

## **DBS: DIGITAL TRANSFORMATION TO BEST BANK IN THE WORLD**

In 2014, Piyush Gupta, CEO and Director of DBS Group, along with his leadership team, set the goal for DBS to become the best bank in the world, 'BBIW', by 2020, by adopting a digital strategy. In 2015, the Board of Directors supported the new strategy, Strategy 2.0, with a S\$200-million (US\$147-million) bet on DBS' digital transformation, demonstrating their faith in Piyush and his team.

The bank achieved its goal two years ahead of schedule. In 2018, it won Global Finance's Best Bank in the World award and Euromoney's Best Digital Bank in the World (the latter was for the second time, after winning the inaugural award in 2016). Then in 2019, it became the first bank in the world to also be awarded the best bank in the world award concurrently from Euromoney, Global Finance and The Banker, as well as receiving several other accolades.

The catalyst for DBS' digital transformation was an outcome of the bank delivering results from its 2014 five-year strategy, Strategy 1.0, one year ahead of schedule, and also the rise of Fintech. Strategy 1.0 had put in place the foundation for the bank to adopt digitalisation. It had laid out an approach for DBS to become 'Asia's Bank of Choice in the New Asia' by streamlining internal systems, processes and performance measurements, and reorienting the culture towards better decision-making and increased innovativeness and customer-centricity.

Strategy 2.0 focused on 'Making Banking Joyful' by leveraging digitalisation to make banking 'invisible' for the customer. It was launched in 2015 and implemented around three strategic initiatives. The first was to be digital to the core, where most of the initial capital was invested. The second was to be customer-obsessed by leveraging customer journeys that focused on making DBS invisible to the customer; for example, via the online Marketplaces, customers would feel like they were buying a house, not the mortgage; or buying a car and not the auto loan. The third component was to create a start-up culture. This was the philosophy underlying DBS' aim to become a '22,000-person start-up' (28,000 in 2019) by creating a culture of experimentation, innovation, and agile and calculated risk-taking in delivering positive changes and outcomes for the customer and the bank.

By January 2020, it was apparent that the strategy had paid off, and DBS had been recognised as the best bank in the world.

### **About DBS**

In 1968, DBS was founded as the Development Bank of Singapore. With a key objective of financing the economic development and industrialisation of Singapore, the performance of Singapore's largest local bank mirrored that of the country. Its property division funded the construction of numerous buildings in Singapore's early years, such as the Raffles City hotel-office-mall complex, Plaza

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*This case was written by Professor Annie Koh, Robin Speculand and Adina Wong at the Singapore Management University. The case was prepared solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.*

Singapore mall, and several offices downtown. In 1998, DBS acquired another local bank, POSB, to have the largest retail banking presence in Singapore, as well as becoming Southeast Asia's largest bank.

As a key growth engine of the country's financial sector, DBS launched many firsts in banking products and services. It was responsible for the IPOs of stalwart Singaporean companies such as Singapore Airlines in 1985, and Singtel in 1993. In 2002, it listed the first REIT on the Singapore Exchange, introducing a new asset class to investors. In 2018, the bank celebrated its 50<sup>th</sup> anniversary by driving several new projects, which included mentoring and supporting 50 social enterprises across Asia.

At the beginning of 2019, DBS had a presence in 18 markets across the globe. Its priority markets were its home market Singapore, as well as Hong Kong, Taiwan, Indonesia, India and China. With more than 10 million retail customers and over 200,000 institutional customers, the bank recorded S\$5.63 (US\$4.13<sup>1</sup>) billion in net profit and S\$13.2 (US\$9.68) billion in revenue for the year 2018.

## The Genesis of Digitalisation in DBS

In 2014, recognising that changing trends in the strategic landscape were rapidly bringing the threat of Fintech to their doorstep, Piyush decided that DBS had to be faster and quicker than its competitors. He had several reasons to do so.

First, he saw that Chinese tech companies such as Alibaba were making great strides not just in their home country, but also going abroad with solutions such as the Alipay payments app. He elaborated,

*When I compared notes with my counterparts in the West, I realised that they weren't half as paranoid as I was because they weren't seeing what I was seeing every day. Sitting here in Singapore and seeing what they were being able to do in China scared the bejesus out of me.*

Second, DBS had emerged relatively unscathed in the aftermath of the 2008 global financial crisis. Piyush reflected, "We were in a position of strength, where the bank could start thinking about tomorrow's battles, not yesterday's battles."

A third impetus for change was the failure to acquire Bank Danamon in Indonesia between 2012 and 2013 due to regulatory changes. It became quite clear to Piyush that growing the bank inorganically was going to be challenging in the short- and medium-term given the difficult regulatory environment. But he also saw this as an opportunity to start doing things differently – and going digital became an attractive option in the course of pursuing growth.

The fourth and final catalyst for Piyush was a personal one. His background was in technology; he had a personal disposition for and comfort with the domain.

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<sup>1</sup> US\$1 = S\$1.36 as at 1 January 2019.

Thus the seeds were planted for DBS's digital transformation journey to begin, ahead of most other banks. Piyush reflected, "I think when you put all of those [abovementioned factors] together, it would probably explain why we embraced this digital journey sooner than many other people did."

The leadership team launched the new digital transformation strategy 'Making Banking Joyful' in 2015, and redesigned their one-page strategy image of a house (refer **Exhibit 1**) that had been used for Strategy 1.0 – which had become known as, "the house Piyush built".

### *Strategic Initiatives and the Digital Scorecard*

The direction and actions to take became clear as Making Banking Joyful and its Balanced Scorecard worked together as a guiding light. 20% of the Balanced Scorecard was allocated to Making Banking Joyful, 40% to traditional KPIs and 40% to strategic priorities (refer **Exhibit 2** for further details). Commented Peter Seah, DBS Chairman,

*We share our balanced scorecard in our annual report and that tells everyone what our strategy is. But we believe it's the execution, which is the whole organization coming together, embracing a new mindset, culture and direction, with everyone believing in it.*

The leadership team worked on developing the new digital KPIs to track and measure the implementation of the strategy, and created ATE; Acquire, Transact and Engage<sup>2</sup>. Piyush concluded, "You manage what you measure. And because we started measuring it in a systematic way, this forces people to continuously look at it and then build it into the business team's way of working."

