

WHITEPAPER

A guide to marketplace survival and growth



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Introduction



Growing a marketplace isn't easy. Marketplaces serve at least two audiences of equal priority, both of which have different goals, and experience the product differently depending on their goals. Together, these varying factors and experiences create complexity for teams running marketplaces and make data critical for cutting through the noise to identify the next clear step for growth.

This puts data teams at the core of marketplace success; marketplaces succeed on an economy of scale, and the only way to get ahead and stay ahead is to use data to scale efficiently.

While data is critical for growth, marketplaces face some specific challenges with data. Data teams are tasked with monitoring supply and demand, sorting through mass volumes of data, and providing access to reliable data company-wide, from the C-suite to the front lines of customer interaction, because every employee needs to use data to do their job.

Thus, successful marketplaces have invested in building data as a product. They've built centralized data teams to ensure that everyone can make informed decisions and tough tradeoffs to maintain health and growth.

In the last year, we've talked to the data leaders at large-scale marketplaces who use Mode about how to balance supply and demand, work with massive, complex datasets, and centralize data for their companies. The stories below, from rideshare pioneer Lyft, Australian-based real-estate giant Domain, and creator-platform Patreon, illuminate how data teams help marketplaces keep up with explosive growth, field changes in consumer demand, and quickly adapt in rapidly changing markets.

When we asked these data leaders about some of the challenges they've recently faced, the pandemic was naturally at the forefront of their stories. Their lessons, however, can apply to marketplace growth at any time.

Featuring stories from:



Matt Isanuk
Data Product & Science
at Lyft



Pooyan Asgari
Chief Data Officer
at Domain



Maura Church
Director of Data Science
at Patreon



01

Lyft gets ahead of supply and demand with real-time data

STRATEGIES

- Real-time data for supply and demand
- Canonical datasets for data democracy

Lyft's data team set up canonical datasets and distributed more real-time data to stakeholders to maintain a good customer experience.



Lyft cares a lot about how long people wait to be picked up by their drivers. The shorter the wait time, the better experience customers have.

When driver ETA, or how long riders need to wait to be picked up, is stable and predictable, it indicates that there is a balance of supply (drivers) and demand (riders). At Lyft, driver ETA had always been a stable and highly predictable metric, but the beginning of COVID-19 changed that. Matt Isanuk, who runs the data team, described the first signs of volatility in the market.

“For Lyft, I think we were probably on the early end of seeing impact. Before shelter-in-place went into effect in most geographies in the United States, people started traveling and leaving home less.”

Lyft also noticed that different markets had different app usage; some markets showed a sharp decline in usage, while others were 5x more active than the least active market. The variation in ridership volume across markets began to cause instability in driver ETA, which indicated an imbalance in the supply and demand. “

Historically, when you have enough density of drivers and riders, the demand works out and you can wind up with some pretty stable ETAs. But when there’s far less density, and it’s more unpredictable, ETA suddenly becomes a really important thing to look out for,” Isanuk said.

To maintain a good customer experience, the data team needed to help Lyft see where longer ETAs were geographically and then invest in those markets to maintain a good customer experience.





“ We needed to look closely at ETAs and monitor which markets to invest in to get the right density, which would let us achieve the service levels that we think our users expect.”



Matt Isanuk

Data Product & Science at Lyft



“We needed to look closely at ETAs and monitor which markets to invest in to get the right density, which would let us achieve the service levels that we think our users expect,” Isanuk said.

Throughout this period, Lyft’s data team helped monitor new conditions in supply and demand, providing visibility when the pace of change was dramatic and when it started to become more stable. To react quickly to these changes, Lyft also began to distribute more real-time data to its stakeholders.

Real-time data helped Lyft react more quickly

The marketplace dynamics for Lyft vary greatly from region to region, this was especially true during the pandemic. To inform decisions about which regional markets to invest in, Lyft's data team started to get more real-time data to its stakeholders.

"With a finite budget, limited resources, and more volatile market dynamics, it's really important that we have good data and good frameworks for making decisions," Isanuk says. "Real-time data has been the hero use case."

