

Cisco SD-WAN Empowers Xingbianli's “Lean Retail”



Company profile

Name: Xingbianli

Industry: Retail

Pain points

- Xingbianli has a large number of applications deployed in its brick-and-mortar stores. In the environment of the carrier's broadband network, many important and time-sensitive applications cannot obtain effective bandwidth, resulting in latency that is unacceptable for the business.
- All applications are deployed on a public cloud platform; this may cause security problems when accessing the public network address of the public cloud containing the applications from the intranet address of the store. The migration of applications and data from the current public cloud platform to the local data center is also a complex issue.
- In the traditional WAN deployment mode, complex equipment and line configuration deployment is required for each branch. When a branch WAN fails, the troubleshooting takes a lot of time.

The “new retail” has led to new industry definitions, “retail species,” and technologies. Especially in the first year of new retail in 2017, a large number of new species of startups began competing with online and offline behemoths, through innovative business patterns such as intelligent self-service convenience stores and intelligent cabinets, with the aim of solving the problem of the “last kilometer” in the retail industry.

Xingbianli, one of these up-and-coming retail enterprises, established in June 2017, has come out on top of this group. It has done so by showing a special preference for innovative technologies, first designing an intelligent cabinet based on mobile internet and location-based positioning technologies to provide close-range and self-service immediate consumption services to users.

To meet customers' diversified demands, Xingbianli opened eight stores at the same time in October 2017, with intelligent self-service convenience stores officially launched to further strengthen the big data competency, creating a brand-new life-experience center for users.

Xingbianli expected that the combination of multiple business patterns such as intelligent self-service convenience stores and intelligent cabinets could help put commodities in the places nearest to consumer groups, reducing the time white-collar consumers spend shopping.

Lean retail makes new retail even more novel

In the battlefield of the new retail, every player has its own strategies and tactics; however, what they have in common is making full use of technologies such as big data and artificial intelligence.

The industry generally accepts that the transformation to the new retail calls for a boost by big data and artificial intelligence to truly understand the needs of customers and satisfy their desires, achieving the business mode based on user experience. The idea of reconstruction of immediate and convenient consumption experiences, proposed by Xingbianli, is based on this business model. Xingbianli puts forward the concept of “lean retail,” which describes data's powerful driving force in the retail businesses. The company believes that stores should differ from each other, with each product chosen in accordance with the results of an analysis performed by self-developed big data systems. In addition, a great deal of data is collected and analyzed to customize each store unit so as to select a commodity category, optimize the commodity arrangement, and precisely meet the demand of specific consumers in a more rational way.

Lean retail places higher demands on the network

Each of Xingbianli's convenience stores has a variety of cloud applications such as surveillance video, inventory, and routine QA. All of the stores access these applications via the WAN and transfer data with back-end business applications in the headquarters in real time every day, putting its WAN to a crucial test.

Like most other retailers, Xingbianli has chosen broadband access via a telecom operator. Although this reduces the cost of the WAN, it also brings multiple challenges in application performance and security.

Challenge 1: Performance and quality of core applications cannot be guaranteed

Xingbianli has a large number of applications deployed in its brick-and-mortar stores. In the environment of the carrier's broadband network, these applications are "equal," and as a result a large number of important and time-sensitive applications cannot obtain effective network bandwidth, resulting in latency that is unacceptable for the business.

When users experience a long wait because a convenience store's facial recognition application fails to obtain enough bandwidth for the data transfer, or when the mobile payment system is stuck due to WAN bandwidth congestion, they will give up on their purchases. Such incidents may greatly influence consumers' shopping experiences and detract from the advantages of the new retail.

Challenge 2: The security of the WAN is a great concern

Because Xingbianli's applications are deployed on a public cloud platform, accessing their public network address from the stores' intranet address causes security issues, such as a failure to separate the applications and the need to convert the addresses back and forth when the store accesses the public cloud application, which is very troublesome and complex.

Additionally, Xingbianli needs to build its own local data center in consideration of overall application deployment. However, this raises the question of how to migrate the applications and data from the current public cloud platform to the local data center, as most public cloud platforms are currently equipped with interfaces for data import but not export.

Challenge 3: Scaling deployment, operations, and maintenance leads to greater complexity

Especially for retail businesses like Xingbianli, new branches will emerge as the business territory continues to expand. In a traditional WAN deployment, complex equipment and line configuration is required for each branch. When a branch WAN fails, the troubleshooting it takes a lot of time.

Cisco SD-WAN: Connecting the unconnected

With the active cooperation of Cisco's sales teams, Xingbianli ended up choosing the latest SD-WAN solution provided by Cisco.

