

Management Perspectives and Solutions for the Ubiquitous Age

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Abstract

Diversification of information, and information chains that go beyond the corporate realm – the ubiquitous environment of the future is filled with substantial business opportunities as well as the need for various risk countermeasures. It will also be important to construct a corporate information system that freely uses IT/Network systems in order to respond flexibly to a changing corporate environment and allow information to be used quickly and appropriately. NEC is proposing “Realtime Management”, “Risk Management” and “Lifecycle Management” as the management perspectives for the ubiquitous age.

This paper describes NEC’s corporate-oriented solutions which give form to a corporate information system that embodies these three management perspectives.

Keywords

Realtime Management, Risk Management, Lifecycle Management, Management Cockpit

1. Advancing of the Ubiquitous Society and Changes in the Business Environment

In Japan the Internet has spread rapidly since the late '90s, and today there are some 80 million Internet users with subscribers to broadband such as ADSL and FTTH over the 20 million mark. It is said that Japan leads the world in broadband in terms of low price and high speed. The spread of cellular phones has also been remarkable, with functionality going beyond regular telephony to include Internet access, camera and audio player functions, and even digital cash and commuter pass functions, thereby expanding the role of mobile phones more than ever.

In this way the ubiquitous society, in which all types of information sources including consumers are linked organically by networks and transcending the framework of nation, government or public agency, is being developed (Fig. 1). Meanwhile, IT and network systems become the infrastructure much like electricity, gas and waterworks, and the economy and daily social life take place on its foundation. In such a society, as a result of goods, money and information being digitized and transactions, exchange and processing becoming easier, the liquidity of various types of goods and information will increase. Added to that, as information volume increases and diversifies exponentially, the ability of corporate management and business information systems to accommodate change will become critically important. So in business activities it will be crucial to quickly recognize changes in the market and society, or in manufacturing, sales and distribution, and to capitalize on

them in business management through their corporate information systems before the competition does.

As you can see, in the corporate information systems that play an important role, the information that is handled is of extreme importance to businesses and to society. As a result, if data were to ever be leaked or lost, or if the system goes down, the effect on society will be great and this may lead to a loss of trust towards the company. In other words, as the ubiquitous society advances, various benefits and opportunities to expand one’s business will be generated, but along with that we must never forget that risk management measures must also be redoubled since the risks faced by businesses are also becoming more diverse and complicated, including security and compliance.

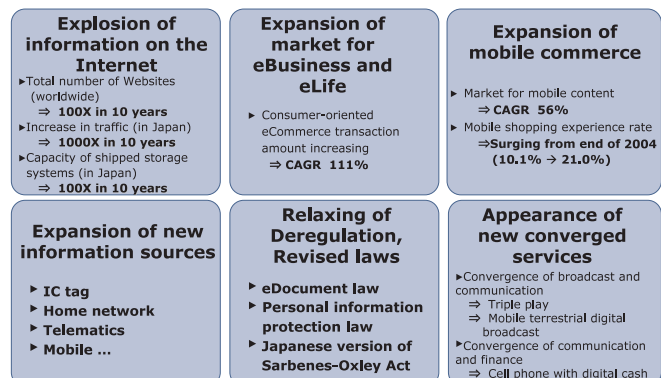


Fig. 1 Changing market environment in the ubiquitous society.

2. Business Management through Three Perspectives

In this way, advancement of the ubiquitous society will accelerate the realtime usage of information on the flow of money, commerce and goods, and will bring about abrupt changes in the market environment and corporate environment. We are in an age where in order to survive, companies must quickly recognize these various changes that have a major impact on their business, reach their decisions and implement countermeasures in a timely manner. What's more, it is becoming increasingly important to fulfill social responsibilities by handling various risks appropriately, continuously maintaining and managing an optimum situation while always understanding the state of management resources.

NEC recognizes the elements that are indispensable to management in this type of ubiquitous society in terms of three management perspectives: Realtime Management, Risk Management, and Lifecycle Management (Fig. 2). Utilizing IT/Network systems, it will be crucial for the corporate information systems that support these three management perspectives to offer both the "flexibility" that will always allow reconfiguration to reflect changes in the market, as well as the high "robustness" that will allow businesses to connect 24 hours a day, 365 days a year.

