

# NEC Group Paves the Way for Smart Devices

The widespread and rapid adoption of smartphones and tablet terminals is revolutionizing business scenes in the corporate world. Responding to these market changes and the demands of corporate customers, the NEC Group has been focusing on studying the related issues and developing approaches to resolve them. Our efforts have resulted in the construction of highly advanced systems that perform with a high degree of flexibility and speed, and an improved platform for solutions that ideally respond to the needs of the market. In this special issue, we would like to present the reader with an overview of this solution platform from the perspectives of services, devices, solutions and technological research.

Senior Expert  
Business Promotion Division  
NEC System Technologies, Ltd.  
MORI Kazunori

## 1 Preface

The widespread adoption of smartphones (as of FY2012, over 60% of Japan's mobile phone market) has ignited the actualization of the smart device market, and the rapid penetration and utilization of these devices in the domain of business (see Fig. 1). In 2012, tablet terminals overtook netbooks, and are on track to replace the desktop in shipped volume by 2013. Forecasts see the tablet segment continuing to grow and take 23% of the PC market by 2015 (see Fig. 2). This can be attributed to the unprecedented level of user-friendly operation of smart devices combined with their quality of "expression" (display, etc.), nimble response and portability on a par with conventional mobile phones, which all adds up to the potential creation of innovative benefits in the business solutions market.

In particular, the solutions that can most fully exploit these advantageous characteristics of smart devices are the solutions that augment business operations conducted on site and in the field. In other words, all these devices hold the potential to enable every individual to execute and complete all their everyday business processes on the spot. On the frontlines of business, smart devices are revolutionizing the way we work.

While the realization of solutions that exploit the power of

smart devices can bring a multitude of benefits and create new added value, it is necessary to improve the system platform on which solutions are developed and operated to satisfy diversified market demands, and overcome a variety of technological issues. The most notable challenges are the establishment of an

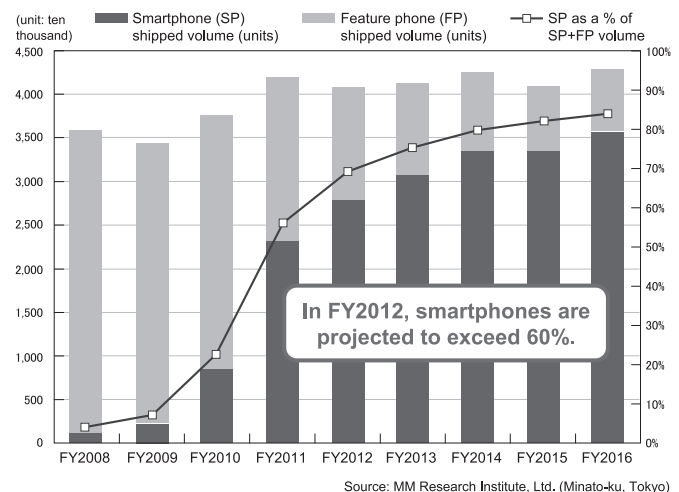


Fig. 1 Smartphone sales trends and projections (Domestic shipped volume).<sup>1)</sup>

AP package platform that responds to the demands of the multi-OS smart device environment (iOS, Android, Windows, etc.), a native AP link platform that responds to and exploits the unique properties and capabilities of each smart device, a security platform that ensures safety and security in this highly portable environment, and a smart device operational management platform. The system development platform to realize these answers will require upgrading and developing

technology for a system construction platform appropriate for numerous devices with different operating systems.

While upgrading our own systems and framework to serve as a system construction platform for the realization of enterprise-class smart device solutions, the NEC Group has also succeeded in providing this platform as an actual product for development. This special issue introduces the crystallization of NEC Group's technological know-how in a system that paves the way for safe, secure and comfortable-to-use smart device solutions, and the content of the technology that drives this innovation.

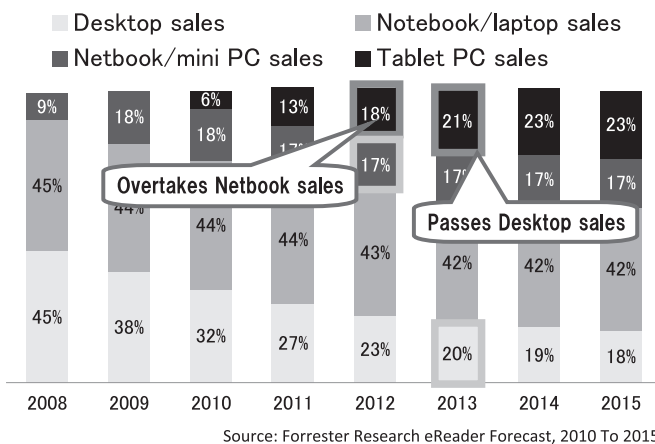


Fig. 2 Smart device market scale trends and projections. 2)

## 2 Smart Devices are Dramatically Transforming the Business-scope

The construction and application of systems employing information technologies have hitherto brought radical changes in the way we work and every facet of business. The question is why has the advent of smart devices triggered the need to tackle these issues anew. The answer lies in the characteristics unique to these smart devices: their potential to realize functions that are expected to bring dramatic innovation and to solve technological issues related to on-site processes that persisted from the past.

