Daily Life in Kenya Survives the New Normal

YNY Technology's Remote Service Preserves the Supply of Edible Oil in Kenya

Meeting the Local Demand on Critical Goods

Kenya is East Africa's largest economy and has a population that has increased by 25% in the last ten years. Kenya's booming economy and population have greatly increased the demand for basic products that people use in their everyday lives. One such product is edible oil. In 2018, for example, only one third of the edible oil consumed in Kenya was produced domestically. For this reason, the Kenyan government worked to greatly increase the local edible oil industry. For example, they provided incentives like tax exemptions to motivate companies to enter the edible oil industry. Edible oil has long been a crucial sector of the food processing industry in Kenya. For example, the industry employed 7,000 workers and contributed 2.1% to Kenya's overall GDP in 2018.
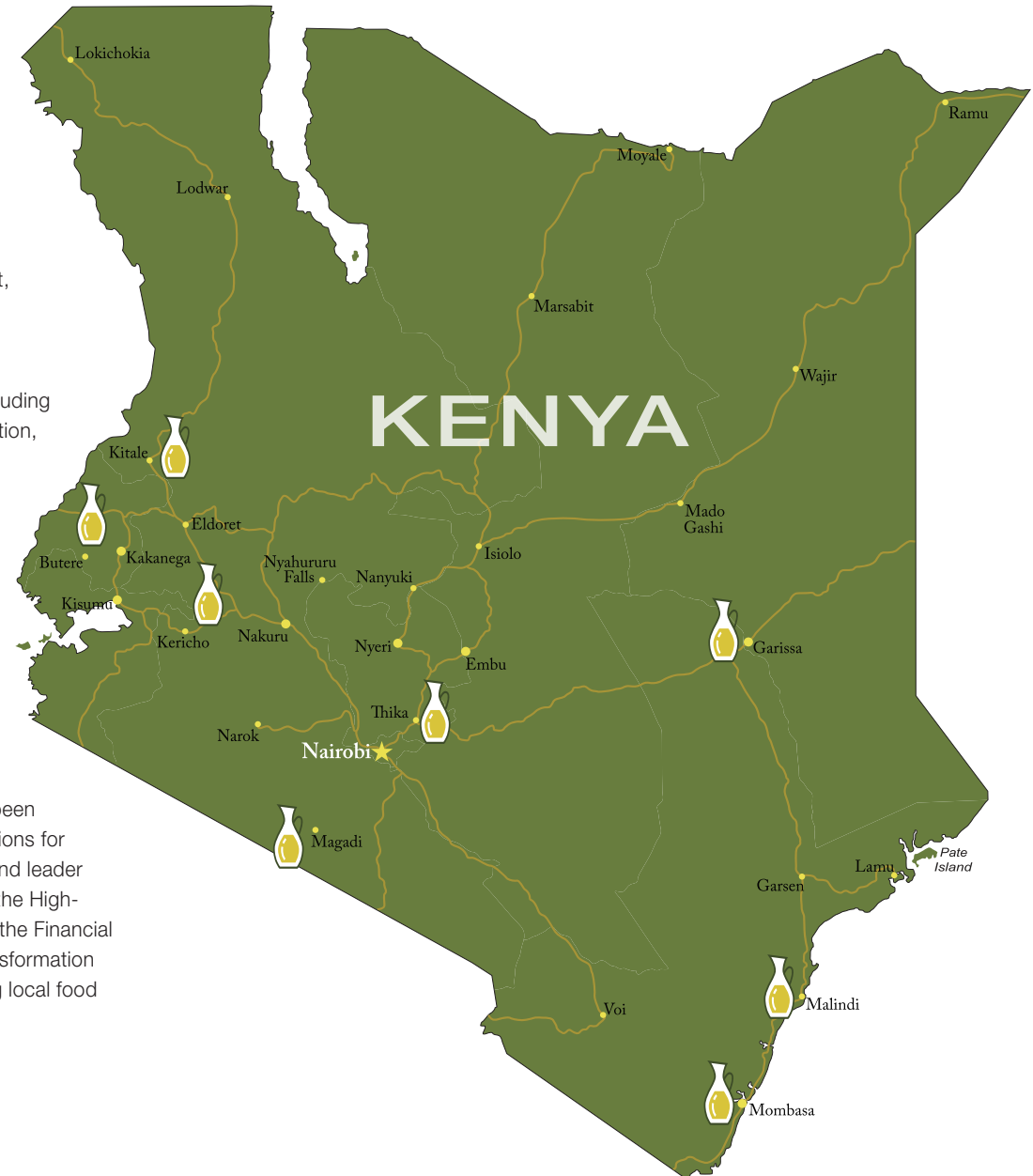
With the government's assistance, most edible oil processing plants operating in Kenya are fully automated. This is important, since the production process requires very precise control over temperature and other factors. Refining edible oil involves several processes to purify the crude edible oil, including degumming, bleaching, filtration, deodorization, and fractionation. It's easy to see why plant owners need a reliable control system to manage the entire process to ensure consistent quality and maximum production. "For example, the temperature of the oil must be precisely controlled. Otherwise, you will spoil the quality of the oil," said Jeffrey Wong, senior business unit manager of YNY Technology.

