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# Tech debt detox

AI outlook in digital native businesses



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## Introduction

Digital native businesses—which straddle sectors from healthcare to automotive and e-commerce but feature technology as a key plank of their offering—might be assumed to have best-in-class approaches to data management. This, however, does not always turn out to be the case.

Sometimes in the race for customer acquisition and market share, data engineering is an afterthought and must be implemented retrospectively. Start-ups surviving on venture funding, meanwhile, may not have the budget to build in-house data platforms or experiment with adapting the large language models (LLMs) that underpin generative AI (GenAI).

We'd like to thank the following executives for participating in interviews and sharing insights:

- **Wassym Bensaid**, chief software officer, **Rivian**
- **Ian Botts**, chief technology officer, **Fanatics Betting & Gaming**
- **Roman Bugaev**, chief technology officer, **Flo Health**
- **Ting Cai**, chief AI and data officer, **Rakuten Group**
- **Kushal Chakrabarti**, chief data officer, **Opendoor**
- **Amit Sharma**, chief technology officer, **Dream Sports**



## One size does not fit all

Digital native companies enjoy a relative lack of technical debt—a function of, in most cases, having relatively short histories. Their second asset is high-quality technologists. Third, their leadership teams generally have a solid understanding of technology themselves, which lends itself to a culture of learning with data.

But they also face risks of their own. Technical founders could be more seduced by AI's impressive novel capabilities and lose sight of the business case.

**“As a digital native, one of the mistakes many people make is finding a solution in search of a problem. You want to start with the problem and find a solution.”**

Kushal Chakrabarti, chief data officer, Opendoor

Opendoor took a deliberate approach to AI, starting from the profit and loss case. They realised that goals like creating a better consumer experience were going to deliver more return on investment than focusing on productivity, a common metric for AI.

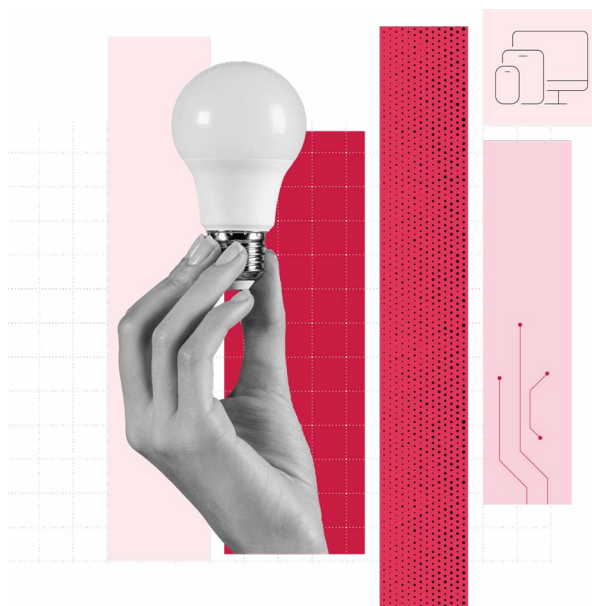
Ian Botts, chief technology officer at Fanatics, a global digital sports platform, echoes this sentiment.

**“You start with the customer scenarios and the customer use cases, and then you back into the technology.”**

Ian Botts, chief technology officer, Fanatics

Digital native companies may also find themselves mired in a complex software and application environment, especially if they grow quickly. One of the challenges induced by the degree of competition is a high risk of platform fragmentation. “You have different tools doing different things; any one of them is good, but you want to choose one,” notes Mr Chakrabarti. He says Opendoor is trying to consolidate its approach via what he calls an “ecosystem approach” that allows the mixing and matching of software and systems.

A similar approach is necessary when it comes to cloud platforms. Like most companies in the modern data-driven economy, digital native companies increasingly move their data across clouds. Unlike leaders in other sectors that didn't start off in the cloud, however, they are keenly aware of the drawbacks of doing so, particularly the challenges of moving data from one provider to another.



