Global IT Management

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1. Global Enterprise Management and IT Governance

While businesses rapidly pursue globalization on the one hand, many enterprises that have expanded overseas are facing serious challenges of slow build-out of internal infrastructure, unregulated IT environments, inadequate security awareness, and inexperienced personnel, to name a few. Any of these challenges serve to inhibit effective executive decision-making and business expansion. Today, IT governance on a global level is a key topic of concern common among executives leading global enterprises. It is not an exaggeration to say that it is the key to business success.

To practice IT governance on a global level, one must create mechanisms to effectively manage IT across all group companies and then execute well. But as the size of the enterprise grows, accomplishing this is not an easy task.

To address this need, NEC is promoting an approach and methodology dubbed “GIM” (Global IT Management) that serves as a framework for IT governance for global enterprise management.

2. Why Adopt GIM Now?

2.1 What is GIM?

To put it simply, GIM is an initiative to maintain and manage the quality of IT services as a firm expands its business globally. Rather than creating an IT organization in each country or region, or optimizing IT services, our approach builds an integrated management system encompassing all sites from a global perspective.

Many use a collection of best practices – called ITIL – to manage IT services. ITIL is effective when each overseas site individually builds IT management systems. However, for a global enterprise, this approach alone is inadequate.

Since various sites are included in a single supply chain, when the quality of operations is not managed from a global perspective, poor operations at one site negatively impact the entire supply chain. In today’s environment where many operations rely on IT, it is imperative that the quality of IT services underlying those operations is managed on a global basis.

2.2 Why adopt GIM now?

Japanese companies’ expanding to overseas markets is certainly not a new phenomenon. So what makes GIM such a necessity now? Here are a few reasons:

- Company activity relies on IT

Among the activities of today’s typical company, a variety of operations rely heavily on IT. This reliance is no longer limited to manufacturing or sales operations; there are many work processes that can no longer function without IT. When operations are expanded globally, the challenge of
building and operating an IT presence soon follows and the need arises to manage the quality of IT services on a global basis.

- **A consolidated management perspective**
  To date, firms expanding overseas instituted innovative work processes aiming for efficiency within the individual site. As a result, each site would often become a unique entity with its own hardware, software, style of operations and vendors. Such site level improvements become a hindrance when viewed from a global perspective of corporate governance and security. A consolidated management perspective that optimizes the overall group rather than individual sites is required.

- **Overseas expansion by small- and medium-sized companies**
  In today's world economic environment, many small- and medium-sized companies are expanding their manufacturing operations overseas to take advantage of lower costs or to spread operational risks. Compared to large companies, small- and medium-sized companies that have less endurance stand to benefit from lower costs and shorter development times by building and adopting a system that regulates the whole rather than individual sites.

In addition to the above advantages, undertaking a GIM approach promises the following merits.

- A firm grasp of the whole (task) makes it easier to create plans.
- The risks of each operation become more apparent and overall business risk can be shared.
- Through the sharing of risk internally, the speed of decision-making at each level of the organization can be improved.
- Building organizational structure, including personnel assignments, now becomes possible.
- Specialization within the organization can be promoted.
- Goals at each level of the organization (from management to floor personnel) become clearer, leading to better work efficiency.
- Quantitative goals can be set, making it possible to track progress and evaluate results.

### 2.3 The ideal GIM system

Global sourcing in the IT domain has recently garnered much attention. In a nutshell, global sourcing entails collaboration with IT vendors that show strength in the global marketplace so that the company can focus its resources on its own core business.

When employing the services of overseas IT vendors, it is common for work to be entrusted to capable local vendors by each individual site. And yet this makes control difficult when you try to put in place a GIM system because the scope and quality of management systems at each site differ.

![Figure 2: Relationship Between IT Functions and Organization](image)

Traditional IT management functions are shown at left in Figure 2. In broad terms, these fall into three areas: (1) IT strategy, (2) business applications development and operations, and (3) system infrastructure development and operations. When constructing an IT management system at the site level, these three areas apply. On the other hand,
when you deploy IT management on a global basis, another layer to manage sites globally must be added. Under such a structure, though, adequate control is difficult to achieve because the IT environment, literacy levels, and application software vary from one site to another.

A practical approach to overcome this problem involves some portion of headquarters control over all sites combined with limited local control. The ideal structure, however, would be a situation where clear boundaries on the role and authority for both the headquarters and the sites are established, allowing tasks in which your company adds no value to be entrusted to IT vendors providing services to local sites (illustrated at right in Figure 2).