DBS Chief Financial Officer Chng Sok Hui elaborated,

*In the middle of the scorecard, we included metrics that pertained to the digital transformation, and we put a 15% weightage on that in the first year. In 2017, we increased that weightage to 20% to reflect that digital value capture is increasingly important across the organisation (refer **Exhibit 3** for the 2018 digital scorecard).*

To implement Making Banking Joyful, there were three key strategic initiatives, 1) Digital to the Core, 2) Embedding ourselves in the Customer Journey, and 3) Create a 22,000 Start-up.

## **1. Digital to the Core**

In order to become truly digital, DBS needed to turn its core legacy systems inside out. This became the first component of the transformation strategy. Piyush explained,

*There are a lot of people who would still argue against it, that it's really hard for legacy companies to change. But we are convinced that this is the best way to transform. It could well be that our Goldilocks size helps us make this transformation in a way that larger companies might find more difficult. But certainly, we found it not only possible, but also really compelling and productive to attack the core, to go for broke.*

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<sup>2</sup> At a later stage, this became EATE as 'E' was added to measure ecosystems. This is discussed at greater length on Page 12 of the case study.

### *Starting the Transformation of the Technology Core*

Although the digital transformation strategy was made official in 2015, the beginnings of technology transformation at the bank had already begun as early as 2010. Shortly after Piyush took over the helm of DBS as CEO that year, he challenged David Gledhill (Dave), then Chief Technology Officer, to look at overhauling and streamlining the bank's technology backbone.

When Dave joined the bank in 2008, initial investment had already been made in revamping the technology systems. By then, the bank was present in 12 markets, all with totally different core banking systems. It was already three years into a supposedly two-year technology transformation programme at its Singapore and Hong Kong operations. Dave assessed that this project was wildly over-ambitious as there were no clear goals and business case. He said,

*The budget was S\$200 (US\$147) million. They had already spent S\$300 (US\$220) million, and reckoned it was going to take another billion dollars to complete. I cancelled that whole project.*

This was a decision he had to defend to both Piyush and the Board, and later Piyush would comment that this initiative was an expensive lesson, but an important one that was a down payment on digital transformation.

From 2015, Dave and his team focused on a few key questions to crystallise the agenda around the outcomes to be achieved from digital transformation. They asked some key questions: What did being world-class in digital look like? How could the bank innovate with technology? What changes were needed to get the business moving? To answer these questions, they visited several technology companies. To think like a technology company and not always as a bank, Dave created a new question, "What would Amazon CEO Jeff Bezos do?" In fact, the question, "What would Jeff do", caught on across the bank to transform people's approach. Dave's technology visits also gave birth to a term, *GANDALF*, which became very popular to explain the bank's digitalisation.

### *GANDALF*

*Let's be the D in GANDALF.*

- David Gledhill, former CTO, DBS

DBS started to explore the best practices they could adopt from the technology world, so that it would be perceived as not only a bank, but also a platform company and technology integrator.

The first letters of Google, Amazon, Netflix, Apple, LinkedIn, and Facebook together spelt GANALF, and Dave, a fan of the classic fantasy novel *Lord of the Rings*, coined the acronym 'GANDALF' (which also happened to be the name of a wizard in the book), setting a goal for DBS to be the 'D' in the company of global technology giants. The plan was for DBS to use open-source software like Google, run on cloud platforms as did Amazon, use data and automation to scale and provide personalised recommendations like Netflix, design like Apple, be a learning community like LinkedIn and push for continuous learning, and become more collective like Facebook. Dave explained the mindset shift that was needed,

*We said to our people, 'Don't compare yourself to other banks. Compare yourself to technology companies because that's now the benchmark we're operating against.' And it had this great cultural effect of setting people free - to be bold enough to really drive change and not be constrained by the way banks normally do things.*

### **Implementing GANDALF**

But merely having a sticker saying GANDALF was not going to get the undertaking very far. Having studied the tech giants and their practices, Dave and his team came up with five key pillars that would support how the bank changed the way it operated and drive digital transformation throughout its core systems and processes: 1) shift from 'project' to 'platform'; 2) organise for success; 3) develop high performing agile teams; 4) automate everything; and, 5) design for modern systems (refer **Exhibit 4**).

The team stipulated goals and set targets for each of the five pillars so that they could track and measure performance, and then drove the adoption across DBS' business teams and platforms.

Simultaneously the bank also attacked the levels of bureaucracy and moved away from steering committees which required multiple approvals at every stage. In 2015, there were 198 ongoing projects for the consumer bank division alone and the technology team needed to improve its cadence. There was a shift from what Dave called 'control to context'. He elaborated,

*Let's say you're in charge of this set of platforms, say, the wealth management platforms. We're going to give you some funding, and with that, you are to deliver the following outcomes: customer growth, deeper penetration, new product services, whatever it is. You go figure out how you're going to spend it to achieve these business outcomes. We're not going to control every dollar you spend through committees and approvals. Just go for it.*

Teams were also reorganised for success. The shift to platform thinking meant establishing platform teams to deliver the desired outcomes. Previously, business and technology would have separate and potentially opposing goals, for instance, business had a revenue goal while technology would have a resiliency (stability) goal. With the reorganisation, both sides would work together as one team with shared goals and KPIs. The mantra, "business equals technology; technology equals business", was adopted, with both functions complementing each other to represent what Dave called DBS' 'digital DNA'. To reinforce the mantra, "Two in a Box" was adopted, and was where the tech and business head collaborated to understand each other's business. The idea was that each head learnt the other's responsibilities, and was in a position to switch roles when required.

New principles such as DevOps were introduced, so that teams could formulate nimble and appropriate responses to incremental feedback for new products. This was paired with the fourth pillar, automation, so that new product rollouts or improvements could be tested and deployed to market with minimal manual work and time to market, resulting in the maximum amount of rapid learning from customer feedback. Dave observed,

*Automated testing has dramatically increased—we're now almost 100% automatically deployed.*

And lastly, designing for modern systems necessitated making changes to the very core of the bank's existing systems and processes. To do this, Dave and his team did two very crucial things.

The first was insourcing. DBS had historically outsourced most of its technology services to third-party vendors. Dave quipped,

*When I arrived at DBS, we were outsourcing 85% of our technology services. We had a bunch of technology people signing contracts and managing members; we were doing contract management, not building technology.*

Dave's objective was for the bank to develop strong technical skills of its own, and it started hiring technology people. By the end of 2018, DBS's technology was 90% self-managed. The bank was effectively running like a tech company, and was able to build, design, run and operate all of its own technology.

