

Best of Business AI

Grab case study



Grab was founded in 2012 as a ridesharing app, but since then it has expanded to become the “everyday everything app,” serving millions of users across eight countries in Southeast Asia. Users can order groceries or takeout, deliver packages, make mobile payments, buy tickets, book hotels, and more. The app has been downloaded over 214 million times.

Grab leverages AI in almost every part of its business. For example, AI assigns ride requestors to a driver based not only on who is closest, but on over 50 attributes including time of day and when the driver’s shift is ending. Another feature uses natural language processing to identify positive and negative sentiment in customer feedback at scale. Facial recognition verifies driver identities at the beginning of their shift, and AI-based recommendations suggest restaurants to users. AI is also used to detect fraud on the platform itself, like people using GPS spoofing to profit from simulated rides.

Establishing the right approach to drive AI success

AI in every part of the organization

From the beginning, leadership knew that AI was going to play a large part in the company. They realized that most of the problems they needed to solve were data-centric problems, and so AI would be a powerful boon. As Grab Head of Technology Wui Ngiap Foo puts it, “The way we see AI was synonymous to how we saw scale. We saw it as a real competitive advantage for a tech company that wanted to solve everyday problems for as many Southeast Asians as possible.” This outlook motivated Grab to use AI in every layer of its technology and operational stack.



Investing in data scientists from day one

To that end, some of Grab’s first hires were data scientists. They sought out experts with real-world experience who understood key data engineering flows and how to use technology to meet business needs. Today, Grab has hundreds of AI experts on the team and they are working closely with universities to grow the data science talent pool in the region. They’ve also trained the rest of their employees to understand how AI works and the benefits it can provide. As Wui puts it, “We never think of AI as a technical domain. We think of AI as a tool that solves customer problems, and anybody involved in the customer problem should embrace it.”



Creating an organizational structure to enable collaboration

Collaboration among data scientists and other employees is a key part of Grab’s AI strategy. It has a “hub and spoke” model where data scientists are embedded in every team. This way, they understand the day-to-day challenges and the customer experience so they can come up with better AI solutions.



“We had no intention to make AI an elitist, ‘black box’ department. We didn’t want it to be a concentrated function where only a select few knew what it was about and had access to it,” says Wui. Puneet Gambhir, Head of Risk and TIS (Trust, Identity & Access Management, Safety) at Grab, says, “We don’t want to build models that look great on paper and have all the latest technical qualities, but don’t produce customer-centric results when you actually implement them on the ground.”

With data scientists spread across many parts of the company, Grab is empowering those closest to the customer with AI, which helps them meet their goal of customer centricity. According to Wui, "We always focus on customer problems. We don't believe in building technology for the sake of technology; we're guided instead by problems we want to solve for the communities."

The other benefit of this collaboration is understanding the downstream effects of AI. AI applications don't exist in a vacuum—they can have ripple effects across the organization. Gambhir gives this example: "You might come up with a great algorithm to let's say recommend certain products to users. It's great for the user, but maybe it has an impact on the business. You are changing the mix of products which are getting sold, and that could have implications on, let's say, targets of internal teams or some other metrics that you might not even be aware of." By creating a culture of collaboration where teams share their plans regularly and proactively reach out to other groups to determine downstream effects, Grab makes sure anyone with a stake in the outcome is consulted.

Establishing AI governance

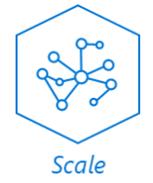
The "hub" of the hub-and-spoke model is Grab's data council. This is a team of representatives from various functions, including engineering, data science, and analytics. The council works on documenting best practices and frameworks for AI. They have created a comprehensive AI ethics framework and helped Grab comply with privacy laws like GDPR. Wui says, "We have the philosophy of a human-centric approach, which is to say when in doubt, when deploying a model, use human judgment."



Responsibility

Enabling continuous improvement

Grab takes an iterative approach to AI, where they are continually looking for ways to improve their models. It's important for them to measure performance, improve shortcomings, and keep up with advancements in the field. With iteration, Grab ensures that the organization and its products are continually meeting the needs of customers, now and in the future.



Scale

Empowering non-technical users with AI

In addition to placing data scientists in every team, Grab is enabling non-technical users to also engage with AI. An example of this is the Internal Audit team, which worked with data scientists to create an AI application that identifies errors and fraud using anomaly detection algorithms. Now, employees on the Internal Audit team are able to engage directly with the application. This is just one example of how Grab is bringing AI to everyone in the company.



