include an operations assessment intended for general IT services operations and a security assessment intended for information security. Each of these assessment methods is introduced below.

**3.1 Operations Assessment**

NEC has drawn from the ITIL\(^2\) Service Management Self Assessment (hereafter, ITIL assessment) to create a method for evaluating, analyzing, and making operations management capabilities of IT services visible.

The ITIL assessment is a tool for measuring the maturity level of IT services management that itsSMF\(^3\) developed based on ITIL V2. Through simple Yes/No questions, the organization’s IT services management is compared to ITIL best practices to understand its level of maturity. By doing this, problems with the current state of IT services management can be clearly identified.

The use of such an assessment method enables a quantitative evaluation of IT services management that conforms to ITIL, a global standard.

**(1) Evaluation Method**

The ITIL assessment can be used to discover the maturity level of IT services management, but the operations assessment not only provides the maturity level, it also expresses the evaluation results on a 100 point scale.

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\(^2\) Information Technology Infrastructure Library: A collection of best practices for IT services management.

ITIL\(^2\) is a Registered Trade Mark of the Office of Government Commerce in the United Kingdom and other countries.

\(^3\) IT Service Management Forum: A non-profit organization, based in the United Kingdom, that promotes the widespread adoption of IT services management. In 2003, itsSMF Japan was established to act as a chapter within Japan.
Maturity levels are defined (see Table 1) based on the ITIL assessment.

The 100 point scale method developed by NEC places weight on each question based on ITIL assessments, IT operations assessments performed by NEC, and cumulative data gained therein.

(2) Evaluation Criteria

The ITIL assessment’s evaluation items were adopted as is, and presented in question format. The questions fall into the 10 processes and 1 function categories of ITIL V2.

- **Service Support**
  - Incident Management
  - Problem Management
  - Configuration Management
  - Change Management
  - Release Management
  - Service Desk

- **Service Delivery**
  - Service Level Management
  - IT Service Financial Management
  - Capacity Management
  - IT Services Continuity Management
  - Availability Management

Figure 2 shows questions for Service Desk, Incident Management, and Problem Management for maturity level 3.

(3) Assumptions

Among the above processes, IT Services Financial Management and IT Services Continuity Management are highly dependent on the organization or group being assessed so it is important to check the following:

- The existence of a management system. If absent, when can it be launched or started?
- The skill and maturity of IT services management personnel.

(4) Scoring Method

When conducting an evaluation using the ITIL assessment, each question is answered as either Yes or No. The operations assessment, though, is evaluated on the following 4 levels of attainment.

- **Excellent**
  An operational structure based on ITIL exists and is optimally managed.

- **Good**
  While not adequate, an effective structure exists and is managed.
3.2 Security Assessment

The security assessment was developed by NEC to assess the security capabilities within the IT services operational context.

The ITIL assessment is based on Service Support and Service Delivery of ITIL V2, so the operations assessment developed using ITIL assessment as a reference includes no security questions or evaluation measures.

As a result, NEC created its own evaluation items, using JIS Q 27001 (ISO/IEC 27001) as a reference. Evaluation falls into the following four categories:

- Security management
- Server-based system
- Client PCs
- IP network, other

In a fashion similar to the operations assessment, each area is scored on a 100 point scale covering 4 levels of achievement.

3.3 Characteristics of the Assessment Method

The assessment method has the following characteristics:

(1) Creating Evaluation Criteria

In order to avoid disparity in evaluation results between evaluators, evaluation criteria were created (see Table 2).