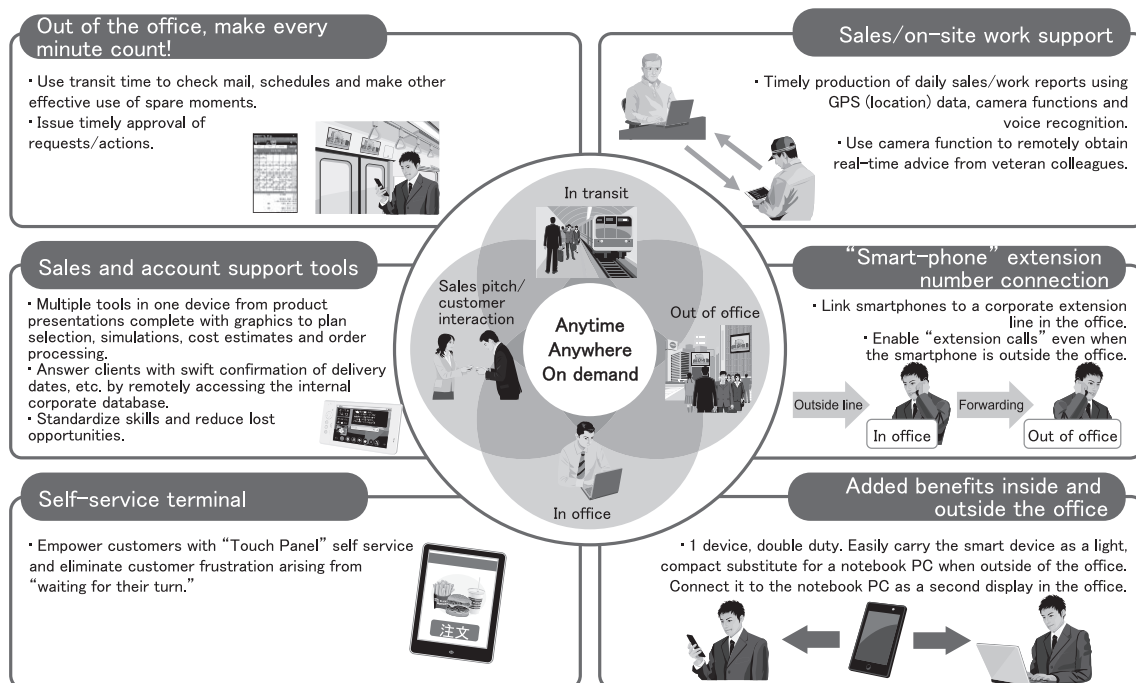


Fig. 3 Smart devices in the daily business routine.

Smart device characteristics can be summed up in the following 4 points:

- (1) User-friendly operability
- (2) Rich “expression”
- (3) Empowers users with responsiveness (adaptability) to changing circumstances through speedy sharing of information
- (4) Mobility

Each quality is essential to meet the demands of constantly evolving daily business scenes, and positions smart devices as the ultimate all-purpose information weapon in the businessperson’s arsenal. The workstyle revolution ignited by smart devices is proving to be very effective in boosting on-site performance and raising customer satisfaction (CS).

A typical example of leveraging the power of smart devices is sales activities (see **Fig. 3**). By empowering sales managers to complete all business processes pursued over a normal day on the spot wherever they may be, the smart device is indeed revolutionizing work styles, and NEC is providing the smart solutions that are transforming this potential into a daily reality.

### 3 “Smart Device”-related Issues in the Business Environment

The construction of systems that facilitate the utilization of smart devices and exploit the characteristics unique to these devices face a mountain of problems. Listed below are the major and obvious issues related to system development compatibility with the different operating systems that drive various smart devices.

- Rising initial costs arising from coding according to the requirements of different operating systems (and different device models), intensive development over a very short time, and assignment of valuable human resources.
- Increasing maintenance costs related to responding to frequent device/OS version upgrades.

In addition, with increasing utilization of the mobile environment as a premise, the construction of a safe, highly secure environment is becoming even more critical (see **Fig. 4**).