Deciding what areas should be entrusted to external IT vendors is not an easy endeavor. When considering what tasks to farm out, using the standard of “contribution to core businesses” is useful. Areas that add value to your core business should remain in house, and non-core business that provides no added value should be entrusted to others. For example, IT infrastructure like networks and servers clearly lies outside of what is considered to be core business. Such areas are best left up to others.

While you are sorting out what areas to outsource it is also important to narrow down worthy IT vendors by determining whether the quality of service matches your needs and that there is a good match between your sites and the regions in which the vendor provides services. If the fit is good, it becomes possible to source tasks at a global level, as shown in Figure 3.

2.4 Setting management goals is the key to success

The goal of GIM is to build an environment where every person involved in IT management can grasp his or her own work, share goals throughout the entire organization, and evaluate results. In other words, the first step is to establish the areas that need management and then set corresponding goals. Setting goals enables meaningful debate on IT budgets that tend to be difficult to show cost benefits and makes it possible to manage results. It can be said that the goals and criteria decided here will function as KPI\(^2\) for the IT build out and subsequent operation.

There are two aspects of a goal: (1) the qualitative aspect is evaluated based on a written description, and (2) the quantitative aspect is evaluated based on one or more numerical targets. When establishing management goals, it is best to set up quantitative metrics as they generally produce greater efficiency gains.

At NEC, we created a numerical scoring system (max 100 points) for evaluating IT operations based on ITIL. Additionally, since ITIL fell short on security

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\(^2\) Key Performance Indicator
aspects, we created a scoring system to rate security based on the ISMS framework (ISO/IEC 27001) for establishing and maintaining information security. The details of our scoring system and method of assessment will be introduced at another time.

3. Eight Checkpoints Regarding GIM Promotion

3.1 Profile of companies needing GIM

Global IT management (GIM) aims to comprehensively manage IT from a global perspective for companies meeting the following conditions, rather than by a region-centric operations model. Therefore, consider your company a good candidate for GIM if you meet the following conditions and have strong management commitment to global IT management.

- You are engaged in business on a global basis.
- You desire an organization where executive management can make decisions without being impacted by IT.
- You have a keen interest in overcoming problems in global security, IT governance, and risk management.
- You are unsatisfied with your current IT service and desire improvement.
- You want to take advantage of global IT comprehensively, including services.
- You aim for overall optimization, with a balance between headquarters and local sites.

3.2 Eight checkpoints regarding GIM promotion

In course of promoting GIM, you’ll encounter eight checkpoints. These checkpoints can be characterized as management-based, where headquarters plays a central role, and frontside-based, where local sites and end users take the lead.
Global IT Management

Figure 4: Eight Checkpoints Regarding GIM Promotion

Management (centralize) Checkpoints

(1) Goals management and business plans for the IT department

In the field of IT there are many matters that are difficult for executive management to grasp and thus it is difficult to gain favorable recognition. In companies that promote GIM, the IT department ideally views its own activities as business operations, develops KPIs, and facilitates evaluation based on numerical goals. If a KPI such as “availability” is clearly established, it then becomes possible to evaluate performance against a clear numerical goal, such as, “This year the availability of System A was 99.68%.” When the IT department has clear operation goals, the level of attainment toward each goal can be appraised and becomes a great driving force for GIM.

As governance and security become global concerns, the IT department confronts ever more problems that are not well understood throughout the company. Greater demands are placed on IT departments to make the content and results of business operations transparent (make it visible). For example, one can contribute to the business by improving the work efficiency. Another way to effectively make the contributions by IT visible is to outsource IT.

Companies that are expanding operations globally have critical regions where business plans call for continuing or expanding operations. The IT department must find optimal ways to build or transfer IT systems to these locales and then execute to a schedule that is compatible with the company’s global business expansion plans.

What’s more, IT deployment and operation is subject to the laws and social environment of countries and regions. Whether the deployment and operation of IT systems in each country proceeds smoothly has a large impact on the speed and success of global expansion.

(2) IT management systems (organizations & Personnel)

The goals for establishing a GIM-driven organization can be summaries as follows:

- Provide IT services with which internal users are satisfied in terms of quality and speed of response.
- Communicate the state of affairs precisely to executive management and promote understanding of necessary expenses and give heads-up to risks.
- Employ suitable IT vendors as needed and achieve clear performance improvements.
- Put overall operational mechanisms into place to deal with site obstacles or trouble in a timely manner.
- Establish clear goals, roles, and authorities related to IT services and build an accountable organization.