YNY Technology Sdn Bdn is a subsidiary of PC Group, a Malaysian company that has been involved in the field of process control solutions for more than 35 years. As a keen advocator and leader in Industry 4.0, YNY was ranked as one of the High-Growth Companies in Asia Pacific 2020 by the Financial Times, and continues to provide digital transformation solutions to its customers, including serving local food processing industries in Kenya.

YNY Technology Sdn Bdn

Founded in: 1999

Headquarters: Selangor, Malaysia

Industry: Manufacturing

Website: www.ynytechnology.com.my

New Service Model Expands Dramatically Amid the Crisis

At the end of 2019, before the pandemic caused such a huge disruption in global commerce, YNY had already realized the importance of implementing remote service for its overseas customers. The biggest challenge was to find a solution that met customers' major requirement: strong cybersecurity. According to Jeffrey, "Edible oil refinery customers are extremely cautious about cybersecurity since the details of their production process is the company's own secret recipe; the information is highly confidential, and no one would risk exposing such valuable information to public networks." In fact, that is why edible oil refineries tended to use closed systems that were totally disconnected from the Internet, and always made use of onsite support, including both commissioning and maintenance.

After January 2020, the pandemic changed everything. As the threat of COVID-19 quickly encircled the globe, most imported edible oil was delayed, and Kenya could only rely on its local supply. This posed a huge problem, since the local industry relied heavily on overseas partners in production line maintenance and technical support. Before the pandemic, overseas technology partners would fly to Kenya to provide onsite services. But as most countries set strict restrictions on international travel, remote access was the only solution for setting up and sustaining a plant's steady refinery process with no downtime. The pandemic greatly accelerated the adoption of remote service provided by systems that connect over the Internet.

YNY considered adopting a traditional Remote Desktop Connection (RDC) solution, which is a common approach for remote commissioning, for their online service platform. Since cybersecurity was a prime concern, YNY spent a lot of effort answering their customers' onsite IT team's security questions before they were granted access via the Internet. However, they still faced some difficult obstacles. First, setup required extensive IT knowledge, which the majority of automation engineers were not familiar with. Second, once connected, users would have access to all local devices in a plant's network. Therefore, one of the biggest IT challenges was planning access rights to avoid any unauthorized access to confidential areas, such as production information, since the alternative could have dire consequences. And last but not least, RDC license fees tend to be extremely expensive.

"We needed a new solution that would allow us to continuously provide real-time support to our customers in Kenya, but at a manageable cost."

Jiat Yong
Executive director, YNY Technology

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Securing Business Future with Trusted Remote Support

YNY technology approached Moxa, its long-time technology partner, to get expert assistance at resolving this difficult issue. And that's where the Moxa Remote Connect (MRC) secure remote access solution came in. As Jeffrey pointed out, "With only a little proof-of-concept work in the office, we saw that MRC could be the remedy for the problem we faced."