The second key thing that the bank did was to move its capabilities to the cloud. Dave explained,

*It's not about applying cloud lipstick but being cloud to the core. If you only move some of it, you can achieve maybe 20% in operational savings. Moving everything is a lot harder to do, but it can get you up to 80% cost improvement if you migrate from various legacy systems to cloud native<sup>3</sup> infrastructure.*

With the move to the cloud, the bank managed to consolidate and shrink its physical data server footprint by 75%, while still allowing for a 10x excess capacity to scale.

Not everything went smoothly. For example, in 2014, DBS partnered with IBM to deploy IBM's Watson cognitive computing innovation to enhance the customer experience. It was initially adopted into wealth management. A couple of years later DBS terminated the IBM Watson partnership as the computing power was more than they required. In 2017, DBS and IBM worked together again on adopting Robotic Process Automation, making it the first-of-its-kind large-scale implementation in the financial services sector in Singapore and the region.

Over time, the nature of the technology work being done had moved on from fixing the basics, towards creating competitive advantage. Dave recounted, "Now, most of our effort spent is invested in customer experience and digitalisation."

## 2. Embed Ourselves in the Customer Journey

*74% of the customers we surveyed said that they would rather go to the dentist than perform a banking errand.*

- Piyush Gupta, CEO, DBS

In May 2018, the bank changed its ten-year old tagline of "Living, Breathing Asia" to "Live More, Bank Less". This tagline for Strategy 2.0 initially created confusion, as staff wondered why they would want their customers to bank less! But it was quickly realised that "Bank Less" meant making

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<sup>3</sup> Cloud-native applications were purpose built for the cloud model. These applications—built and deployed in a rapid cadence by small, dedicated feature teams to a platform that offered easy scale-out and hardware decoupling—provided organisations with greater agility, resilience, and portability across cloud environments.

it easier for customers to conduct their banking by leveraging digital. The new strategy was well received and rapidly adopted across the whole bank.

At the same time, the internal mission was clearly defined as ‘Making Banking Joyful’ for customers and employees alike. Piyush elaborated,

*We spent a lot of time trying to think about what the soul of DBS should be, and what our role is in the context of society at large. Banking or financial services is actually a very meaningful part of life. We realised that the basic problem is that most people have started distrusting banks, and most people think that banking is a pain. The question was how do you take financial services, make it really simple, fun and meaningful to the customer to help them improve their lives in whatever way they wanted? That's the idea of ‘Making Banking Joyful’.*

One way to make banking joyful for the customer was to make it ‘invisible’, so that they could ‘Live More, Bank Less’. To do this, DBS turned to mapping out the customer experience through ‘customer journeys’, as well as using data analytics.

A significant question a leadership team needed to answer was, “What does digitalisation mean to their employees?”

### *Continuing Focus on Customer Journeys*

Paul Cobban, who had joined the bank in 2009 and assumed the role of its Chief Data and Transformation Officer in 2017, had introduced customer journey thinking as a path for the bank to carry out its processes under Strategy 1.0. This meant empathising with the customer by identifying the “job to be done”<sup>4</sup> and thinking of the ‘journey’ they took to carry out daily tasks, including banking. Closely related to that was the idea that customers did not do banking for banking’s sake, but to fulfil an ultimate purpose.

At the bank’s annual strategy planning off-site in 2015, Piyush and his 250-strong senior management team officially kicked off the bank’s digital transformation journey. Out of the two days allocated for the off-site, an entire day and a half was spent training the senior managers on customer journey thinking, so that they were equipped to run customer journeys for their own teams. Each leader had to adopt a customer journey, and was allocated five minutes to present on the projects they were planning to roll out in the coming year to increase the digitalisation of their business lines—something that was made part of their KPI for the year. 250 customer journeys were targeted that year, and Piyush personally reviewed the progress.

By 2018, DBS was running a total of 600 end-to-end customer journey processes tied to Strategy 2.0, with the goal of promoting digital means of transaction processing, acquisition or engagement with the customer. Effectively, the bank would, through these customer journeys, embed itself seamlessly into customers’ daily routines, accompanying them and facilitating their goals at every stage of their life.

### *Data Analytics*

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<sup>4</sup> This was a term adopted from Clayton Christensen, the B. Clark Professor of Business Administration at Harvard Business School.

The use of data analytics was necessary for the bank to stay close to the customers, anticipate their needs, and offer them recommendations that were relevant to them. Sameer Gupta, Chief Analytics Officer, DBS (a role created in mid-2017), explained the bank's objective in using data analytics,

*People are obsessed with Big Data. We said Big Data's not important; Big Analytics is important.*

Piyush explained why having good data analytics made all the difference when engaging with customers,

*In banking, as the cost of customer acquisition is very high, it is a typical practice to try to cross-sell new products to the customers. So one of the big holy grails is the ability to cross-sell. But that is merely product pushing... how do you shift from cross-sell to cross-buy? Data lets you do that. If you have good user data and you understand the context in which the customer is operating, then you can come up with recommendations that would encourage the customer to cross-buy instead.*

To manage the potential questions and issues surrounding data appropriateness, privacy and security that would come up with using the findings from data analytics, the bank formed the 'PURE' committee on decision-making surrounding how to use customer data. PURE stood for data that from a customer's perspective was applied in a way that was 'Purposeful, Unsurprising, Respectful and Explainable'. Internally, data access was granted to the extent that it corresponded to the roles that people had vis-à-vis the customer.

### **Data First Culture**

To create a data first culture, it was necessary to change the mindset of employees, the way people worked and the way employees thought about making improvements. To achieve this outcome, DBS targeted four essential components:

1. Culture: How could the company embed a data first culture in which employees leverage data to enrich their decision making? This included, for example, eliminating decision-making based on who talks loudest in a meeting.
2. Capability: How can capability be created across the bank?
3. Enabling: Traditionally data was locked down and released on request. Moreover, given the risks involved, data needs to be protected. The challenge was to make data discoverable (safely) and usable (reliability).
4. Tooling: How to develop infrastructure for the future, such as AI, machine learning, GPU (Graphical Process Units), with secure data warehouse?

The bank also started hiring data scientists and reskilling business analysts to learn the tools to work with data more effectively. Dave described the types of people that helped to bring about the data-driven culture,

*We have hardcore data scientists, who in many cases we hired. Then there's a whole community of data translators, who are mostly existing staff. They're people who understand the business and business analytics, who can be a bridge between the data modelling and everything else.*



There were some early successes, such as engaging with HR to predict when a salesperson would leave the bank, and being able to predict customer calls to the call centre.