<table>
<thead>
<tr>
<th>Table 2: Example of Evaluation Criteria (Service Desk)</th>
<th>12</th>
<th>10</th>
<th>8</th>
<th>6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Criteria</td>
<td>Excellent</td>
<td>Good</td>
<td>Fair</td>
<td>Poor</td>
</tr>
<tr>
<td>1. Is the Service Desk notified of new services or changes to existing services?</td>
<td>Yes; it is notified of all changes</td>
<td>Yes; it is notified of almost all changes</td>
<td>Yes; it is notified of limited changes.</td>
<td>Yes; it is notified of almost all changes.</td>
</tr>
<tr>
<td>2. Has a study of the workload mix been conducted to determine the required staff levels, skill type and the associated costs of the Service Desk?</td>
<td>Yes; it is conducted for a limited number of subjects.</td>
<td>Yes; it is conducted for a limited number of subjects.</td>
<td>No; never.</td>
<td>No; never.</td>
</tr>
<tr>
<td>3. Is the Service Desk perceived as a strategic function by senior management?</td>
<td>Yes; it is well disseminated.</td>
<td>Yes; it is mostly recognized.</td>
<td>No; it is not recognized as so.</td>
<td>No; it is not recognized as so.</td>
</tr>
<tr>
<td>4. Is the purpose and benefits of the Service Desk being disseminated to customers and users in the use of the Service Desk and its benefits?</td>
<td>Yes; almost all customers and users.</td>
<td>Yes; almost all customers and users.</td>
<td>No; not at all.</td>
<td>No; not at all.</td>
</tr>
<tr>
<td>5. Are the functions of the Service Desk being agreed to?</td>
<td>Yes; the service desk meets the all business requirements from customers.</td>
<td>Yes; the service desk meets the all business requirements from customers.</td>
<td>No; one division acts for a service desk function.</td>
<td>No; one division acts for a service desk function.</td>
</tr>
<tr>
<td>6. Does the Service Desk provide a status update to the customer on the closure of incidents?</td>
<td>Yes; it provides information but on a limited number of incidents reported by customers.</td>
<td>Yes; it provides information on any number of incidents reported by customers.</td>
<td>No; it covers only 70% of the required information from customers.</td>
<td>No; it does not provide information.</td>
</tr>
<tr>
<td>7. Does the Service Desk provide a status update to the customer on the planned changes?</td>
<td>Yes; status updates are provided on planned changes.</td>
<td>Yes; status updates are provided on planned changes.</td>
<td>No; it does based on its necessity.</td>
<td>No; it does not provide information.</td>
</tr>
<tr>
<td>8. Does the Service Desk communicate planned and short-term changes to someone who can, based on agreed service levels?</td>
<td>Yes; it is informed about the plans to all customers.</td>
<td>Yes; almost all changes are informed to the customers.</td>
<td>No; those are partly identified.</td>
<td>No; almost all are identified and informed to the customers.</td>
</tr>
<tr>
<td>9. Has the business need for a Service Desk clearly identified and required staff levels, skill type and the associated costs of the Service Desk?</td>
<td>No; it has not been conducted for service improvement.</td>
<td>Yes; it is conducted for a limited number of subjects.</td>
<td>No; never.</td>
<td>No; never.</td>
</tr>
<tr>
<td>10. Is the Service Desk noticed of any new services?</td>
<td>Yes; it is notified of almost all services.</td>
<td>Yes; it is notified of almost all services.</td>
<td>No; it covers only 70% of the required information from customers.</td>
<td>No; on almost all services.</td>
</tr>
<tr>
<td>11. Does the Service Desk have a service desk function?</td>
<td>Yes; there is.</td>
<td>Yes; there is.</td>
<td>No; it covers only 70% of the required information from customers.</td>
<td>No; it does not provide information.</td>
</tr>
<tr>
<td>12. Does the Service Desk have a service desk function?</td>
<td>Yes; it is well disseminated.</td>
<td>Yes; it is well disseminated.</td>
<td>No; it covers only 70% of the required information from customers.</td>
<td>No; it does not provide information.</td>
</tr>
</tbody>
</table>
This type of assessment should be conducted by a person who has a high level of education and training and who has deep experience. Even so, results may vary because points awarded or scoring criteria differ among those performing the assessment.

To minimize variances in scoring, we have created the evaluation criteria.

Since each question is evaluated, this not only allows each of the 10 processes and 1 function to be evaluated, but the level of attainment for each individual question can also be ascertained. This allows one to study in a concrete way the issues surrounding each question and the corresponding areas for improvement.

(2) 100 Point Score
In addition to the maturity level evaluation, we have adopted a 100 point scoring system.

In the 100 point scoring evaluation, each question is weighted for importance where the sum of the evaluation results adds up to 100.

By evaluating on a 100 point scale, it becomes easy to understand the weak areas for each management discipline. Consequently, goals for each can be more easily set.

(3) An Index of GIM Promotion
The GIM effort is not easily accomplished in a single pass. It is a multi-phase, continuous effort comprised of a multitude of evaluation items that are subject to improvement.

In order to improve weaknesses exposed by the assessment results, what areas will be improved at what phase can be determined based on the evaluation items scoring and question evaluation results. Moreover, goals for each phase can be set in more concrete terms.

In other words, the evaluation results from the assessment method can be effectively employed as management goals and as an index to evaluate the promotion of GIM.

(4) Implementation of the PDCA Cycle
The PDCA cycle for IT services can be more efficiently and effectively applied.

Leveraging these assessment methods makes it possible to measure the quality of IT services on a continual basis and to quantitatively grasp the impact of IT services management and areas of improvement.
4. Applying the Assessment Method

4.1 GIM Implementation Process

Based on NEC’s experience implementing IT services management on a global level, we propose a 4-phase GIM implementation process beginning with gaining a grasp of the current state of affairs. This GIM implementation process is particularly effective when executed in the context of a project structure.

Grasp current state

Set incremental management goals

Plan and execute

Evaluate and improve

PDCA

Figure 3: GIM Implementation Process

In an actual GIM promotion, the first thing is to conduct an assessment to discover the current state of IT services. Based on the results of that assessment, improvements are then undertaken. But the problem of cost may often make attainment of ultimate goals difficult to pursue in one fell swoop.

