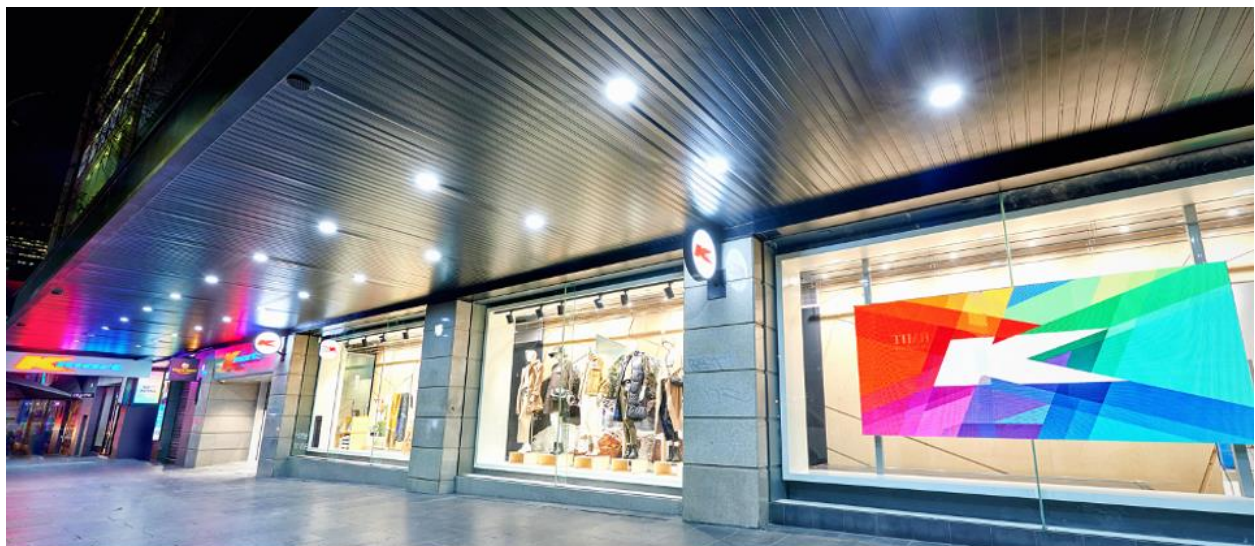


KMART AUSTRALIA MIGRATES ITS TRANSACTION SYSTEMS TO AWS

There is a large and very successful retail chain in Australia called “Kmart”, and despite having the same name and similar branding, it’s utterly unrelated to Kmart in the United States. Kmart in the United States is closing stores while 10,000 miles away in Australia, the other Kmart (and yes, it’s actually an Australian owned and run retailer) is thriving. After researching the company, I believe a contributing factor to Kmart’s success has been its investment in digital transformation which is at the very heart of its operations. Their focus – being a customer led, digitally enabled retailer.



Kmart Melbourne, Victoria

THE MODERNIZATION JOURNEY

Kmart Australia, like many retailers, needed to engage seamlessly with their consumers across all channels in the face of increasing cost pressures while tackling with being somewhat slowed by what the company considered rigid infrastructure. The mainframe system was initially set up back in 1990s and is at the core of Kmart’s business hosting, product registration, ordering, replenishment and supply chain systems.

Kmart embarked on the journey of mainframe modernization with three goals in mind. First, to create a technology backbone built for more agility and speed, second to reduce operating costs, and finally to unlock and monetize data currently trapped in

legacy systems. The older mainframe struggled to scale to meet future needs, and Kmart knew that changes to the system would be costly and time-consuming.

Kmart General Manager of Products Technology, Kevin Love explains, “This was a critically important project for us because the mainframe is really the heart and soul of any retail business. Taking the first step of mainframe modernization by moving it to the cloud of course helped reduce our operating costs for the platform but it was much more than that. Firstly, the move enabled us to scale our business in ways we never could have before. We saw this almost immediately as Kmart embarked on its store network growth. Secondly it enabled us to unlock data trapped in our legacy systems which is now feeding analytics cases across multiple strategic programs such as loss prevention and inventory optimization. Finally, and most importantly it has given us the base upon which we can modernize, deliver new solutions and enable better outcomes and experiences for our team members and our customers.”

The project involved re-hosting merchandise, inventory, and supply chain applications currently running on their mainframe infrastructure, most of which are now, thanks to Infosys Cobalt, running in the cloud on a mainframe emulator. At the same time, Kmart will be carving some mainframe functionality and re-building apps as micro-services that can interact with other parts of the business digitally.



Kevin Love, Kmart General Manager of Products Technology

Kmart Australia chose Infosys, with its Infosys Cobalt cloud services advantage, as the partner for the legacy modernization project. Infosys brought in two other key partners, [Micro Focus](#) and [Amazon Web Services \(AWS\)](#).

A LOWER-RISK PROCESS FOR MAINFRAME MODERNIZATION

Initially, Infosys spent six weeks producing a business case for legacy modernization for Kmart which described the benefits and a phased approach.

Data sources and applications were examined for compatibility with the target architecture and the integration points during the discovery phase. Qualitative and quantitative analyses on source data determined the right set of tools and migration activities. To give you an idea of the scale, Infosys migrated 1.4 terabytes of DB2 tables and five terabytes of data.