### *Dashboards*

The other initiative that DBS took to embrace a data-first and digital mindset was to do away with the use of slide decks and instead employ dashboards for reporting. Items from the scorecards were linked to the respective business and department dashboards, so that they could be constantly tracked. The dashboards served two purposes: they enabled data visualisation so that users could clearly see if the transformation was on track, and they also allowed the data to be drilled down to the product level, customer level or even individual transaction level. This practice enabled the business teams to make meaningful decisions.

### *Benefits of Increasing the Use of Digital Channels*

Very early on in the digital transformation process, DBS had hypothesised that digitally active customers would see much better outcomes in terms of incomes, revenue expense ratios and return on equity than customers who were not digitally active. The bank termed this positive outcome 'digital value capture'. DBS then began to track these two groups of customers, and the activities they undertook separately.

Over three years from 2015 to 2017 in the Consumer and SME (Singapore and HK) segment, it found that the total engagement of digitally active customers was manifold times higher than traditional customers, through activities such as account balance checking and making payments. In Consumer Banking, the multiple was 16 times, while in SME, the multiple was six times. The revenue per digital customer was double the revenue of a traditional customer on account of an increased uptake of products, higher loan and deposit balances, as well as higher credit card and investment transactions. There were also substantial cost savings from servicing a digitally active customer who did not need a relationship manager or paper forms to transact. Sok Hui commented,

*The cost to income ratio is a lot lower - 34% for a digital customer versus 54% for a traditional customer [in 2018]. The return on equity of this digital segment was 32%, ten percentage points higher than for the traditional customer. In 2018, 48% of our customers were digital. They gave us 68% of the revenue pie and 76% of the profit pie.*

### *Digital Transaction*

One of the key activities along the journey of becoming a digital bank was converting traditional customers to digital customers, and convincing them to transact with the bank through its digital channels. Sok Hui explained,

*We came up with three criteria to separate digital from traditional customers. A customer was digital if in the last 12 months, i) he had bought a product online, ii) he had done more than 50% of his financial transactions online, or iii) he had done more than 50% of his non-financial transactions (e.g., address update) online.*

The criteria were first applied to retail and SME (Small Medium Enterprise) customers in Singapore and Hong Kong, which made up 44% of the bank's overall revenue mix. Digital customers were re-qualified on a rolling 12-month basis. To maintain their digital status, customers would from time to time be incentivised to use DBS's digital services, such as being rewarded with a cash voucher if they signed up for a new digital service.

### *Digital Engagement*

To better engage customers digitally, the bank improved the user experience for its retail and institutional digital platforms. For instance, in 2016, Sparks, a mini-series about the lives of young bankers, was created in-house by DBS' Strategic Marketing and Communications team. It was watched by more than 250 million viewers by 2018, and played a part in triggering about 10% of the customer inquiries that the bank received.

In May 2014, the bank introduced 'DBS PayLah!', a mobile wallet app that made peer-to-peer payments possible just by knowing the recipient's mobile phone number.<sup>5</sup> This enabled the making of cashless payments to individuals and small businesses alike. In December 2018, DBS further enhanced this capability by adding QR code scanning capabilities for payment to recipients.<sup>6</sup>

Gene Wong, Head of Ecosystems, Consumer Banking Group, DBS, added,

*DBS was the incumbent in Singapore and dominated the consumer banking space. PayLah! was a fundamental piece of the puzzle for setting the agenda for cashless payments and could be the main consumer app for all the customer's lifestyle needs, such as movie tickets, transport and dining. We thought, 'This is our game to lose'.*

In February 2017, DBS rolled out iWealth, an app for its priority and private banking clients.<sup>7</sup> iWealth would enable clients to access their investment portfolios at a glance and customise reporting according to their preferences, such as by asset type or currency. In 2018, the Wealth business division's income grew by 26%. The same year, it also launched the POSB Smart Buddy Programme, whereby parents could use a smartwatch to teach their children how to make digital payments, save money, and also track their eating and spending habits.<sup>8</sup>

In October 2017, DBS introduced the Treasury Prism, the world's first online treasury and cash management simulation tool for institutional customers. The tool addressed the main pain points faced by companies trying to arrive at their ideal cash management solution. Not only did the Treasury Prism provide the benefits and costs of different cash management structures, but it also took into account the relevant regulations and tax considerations that would apply in each country.

### *Digibank for Digital Acquisition*

<sup>5</sup> The Straits Times, "QR Code Payment Popular in Singapore and a Boon for Small Merchants, Says NUS study", December 13, 2018, <https://www.straitstimes.com/business/...nus-study>, accessed June 2019.

<sup>6</sup> Ibid.

<sup>7</sup> Rachel Boon, "DBS Unveils New Mobile App, Latest iWealth Website", The Straits Times, February 11, 2017, <https://www.straitstimes.com/business/banking/dbs-unveils-new-mobile-app-latest-iwealth-website>, accessed June 2019.

<sup>8</sup> Claudia Lim, "Trying Out the POSB Smart Buddy Programme", DBS, October 25, 2017, <https://www.dbs.com/innovation/dbs-innovates/...html>, accessed June 2010.

On 26 April 2016, DBS launched digibank India, the first mobile-only bank in India.<sup>9</sup> Digibank demonstrated internally the potential of digitalisation, helping to build confidence and momentum in Making Banking Joyful. It was a clear example of how being digital to the core enabled the bank to penetrate new markets by offering unprecedented, innovative products with no physical presence. Digibank evolved from the bank's first hackathon and targeted to 'design for no ops'. In fact, this was not about designing completely for no operations – but more about eliminating the unnecessary components and focusing on the value add, which was delighting customers. Data analytics was used to reflect performance.

One of the initial challenges for the team was ensuring compliance with the banking regulation 'KYC' (Know Your Customer). This typically required a customer to visit a branch to confirm identification, and was a difficult proposition when there was no physical presence in the country. However, the API<sup>10</sup> ecosystem that the bank was developing provided a solution by allowing it to partner with Café Coffee Day, a local coffee chain with about 600 outlets throughout India. A customer could walk into the store and open a savings account within minutes. The customers would present their national identification Aadhar<sup>11</sup> card to the barista, place their thumb on a point of sale terminal provided by DBS that was linked to the government's identity system for their thumbprint to be biometrically validated, and open a bank account.

In addition, the bank went paperless for transactions and favoured digital payment instructions over paper, although India was largely a cheque-based society. The customer journey was made easier by enabling the payment instruction to be sent in just two or three clicks of a button. Customer service was done through artificial intelligence (AI) virtual assistants or chatbots that were trained to answer the most common questions. Karen Ngui, Managing Director and Head of Group Strategic Marketing and Communications, described digibank as "branchless, paperless, and signatureless".

