

KGI Securities achieves digital evolution with new platform



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KGI Securities, the second-largest securities brokerage in Taiwan, is racing to meet market demands and keep up with evolving IT technology. The business adopted Red Hat OpenShift to transform its complex and aging core system for securities trading. The new architecture enables a more agile operating environment and gives IT teams critical resources to develop new applications and services quickly and effectively.



Financial Services

3,000 employees
more than 100 global offices

Benefits

- ▶ Fostered a culture of innovation
- ▶ Accelerated speed of service
- ▶ Established a foundation for hybrid and multi-cloud strategies

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Jung-Lin Huang

Chief Information Officer, KGI Securities Asia Pacific

Updating legacy systems to meet market demands

Speed is a vital consideration in the securities industry, and a critical area of operations for KGI Securities. The brokerage specialist must check for violations, over-subscriptions, security lending, or financing before completing a transaction. While checks can be completed within microseconds of a customer placing an order; however, outdated information systems were struggling to meet customer demands and adapt to market changes.

Stock trading on a cell phone involves five operating systems, three databases, and seven applications in four stages: from the stock exchange to the brokerage firm to the trading software provider and finally to the customer's phone. The process was hampered by KGI Securities' aging core system, which was stable but excessively complex.

To add new features, such as setting up a regular fixed investment portfolio or a price notification, engineers previously had to retest the entire system, which involved significant integration work and very high development and maintenance costs, as well as slow responses to market demands. Adding to the issues was a shortage of technical talent. KGI Securities' core system uses the IBM AS/400 server, launched in 1988, but many engineers familiar with this system have retired and the technology is no longer taught. Some also found its complexity overwhelming and left the company in frustration.

"It was similar to a train that stops at every station and passes through multiple road junctions; there were too many external interferences," said Jung-Lin Huang, Chief Information Officer at KGI Securities Asia Pacific. "It was becoming a very serious problem. We needed a new infrastructure that would operate like a through train on a high-speed railway."

Transforming the core trading system with Red Hat OpenShift

Huang convinced colleagues that reform was inevitable and launched a core system transformation project with the unanimous support of senior management. KGI Securities quickly saw that open source technology, and Red Hat OpenShift in particular, would provide a solid foundation to enable critical subsystems to deliver real-time responses to fast-changing demands. It would also prepare KGI Securities for the industry's shift to the cloud, with a platform that would be easy to migrate, highly resilient, and openly supported.

"To seek innovation while maintaining stability, we rely on companies like Red Hat that have been investing in the open source community for a long time," said Huang. "Red Hat transforms innovative technologies into enterprise-class solutions that act as the backbone of our transformation."

Such a comprehensive overhaul of a core system would be a first for the securities industry. Red Hat Consulting and Red Hat Technical Account Management (TAM) services were therefore key factors in helping KGI Securities to handle pre-planning, mid-term construction, post-delivery, and maintenance. They would also support KGI Securities as it ran old and new systems in parallel, gradually reconstructing key subsystems on Red Hat OpenShift.

“Red Hat guides us so we don’t have to figure it out on our own and get sidetracked from the start,” Huang said.

The first project is to reform the crucial ‘financial middle ground’, which gives customers real-time information during trading. Scheduled to launch in 2024, the platform will be built on a containerized microservices architecture, allowing easy management of decentralized applications on a single interface. Stable, localized services will also allow quick responses to maintenance, support, and consulting requests.

KGI Securities also adopted Red Hat Quay--a security-focused, scalable private registry platform for managing content across globally distributed datacenter and cloud environments--and Clair--an open source project that provides a tool to monitor container security. Red Hat OpenShift utilizes Clair through the Kubernetes ‘Container Security Operator’, a component of Red Hat Quay. OpenShift administrators can continuously monitor the status of images in the OpenShift management interface as well as scan images and issue warnings.

Gaining a competitive edge with with DevOps

Fostered a culture of innovation

As the first brokerage firm in Taiwan to transform its core system, KGI Securities has reaped significant benefits, one of which is a new culture of innovation.

