SK hynix is a leading global semiconductor company with operations in South Korea and beyond. Since 1983, SK hynix has been pushing the limits of innovation, with the ambition of becoming the world’s best semiconductor manufacturer. Apart from its domestic plants in Icheon and Cheongju, it runs operations globally, including production stations in China, 4 R&D subsidiaries, and 10 global sales subsidiaries.

To stay ahead of evolving trends and developments within a dynamic Information and Communications Technology industry, as well as overcome internal IT infrastructural challenges, SK hynix decided to introduce a modernized cloud infrastructure leveraging VMware’s Software-Defined Data Center (SDDC), including VMware Cloud Foundation™, VMware vRealize Automation™, VMware vRealize Log Insight™, VMware vRealize Network Insight™, VMware vRealize Operations™, and VMware HCX™, to improve the agility of its manufacturing process and meet growing customer demands.

With the stability provided by VMware’s end-to-end solutions, SK hynix innovated production processes and empowered employees to engage in higher value-added production activities. SK hynix aims to continue leading the global semiconductor industry and spearheading the future of technological innovation by accelerating employee-centered digital transformation.

Driving workforce transformation with IT infrastructure

SK hynix recognized the importance of enhancing its digital infrastructure and this formed the foundation for employee experience and innovation. To improve its overall organizational competitiveness, SK hynix decided to strengthen its IT department’s capabilities and elevate its role within the organization to be a strategic partner that proactively creates business value. This resulted in the establishment of information headquarters and subdivisions, including SDDC, Infrastructure, Mobile, and Application to support individual divisions.
Digital Transformation Based on Cloud Infrastructure

SK hynix Leads the Global Semiconductor Industry by Proceeding with

access to resources through a self-service portal. Now, resources could be
With SDDC-based cloud infrastructure, this also improved employee
a more effective response in real-time on devices, anytime, and anywhere.
that they no longer needed to check ten or more screens manually but had
now had access to an enhanced cloud management platform. This meant
environment with VMware Cloud Foundation, SK hynix's IT department
hynix. By switching to a software-defined server, storage, and network
automation workflows to implement an IT infrastructure optimized for SK
Technologies also came on board as a reseller for this project.

To address these challenges and effectively respond to intensifying nano
process competition within the industry, SK hynix decided to partner with
VMware to introduce a cloud-based infrastructure, leveraging VMware’s
SDDC. As a long-time customer of VMware for the past 15 years, SK hynix
trusted VMware’s offerings and benefited from deployments that
improved business processes and outcomes.

Harnessing automation for a robust digital strategy

To embark on SK hynix’s deployment, VMware partnered with Goodmorn-
ing Information Technology Co., Ltd, to lead in key technical tests, and
critical SDDC design groundwork that identified how the private cloud
should allocate or automate resources to SK hynix’s engineers. Dell
Technologies also came on board as a reseller for this project.

With the support of its partners, the VMware team developed over 50
automation workflows to implement an IT infrastructure optimized for SK
hynix. By switching to a software-defined server, storage, and network
environment with VMware Cloud Foundation, SK hynix’s IT department
now had access to an enhanced cloud management platform. This meant
that they no longer needed to check ten or more screens manually but had
a more effective response in real-time on devices, anytime, and anywhere.

With SDDC-based cloud infrastructure, this also improved employee
access to resources through a self-service portal. Now, resources could be
retrieved in just 5 minutes for implementation in 2 to 3 days, when it used to
take at least 2 weeks or longer.

The SK hynix team improved and simplified resource recovery and
budget maximization with more accurate forecasting of resources and
future demands.

“SK hynix’s digital transformation started with the
belief that IT will create countless possibilities in
the future. With the introduction of cloud-based
infrastructure, supported by VMware, the com-
pany now has a strong foundation to innovate
and achieve its ambitions to become a global
leader in the semiconductor industry.”

Byungsun Kim
Vice President, Software-Defined Data Center, SK hynix

Looking toward people-centered innovation

With a renewed digital infrastructure supported by VMware, SK hynix
now had an optimal environment to accelerate manufacturing and
business automation within a short period.

Following the success of its cloud-based infrastructure implementation,
SK hynix plans to accelerate its digital transformation journey, beginning
with improving the employee experience. SK hynix believes investing in
people-centered digital innovation would not only improve their efficien-
cy but ultimately, their eventual outcomes and performance. SK hynix
introduced data analysis, a software development environment, and
infrastructure to provide an intuitive and seamless experience for
employees to use digital tools.

To help in-house developers adapt to the new cloud environment, SK
hynix is conducting a pre-Quality Assurance (QA) assessment of VMware
Tanzu to standardize Cloud Native.

SK hynix is also committed to introducing the latest open source technol-
y. The Data Lake, a Kubernetes-based platform, would effectively
manage data generated within the company, including its individual
plants. The implementation of the Data Lake would not only accelerate
more efficient utilization of big data but, more importantly help SK hynix
lay the groundwork for data-based innovation.

Looking ahead, VMware hopes to continue working closely with SK hynix
to realize its vision to become the world’s best semiconductor manufac-
turer through new opportunities uncovered by technological innovation,
including the possibility of introducing VMware vSphere 7 Bit fusion™ to
provide on-demand support for the development of artificial intelligence
(AI) and machine learning (ML) applications.