Sok Hui observed the healthy uptake of the mobile banking service, "In India, as of beginning 2019, we have over 2.2 million customers. That would not have been possible so soon if we were using a brick-and-mortar strategy." (refer to **Exhibit 5** for more details on digibank India).

In November 2018, DBS launched digibank Indonesia, announcing local ride-hailing service GO-JEK as its ecosystem partner.

### *Digital Ecosystems*

In November 2017, DBS launched the world's largest banking API platform. The platform went live with more than 200 APIs and more than 80 DBS partners, ranging from Fintech start-ups to telcos. The use of APIs enabled the bank to integrate external partners seamlessly into its digital ecosystem, to create new customer applications and scale its range of new product and service offerings easily. In 2018, DBS launched different Marketplaces for cars, property, and electricity, providing a reliable source of such listings to its customers.<sup>12</sup> As at August 2019, DBS had over 450 APIs.

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<sup>9</sup> "DBS Launches India's First Mobile-Only Bank, Heralds 'WhatsApp Moment in Banking', DBS Newsroom, 26 April 2016, <https://www.dbs.com/newsroom/...banking>, accessed May 2019.

<sup>10</sup> 'API' stood for Application Programming Interface. An API was a software intermediary that allowed two applications to talk to each other.

<sup>11</sup> Aadhaar was a 12-digit unique identification number issued by the Indian government to every individual resident of India.

<sup>12</sup> Pailin Boonlong, "DBS Is No Longer Just A Bank - Their New Marketplace Lets You Buy Cars and Homes", The Smart Local Singapore, June 18, 2018, <https://thesmartlocal.com/read/dbs-live-more>, accessed June 2019.

In January 2019, DBS published a research paper titled “Pivot or Perish: Ecosystem, the emerging business model”.<sup>13</sup> It defined an ecosystem as “Bringing together entities in disparate industries to create new offerings or capture value that individual companies or sectors may not be capable of creating on their own. Through ecosystems, marketers gain the ability to cater to customer needs, without prompting the customer to look further than the company for a product.”

Gene explained how partnerships were a crucial part of welcoming customers into the DBS ecosystem,

*Customer engagements are happening out there in real life. We would be burying our heads in the sand if we don't recognise that it might take the customer 20 clicks on other websites before they reach the DBS portal to transact. We have to partner with whomever the customer is in contact with to acquire new customers. Furthermore, using non-traditional data for underwriting is not possible without partnerships with third-parties such as telcos and ride-hailing platforms that are in direct contact with the customer.*

Sok Hui explained how the bank's risk management framework expanded in sync to encompass the broader ecosystem,

*We made sure that as we grow in this area and our APIs get connected to more and more ecosystem partners, the risk management aspects are also taken care of. We have a process to know how data is transferred, and whether there are cybersecurity risks, etc.*

At DBS, ecosystems were developed leveraging APIs by participating/investing where the customer was, and then orchestrating to build into the customer lifestyle.

### *A New Scorecard Measure*

Within the overall digital transformation, the bank measured four main activities that it believed would bring about positive results from being digital with the customer, something that was abbreviated initially as Acquire, Transact, Engage and later evolved to ‘EATE’ as Ecosystems became a critical area to measure and manage the business.

## **3. The 22,000-Person Start-up**

In 2014, to make a company of then 22,000 people operate more like a start-up needed some planning and changes. Paul introduced ‘Culture by Design’ to identify the new desired culture, and what had to be done to transform the culture. The acronym ABCDE made explicit the characteristics of the start-up culture.<sup>14</sup>

*Agile: adapt more quickly*

*Be a learning organisation: adopt new ways of approaching the business*

<sup>13</sup> DBS, “Pivot or Perish: Ecosystem, the Emerging Business Model”, January 10, 2019, <https://www.dbs.com/...perish.xml>, accessed June 2019.

<sup>14</sup> David Kiron and Barbara Spindel, “Redefining Performance Management at DBS Bank”, MIT Sloan Management Review, March 26, 2019, <https://sloanreview.mit.edu/case-study/redefining-performance-management-at-dbs-bank/>, accessed June 2019.

*Customer-obsessed: understand customers' pain points*  
*Data-driven: use data holistically to transform internal processes*  
*Experiment and take risks: encourage the 4D process of discover, define, develop and deliver.*

In order to help employees to more easily adopt the start-up culture, the bank ran a series of programmes to acquaint employees at all levels with the practices of innovation and experimentation. Paul explained the rationale behind the programmes that were rolled out,

*I'm not a data guy; I'm a culture change guy. And culture change is more about behavioural change rather than capability or technology. In order to get the best performance and most traction, we had to build creative confidence, provide stable leadership and strategy, and ask people to put the 't' in transformation by setting the bar very low for them to be able to participate.*

### ***Daring to Experiment (and Fail)***

From 2015, to eliminate the fear that people had of experimentation and taking risks, hackathons were organised where employees would join with external coders and entrepreneurs (from start-ups) to form a team of about ten people, for a three-day design session, which was preceded by two-days of education and problem identification.

On the first day of early Hackathons, the bankers were taught the methodologies to apply, such as how to carry out customer journey thinking and conduct fact-finding interviews (refer to **Exhibit 6** for more details on the 4D design process to understanding customer pain points and to create solutions that addressed these pain points). The second day, they would be given a problem to solve. Thereafter, the team had 72 hours to solve the problem through customer interviews, focus groups and storyboarding. The objective was to create an app which the team had to showcase on the fifth and last day.

To give recognition to people who aimed to innovate, the bank even created a 'Dare to Fail award' for those who tried something new and failed, thus giving the signal that it was okay to do so. Early successes were given positive recognition and mentioned at town hall meetings. Piyush personally reviewed each of the new projects or programmes the bank was undertaking every few months.

The third hackathon the bank conducted had the criterion that only bankers over the age of 40 years old could participate. This was initiated by Piyush, after watching his 85 year old father shopping and submitting his taxes online. Piyush wanted to quickly squash the notion that digitalisation was only for younger bankers, and create the belief that age was not a controlling factor. The over-40s hackathon achieved this.

By 2018, around 15,000 employees had been involved in at least one innovation project.