An organization aspiring to GIM must consider including partners and other external participants involved in building out or operating IT systems and not only restrict its efforts to the company itself. When outsourcing IT services, it is important to consider the entire organizational structure and clarify the roles played by your own organization and by external vendors. Moreover, to ensure that problems of a compliance nature do not arise, you
must work diligently to establish internal controls, command systems, and checks within the organization.

Ample consideration should also be given to the talent you bring into the GIM effort. You must maintain a firm understanding of the necessary skills and degree of mastery down to the local level and throughout the company and train personnel so that you can respond as an organization.

(3) GIM evaluation metrics

No equation exists to clearly express your level of GIM attainment as a single numerical value, but the following metrics can be used as a multi-dimensional measure.

- **Balance between local and company-wide business**
  For example, assume a value of zero if headquarters decides everything, and a value of 100 if all decisions are made locally. Then plot your level of balance between local and company-wide business.

- **Management speed**
  This metric measures the number of days it takes for executive management decisions to reach employees on the business frontlines.

- **Hierarchical levels of management control**
  This metric expresses the number of hierarchical levels in the company’s management structure, to include the lowest organization or individual employees. This also impacts the management speed metric.

- **Ease of local IT deployments**
  This metric allows you to evaluate on a city-by-city basis the ease of deploying and operating IT systems needed for business activities. For example, the capacity of communication lines available for use.

- **Ratio of unique applications/systems**
  This metric measures the number of applications and systems developed in-house (unique to the company) as a ratio to the total number of applications and systems. The larger the value, the more difficult maintenance will be under global expansion.

  - **Network complexity**
    The more complex the network system connecting the headquarters to local sites becomes, the more difficult it is to manage. The number of communication carriers, network configuration parameters (number of routers, etc.), the cost and quality of network products and communication carriers are all good metrics.

  - **International certifications**
    This metric expresses the number of international certifications obtained by the company. From a GIM perspective, information security and service management are incredibly important, so ISO/IEC 27001 and ISO/IEC 20000 are requisite certifications.

  - **Number of vendors contracted for services**
    This metric captures the number of IT vendors contracted by the company. When categorized as IT services or business applications, the role of each vendor becomes clear and it becomes easier to consider cost reductions by consolidating vendors.

(4) Assessment of social environment (customs, legal frameworks, etc.)

The countries and regions in which the company operates its business are governed by a variety of laws and regulations, and subject to business customs, labor practices, and religion. When the company acts in a way incompatible with local customs, practices, or laws, the company runs the risk of great damage, such as a decline in its image or boycott movements. GIM recognizes that customs and laws impact IT efforts and that the following cautions must be taken.
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- Matters of a personal nature, such as culture, customs, language, immigration control, privacy protections.
- Financial matters, such as tax laws on transfer pricing, value-added taxes, consumption taxes, and foreign exchange.
- Matters ensuring security such as national security law, anti-espionage law, wiretapping law, and internal security law.

Frontside (local) Checkpoints

(5) Service levels for users

The company’s IT department is charged with providing IT services to internal end users of its business units. What is important here is to clearly indicate service levels to business units such as reliability or ease-of-use. A number of metrics like network availability, system turn-around time, hardware failure rates, or mean time to repair (MTTR) are often used to indicate service levels. These service levels are presented in Figure 5 in a hierarchical manner.

![Figure 5: Hierarchical Structure of Service Levels](image)

Organizational guarantees lie at the bottom-most level. This expresses whether the organization is equipped with the systems and capabilities to provide IT services. It can be demonstrated through ISO 9001 (quality management systems) or ISO/IEC 20000 (IT service management systems) certifications. Work guarantees reside at the next level up. This level specifies the work content of concrete services (such as the frequency of maintenance, and languages supported by the help desk). The most common SLA metrics, such as operation guarantees, lie at the next level and provide clear numerical values for actual operational results, including availability. Lastly, the top-most level involves evaluation guarantees to measure end user satisfaction and such.

(6) IT infrastructure feasibility

IT infrastructure progress impacts the company’s GIM. There are no guarantees that the technologies, products, and services that comprise the IT infrastructure can be reliably used for company efforts throughout the world, irrespective of location. For example, in a region subject to frequent brownouts, blackouts, or communication failures, back-up power supplies and alternate means of communication are indispensable. Moreover, even if you unify system specifications globally, deployment remains difficult in regions where procurement routes or maintenance/support are not in place.