MRC is a secure remote access solution that runs on a cloud platform. It can be used to easily and securely bridge field devices/machines, engineers, and application servers for industrial applications. There is no need to perform complex VPN/firewall configurations. Compared with the RDC option, which requires engineers to design a special IT security policy to mitigate security issues, MRC was much easier to work with. The extra effort required for the RDC option generally requires extra manpower and additional maintenance costs. For example, MRC does not require changing firewall settings, and can be configured to block access to unknown devices, thereby protecting both data and equipment. Furthermore, with MRC Quick Link, which is a remote connection service hosted by Moxa, users do not need to build their own server portal. Jeffery pointed out that "MRC eliminates all the headaches on the IT side, such as complex firewall settings and IP reconfigurations. In addition, MRC is also very straightforward and user-friendly to OT engineers. With MRC, existing technical staff, both at our company headquarters and remote customer sites, can deploy remote access without extensive IT knowledge."

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🔒 Protecting Customer's Secret Recipe

MRC's secure remote access solution provides data encryption and secure tunneling between the local and remote systems. "When we showed the MRC solution to our customer in Kenya, the first question they asked is 'How secure is the connection?' MRC answered all their concerns," said Jeffery. MRC's end-to-end encryption can prevent data leaks, and plant owners have on-demand remote access control, which means they can easily disconnect the Internet connection with YNY when remote support is not needed.

☕ The New Era of Real-time Global Customer Support

The SCADA control system with built-in MRC gateway that YNY provided to its customers gives YNY the ability to securely troubleshoot and configure PLCs remotely over the Internet. With a single gateway at the field site, MRC can meet a variety of communication requirements, such as 1-to-1 and 1-to-many, thereby providing connection flexibility and scalability. End-users no longer need to purchase multiple dedicated PCs and software licenses, allowing YNY to respond quickly to customers' needs, at a lower cost. In the past, whenever YNY's overseas customers faced a problem they were unable to solve, YNY would fly one of their experts to Kenya at a moment's notice. The travel time was at least two days, not including visa applications and other travel preparations, making the entire process extremely time consuming. "With MRC in place, even for issues reported from overseas, if an Internet connection is available, we can fix the problem in just two hours. Via MRC's secure network connection, we can easily download relevant information from the customer's side, and then troubleshoot the problem from our home office," Jeffery noted. Today, YNY can support customers in real time, without geographical limitations, and at a much lower cost than before.