Paul also shared the importance of removing obstacles, or 'blockers' to changing culture,

*The number one blocker, as identified by our leaders, was meetings – too many meetings, ineffective meetings, and people not understanding what they're doing at the meeting. So we experimented by creating a ritual, and ended up with 'Meeting MoJo'. When implemented, it doubled the effectiveness of meetings. 'Mo' is the meeting owner and he has to do three things. First, begin the meeting stating the purpose and context of the meeting. Second, at the end of the*

*meeting, Mo has to summarise what was discussed during the meeting. Third and most important of all is that Mo has to ensure that everybody in the meeting has an equal share of voice. And we also appointed a 'Jo', which stands for 'joyful observer', who at the end of the meeting says how well Mo did the job. An unexpected positive side effect is that Jo practises giving feedback, which is a skill we often don't use enough at work.*

### **Digital Bankers**

In 2017, HR introduced DigiFY, a mobile and online platform aimed at providing fundamental digital training to DBS's bankers to transform them into 'digital bankers'.<sup>15</sup> After completing the training in the seven areas of agility, data-driven mindset, digital business models, digital communications, digital technologies, journey thinking, and risk and controls, bankers would be certified and equipped to pass on the knowledge to their colleagues.<sup>16</sup>

Digital transformation took place throughout the bank, not only in the business functions, technology and operations, but the corporate functions as well (refer **Exhibit 7** for further details on the digital transformation initiatives in Audit).

Different methods were implemented to support employee's transformation as the bank became a learning organisation, such as eliminating approval for any skills training course less than S\$500. "iTQ" (I Thank You) was launched in 2017, an online peer-to-peer recognition program that made saying thank you to anyone across the bank (and across geographies) straightforward. Leaders had a reverse mentor to provide opportunities to learn areas of the business in a one-on-one meeting with an employee. This also allowed them to probe and ask questions that they may not ask in meetings or other situations.

In June 2018, Human Resources adopted the use of AI for recruitment—Southeast Asia's first virtual bank recruiter, "Jim" (short for Jobs Intelligence Maestro), was born as a result of the collaboration between the talent acquisition team and an AI start-up. The custom-made system benefitted the recruitment team by automating the pre-screening process, saving man-hours, and enabling recruiters to focus on candidate sourcing and interviews. Jim's round-the-clock availability enabled real-time interaction with job applicants and the administering of psychometric assessments at any time without coordination with HR. Jim was first deployed in the bank's core markets and for high-volume roles such as management associate positions, for which, out of 7,000 applicants, only 20 were selected. Piyush attested to the effectiveness of Jim, "It allowed us to bring our turnover rates down. We're hiring better people who are more suited to the job."

### **What Next?**

From 2014, DBS' digital transformation had entailed overhauling the bank's legacy systems from the core, doubling down on its customer-centric approach to further embed itself into the customer journey, and cultivating a start-up culture by design. Piyush commented,

<sup>15</sup> David Kiron and Barbara Spindel, "Redefining Performance Management at DBS Bank", MITSloan Management Review, March 26, 2019, <https://sloanreview.mit.edu/case-study/redefining-performance-management-at-dbs-bank/>, accessed June 2019.

<sup>16</sup> Ibid.

*I think a lot of people would say that being able to put a Singapore bank on the world map is a reasonably good achievement. To have the world's best bank come from this little red dot, that's actually quite incredible. But for me personally, the biggest satisfaction actually comes from the fact that the culture of DBS has changed. Most people would tell you—it's a new DBS... The fact is that all of our people feel this immense sense of pride in what we are doing, and we're doing it anchored around this whole purpose of really trying to make banking joyful. People believe we are doing something different and meaningful. And that's a good feeling.*

Making Banking Joyful had been well received; in 2018, the net profit of the bank was S\$5.63 billion, a 28% increase from 2017 and return on equity was 12.1%. Digital customers bring in twice the income and have grown from 33% of the base in 2015 to 48% in 2018.

DBS had set its sights to become the best bank in the world by 2020. Despite the accolades won and encouraging progress made so far, Piyush recognised that “We still have a lot of work to do before we can compare ourselves with Alibaba and Google”.

EXHIBIT 1: THE DBS ‘HOUSE’



Strategy 1.0 – The Asian Bank of Choice for the New Asia

Strategy 2.0 – Making Banking Joyful

Source: DBS

EXHIBIT 2: DBS BALANCED SCORECARD AND MANAGEMENT PROCESS

40% Traditional KPIs		
<b>Shareholders</b> Achieve sustainable growth	<b>Customers</b> Position DBS as bank of choice	<b>Employees</b> Position DBS as employer of choice
20% Making Banking Joyful		
<b>Drive digitally:</b> <ul style="list-style-type: none"><li>• Acquire</li><li>• Transact</li><li>• Engage</li></ul>	<b>Joyful customers &amp; employees by focusing on journeys, experiences</b>	<b>Capture value created from digitalisation</b>
40% Strategic priorities		
Geographies	Regional businesses	Enablers
Regulators	Society	

Source: DBS



**EXHIBIT 3: 2018 MANAGEMENT SCORECARD****Traditional Key Performance Indicators (KPIs) (40%)****Shareholders****Achieve sustainable growth**

Measure financial outcomes and risk-related KPIs to ensure that growth is balanced against the level of risk taken, including compliance and control.

**Customers****Position DBS as bank of choice**

Measure progress in customer satisfaction, depth of customer relationships and brand positioning.

**Employees****Position DBS as employer of choice**

Measure progress in being an employer of choice, including employee engagement and people development.

**"Making Banking Joyful" KPIs (20%)****Digital transformation****Ecosystems**

Measure progress made in growing and developing meaningful relationships with ecosystem partners.

**Acquire**

Measure progress made in leveraging digital channels to acquire new customers with increased digital channel share.

**Transact**

Measure progress made in automation by driving end-to-end straight-through processing and instant fulfilment.

**Engage**

Measure progress made in growing customers' digital engagements with the bank.

**Capturing value created from digitalisation**

Measure progress made in driving digital behaviours of our Consumer and SME customers (Singapore and Hong Kong) and increasing the income of digitally engaged customers.

Our hypothesis is that digital customers give us higher income, better cost-income ratio and higher return on equity vs. traditional customers.

**Reimagining customer and employee experiences**

Measure progress in embedding ourselves in the customer and employee journey to deliver superior experiences.

*Read more about this on page 31.*

**Being a data-driven company**

Measure progress of data analytics projects to be a data-driven company.

*Read more about this on page 31.*

**Creating a startup culture**

Measure progress in re-wiring mindset to be a 26,000-person startup anchored on our PRIDE! values.

**Areas of focus (40%)****Regional businesses**

Grow our regional businesses in Consumer Banking/ Wealth Management (CBG), Institutional Banking including SME (IBG).

**Enablers**

Strengthen management processes, technology and infrastructure platform.