Under GIM, it is important to discern a host of IT infrastructure issues by each country or region that affect the deployment and operation of IT systems.

(7) Local business characteristics

The IT needs of each local site in terms of function, performance, and priority, differ according to the role of the organization, such as manufacturing, market research, or sales. Consequently, under GIM you must manage each site’s IT system by characterizing its role in a manner like production site, distribution site, or sales site.

For example, the number of users of the IT system will be relatively low in a manufacturing site, but if IT systems are embedded into the production line, a high degree of reliability may be required. Additionally, if the site is a factory, security measures

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3 Service Level Agreement
are critical to ensure that design drawings and manufacturing orders are well-protected.

(8) IT expense structure

Among companies with global operations, few manage expenses incurred by their local sites as a part of IT expenditures. That is, most leave it up to the local entity to manage. Even if you attempted to reduce costs, such a situation makes it impossible.

Ideally, IT-related expenses should be tracked at a number of levels, such as by site, by city, by region, by country, and global (worldwide). By doing so you can then unify software and consolidate IT service contracts to achieve cost reductions.

The following categories are presented as a typical method of organizing expenses to aid understanding of the IT expense structure. It’s a good idea to also grasp individual expense amounts, the names of contracted vendors, the contract duration, and any SLA terms.

- Service-related expenses (global sourcing, consulting, site research, etc.)
- Equipment purchases (servers, software licenses, etc.)
- Network-related expenses (communication line services or LAN)
- Personnel expenses
- Facility-related expenses (electric power and air-conditioning systems)
- Maintenance expenses
- Governance and security expenses
- Procedural expenses such as charges

4. Implementing GIM

When actually promoting GIM, you will need to grasp the current state according to evaluation metrics and then incrementally make improvements to them. Cost is one challenge and achieving high satisfaction levels in one fell swoop is unrealistic. For example, an incremental approach like aiming for efficiency gains in IT operations in phase 1 and then securing compliance at the most basic levels in phase 2 is typical.

Based on our own experience of first expanding business overseas with deep local roots and then implementing IT management at a later date, we propose the following four step GIM implementation process.

Grasp the current state
To gain a good grasp of the current state, conduct research using two assessments – one covering the general IT operations and another covering information security. Quantifying the results of your research will facilitate grasping the current state and make it easy to set goals for improvement.

Set incremental management goals
Present the results of your research to concerned parties and then begin the process of setting goals. For example, set incremental goals in the following fashion.
- In phase 1, set initial goals at the minimum level required for each management point according to privacy, security, and compliance policies.
In phase 2, set goals with a focus on strengthening network security.

In phase 3, set goals for integrated security, including thin clients for PCs.

**Plan and execute**

Next, put together a schedule for tasks that should be accomplished to promote GIM. What is important here is coordinating with the field with overseas sites as a focal point. By establishing close communications with local sites, local resistance can be better overcome.

**Evaluate and improve**

GIM implementation is not complete once the project is over. 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.

For example, conduct studies or audits once each year, compare and analyze measured performance against goals. Also, track and evaluate progress toward goals and when goals are not attained, study and analyze the causes and make adjustments or improvements to renew the cycle.

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### 5. Strategic Global Sourcing

If you’ve got few overseas sites and a sufficient number of talented IT staff, you can build out and operate an IT management system suited to each country or region’s environment on your own. However, the number of companies that can successfully do so is very few indeed. Even if you were successful in doing so, resolving problems will take time and new problems will arise as the IT environment and management environment evolve.

So what is the secret to overcoming the challenges when implementing GIM? The answer lies in strategic global sourcing.

Joining forces with an IT vendor that demonstrates competence in the global market allows you to farm out non-core tasks (IT infrastructure development, design, operation, and maintenance) in which no value is added to your company’s core business operations. You can also then fold IT vendor services into your IT management system. In short, you can embed IT services provided by IT vendors into your company’s business platform. At the same time, you can achieve “IT transparency” through management and evaluation of IT services using KPIs.

The era of “procuring” IT is transitioning to an era of “leveraging” IT. To say it differently, the traditional approach of purchasing hardware, software, and network equipment and using those functions and services is evolving to an approach whereby IT services are leveraged without any thought to hardware, software, or networks.