2.1 Realtime Management

In the ubiquitous society, IT/Network systems that reach beyond national and corporate boundaries are advancing at a high

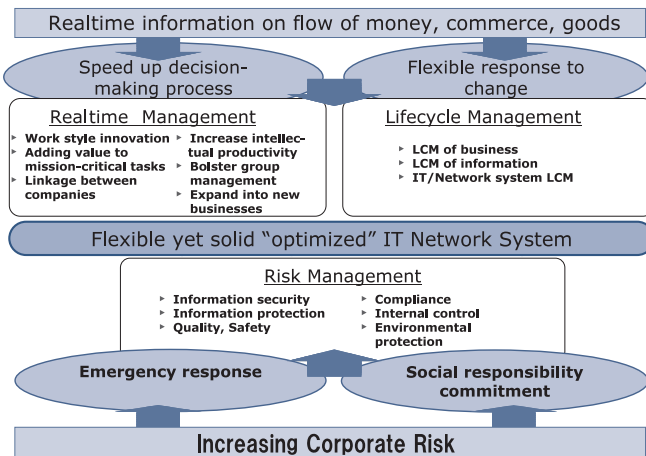


Fig. 2 Business management and IT/Network strategy in the ubiquitous age.

level, with the market environment and corporate environment changing moment to moment. Overlooking these changes, creating a time lag in decision-making or a gap in recognition, not only holds the possibility of losing business opportunities but also can be damaging financially or in terms of lost trust. And as time passes, these problems may snowball. Closing the time lag between each decision-maker in this kind of market and situation, maintaining a clear view of the issues at hand, and having the right person make decisions at the right timing, based on information ranging from internal sources such as supply, distribution and sales, to external sources like consumers, governmental agencies, the marketplace as well as competitors – this is "Realtime Management".

As an example of Realtime Management efforts, NEC has implemented Supply Chain Management (SCM) in its personal computer manufacturing. In it, market trends and product sales information are fed back to manufacturing. Additionally, by using RFID and conveying order information to suppliers in real time, transaction lead time has been successfully reduced by about a half (2 days reduced to 1 day).

2.2 Risk Management

With the development of the ubiquitous society, various types of information are linked together by network, so the need for corporate-wide security measures to counter virus attacks from outside or to prevent information leaks from within, becomes greater than ever. And as corporate information systems become infrastructure, the impact on society caused by a system crash, as well as its scope, will be immeasurable. Furthermore, the risk factors for companies are becoming ever more diversified and complex, such as Corporate Social Responsibility (CSR), and compliance issues such as the Personal information protection law and the Japanese version of the Sarbanes-Oxley Act (SOXA).

To counter this tide of increasingly diversified and complicated risks, it is necessary for executives to know the risks faced by the entire company and to assess the impact of those risks, as well as to respond with flexibility to those risks. "Risk Management" with a wider range and a higher level of technicality and complexity is therefore required. It is also important to not only recognize actual risks but also to consider latent risks and devise countermeasures against them too.

2.3 Lifecycle Management

When talking about Lifecycle Management (LCM), it generally means the "product lifecycle" in which appropriate measures are implemented according to the lifecycle from the perspective

Management Perspectives and Solutions for the Ubiquitous Age

of a product’s introduction, growth, maturity and stagnation. In order to respond quickly and smoothly to rapid change in the corporate environment, NEC believes it is important that not only products but also all of the management resources such as the information held by the business itself or its organizations, as well as the IT/Network infrastructure that supports them, should be viewed from the perspective of a lifecycle.

In the future, larger volumes and varying types of information accumulate in companies and organizations. And in the ubiquitous society this information will be distributed and become obsolete quickly, making it very important to manage the freshness and quality of information. In other words, appropriate storage, management and application of such information becomes necessary based on the “information lifecycle” including the timing of the information’s creation and expiration, effectiveness, content and scope of utilization. Additionally, from the standpoint of compliance, each company will need to quickly find necessary information from enormous amounts of digitized corporate data and appropriately manage and utilize the information from its creation/recording all the way to its deletion, when adhering to the Personal information protection law and the Japanese version SOXA.

Likewise, the IT/Network infrastructure consisting of servers, networks and software, etc., that support corporate information systems also need to be optimized from the standpoint of a lifecycle that matches the changes in corporate environment, business process, organizational changes as well as changes in technological trends. When we take a look at the current IT/Network infrastructure, we see that servers and storage devices are installed independently by each department, the technology and architecture differs in each system, and the methods of usage and development are not standardized. In exchange for optimization at the departmental level, systems suffer from fragmentation and complications. Under such circumstances, it is not unusual for just the maintenance costs to exceed 70% of the entire budget due to the wasteful resources and complicated usage. Needless to say, it is also difficult to respond quickly vis-à-vis changes in the market environment and corporate environment.

