

PIXIM REVIEW

Security in Banking

Chinese banks choose Pixim[®]-powered cameras for extra security

Banking is nothing new in China, where financial institutions have been accepting deposits, making loans, issuing notes, and exchanging money for at least 1,000 years. Today, banks continue to be modernized throughout the country.

One example of this modernization is the recent choice by three of China's "big four" state-owned commercial banks, including Bank of China, as well as two other significant banks, to deploy security cameras based on Pixim's sophisticated Digital Pixel System[®] technology. Sunell Group, one of China's leading providers of Pixim[®]-powered technology, has been shipping Pixim-powered cameras to key banks in China since 2005.

The security cameras in Chinese banks operate for the same reasons as elsewhere in the world: to help prevent theft of cash, identity, or credit cards; to keep employees honest; and to provide confidence for customers that the banks are safe.

Clearer pictures in challenging light

Video security is only as effective as the quality of the pictures it captures and records. Banks are notoriously

challenging for video security due to their highly variable lighting conditions. For example, entrances might experience strong backlighting as doors open or sun streams through windows. Lobbies can suffer from glare bouncing off cars outside a window, sunlight reflecting off a shiny floor or metallic objects inside the bank, or fluorescent and other indoor light sources.

Pixim's Digital Pixel System technology represents a fundamental breakthrough in imaging technology, enabling high-quality, clear, color-accurate pictures with the highest dynamic range. With its ultra-wide dynamic range, a camera using Digital Pixel System technology can capture images from brightly lit and deeply shadowed areas of a scene, simultaneously.

The main alternative is analog charged-couple device (CCD) cameras, which do not offer the level of dynamic range achieved by Digital Pixel System technology. In fact, CCD security cameras falter in situations where there is high contrast between the light and dark areas of a scene. Pictures from a CCD camera often end up washed out, underexposed, or filled with visual artifacts

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such as blooming or vertical smear. In these cases, important details of a scene – including the identity or even presence of a person – can be obscured.

Banks replace old cameras with Pixim-powered cameras

Here are some of the banks in which Sunell has installed cameras powered by Pixim's Digital Pixel System technology:

- **Industrial and Commercial Bank of China (ICBC).** One of the largest banks in the world in terms of both market value and assets, ICBC has installed 1,500 Pixim-powered Sunell dome cameras in Henan. Founded in 1984, ICBC aims to become a leading international modern financial enterprise. It is one of China's "big four" banks.
- **Agricultural Bank of China (ABC).** Another of the "big four" Chinese banks, ABC has installed 1,000 Pixim-powered Sunell dome cameras in Jilin and another 1,000 cameras in Heilongjiang. Founded in 1949 with headquarters in Beijing, ABC has become the second-largest bank in China in terms of total assets.
- **Bank of Communications (BOCOM).** BOCOM was founded in 1908 and emerged as one of the few national note-issuing banks in the early days of the Republic of China. It is now one of the top five leading banks in the country. BOC has 500 Pixim-powered Sunell dome cameras in Liaoning.
- **Industrial Bank Co., Ltd. (CIB).** Originally known as Fujian Industrial Bank, CIB is one of China's joint-stock commercial banks. It has its headquarters in Fuzhou City, Fujian Province. CIB has 200 Pixim-powered Sunell dome cameras in its Beijing branch.

According to Steven Liu, president of Sunell Group: "The banks replaced older security cameras with Pixim-powered Sunell cameras to achieve natural color response, outstanding picture quality, the wide dynamic range advantages in variable and strong light, zoom functions, and multi-functions such as day/night operation, motion detection, and alarm input/output."

The cameras with Digital Pixel System technology are installed primarily in ceilings of lobbies and halls within the banks, to monitor customers entering and leaving the bank as well as activities that take place within the public spaces.

In addition to improved picture quality, the banks have also found they could deploy fewer security cameras. Previously, they had to install more cameras placed at different angles to try to capture images in various lighting conditions. Now, a single Pixim-powered camera can do the work of multiple variously angled cameras – and produce crisper, more color-accurate images, as well.

"The Pixim-powered cameras are so successful in handling strong and challenging lighting conditions in the banks where they've

been installed that we expect not only other Chinese banks to follow suit, but also for cameras using Digital Pixel System technology to be adopted in government, public security bureau, finance, telecom, traffic, airport, seaport, post office, electric power, intelligent building, and other installations throughout China," said Liu.

Image capture challenges in banks

Common security camera problems for banks include:

- Lack of detail of targets
- Inconsistent clarity in bright or low light, or high-contrast lighting situations
- Color inaccuracies in varying lighting conditions and under fluorescent and other indoor lights

Pixim's imaging technology

Pixim's Digital Pixel System ultra-wide dynamic range technology, a true breakthrough in imaging technology, delivers unprecedented image quality in all lighting conditions. Cameras powered by Pixim's specialized image processing chipsets can significantly enhance security in banks through the following capabilities:

- **Widest dynamic range:** Captures highlight and shadow detail – including backlit faces – in the same scene.
- **Highest total resolution:** Makes it easy to distinguish target image features and details, even in highly variable lighting conditions.
- **Superior color rendering:** Accurately displays color even in difficult lighting such as mixed indoor/outdoor scenes, glare, and fluorescent lighting.
- **No "camera blindness":** Eliminates the vertical smear, pixel blooming, and other image artifacts commonly encountered in high-contrast scenes.

Security cameras based on Pixim technology enable banks to capture target details accurately, even in variable and challenging lighting conditions. As a result, banks are better able to identify suspected thieves, whether bank robbers or unethical employees, and potentially to prevent some of their losses from theft.



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