Many companies seek to build their own data platforms on top of cloud providers. “Even if we were hosting data with a particular cloud provider, we made sure that our teams build a cloud-agnostic architecture that allows us to interface with multiple providers,” says Wassym Bensaid, chief software officer at Rivian, an electric car manufacturer.

But as data proliferate across multiple cloud providers, even in-house data platforms can falter when they need to pull strands from many discrete environments. This has been the experience of Rakuten, a Japanese technology conglomerate and owner of the eponymous e-commerce website, which places data in Google, Microsoft, Amazon and Oracle environments. “Building the data platform across all of these different cloud providers is a challenge,” says Ting Cai, chief AI and data officer at Rakuten Group. “Specifically, how do we reduce the latency across the multiple providers and how do we merge the data [held in different providers when needed]?”

### Learning through errors

Once data are successfully combined on in-house platforms, one of the primary benefits is the ability to deploy machine learning (ML) algorithms, a discipline that is advanced at many digital native companies.

Indian company Dream Sports, for example, uses ML to parse real-time data from millions of users who create and manage teams for fantasy leagues.

One algorithm will automatically create lucrative contests, which allow fantasy league customers to compete for cash prizes around a specific match, for example. A product recommendation algorithm, meanwhile, surfaces recommendations about games that can be streamed on the Fan Code platform, while customers signed into that platform are also offered the chance to participate in fantasy sports games. ML was introduced as the company’s user base multiplied, introducing more and more variables that could be factored into decisions.

For the first year, the product recommendation engine underperformed the company’s existing recommendation engines, according to its chief technology officer, Amit Sharma, showing the need for a company to persist with technology and develop a culture of experimentation.

**“A lot of our algorithms that are actually working today, when they were initially launched, gave us negative business metrics for a period of time. Obviously, the product teams and the finance teams got a little nervous about that, but now they can see this has worked before, so they are more open.”**

Amit Sharma, chief technology officer,  
Dream Sports

## Cautious adopters

Digital native companies formed over the last decade were already aware of the potential for AI to power their business, and some were formed specifically to take advantage of the clear momentum it was gathering. “One of our board members jokes that we’ve been doing AI since it was spelled ML,” says Mr Chakrabarti at Opendoor, which has developed algorithms for optimising the buying and selling of homes, including pricing.

The company is harnessing GenAI in areas like listing descriptions and for tightening the feedback loop between human input and pricing, all while being careful to capture the nuanced aspects of human intuition such as how wear and tear affects valuations.

Some digital native firms caution against excessive GenAI hype.

“We don’t believe that it’s ready yet to actually solve the real-world problems that most people are claiming,” says Mr Sharma at Dream Sports. Rivian’s Wassym Bensaid says the company is cautious about eroding customer trust by introducing applications before they are fully reliable.

At Flo Health, the leading global consumer-facing women’s health app, Roman Bugaev, the chief technology officer, says that users are far less tolerant of errors or inconsistencies from an AI bot than from humans:

“Different GPs [doctors] might say different things because they trained in different ways and interpret things differently.” As a result, he says:

**“With information that a user might act on, such as ‘what could I learn about a symptom I’m experiencing?’, there is undoubtedly a need for more caution [when using AI bots for health insights].”**

Roman Bugaev, chief technology officer,  
Flo Health

According to Ian Botts of Fanatics, effective AI governance encompasses three components. First, it builds guardrails, ensuring that “personally identifiable information isn’t used inside of a model to specifically target or take advantage of a particular human.” Second, it builds out mechanisms that enforce those guardrails. And third, it establishes dedicated data governance, which is “almost like a compliance function to ensure that it’s being audited and that [companies are] being transparent,” explains Botts. “I think the transparency point is incredibly important because it drives better decisions.”

## Build versus buy

Digital native businesses face a similar conundrum as others: whether and when it makes sense to build their own models versus harnessing others. As with the wider world, start-ups and smaller firms see little value in developing their own.

