

## How Lemon Tree Uses Face Recognition To Bolster Security

by Sohini Bagchi Nov 03, 2015

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Located in the upcoming Aerocity Hospitality District in New Delhi, the 10-storey, 81-room Lemon Tree Premier—owned by Lemon Tree Hotels Ltd—needed a top-end surveillance and security system since it was difficult to track all that was happening on the property throughout the day.

Another challenge was to identify the solution that would be the best fit with the detailed mandate and prescribed guidelines provided by Indian security agencies. Besides, the upscale hotel did not want to upset its

visitors by appearing to be intrusive—the experience of premier guests at the hotels mattered a lot.

Lemon Tree Premier opted for a face recognition solution called NeoFace from the India unit of NEC Corp to help it deliver a more secure and elevated guest experience.

Face recognition software typically identifies a face and extracts it from the rest of the background scene to compare it with a database of stored images. It is based on the ability of the software to recognize a face and then measure the various features of the face like distinguishable marks, distance between the eyes, width of the nose, depth of the eye sockets, shape of the cheekbones—all features that result in making a faceprint, representing the face in the database.

However, the solution required that Lemon Tree Premier invest in upgrading its existing IT infrastructure. Both the IT and the security teams had to rapidly move up the learning curve in order to suitably test, deploy and man the solution.

The hotel needed a solution that helped identify faces throughout the property with high accuracy and auto-generated alerts. "Safety and security of guests has always been paramount to us. It was thus essential that we adopted a solution that would merge innovative and path breaking technology with accuracy and consistency, but most importantly met the stringent guidelines defined by the Indian Security agencies," Sumant Jaidka, Chief Operating Officer- North, The Lemon Tree Hotel Company explained.

The hotel worked with NEC Corp to implement the latter's face recognition solution that is designed to capture fast and accurate facial images from Live CCTV (closed circuit television) cameras over a standard IP (internet protocol) network and match it with the hotel's database in real-time. The biggest advantage of the solution lies in the fact that the hotel staff does not have to disturb the guests to verify their identity since it captures facial images from a distance.

Koichiro Koide, Managing Director of NEC India said, "The technology has been added as an advanced layer to the existing security at the hotel which will ensure safety of the customers and will also help the authorities have a better control over the sensitive security zones."

Describing the situation, a project head at NEC India explained, "We were asked for a security system that would let the hotel staff identify a visitor even before he entered the hotel. This required us to engage deeply with the hotel security team to not just understand their exact requirements, but also conduct numerous Proofs of Concept (POCs) to demonstrate the value proposition of our face recognition solution."

NEC's face recognition technology, NeoFace, can handle poor quality images, the company claims. "With high tolerance for low quality, highly-compressed surveillance videos and images, including web images, the system has the capability to register and generate match results for the control of both 'black-list' and 'white-list' images using digital photographs," the company says on its website.

The captured face is compared to all facial templates in the database, irrespective of any attempts by the person to conceal identity via the usage of caps, hats, glasses or slightest change in the facial hair. This helps determine whether the person is blacklisted or a welcomed VIP customer for the particular facility," the project head explained.

NEC's face recognition solution sets a new standard for security in the hospitality sector in India. The solution deployed was tested for various use cases and potential challenges in recognizing a facial image captured from a live CCTV camera and it delivered accurate results every time. The ability of the solution to respond in real-time is a great advantage as it ensures there is no time gap between identification of an individual and personalized reaction by the hotel staff.

International Data Corporation (IDC) hosted a web conference in December last year predicting the future of digital security. Based on the findings, biometric technology including facial recognition system is forecast to play an increasingly important role in digital security over the next several years.

According to a UK-based biometrics Consultant, Thomas Heseltine, face recognition has a number of advantages over some of the other biometrics used. He wrote in his research paper at [The University of York](#): "It is non-intrusive. Several other biometrics require the subjects co-operation and awareness in order to perform an identification or verification, such as looking into an eye scanner or placing their hand on a fingerprint reader, face recognition could be performed even without the subject's knowledge. Secondly, the biometric data used to perform recognition is in a format that is readable and understood by humans."

He added that other advantages are that there is no association with crime as with fingerprints (few people would object to looking at a camera) and many existing systems already store face images (such as police mug shots).

"We are confident that with face recognition solution deployed at the property, we will be able to provide a much improved security setup and hence better customer service at Lemon Tree Premier. The technology is perfect for providing unobtrusive and seamless 360° security; and the fact that it can be monitored remotely rovides that additional piece of mind," said Jaidka.

He added that the hotel is currently evaluating its application "for a 'white-list' (list of people considered to be acceptable or trustworthy) management of our VIP customers" to provide a personalized experience and believe it will provide the additional differentiation in our customer service.

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