According to Andal Alwan, Regional Head - APAC, Consumer Goods, Retail and Logistics at Infosys, “Infosys is working with Kmart to leverage the [A.R.T framework](#) for mainframe modernization. Infosys ART framework enables rapid realization of operational costs savings from migration to cloud, while in parallel setting a strong architectural foundation to move towards modernization.” The accelerated phase includes re-hosting mainframe workloads onto the AWS cloud. The renewal phase is about creating new user experiences and applications. This phase also includes reducing development cycles through new tools utilizing application programming interfaces (APIs) and modularization. The transform stage involves rewriting and redeploying existing mainframes workloads to take advantage of the AWS Cloud.

Love expanded on this. “As an organization we want to best understand supply and demand and be able to have the right product at the right time in the right place for our customers. There are two parts to our modernization strategy, the first is to decouple and the second is business led. Early in the mainframe modernization we decoupled data and we’re already seeing results, however that’s just the beginning. We are well progressed taking that further by introducing API’s to expose, in a more modern manner, business capabilities which had previously been locked within the mainframe’s screens. In terms of modernization, we’ve developed a potential roadmap but ultimately the modernization is through a partnership with business, taking an opportunistic approach to how and what capabilities we re-write as cloud native.

Infosys used the Microfocus mainframe emulator to reduce the re-hosting risk because it provides a container that mimics the mainframe hardware on a virtual machine. COBOL software, for example, can run on standard virtual machines (VMs) without significant changes to the code.

INFOSYS MODERNIZATION SUITE

The Infosys Modernization Suite, also part of the Infosys Cobalt portfolio, is a suite of modernization services designed to help enterprises modernize legacy systems. It is an integrated solution that supports a range of modernization scenarios through cloud-native development, cloud migration, mainframe modernization, and technology

migration. The solution includes a team of experienced consultants and an ecosystem of over fifty partners.

According to Infosys, this framework of repeatable services has allowed the company to reduce development efforts by 40%, cutting time to market by 20 to 40% and reducing modernization costs by 15 to 30%.

THE AWS CLOUD

The infrastructure cost savings alone are a compelling reason to undergo migration. Other advantages are the ability to scale and utilize on-demand IaaS and PaaS to innovate rapidly. There are several mainframe migrations approaches, such as Kmart did with re-hosting to full-scale cloud-native re-engineering.

For Kmart, a significant human re-skilling effort involved the entire IT team taking AWS training and certification, including non-technical staff such as top-line management, marketing, and even store line managers.

OPPORTUNITIES THAT LIE AHEAD

When it comes to the future, the opportunity lies in engaging with customers and ensuring that they get a seamless and effortless experience across all channels. This would involve combining traditional trade and online business into one seamless engagement as a customer walks into a store, shops online, or orders online and picks up at the store.

According to Love, one of Kmart's key strategic differentiators is its physical stores. Trading for over 50 years (first having opened a store in 1969 at Burwood, Victoria), means the logistics, store layouts and ability to service a store are mature. "To compete and excel we not only want to be exceptional at both online and in store; we must integrate both digital and physical experiences. Having as much information about our product inventory which is timely and accurate will mean we not only react but can predict trends and move to a much more dynamic ways of working. Therefore, having a more responsive, transparent, and adaptive architecture for stock movement and inventory is critical to us having the products customers love available to them where, when and how they want to shop. Our immediate focus is on tackling those important capabilities and eliminating our dependency on the mainframe for them," he said.

A second opportunity is the utilization of data for personalization. Companies with multiple businesses and touchpoints with consumers can use data around customer engagement and increase the share of the wallet. Legacy modernization enables the ability to free trapped data and then personalize it more.

WRAPPING UP

Let me say first that I am impressed to hear about this successful mainframe migration project. The first time I have talked to someone who has done it! These types of projects are challenging to undertake, and not every company can pull it off. This shouldn't be viewed as a poor reflection on mainframes. Statistically, global mainframe usage is growing as the newer systems run Linux and open-source cloud stacks and are now even available as a public cloud resource. It's just not for every company.

I believe Kmart is one of the first retailers globally to migrate mainframe applications to the cloud and has an agile cloud platform that puts them in a great position to innovate and optimize customer experiences rapidly and at scale. Could they have done this with a newer mainframe? Yes.

The savings in OPEX are already kicking in because Kmart is on AWS, and the mainframes are retired. The gain from improvements in customer engagement is an ongoing process. OPEX savings alone are estimated to be up to twenty million US dollars over the next three to four years.

Love is very proud of what his team has already achieved, not least of all performing the migration fully remote during a pandemic! "It has put us in a fantastic position to deliver our ambitions and we are already seeing the benefits. As I mentioned earlier, we wouldn't have been able to scale our store network as rapidly as we have had we not begun the mainframe modernization journey," he said. Stability has also been a big win from this initiative with the Mainframe now able to scale to processing peaks and handle the unexpected fluctuations in demand the pandemic has brought about. And now they are starting to solve some of those technically challenging problems around stock movement, inventory, and product. I'm really excited for the future of technology at Kmart.

For enterprise-level migration projects, the Infosys A.R.T Framework for mainframe modernization along with Infosys Cobalt for cloud, coupled with Infosys' strategic partnership with AWS, — looks like a proven approach for the mainframe to cloud modernization.

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