“We don’t believe a company of our size can promptly build something truly meaningful in terms of home-grown LLMs,” says Mr Bugaev at Flo Health. Instead, he likens LLMs to electricity.”

**“ The power is to build on top. We use foundation models from OpenAI, Gemini, [and then we introduce] our content from medical experts. We have privacy rules and expertise unique to our users.”**

Roman Bugaev, chief technology officer, Flo Health

But Rakuten, which generated more than ¥2trn (US\$15bn) in revenue last year,<sup>1</sup> can operate at a different scale than smaller firms by building in-house LLMs based on continued pre-training from open-source models and by building its own data pipeline, tokenisers and engineering capabilities.

By introducing high-quality data in the form of transactions from its e-commerce website, the company’s adapted LLM can make product recommendations using far less processing power than a general purpose platform. Rakuten’s Mr Cai compares it to how search engines retrieve answers more efficiently: “When you enter a query, the first thing should be: understand your intent. If your intent is related to news, you will just invoke the news ranker, right? You don’t need to invoke the entire

search system, which would involve trillions of documents and be very expensive to run.”

The company has already introduced an internal GenAI productivity tool, which has 7,000 daily users, fielding requests ranging from translations to generating code. The company also has a user facing chatbot, which proposes replies to customers for merchants, and will soon debut a much more ambitious Universal Concierge agent, which will learn users’ preferences and act on their behalf. This agent will not only find products users love but also discover new ones they might not have considered. Financial heft will likely determine which digital native companies can pioneer their own models going forward and which will adopt those already on the market.

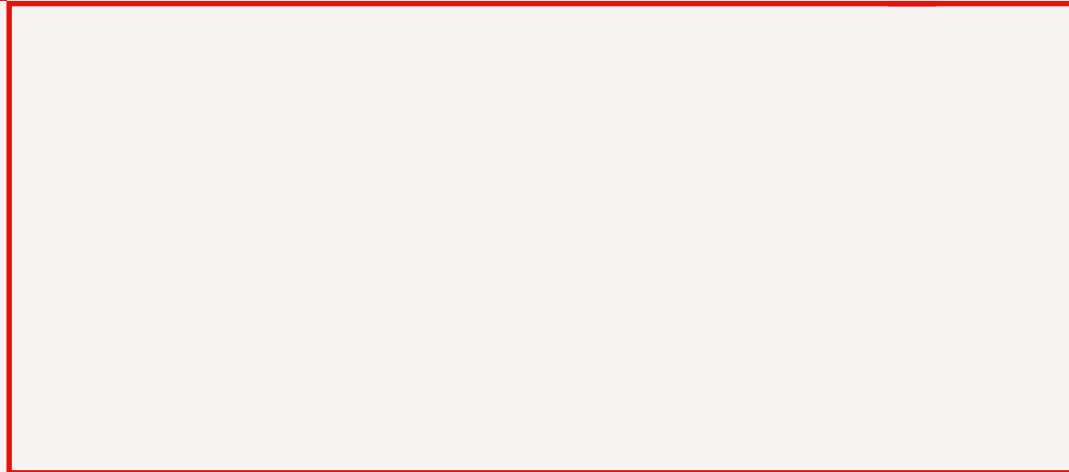
Whichever route digital natives take, they are at an advantage in their tendency to view AI and data as a foundation rather than an afterthought. As digital native companies evolve, it becomes clear that AI and data are not just tools but integral components of their overall strategy. This is especially true for those like Rivian, where technology is deeply embedded in every decision.

**“Software, data and AI is not an add-on to our philosophy. It’s really at the heart of everything that we’re doing.”**

Wassym Bensaid, chief software officer, Rivian

<sup>1</sup> [https://global.rakuten.com/corp/news/press/2024/0214\\_07.html](https://global.rakuten.com/corp/news/press/2024/0214_07.html)

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