

Restructuring Renesas Technology through fast, seamless integration.

How HP integrated two disparate IT systems to create the most powerful, flexible platform for Japan's leading semiconductor manufacturer.



The Renesas logo is displayed in red on a white background. The word 'RENESAS' is written in a bold, sans-serif font with a stylized 'R'.

Japan's semiconductor industry – considered the foundation of the digital consumer electronics industry – has been recovering rapidly in recent years. One key company that has spurred this remarkable revival has been Renesas Technology. With the onset of the 'ubiquitous networking' age, the company was formed in 2003 when Hitachi Ltd. and Mitsubishi Electric Corporation joined forces in a bid to command a leading position in an industry characterised by fierce competition.

Today, Renesas Technology is the third largest semiconductor manufacturer in the world, ranking number one in Japan. It is also the world's market leader in many areas, such as microcontroller units (MCUs) for car navigation (for which it has 80% of the global market share), and mobile phone (GSM) radio frequency modules (for which it commands 60% worldwide). Its success today is attributed to the human and technological resources resulting from the merging of Renesas' two former companies.

The Challenge: Integrating two disparate systems in the fastest possible time.

Given the significant differences in culture, corporate history and business methodology between Hitachi and Mitsubishi, the most critical issue when the two companies merged was the integration of the IT base. The main objective was to break away from the business model of 'One Nation, Two Systems' as soon as possible, so as to maintain business continuity and keep up with competition.

Due to the short cycle of boom and recession of the semiconductor industry, the rule-of-thumb is that investments should be short-term – that is, not more than 1-2 years – otherwise they might bear a sizeable management risk. As Mr Nomura, Deputy Chief Director of IT Strategy, said, "This made it difficult to have any long term projects at the time." As a result, one of the most critical aspects of the integration process was speed.

Commenting on the disparity of the two legacy systems, Mr Nomura said, "It was impossible to simply integrate systems that supported the different culture and business methodology of the two companies. For instance, the majority of operations at Hitachi were systemised; in contrast, systematisation at Mitsubishi was minimal. This in turn determined the labour headcount budget. As it was difficult to completely integrate immediately due to different key system mainframes and vendors, the first step was to proceed with integrating the external communications infrastructure."

Because of this, the company was faced with a dilemma. "If we had chosen to keep systematisation to the minimum, it would not have been sufficient to compete globally," continued Mr Nomura. "On the other hand, excessive systematisation would have made it very difficult to respond quickly and flexibly to change." As a result, Renesas Technology needed to adopt a new IT base and interface. It also had to do this while keeping the key system that was necessary at the same time. The plan was to construct completely new concepts around the key system.



Mr Nomura, Deputy Chief Director
Renesas Technology Corp.
IT Strategy General Headquarters

Key criteria for choosing HP: The winning combination of Intel® Itanium® 2-based HP Integrity servers, HP-UX, Windows® and Oracle

As the ambitious systems integration plan got under way, RFPs (Requests For Proposals) were sent out to five vendor companies. The RFPs highlighted the key criteria that would influence the final decision.

Mr Nishizawa, Group Manager of Renesas Technology's Information Systems Group, explained the selection process. "In choosing a vendor for constructing the new IT base, we identified an important set of criteria. These included cost performance, benchmark capabilities, domestic and international results, support services, future product road map and continuance, as well as the reliability of hardware and OS."

In summary, Mr. Nishizawa noted that the main RFP requirements were:

- to select the most suitable SAP R/3 database, as there was an existing pool of engineers experienced in SAP R/3 and Oracle already available
- to possess the ability to develop a system that accommodates overseas affiliates across the globe
- to have an established worldwide call-centre and coverage of hardware support



Mr Masuda, IT Infrastructure, Manager
Renesas Technology Corp.
IT Strategy General Headquarters

HP's proposal

By February 2004, three vendors were short-listed and asked to submit a proposal in Japanese as well as English. "HP stood out with a complete and impressive proposal," said Mr Masuda, Manager of IT Infrastructure, IT Strategy General Headquarters.