The Cisco® SD-WAN solution aims to simplify management, improve agility, and reduce the costs of interconnected and distributed enterprise networks, making deployment easier through management, arrangement, and overlay functions.

The Cisco SD-WAN solution features a completely separate control plane and data plane. The Cisco vEdge Router, which provides integrated routing, encryption, and other security functions, is deployed in each branch and public cloud without additional hardware.

vSmart, the SD-WAN controller, provides security, routing, and strategy management for the vEdge router. Each controller instance can support up to 3000 edge devices, and can be scaled to accommodate greater deployment.

A more economical and widely connected WAN

The Cisco SD-WAN solution supports hybrid WAN deployment, and Xingbianli provides all of its convenience stores with two kinds of WAN lines: a main line for internet broadband access, and a backup line for the 4G mobile line. Compared with traditional costly WAN lines, such an internet link costs significantly less.

However, Xingbianli's Cisco SD-WAN addresses Xingbianli's problems in other ways as well. Since the Cisco vEdge Routers also support software mode deployment, Xingbianli deploys these routers in both the southern and northern regions of the public cloud provider, thus providing a connection between the branch stores and the northern and southern regions of the public cloud, as well as rapid transmission of data.

A guarantee of more reliable application performance

Cisco SD-WAN enables Xingbianli to deploy multiple WAN links, and helps ensure that the optimal links are available at any time through key applications and by prioritizing applications and balancing the traffic load.

It is particularly suitable for sensitive data such as that related to videos and payments, always providing enough bandwidth, low latency, and minimum data packet loss, and making the best shopping experience come true.

Secure cloud connection to help ensure secure segmentation of assets

Cisco SD-WAN provides direct access to the internet from Xingbianli's branches by integrating four to seven tiers of firewalls. More importantly, the technology for segmenting the traffic of different applications makes it possible to isolate these applications, enabling all cloud applications to be connected from end to end in a secure and seamless way.

For retail businesses like Xingbianli, using Cisco SD-WAN to segment key task traffic and assets helps prevent vulnerabilities in other parts of the network from affecting the core enterprise.

More intelligent operation and maintenance of the network

At the operations and maintenance level, Cisco SD-WAN implements "zero-touch provisioning" (ZTP), "with all branch equipment configured and provisioned by a cloud controller as a whole. ZTP makes deploying the WAN in the Xingbianli branches exceedingly convenient – non-IT personnel can do it simply by powering up the hardware equipment in a branch and then connecting it to the internet or the 4G network.

Operations and maintenance personnel are also able to identify failures in the branch WAN links through the graphical user interface, which enables them to maintain, adjust, and troubleshoot the links in an easy way, as well as to prioritize all the applications through the centralized management interface.

Xingbianli experienced this convenience in no time. First, it deployed the WAN in three smart self-service convenience stores and in both the southern and northern regions of the public cloud platform, which took less than one month to complete from beginning to end. "In the most ideal situation (with no consideration of the coordination time for deployment of three smart self-service convenience stores), it is expected to complete all the deployment within 2 to 3 days." said Wang Mengzhe, IT director of Xingbianli.

Xingbianli's lean retail has a promising future

In reality, Cisco offers Xingbianli much more than excellent network performance, simple deployment, and convenient management; it offers the potential of a boost in future business.

In the future, Xingbianli will make the best use of the Internet of Things (IoT), achieving more elaborate retail innovations by leveraging IoT technologies. With self-service shelves, for example, waste and the sales volume of commodities will be precisely calculated to guide and streamline the supply chain promptly, and data on consumers will be captured in varied dimensions to obtain more precise user profiles and enable a more scientific approach to overall marketing.

However, these innovations cannot go forward without the underlying data and a reliable and stable network. Leveraging Cisco SD-WAN's accumulative advantages in machine learning, artificial intelligence, and intent-based networks, among others, Xingbianli hopes that the SD-WAN can evolve into a self-learning and self-healing WAN, even featuring instantaneous dynamic strategy adjustments, and thus enabling more in-depth business mining.

"With the help of Cisco, we are more confident in making use of such technologies as mobile payments, biological recognition, intelligence applications, and big data, building retail big data and situational application systems for the immediate convenience retail sector by collecting consumer information from intelligent cabinets, new convenience stores, and the like, and boosting exploration and breakthroughs in the new retail industry through big data marketing and system competency in the future," said Wang Mengzhe, IT Director of Xingbianli.

It also means the creation of brand new consumption scenarios, ecological ways of collaborating, and infinite closeness of brand to user groups.

Eventually, it will also give Xingbianli's lean retail a promising future.

For more information

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