DRIVING CHANGE THROUGH INNOVATION

With a fleet of high-performance ThinkPad X Series by their side, Taiwan-based FETC achieves global recognition for its innovative technology practices.

CUSTOMER SUCCESS STORY

ThinkPad

FETC

COMPANY PROFILE

Far Eastern Electronic Toll Collection Co. Ltd. (FETC) was established in 2004 and is based in Taipei, Taiwan. The company is engaged in the planning, designing, building, testing, and operation of electronic toll collection systems. FETC was commissioned by the Taiwanese Government to build and operate the Electronic Toll Collection (ETC) System for the nationwide freeways in Taiwan. The company has received numerous awards over the years, both nationally and internationally, for their exemplary work.

Far Eastern Electronic Toll Collection (FETC), a private company commissioned to build and operate the ETC system in Taiwan, has achieved three global firsts with the help of their technology partner Lenovo. It is the world's first nationwide distance-based multi-lane free-flow electronic toll collection (MLFF ETC) system. It boasts the longest MLFF ETC mileage – a staggering 926 km. The company also holds the distinction of building 319 gantries in just 10 months' time.

As a next-generation toll collection ecosystem, the ETC in Taiwan records more than 16 million transactions every day. It is little wonder then that the company has attracted remarkable global attention. There is a continuous flow of experts flowing in from all over the world to pick the brains of FETC engineers and other personnel on the system. This is truly an exceptional "Made in Taiwan" success story.

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Vice-President
Far Eastern Electronic Toll Collection Co. Ltd

BUSINESS CHALLENGE

Taiwan is renowned for its tech capabilities and culture of innovation. However, as the country developed, so did the number of cars plying its roads and highways. According to a recent estimate, there are 333 cars per 1000 people in Taiwan. Managing the massive flow of day-to-day traffic manually was inefficient as well as detrimental to the country’s image as a technology powerhouse. Manual toll collection slowed down traffic and often lead to traffic congestions, especially during peak hours. FETC decided to change this.

The marvelous accomplishments that FETC is globally recognized for today are the result of the collective efforts of everyone working tirelessly behind the scene. It took immense planning, groundwork, and execution to turn Taiwan’s traditional highway toll collection system into a benchmark-setting multi-lane free-flow electronic toll collection (MLFF ETC) system.

Chen Sheng-Keng, Vice-President of FETC’s IT division says, “The road to FETC’s success wasn’t exactly a smooth one—there were no precedents to follow, so all the problems encountered in the process had to be tackled one by one.” Chen adds that another key factor of the success is the powerful ongoing support of FETC’s partners – one of which is Lenovo.

LENOVO SOLUTION

FETC was not looking at a short-term resolution for its transport woes but a long-term future-ready strategy aimed at transforming toll collection in the country. They decided to partner with Lenovo in this journey. Thanks to their legendary durability, Lenovo ThinkPads have long been the device of choice for the FETC. “ThinkPads are super reliable with fast response time to help get things done. This is why they are the top choice when new equipment is needed at the FETC,” says Chen.

ThinkPad X Series were integral to the seamless integration and operation of the new electronic toll collection (ETC) system. Equipped with the responsiveness and efficiency of 7th generation Intel® Core™ processors and Solid State Drive (SSD), ThinkPad X Series PCs offer fast processing even while multitasking. Boot up time is nearly three times quicker, while opening files is up to 30% faster. These devices ensured that all stages of the toll collection process ran smoothly. ThinkPads also helped in expediting the deployment of AI modules in the system, thus shortening the integration time.

The MLFF ETC system also relies heavily on field staff tasked with gantry system maintenance. The work environment for this crew is quite different from indoor office workers. “System failures often coincide with harsh weather conditions,

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many a time in challenging locations. Out on the field, bumpy roads and high temperatures were not uncommon,” says Chen. Tested against 12 military-grade requirements and passing more than 200 quality checks, ThinkPad X Series business laptops handle these everyday bumps with ease, allowing the field staff to work without interruption, even in the harshest environments.

BUSINESS IMPACT

Since its first deployment in 2006, over 90% of freeways in Taiwan have adopted the MLFF ETC system. The RFID-tag based system offers a more efficient way to collect toll fees, reducing delays due to traffic congestion and unnecessary carbon emission.

In the past, some 160,000 license plate photos required manual identification to resolve controversies over toll fees. Now, with the introduction of AI and machine learning, the number of manual identification has dropped significantly to less than 50,000. AI recognition accuracy rate can reach as high as 99.67%. This has been a game-changer for the industry as a whole.

ThinkPad X Series laptops played an important role in the successful deployment of the MLFF ETC solution in Taiwan. Offering the right mix of power, performance and portability, along with the renowned ThinkPad durability, these devices delivered fast, effective and reliable results regardless of the environment.

The stability and maturity of MLFF ETC in Taiwan has earned recognition and accolades from many global organizations including the International Bridge, Tunnel and Turnpike Association (IBTTA), International Road Association (IRF), ITS World Congress, and World Information Technology and Services Alliance (WITSA).

THE ROAD AHEAD

With the MLFF ETC, Taiwan became the first country to launch a national electronic tolling system network. Chen and his colleagues are often invited to other countries as consultants on electronic toll systems. “As presentations and discussions can last an entire day, the all-day battery life on our ThinkPad X Series helps us handle all the curveballs with grace and speed,” says Chen. This is yet another example of how the partnership with Lenovo has helped the company focus on the bigger picture and achieve greatness.

THINKPAD X270

PERFORMANCE

Effortless switching between apps, 3 times quicker boot ups, and 30% faster in opening files

MIL-SPEC TESTED

Mil-spec tested to ensure reliable performance even under extreme work environments

PORTABILITY

Weighing from just 1.27kg the X270 gives you portability and performance

SECURITY

With biometric fingerprint technology, there's no need to remember a password

EASY TO SERVICE

Easy to set up and roll out, as well as quick to service, upgrade, and secure

5 reasons why Lenovo is a difference maker

- Trusted around the world
- Expertise across categories
- Choose Lenovo with confidence
- Business-boosting technology
- Flexible support network