The new architecture allows KGI Securities to adopt a more agile DevOps approach for software development. Division of tasks between the development and operations functions has improved, reducing both application iteration cycles and communication costs. Red Hat OpenShift also gives IT teams a vast pool of reusable components that can be combined to develop new applications quickly, while Red Hat OpenShift reduces repetitive work and enable efficient use of open source technology to achieve key goals.

A culture of innovation is also more appealing to the new generation of IT staff. This gives KGI Securities a significant advantage in talent development and removes concerns over work handovers caused by resignations.

“The IT talent we need should not only master the most advanced technology but also be familiar with the business,” said Huang. “They can now broaden their vision by combining existing components to create new products through microservices.”

Accelerated speed of service

KGI Securities has been able to improve its resource expansion and reduce development times by introducing innovative approaches such as DevOps, modularization, and microservices. , and leveraging tools like Red Hat Quay for secure container management. The faster time to market achieved through Red Hat OpenShift allows KGI Securities to deliver innovative services to their customers before competitors.

As a result, the brokerage can now anticipate customer needs earlier and launch services more quickly, enhancing its market competitiveness. “Our ultimate goal is to keep giving customers pleasant surprises,” said Huang.

Established a foundation for hybrid and multi-cloud strategies

Leveraging Red Hat OpenShift has allowed KGI Securities to prepare for hybrid and multi-cloud environments. It provides a unified platform to build, modernize, and deploy applications at scale, across diverse environments, including on-premises, private cloud, and public cloud options.

“KGI Securities began its digital transformation project in May 2023, investing an estimated over NT\$10 billion,” said Huang. “It will free up the core system and enable KGI Securities to build a system with an agile foreground, large middle ground, and stable background, and prepare for the future.”

Building a vision of speed, stability, safety, and innovation

Huang believes that success in digital transformation depends on four factors: vision, communication, courage, and accommodation. KGI Securities now plans to further collaborate with Red Hat to achieve rapid development and stable growth over the next 20 to 30 years. And with the support of Red Hat’s containerized platform, KGI Securities is expected to outperform its competitors and gain a considerable competitive edge.

“We may not be able to outpace technological development, but so long as we run faster than our competitors, we will win,” said Huang. “With the support of Red Hat containerized platform, KGI Securities is expected to gain a considerable competitive edge.”

KGI Securities will launch the second phase of its transformation, a new ‘service middle ground’, in 2024. It aims to integrate customer inquiries, financial information, and provisional estimates on a larger scale than the ‘financial middle ground’. Beyond that, KGI Securities plans to reintegrate all 21 existing systems and move them to a containerized platform within five to seven years, enabling it to anticipate and meet customer needs earlier and more accurately.

Other plans include the extension of Red Hat solutions to KGI Securities’ overseas subsidiaries, enhancing the collaboration with Red Hat to develop a new API management platform, and integrating various Linux operating systems into Red Hat Enterprise Linux. An ‘automatic middle ground’ will also create a highly automated operating environment, supporting KGI Securities in achieving its vision of being fast, stable, accurate, safe, and innovative, and becoming a sustainable business.

About KGI Securities

KGI Securities is a wholly owned subsidiary of China Development Financial (CDF). It provides a comprehensive range of financial products and services, including wealth management, brokerage, proprietary trading, underwriting, and bonds.

KGI Securities is the second largest brokerage firm in Taiwan, with client assets under management amounting to more than NT\$200 billion. It has subsidiaries in China, Hong Kong, Thailand, Singapore, and Indonesia, and over 100 offices worldwide.






About Red Hat Innovators in the Open

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About Red Hat

Red Hat is the world's leading provider of enterprise open source software solutions, using a community-powered approach to deliver reliable and high-performing Linux, hybrid cloud, container, and Kubernetes technologies. Red Hat helps customers develop cloud-native applications, integrate existing and new IT applications, and automate and manage complex environments. [A trusted adviser to the Fortune 500](#), Red Hat provides [award-winning](#) support, training, and consulting services that bring the benefits of open innovation to any industry. Red Hat is a connective hub in a global network of enterprises, partners, and communities, helping organizations grow, transform, and prepare for the digital future.

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