accenture | Central Provident Fund Board

Securing life goals

Transforming CPFB's digital services to make savings a simpler, accessible and personalised experience

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Modern tech, simplified service

Planning for retirement means taking specific financial steps decades before you are ready to spend the 9-to-5 on leisurely pursuits. The journey, however, is different for everyone. Plus, it can be a slow and frustrating journey if the information is difficult to find and understand, especially if it is full of jargon. This is what the Central Provident Fund Board (CPFB), Singapore's social security organisation, found when it asked its members for feedback on their online experiences. The CPFB knew that it needed to simplify its website to serve members well and connect them with the right information and actions. However, for those surface-level interactions to be meaningful over the long term, a deeper, systems-level change must first occur.

The CPFB set out to provide a reimagined and personalised digital experience for Singaporeans and permanent residents — one that would be easy to navigate on all kinds of devices. The platform had to serve different individuals equally well and present information that was specific to their needs. After all, the financial journey for someone purchasing their first home and decades away from their retirement bears little resemblance to someone already enjoying their golden years.

Providing personalisation, with a seamless and simple experience, required modernising the CPFB's front-end and back-end systems. It also meant rethinking CPFB officers' ways of working to ensure that every member had a fast and accurate end-to-end experience in line with their individual needs. Achieving all this would be challenging, and the CPFB knew it had to modernise its core mainframe applications—the central application and data repository platform—with minimal service interruption. A complete front-end and back-end modernisation, which involved about 600 staff from CPFB, would be unprecedented for most government agencies—yet it would be critical for securing the future of every Singaporean.

When tech meets human ingenuity

Automation plus empowerment

Starting in 2018, the Accenture-CPFB team began to modernise the mainframe applications for smoother and faster responses to policy changes and, simultaneously, re-engineering the business processes to create a more dynamic, personalised user experience. This journey would require a three-prong approach. It started with migrating CPFB's eServices to the cloud to achieve greater scalability and to automate personalised, targeted services. This migration would lay the foundation for enhanced platforms and system interfaces. The second prong would involve empowering the CPFB workforce to make better and faster decisions with data analytics and insights. The final prong would involve re-creating the front-end interface, so members would enjoy a personalised experience while planning for their future.

In modernising the mainframe applications, the team needed to modernise the language from the mainframe's Common Business Oriented Language (COBOL), to Java. The modernisation was essential not only to address the shortage of Cobol skillsets, but also to enable faster changes and reduce development time. To-date, 76 business applications, amounting to 16 million lines of COBOL codes, have been modernised to Java. The program codebase was drastically reduced by up to 5.5 times, largely through the reuse of common services. This has greatly improved the maintainability of the programs to enable CPFB to respond faster to business changes.

In addition, the team created a modern user portal to improve internal user productivity and to introduce new capabilities. In a user satisfaction survey, the modernised portal garnered an above industry-average usability score of 75%, indicating that the portal has achieved its intended outcome of enhancing user experience.

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Among the new capabilities introduced is the adoption of test automation to accelerate the laborious testing process during the transition process. Since the programs—or functions of the organisation to be migrated—required more than 100,000 test cases, the automation has enabled more than 70% of the test cases to be executed via test automation tool, saving thousands of hours of manual work, reducing testing time and accelerating the migration to the modern architecture.

In concert with the system modernisation, there was a comprehensive effort to train CPFB officers to work in new ways. More than 100 CPFB's IT staff have since been upskilled to maintain the modernised system moving forward. Upskilling and other digital advancements have helped staff to achieve the organisation's Mission and Vision.

> "We started our modernisation journey with three key objectives in mind - reduce time-to-market, enhance business user experience and enable adoption of new capabilities. Today, we have successfully built common services through modularisation and with the introduction of new tools and systems, we were able to reduce the complexity and improve the performance of our systems significantly thus increasing work productivity."

Tan Choon Swee,
Group Director, Business Application Systems Group, CPFB

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Built to last

The transformation was completed behind the scenes. With the use of the latest cloud platforms, the CPFB digital shopfront was able to handle more than 5 times the normal daily user activity just after January 1, 2022, when new yearly statements of account (YSOA) became available. More than 700,000 members viewed their YSOAs in the first week of the year, with the system handling more than 47,000 page views per hour at peak periods. This was especially noteworthy since the old system was only able to handle 22,500 page views per hour. The new system proved to be stable and resilient, achieving 35% greater member-engagement efficiency as we received 540,000 unique page views from 1 to 5 January 2022 compared to 400,000 over the same period in 2021. Along with the mainframe transformation, the team rolled out the new mobile and web experience by connecting members with customised content and tools based on their age and financial profile. This makes it easier for members to take advantage of new tools. Around 90 CPFB's staff, both IT staff and business users, have gone through various trainings and upskilling to build a more personalised website.

What's more, CPFB streamlined what was more than 1,000 content pages into 320 pages to make the website more user-friendly. By simplifying the content, avoiding jargons, and presenting information thematically to mirror a typical CPF member's life journey, members now enjoy a more personalised experience that is easy to navigate and understand. As a result, CPFB obtained a consistently high rating of ~90% in user satisfaction after the transformation.

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A valuable difference

> How citizens access their provident fund information, understand them and take action for their retirement planning have completely changed, no matter their stage in life," says Wong Yan Jun, Chief Information Officer of the CPFB. "And by changing the way we engage citizens and work internally, as well as embracing the latest technologies, the CPFB is able to enhance the user experience over the long term by introducing new products and services.
>
> **Wong Yan Jun,**
> Chief Information Officer, CPFB

For example, members can see their up-to-date contributions in a single, user-friendly dashboard—how much they have saved, how much more they can grow the account over time, and more. Whether they are already retired or still early in their career, any member can use this information and plan for their future effectively. There is even an enhanced calculator that allows for more personalisation. Members looking to purchase a home can use the calculator to determine how much CPF funds can be used to pay for the loan, while older members can make calculations specific to their savings goals. Members will also see targeted content. For example, a younger member might see home-buying tips, while a retiree might receive targeted information about how to access the retirement fund.

Last but not least, the team also designed the digital experiences with mobile devices in mind, considering that Singapore has one of the highest smartphone penetration rates in the world. Today, nearly 90% of Singapore's population has mobile access to the internet, and this is set to continue to rise in the coming years. A mobile-first approach allows designers to deliver a seamless experience to members.

> **It is noteworthy that the new digital platform is launched within 12 months, through the close cross-teams collaboration and leveraging agile processes and practices. The new digital platform can now adapt to changes faster. Building and launching new products and services is also easier. Along with the steady stream of improvements, the CPFB digital shopfront will continue to delight members by anticipating and meeting their needs at different life stages.**

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