**Regulators**

Contribute to the stability of the financial system.

**Geographic mix**

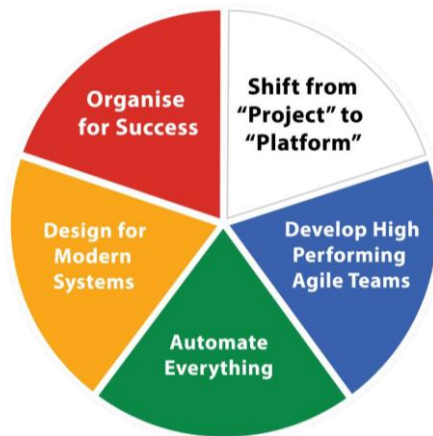
Scale our growth in our priority markets of China, India, Indonesia and Taiwan to rebalance our geographic mix.

**Society**

Create impact through responsible banking, responsible business practices, DBS Foundation's support of social enterprises and DBS' volunteerism movement.

**Source: DBS AR 2018, p. 26.**

#### EXHIBIT 4: DBS' FIVE KEY TECHNOLOGY ELEMENTS TO DRIVE CHANGE THROUGHOUT THE ORGANIZATION



Source: DBS

#### EXHIBIT 5: ABOUT DIGIBANK INDIA

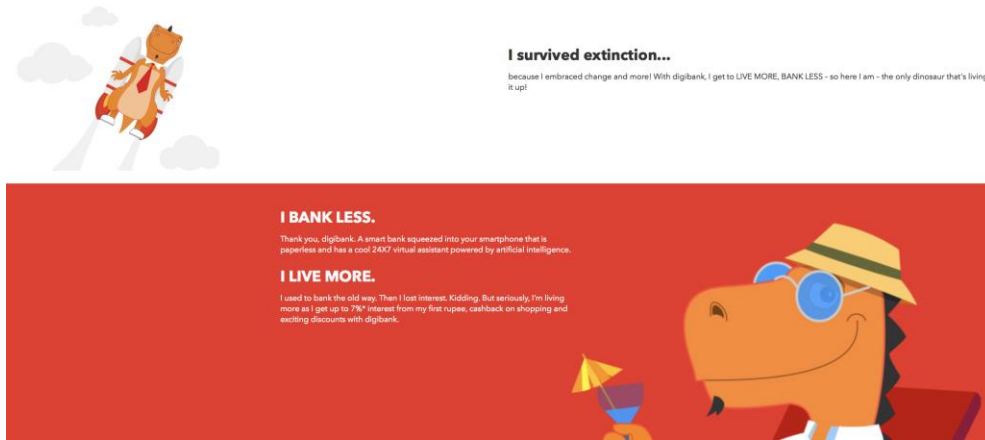
*"DBS bank, Singapore's largest bank and a leading bank in Asia, today officially unveiled digibank, India's first mobile-only bank. A revolutionary offering, digibank brings together an entire suite of ground-breaking technology – from biometrics to artificial intelligence (AI) – to enable customers to enjoy a whole new way of banking. Breaking away from conventional banking norms with their onerous form-filling and cumbersome processes, digibank is a completely paperless, signatureless and branchless bank. Other revolutionary features include:*

- Customer service provided by a 24x7 AI-driven virtual assistant. Wherever they are, whatever their need, digibank customers can converse with digibank's AI-powered virtual assistant to get their queries answered or banking transactions performed. Because the virtual assistant understands natural language and has learning ability, it is able to respond in real-time. Today, it can already anticipate and answer some 10,000 customer questions, with new knowledge added each passing day.*
- An intelligent, intuitive budget optimiser that helps customers be smarter about their money. In-built into digibank is a budget optimiser that helps customers do their budgeting, track expenses and analyse purchasing trends. The function is smart enough to understand customer behaviour and preferences, synthesise data, and provide recommendations. For example, it can make sense of customers' spending habits to reward them with relevant, contextual marketing offers such as restaurant discounts for a foodie or coffee vouchers for a caffeine-lover. It also studies customers' spending patterns and prompts them if they are overspending.*
- Recognising that safety is uppermost on consumers' minds, digibank offers peace of mind through dynamic inbuilt security. Most bank customers are used to receiving one-time passwords (OTPs) via sms, and then typing codes into pages to authorise their mobile banking transactions. Digibank has*

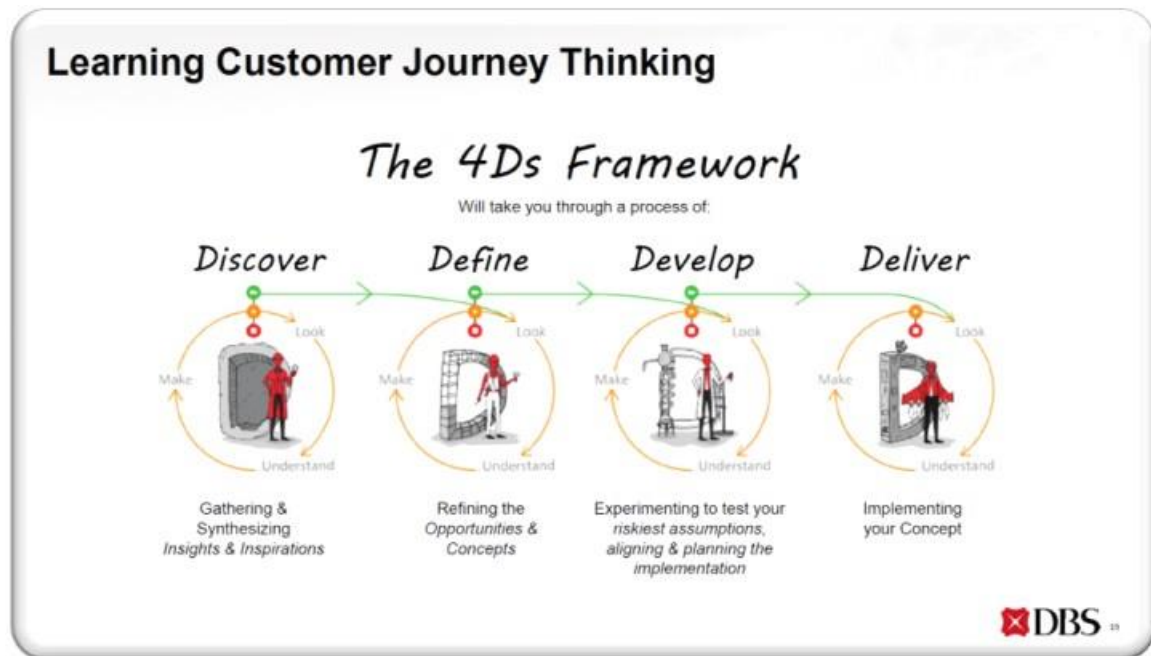
*an embedded soft token security, avoiding the need to wait for SMSs to arrive and providing even stronger security for transaction authorisation.”*

Source: “DBS launches India’s first mobile-only bank, heralds ‘WhatsApp moment in banking’”, DBS, April 26, 2016, [https://www.dbs.com/newsroom/...\\_banking](https://www.dbs.com/newsroom/..._banking), accessed June 2019.