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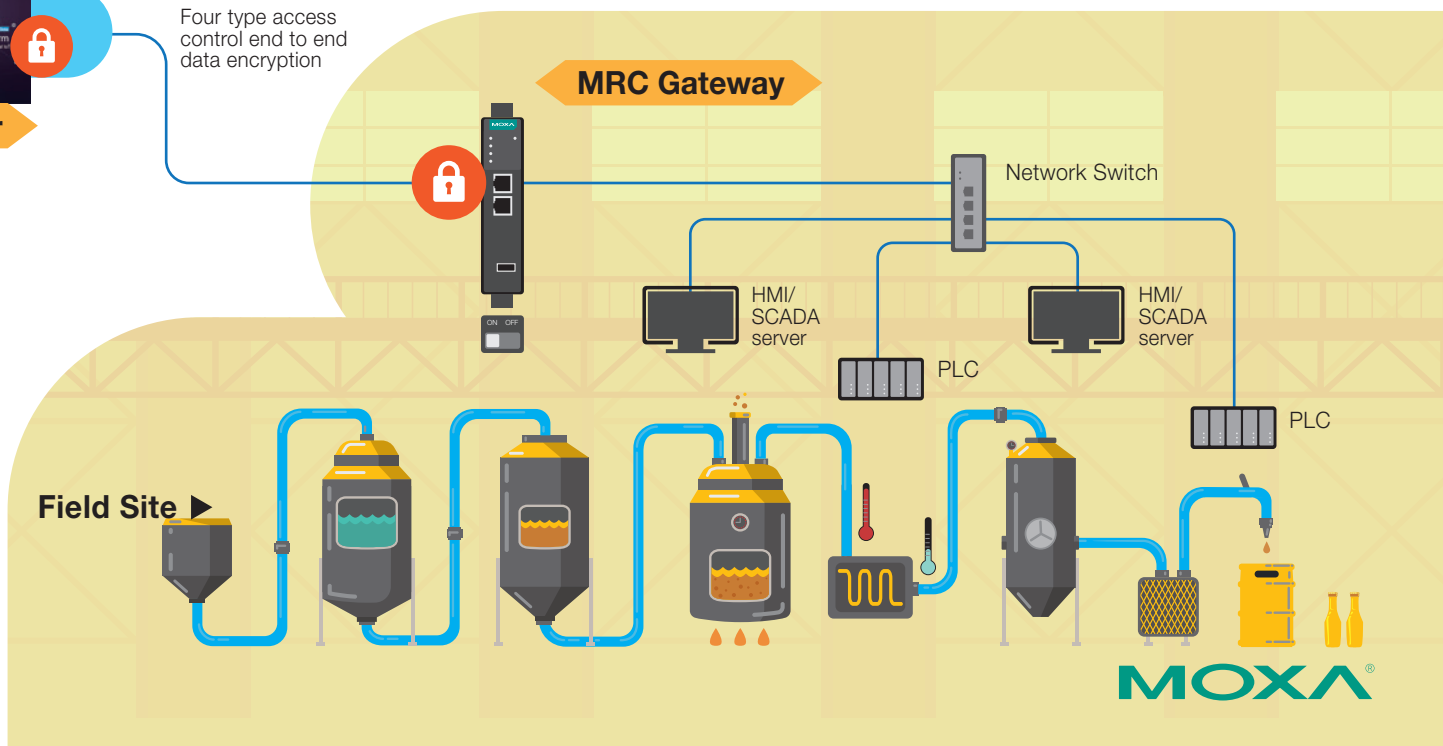
MRC Server
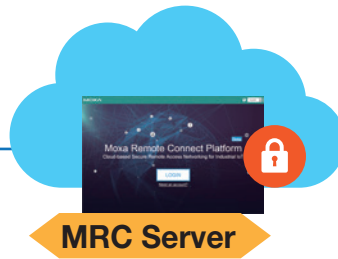
Four type access control end to end data encryption

MRC Gateway

Network Switch

MRC Client

• Remote desktop control of the HMI/SCADA server
• Download PLC program
• Change equipment configuration

HMI/SCADA server

HMI/SCADA server

PLC

PLC

◀ Service Engineer

Field Site ▶

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Stepping Forward in the Industry 4.0 Journey

As an integrated solution provider of Industry 4.0, YNY is already thinking ahead. YNY is studying the feasibility of leveraging MRC's proven functionality to provide predictive maintenance, which is a more proactive customer service, to improve overall equipment effectiveness (OEE) and zero equipment downtime. With secure remote access, YNY can directly diagnose problems with customers' machines, and assess the health of their overall control system to predict failures before they occur. This type of solution can give their customers the opportunity to schedule machine maintenance service in advance, enabling them to improve the availability of their machines and improve production quality and speed.

"We are delighted to have Moxa as our reliable technology partner. With great support from Moxa, we are confident that we can keep providing customers with the best performance and operational excellence. After eliminating geographic and time zone limitations, we look forward to expanding our global service scope and bringing customers the full benefits of this industrial transformation," said Jiat.

Today, YNY Technology is able to help its customers in Kenya achieve operational excellence, and relieve the stress of local demand in the country, even in this difficult time. Moreover, they also ensure the security of customer's secret recipe and win their trust. Moving forward, YNY is able to provide its global customers with real-time remote professional support anywhere, anytime.

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