HP's proposal addressed the key issues identified by Renesas. These included:

- the adoption of Oracle 9i as the database solution
- combining the integrated system with HP-UX and Windows® using Intel® Itanium® 2-based HP Integrity Superdome servers to ensure cost-effectiveness and high performance
- cost-effective use of existing properties such as storage
- a highly stabilised throughput using SAN with FC switch

In addition, because the key system infrastructure was built using HP Express Service, the server's configuration information details could be well managed. This aspect of the proposal demonstrated how HP's solution would allow Renesas Technology to respond and adapt to change far more flexibly in the future.



Mr Nishizawa, Group Manager
Renesas Odaira Semiconductor Ltd.
Information Technology Headquarters
Information System Group

“The main reasons for selecting HP included its proposal of Oracle – an industry standard database – as well as the high performance of Intel® Itanium® 2-based HP Integrity servers.”

Mr Masuda



HP's solution: Equipping Renesas with an infrastructure to become a flexible, adaptive enterprise

In May 2004, Renesas Technology chose HP to implement its systems integration. This was the start of a colossal operation in which SAP R/3 would be introduced on multiple platforms based on the Intel® Itanium® 2 system that HP had proposed.

“The main reasons for selecting HP included its proposal of Oracle – an industry standard database – as well as the high performance of Intel® Itanium® 2-based HP Integrity servers,” said Mr Masuda. “In addition, HP possesses key knowledge of the HP-UX platform, an established global support organisation and the ability to integrate HP-UX and Windows® with the multi-OS support capability of HP Integrity servers. This allows us to adapt flexibly to future business changes. We were also impressed by HP's ability to scale-up and scale-out of the platform through integration of small parts.”

“One of our initial concerns in relation to HP's offering was that they proposed the most advanced technology currently available – HP Integrity platform based on the Intel® Itanium® 2 processor. We were worried that not all products would be available to run on such a new platform. However this was not the case, and in the end it was no cause for concern,” said Mr Nomura.

Business benefits of HP's solution at a glance

Fast implementation

Renesas' system is undergoing its cutover in 2005. The key system is scheduled to operate in most areas, such as order processing, material management, and production planning. The company is expected to complete the move from its existing mainframe architecture to an entirely new system by 2007.

Local and overseas expertise

The transition is set for all 40 offices both within Japan and abroad. It will also include overseas sales and group companies. The number of users during the cutover will be approximately 8,000, while the final number will be approximately 20,000 covering all 40 companies within the group.

Improved decision-making

Once the system is up and running, it will be able to study sales trends and other business indicators in real-time, thus enabling managers to make more timely and informed decisions.

Real-time management

The new system will improve management capabilities. For example, in manufacturing, the company can raise or lower its production to accurately meet market needs. Furthermore, if costs were to increase, the necessary cost-cutting actions could be quickly taken.

Greater productivity and profitability

As a result of all the above advantages, introduction of such a system enables the company to operate far more productively, cost-effectively and profitably.



Hardware

- **Development environment**
 - HP 9000 rp5470 (1 unit)
 - HP Integrity rx4640 (4 units)
 - HP ProLiant DL580 (4 units)
 - HP StorageWorks XP1024 (1 unit)
- **First phase production environment**
 - HP Integrity Superdome (32 CPUs)
 - HP Integrity rx4640 (4 units)
 - HP ProLiant DL380 (15 units)
 - HP ProLiant DL580 (2 units)
 - HP StorageWorks XP1024 Disk Array
 - HP StorageWorks FC switch 2/64 (2 units)

Software

- Oracle 9i
- HP-UX 11i
- Microsoft® Windows®

HP Services

- HP Express Service

Conclusion

While business mergers are common today, a smooth transition of IT systems requires experience and know-how, as well as global support. In order to survive in the tough competitive environment of the semiconductor industry, Renesas Technology's decision to choose HP has enabled it to integrate its IT base swiftly while also ensuring that it has a clear roadmap that will further enhance its management strategy.

Challenges

- Migration from mainframe to open system
- Integration of 2 businesses through SAP R/3 big-bang adoption
- Speedy construction of key system

Solutions

- Integrated HP Integrity servers running on HP-UX + Windows®
- Construction of key systems in a short period of time as well as implementation on a worldwide basis
- Flexible framework in response to changes using HP Express Service

Results

- Speedy system construction
- High performance of system
- Worldwide support
- Cost efficiency