### Digor, digibank’s mascot



Source, Digibank, ‘Hola, I’m Digor!’, DBS, <https://www.dbs.com/digibank/in/digor-site.html>, accessed June 2019.

**EXHIBIT 6: 4D DESIGN PROCESS**

*“4D Framework”*

### **Discover, Define, Develop and Deliver**

**Discover** involved researching methodically through customer immersion and then analysing the results. This may end up in different personas requiring different offers, which allows for a well-articulated “job to be done”.

Then the team methodically walks through every step the customer takes to **Design** the improved experience.

As the team then moves to **Develop**, they keep in mind that it is not about the product features, but the whole customer experience and solving the job to be done.

Only then do the team **Deliver** the job that had to be done.

**Source: DBS**

## EXHIBIT 7: DIGITAL TRANSFORMATION IN AUDITING

### Agile Auditing

Derrick Goh, Managing Director and Head of Group Audit, shared,

*Audit is the third line of defence (after business and compliance) to detect and alert the bank to risk. We asked ourselves – how do we leverage data to deliver more value to our partner stakeholders, in order to hunt risk and deliver the findings earlier?*

The audit team began to periodically analyse 100% of the available data it had, rather than performing random sampling using a traditional cycle-based approach. It built the capability to extract this data itself, instead of waiting for the business to provide it. It moved from a deductive approach to a predictive one, such as using machine learning to audit bank branches to detect patterns and identify which branches were at higher risk, and allocating more audit resources to those branches.

The audit team also came up with a way to incorporate ‘agile’ management principles into its practices, which significantly improved its effectiveness as a unit and strengthened its partnership with business. While the traditional audit process would take up a lot of the business team’s time, the agile audit process (refer to **Figure 1** below) would only require 15-minute ‘sprint’ sessions. Both sides would then discuss what actions should or should not be taken.

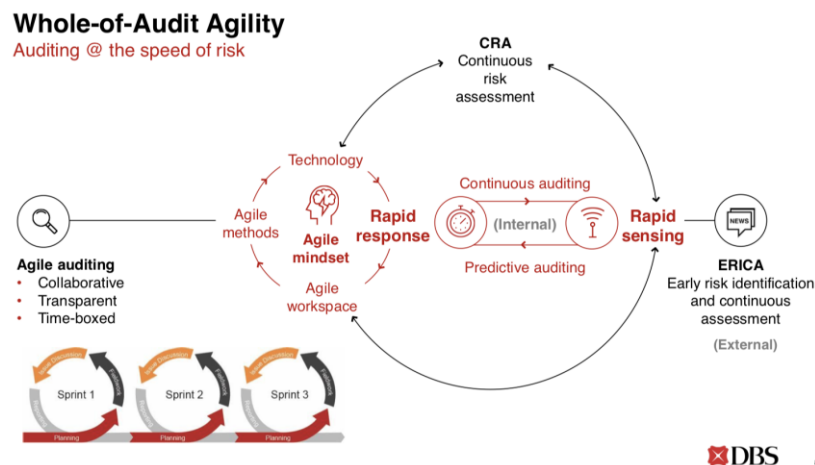


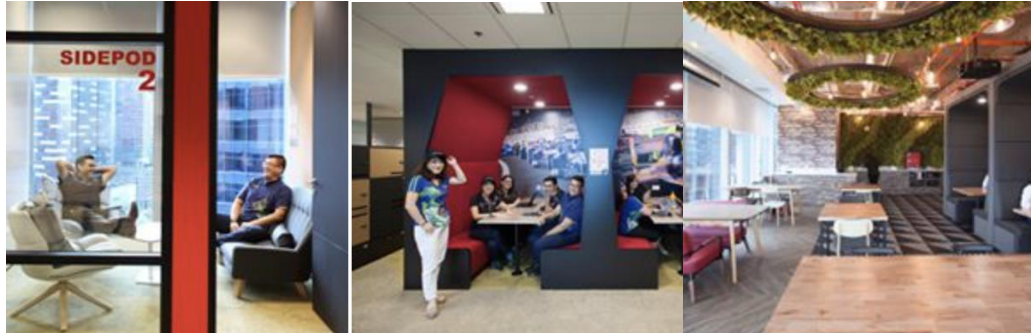
Figure 1. DBS’s agile audit flow process

The transparency, efficiency and helpfulness of the audit process brought about an unexpected reversal of roles—the business team started welcoming the opportunity to be audited, and requesting for audits to be performed, instead of the other way round.

In 2015 and 2016, the audit team won the Institution of Engineers Singapore’s engineering awards for its innovation in technology and use of data analytics in predictive risk identification.

## JoySpace

In 2017, the audit offices were transformed into ‘JoySpaces’ or activity-based workspaces. This was an open plan office that enabled employees to work, eat and relax.



*DBS audit scrum masters Bervia Chew and Cheryl Gan were unanimous when they explained that “An integral part of our transformation journey is to change the concept of the traditional back-office to a more progressive, fun and customer centric office hub. With ‘Joyspace’, it further enabled us to foster a sense of community and collaboration among staff and simulate a community where ideas are germinated.”*

Source: DBS Investor Day Presentation, ‘Reimagining Audit’, November 2017, [https://www.dbs.com/investorday/presentations/Reimagining\\_Audit.pdf](https://www.dbs.com/investorday/presentations/Reimagining_Audit.pdf), accessed June 2019.  
The Institute of Internal Auditors of Singapore, ‘The Future of Auditing in the Age of Digital Transformation’, November 2017, <https://iia.org.sg/content/future-auditing-age-digital-transformation>, accessed June 2019.  
DBs Careers, DBS Joyspace Programme, Photos, [https://www.facebook.com/pg/dbscareers/photos/?tab=album&album\\_id=381730132262682](https://www.facebook.com/pg/dbscareers/photos/?tab=album&album_id=381730132262682), accessed June 2019.