That is why it is so important to maintain overall optimization of the IT/Network infrastructure by making assessments of the IT/Network infrastructure on a regular basis, assuring standardization and integration while considering the off-balance of IT/Network system properties due to managed services (outsourcing service).

3. NEC’s Corporate Solution Realizing Three Management Perspectives

In the above we discussed about the three management perspectives: Realtime Management, Risk Management and Lifecycle Management. NEC offers solutions in the form of corporate information systems based on these perspectives (Fig. 3).

First, as solutions that realize “Realtime Management”, there is the “Sensing Solution” that allows speedy management by upgrading the basic systems like SCM through the use of new technologies such as RFID. Also offered is the “Mobile Solution” which improves intellectual productivity and work efficiency by using mobile equipment such as cellular phones and PDAs to allow information from the basic system or business information to be exchanged in real time regardless of the location. What’s more, by virtue of the “Broadband Office Solution” which improves intellectual productivity and innovates work styles by applying the latest IT/Network convergence technologies such as IP phone and Web meetings, communication is invigorated and realtime management is attained.

Next, as solutions that realize “Risk Management”, there is the “Internal Control Enhancement Solution” that takes advantage of NEC’s know-how regarding SOXA compliance in the U.S. to support the customer’s internal control and Japan version SOXA compliance, as well as raising the corporate value of the customer. Also offered is the “Security Solution” which aims at avoiding the management risk posed by leaked personal information as well as complying with personal information protection laws, providing a total solution from grasping the current situation to system construction and running.

Lastly, as a solution that realizes “Lifecycle Management,”

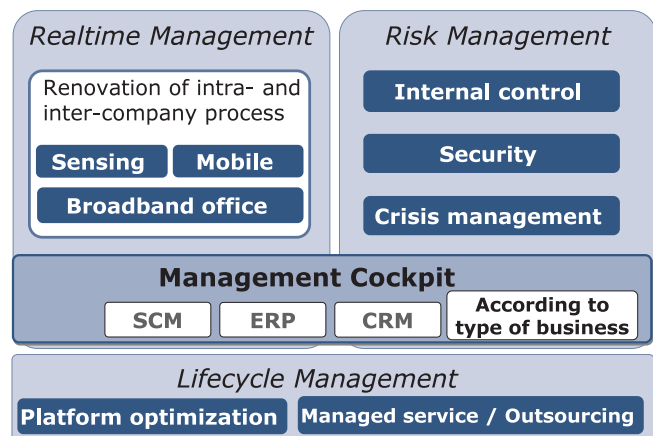


Fig. 3 NEC’s corporate-oriented solutions.

we offer the “Platform Optimization Solution” which seeks to offer a continuous reduction in TCO through overall optimization of the IT/Network infrastructure, such as server integration, storage integration, network integration and improvements in operation management, allowing the cost savings to be distributed to strategic investments. In addition, we also offer “Managed Service/Outsourcing” to support outsourcing needs such as IT/Network resource environment improvement and risk management, based on a diagnosis of the alignment between the customer’s management strategy and IT strategy.

Furthermore, we offer the “Management Cockpit” which fuses these three management perspectives organically into a solution that supports transparency from the executive office to the field. The Management Cockpit is where sales information, customer information, costs and shipment information associated with development and manufacturing, market and competitor information, etc., from management level to work site, can be viewed by all levels of the organization, at the timing that it is required. Thanks to this high transparency, latent problematic issues can be exposed, and by dealing with them precisely a company’s competitiveness and corporate value will rise.

By positioning a company’s mission critical system as an OMCS (Open Mission Critical System), NEC has led the way in constructing a large number of open-platform systems. NEC’s integration technology, R&D capabilities and service technology capabilities are all highly regarded in the IT/Network infrastructure which has a great influence on society. Through solutions based on three management perspectives, it is possible to transform a customer’s mission critical system into a corporate information system that offers higher added value.

4. Conclusion

Diversification of information, and information chains that go beyond the corporate realm – the ubiquitous environment of the future is filled with substantial business opportunities as well as the need for various risk countermeasures. It will also be important to construct a corporate information system that freely uses IT/Network systems in order to respond flexibly to a changing corporate environment and allow information to be used quickly and appropriately. At NEC, we will continue to support our customers’ business expansion based on the three management perspectives, by providing various products and services that will increase corporate value as our solutions.

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