AI for everyone

Reducing time to market with partnerships

While many of Grab's AI applications are built in-house, they've taken a pragmatic approach to working with partners to leverage pre-built AI models. According to Wui, "Partnerships make everybody better because it reduces the time to market and maximizes the value you get out of deep technological areas like AI. This has actually been critical to help us fast forward our AI expertise across many areas."



Strategy

An example is Grab's partnership with Microsoft to co-develop a facial recognition application. Grab wanted to have drivers submit a selfie at the beginning of each shift to verify their identity, in order to prevent unregistered drivers from using the platform. Based on Microsoft's significant expertise and investment in computer vision, Grab chose to partner with Microsoft to co-create the application.

Monetizing AI

Grab's success with AI has helped them reach the next level: they are now monetizing their AI expertise. Grab shares its technology via APIs that other companies can integrate into their own websites or apps. One example is Grab Defence, Grab's suite of fraud prevention and detection capabilities. It has earned early success with Fintechs and logistics companies in the region.



AI in action: Fueling growth

Grab's approach to AI has paid off. AI has been baked into almost every aspect of the Grab app.

One of the most beneficial outcomes of Grab's AI investments is the expansion of their API platform. The latest API, Grab Defence, was born out of Grab's experience combating fraud. Over the years, Grab has invested heavily in developing robust AI-powered systems to catch and prevent fraud on its platform. Grab sees billions of transactions every year, which gives them a thorough understanding of how fraudsters operate. AI models play a key role in this. Wui says, "Every day our machine learning models crunch millions of data points in real-time to catch existing and uncover new fraud patterns. Fraud is ever evolving, so we've built algorithms that evolve and learn so we stay one step ahead of bad actors."

Grab correctly identified that this problem plagues other companies as well. In fact, eCommerce businesses in Southeast Asia lose on average 1.6% of their revenue to fraudulent transactions.¹ Now, Grab is making its fraud detection technology available to other businesses that process online transactions through Grab Defence. As Wui describes, "Grab Defence is essentially us taking the cumulative experience and data we've collected through the years of combating fraud and protecting users in Southeast Asia. We have platformized that technology."

Grab uses AI to detect fraud in a few ways. One example is catching fraudulent accounts with AI-powered behavior modeling. Grab has noticed that fraudulent accounts have different usage patterns than normal accounts, and so by analyzing user data and clicks, they can detect anomalous accounts and bookings in real time. Grab is also leveraging graph algorithms for scalable fraud detection. Although a single device or booking may not look suspicious, there may be a pattern that suggests fraud. Graph algorithms leverage Grab's vast data sources to expose relationships between entities and detect fraudulent behavior quickly. With these capabilities, Grab has been successful at keeping fraud on their platform below 1%.

Fraud reduction is just one example of how AI is paying dividends for Grab. The company continues to see the benefits of using AI across its entire platform. During the COVID-19 pandemic, AI helped contribute to Grab's ability to scale and adapt. In 2020, they onboarded more than half a million new merchants and scaled GrabMart, the grocery delivery service, to eight countries in under 2 months.

Making a difference with AI

Grab has been successful in positioning AI at the core of their business, but they're not using AI for AI's sake. As Gambhir puts it, "AI is not just a buzzword or not something that we need to do because it has to be done. It is a very, very tangible and a significant way of improving our services that we offer to millions of users across Southeast Asia."

Grab's success with AI comes from having a strong AI strategy. They set up an organizational model that enables collaboration and oversight. They continually improve their AI models and take a pragmatic

¹ [Cybersource SEA Fraud Benchmark Report 2018](#)

approach to engaging with partners. And they've been able to monetize their success by commercializing components of their technology.

Grab has established an organizational approach to AI that works for them, and that's Wui's top advice for other companies. Whether you have a hub-and-spoke model, a centralized AI team, or something else, he says "Pick one that works for your company and pick one that is embraced by your teams. Because only when people embrace and have conviction of what you're trying to do with it, do you unlock the value of AI."



Wui Ngiap Foo
*Head of
Technology, Grab*



Puneet Gambhir
*Head of Risk and
TIS, Grab*

Learn how other companies have used AI successfully on the [Best of Business AI site](#) and the [AI Business School](#). The AI Business School includes modules on:



*Defining an
AI strategy*



*Enabling an
AI-ready
culture*



*Responsible
AI*



*Scaling AI
in your
organization*



*Enabling
business users
with AI*

AI Business School

Learn tips and strategies for leading in the age of AI with our online class

