FUJITSU

Case Study
Valor Co., Ltd.

»Using Hadoop, we reduced batch processing time to less than 5%,
and realized efficient order placement that reflects the daily inventory status«

Yutaka Hatanaka, Assistant Manager, Information System Division, Valor Co., Ltd.

The customer

Country: Japan
Industry: Retail
Founded: 1958
Employees: 18,320
Website: www.valor.co.jp

The challenge

Valor has many retail stores, such as supermarkets, and wanted to improve its ordering performance to reduce operating costs and increase competitiveness.

The solution

By combining Fujitsu Cloud IaaS Trusted Public S5 (TPS5) and Hadoop, the store inventory calculation process was removed from the core system, making batch processing faster.

The customer

Valor Co., Ltd. currently has approximately 590 retail locations based in the Tokai and Hokuriku regions, predominantly supermarkets, home improvement centers and drugstores. From 2011, Valor developed a five year growth plan focused on aggressive store opening with an operating revenue goal of 500 billion yen. From 2012 into 2013, it enhanced store sales capacity and infrastructure. In November 2012, it established a 33,000m^2 (approx.) dry goods center (normal temperature distribution center) in Kani City, Gifu Prefecture. In rapid succession, it opened the Shizuoka Distribution Center in July 2013, a chilled goods center (low temperature, refrigerated distribution center) in Kani in August, a meat packing processing center in August, and a fresh produce center for processing agricultural produce in September. By centralizing work that had conventionally been performed at individual stores, and doing collective batch distribution from the centers to the stores, work at the stores was reduced and quality was stabilized.

The challenge

By focusing on distribution centers to enhance the infrastructure, Valor laid out the framework to handle future increases in stores, and to enhance store operating capacity. One factor was improving order placement performance. "For store operations, running out of stock and merchandise waste decreases sales and profits. Improving order placement performance is imperative to prevent order placement omissions and lost opportunity due to being out of stock. On the other hand, with a great deal of time required for work at stores, making the order placement process more efficient and lowering the cost had become a big issue. In light of that, we needed an order placement mechanism that reflects the most recent inventory," says Yutaka Hatanaka, Assistant Manager of the Information System Division at Valor.

The solution

Previously, order placement done using the core system did not reflect the previous day's inventory. For this to happen, the inventory has to be calculated by date, by merchandise, and by store during the night after close of business and before the morning employees arrive. That data then has to be sent to the order placement system.

The benefit

- Reduce costs by using the cloud in hour units
- Cut batch processing time to 5% using Hadoop technology
- Reduce the operating burden with schedule automation

Products and services

- Fujitsu Cloud IaaS Trusted Public S5

The supermarket product count is huge at approximately 30,000 items, and with multiple stores, it takes approximately seven hours to complete the calculating process using the conventional mechanism. Also, because the end of the month inventory involves even greater data volume, it sometimes takes around 24 hours, which means it cannot be utilized for actual order placement work.

As the number of stores increases in the future, there will of course be more transactions. The option of making the core system bigger would mean a greater cost burden, and a greater work load at the time of introduction. The core system was operating fine for regular work so it did not make sense to replace it just for inventory calculation. Therefore, it looked into removing the store inventory calculation process from the current core system, and using a system that combines TPS5 and Hadoop.

The benefit
"One of the major decisive factors for choosing this was the ability to use Trusted Public S5 in hour units as opposed to monthly usage, required by many domestic vendors. Currently, Hadoop performs processing using eight slave machines, and the operating time is merely one hour of the day. It would be extremely inefficient to purchase and operate a computer just for that at our company, and using the cloud also makes it possible to keep costs down using hour units," says Mr. Hatanaka. Valor was unfamiliar with Hadoop, so there was concern about operation after introducing the system. Their sense of trust in Fujitsu allowed it to take the plunge. "We've had interactions with Fujitsu about various systems in the past, and this led to a sense of security because we know the system engineer (SE) in charge will provide extra help if a problem occurs," explains Mr. Hatanaka.

From around June 2012, looking to the introduction of the order placement system, Valor studied how to speed up inventory calculation batch processing with the current core system. However in October of that year, it then decided to cut out the core system by using Trusted Public S5 with Hadoop.

"I think the biggest factor in finally deciding to use a combination of Trusted Public S5 and Hadoop was that we obtained verification results using our company's actual data according to a benchmark proposal from Fujitsu. We heard it was possible to realize, in less than one hour, calculation processing that took seven hours in the past. That gave a strong impression, and with the verification, we felt confident that Hadoop was a good choice. Currently, we are also implementing a logic review, and calculation of inventory is completed in 15 minutes which is approximately 5% of what it was at the start," says Mr. Hatanaka.

An investigative commission was started with representatives of the company's sales department, merchandise department and information systems division. From February 2013, an all-store store inventory calculation process was performed, and a new order placement system was operated using that data in April 2013. In addition to reducing the store operating burden, this also makes it possible to enhance sales capability using the improved order placement performance.

The new order placement system, which started operating at a handful of stores, is operating in 26 stores as of December 2013. Currently, with the investigative commission at the core, clarifications and improvements are also being made to the operating method and system. The number of stores operating the system is gradually increasing, and the ultimate goal is to introduce the new order placement system at all stores.

This system controls the Trusted Public S5 usage schedule by using Hadoop and API provided by Fujitsu. It is automated to start up at 2am and finish all processing by around 6am. This is ideal for use of the cloud in hour units.

Mr. Hatanaka, satisfied with the great performance of the system, speaks about using the cloud: "Though they'd like to use the cloud, I think there are many companies that haven't taken the plunge. Our company was one of those companies. However, once we took a step in that direction, we were able to actually sense how convenient it is. We understood the big difference between studying something with a book, and experiencing it through actual use."

Conclusion

Valor, after it cut out the core system by using Trusted Public S5 utilizing Hadoop, used the cloud for various systems. In June 2013, it transitioned to the single sign on system of Trusted Public S5. Authentication for log in of various systems at Valor is performed on the cloud.

"The good thing about the cloud is efficiently using it to handle peak access numbers. For Valor, there is a sharp increase in access numbers at the end of the month because of stocktaking and inventory. Previously we had to provide servers to handle the peak at the end of the month, but now it is possible to handle this simply by upping the performance level of the CPU at the end of the month. For our company, this is revolutionary, and I feel it is a big benefit of the cloud," says Mr. Hatanaka.

"Furthermore, we selected Trusted Public S5 for the core system infrastructure of the market purchasing system, and for subsidiaries that handle fresh flowers. Operation was achieved quickly, ranging from several weeks to three months.

"Going forward, the Information System Division is aiming to reduce hardware costs and operating costs. To do that, we're considering developing new application infrastructure for the POS system and to use the cloud infrastructure when updating the core MD system.

"For Valor, after constructing a mechanism by which we can be competitive and reach the goal of becoming a 500 billion yen or trillion yen company, we'd also like to actively consider the cloud as an option in the future," says Mr. Hatanaka. In the future there is also an expectation for Fujitsu to continously provide the latest technology and make proposals to suit Valor's business.

Currently, Valor is also opening stores overseas, in countries such as Korea, and wants global support. Going forward, Trusted Public S5 will support Valor in lowering store operating costs and enhancing operating capability both domestically and abroad.