Currently iOS, Android, Windows and other operating systems already have sizable domains in the smart device landscape. Depending the device, the installed OS will differ, and accordingly, the development programming language will differ. Even in the case of the development of business applications for smart devices, it is necessary to conform to the respective operating system, which means AP development using native language coding. However, AP development for each OS poses a huge cost risk from the perspective of maintenance and repair from a possible shift of smart device deployment

Security that permits the safe use of information without sacrificing “smart device” convenience is demanded.

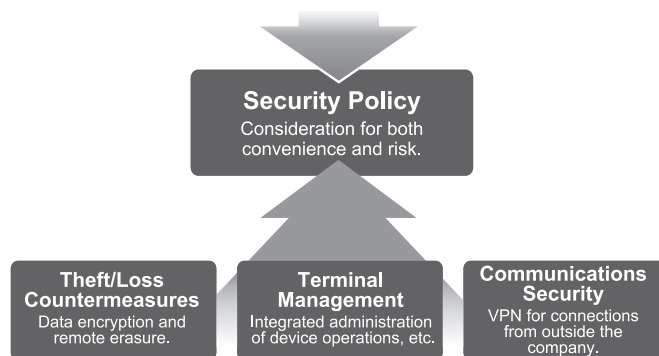


Fig. 4 The challenges of creating a safe and secure environment.

arising from a policy of device selection according to the users’ environment and circumstances, or the future adoption of a BYOD (“Bring Your Own Device”) policy. In short, a single AP development platform that responds to a multiple-OS environment is urgently needed.

For a highly secure environment premised on the challenges of a mobile environment, it will be necessary to not only adapt the existing security infrastructure, but also establish a new platform for device operation and management. Ensuring a safe and secure environment for “everywhere” device utilization an operation-management platform that provides “flexibility” of utilization in parallel with highly detailed management for both the device and user is essential.

In order to solve these significant issues, NEC has already released an AP development platform for smart devices (SDE for Smart Device) and expanded smart device operation and management services. The details are explained in this special issue.

### 4 NEC’s Approach to Smart Device Utilization

In NEC Group, we are aggressively meeting the challenge of integrating smart devices by maintaining an in-depth grasp of smart device market trends, developing a system construction platform that measures and utilizes various benchmarks, studying and developing countermeasures for related technology issues, and creating the necessary mechanisms and structures.

Formed to lead NEC Group-wide efforts, the “Smart Device Utilization Working Group” continues to pursue a wide range of activities. Studying and collating customer needs and issues, identifying issues to be addressed and swiftly constructing a solution platform, the Working Group aims at building

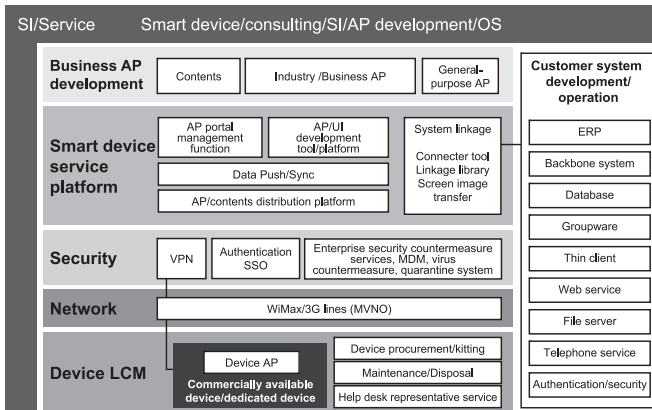


Fig. 5 NEC smart device solution systems and framework.

shared understanding of the challenges and solutions among all companies in the NEC Group and realizing appropriate solution feedback to our customers.

Together with the April 2013 release of “SDE for Smart Devices” - an AP development platform for past smart devices, NEC will further expand smart device operation and management services and establish a framework of solutions linked with other related platforms and infrastructure (see **Fig. 5**).

## 5 Conclusion

In the future, we believe that needs related to the building of solutions that use smart devices will grow at increasing rate. Keeping a finger on the pulse of market trends and a sensitive ear turned to the voices of our customers, the NEC Group speedily responds to each demand, each issue. Specifically, we tackle numerous technological matters as an expansion of our technology assets and realize an ecosystem that shares our solutions both inside and outside the corporate environment. Through our ongoing fulfillment and sharing of this technology platform and infrastructure, it is our hope to make a useful contribution to the future business success of our customers.

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\*Android is a trademark or registered trademark of Google Inc.

\*Windows is a registered trademark of Microsoft Corporation in the U.S. and other countries.

\*WiMax is a trademark or registered trademark of WiMax Forum.

## References

- 1) MM Research Institute, Ltd. (Minato-ku, Tokyo), “Smartphone sales trends and projections (Domestic shipped volume),” 2012.3  
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- 2) Forrester Research, Inc.:Forrester Research eReader Forecast, 2010 To 2015 (US), 2010.6

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