As such, improvements are often pursued in a phased approach. For example, the effort may be split into three phases, as presented by the GIM Implementation Process shown above.

Set Incremental Management Goals

Using the results from the above assessments, we then enter the process of setting goals. We may set goals using an incremental approach, for example:

- In phase 1, set goals to achieve minimum levels of performance for each management area in domains like privacy, security, and compliance policies.
- In phase 2, set goals to strengthen network security.
- In phase 3, set goals to strengthen integrated security, including a move to thin clients for PCs.

Plan and Execute

Next put together a plan for any work that must be undertaken to promote GIM. What is important here is the coordination with operational field groups, focusing on those overseas.

Evaluate and Improve

GIM implementation is not over once the project is complete. It is important to strive for ever-higher levels and adapt to changes in the management environment or IT environment. Approaching the task as a PDCA cycle, whether it is on the phase or project level, or from one fiscal year to the next, is essential.

4.2 Service Proposal Example

Let’s use a concrete example to introduce how we might use the assessment method (operations assessment) on a service proposal.

(1) Proposal Summary

Assume NEC is making a proposal for desktop services to Client A.
(2) Proposal Phase & Proposal Model

The proposal involves the introduction of services over three phases, following the GIM implementation process (see section 4.1).

Figure 4: Incremental Improvement

For phase 1, we present a three service level model (premium, recommended, and value) so that our client can easily compare and study the content of each.

(3) Content of the Proposal

The differences in service content for each phase and proposal model are shown in Table 3.

Table 3: Proposal Phase and Service Content (Example)

<table>
<thead>
<tr>
<th></th>
<th>Evaluation Result</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Proposal</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase 1</td>
<td>Premium model</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Information Literacy Education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Asset Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>OS/AP License Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PC Encryption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operational Service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Help desk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Recommended model</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>OS/AP License Management</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PC Encryption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operational Service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Help desk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Value model</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operational Service</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Help desk</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase 2</td>
<td>PC Health Check, PC Usage Log Collection, Illegal Access Prevention, Traceability</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phase 3</td>
<td>Thin Client, Integrated ID Management, Authority Management</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In phase 1, the service content differs according to the proposal model. NEC can propose the optimal solution, taking into account the client’s service needs and budget. This allows the client to study and evaluate the cost-benefit of each service proposal in a concrete and quantitative way.

(4) Current Status Results and Goal Setting

Using the assessment method, we then conduct an audit of the client’s IT services. From the results of that assessment, we establish goals corresponding to each of the three phases (see Table 4).

For phase 1, we set goals for each of the three proposal models (premium, recommended, and value).

Using the same assessment method and approach, we then estimate goals for phases 2 and 3, assuming that the content of services proposed for phase 1 will be fully realized.

Table 4: Evaluation Results and Goals (Example)

<table>
<thead>
<tr>
<th>Evaluation Item</th>
<th>Phase 1</th>
<th>Phase 2</th>
<th>Phase 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service Support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Desk</td>
<td>13</td>
<td>67</td>
<td>84</td>
</tr>
<tr>
<td>Incident Mgmt.</td>
<td>18</td>
<td>61</td>
<td>91</td>
</tr>
<tr>
<td>Problem Mgmt.</td>
<td>18</td>
<td>23</td>
<td>74</td>
</tr>
<tr>
<td>Change Mgmt.</td>
<td>16</td>
<td>19</td>
<td>74</td>
</tr>
<tr>
<td>Configuration Mgt.</td>
<td>15</td>
<td>27</td>
<td>62</td>
</tr>
<tr>
<td>Release Mgt.</td>
<td>16</td>
<td>20</td>
<td>73</td>
</tr>
<tr>
<td>Service Delivery</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Service Level Mgt.</td>
<td>14</td>
<td>34</td>
<td>94</td>
</tr>
<tr>
<td>Availability Mgt.</td>
<td>52</td>
<td>30</td>
<td>53</td>
</tr>
<tr>
<td>Capacity Mgt.</td>
<td>14</td>
<td>34</td>
<td>59</td>
</tr>
</tbody>
</table>

(5) Service Proposal

In an actual service proposal, we often use charts to express things visually (see Figure 5). The numerical values of these goals are not guaranteed by NEC to the client in the Service Level Agreement (SLA).
5. Conclusion

The aim of GIM is to share goals throughout the organization and evaluate performance by building an environment in which every person involved in IT management can understand the tasks he or she should undertake. To accomplish this, defining what must be managed and setting accompanying goals is critical.

While the assessment method introduced here functions as an effective tool to attain these GIM goals, it can also be applied by those who wish to gain a quantitative understanding of IT services and IT services management and then set goals for improvement.

Identifying management items and setting numerical goals is indispensable to GIM promotion. In other words, making IT services visible is crucial. We are confident that the assessment method introduced here can contribute greatly to the promotion of GIM and serve as a tool to “make IT services visible”.

Figure 5: Improvement Proposal for IT Services (Example)