As a result, Lyft began to experience a distinct cultural shift about real-time data internally; it quickly proved to be more valuable than one-day or two-day-old data in a rapidly changing environment.

"I think everyone realized that it accelerates your ability to operate as a company," Isaunk said.

Some had been skeptical that you needed real-time data to run a business—and to some extent, when the data doesn't change much day-to-day, it hadn't been as important—but in the midst of changing market conditions, real-time data let more people react more quickly when resources needed to be conservative.

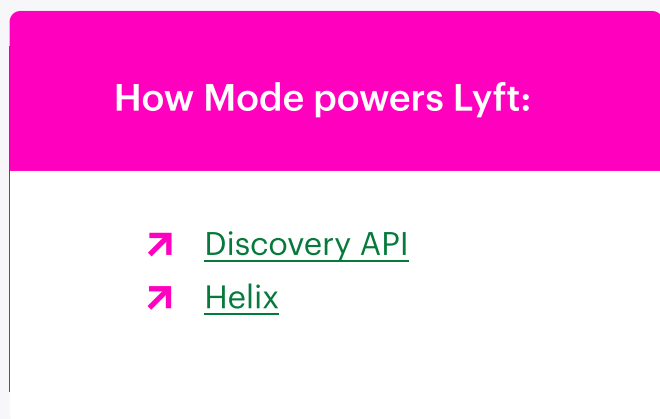
People started to verify their decisions with real-time dashboards, using them to spot any positive or negative responses in campaigns early on, which let them get ahead on iterations. This let Lyft respond to the market faster.



Data democracy at Lyft increased velocity in operations

With the influx of requests for real-time data, the data team began to churn out canonical datasets (similar to [Mode's Core Concepts](#)) that could be used across the company to make decisions.

As part of this democratization, they invested in data discovery and monitoring and alerting systems. For better data discovery, [Lyft integrated Mode dashboards](#) into [Amundsen](#), its data discovery and metadata engine, which helped make downstream objects more discoverable. Now if someone searches key business metrics like “cancels” or “rides,” they can see the data tables and suggested dashboards that are commonly viewed for those metrics.



They’ve also put more monitoring and alerting in place, which makes it easier for everyone to be aware of changes in the large amounts of data Lyft ingests and produces. All of these efforts are contributing to better data democracy within the organization and helps it not just weather the changing landscape and unpredictable external factors, but also to get ahead of trends instantly.

“Our roadmap has been really laser-focused on having high-quality representations of the business available in a timely manner, more so than ever before,” Isanuk said.

But Isanuk was also aware that with more people looking at data, mistakes could become more costly, so they began to invest in systems to upkeep data quality with the help of data engineers.

“I think there’s a lot of complementary aspects of data engineering for setting up quality checks or frameworks that make it easier to generate derived tables without writing 1000-line long spaghetti code of SQL,” Isanuk said. “It’s not just making the data available in the data lake, it’s organizing it, transforming it, and guaranteeing that it’s of a certain quality for all the downstream users and applications. We’re investing in systems for data quality including complementary parts of the stack that will work with Amundsen.”

Throughout the last year, the data science team has played a critical role in solving some of these technical marketplace balance challenges. By getting real-time data out to stakeholders, making data more discoverable, and investing in data quality, Lyft was able to react quickly in an extremely volatile and changing landscape.

02

Domain invests in data heroes



STRATEGIES

- Activating “data heroes” for faster market response (data democracy)

Domain’s data team activated data-savvy stakeholders, which let them respond faster in a volatile real estate market.



Domain is a real estate marketplace that reaches millions of Australians through its ecosystem of multi-platform property solutions for residential, new development, and commercial properties.

As a multi-sided marketplace, they help with a wide variety of real estate goals, from buying and selling, to monitoring investments, renovations, and refinancing opportunities.

With so many personas to attend to in a fast-moving market, the data team was often overwhelmed with requests, making data democracy a critical goal for Domain Group's Chief Data Officer Pooyan Asgari.

"We are operating in an extremely high-velocity market environment, with an average of 300,000 properties for sale at any given time," Asgari says. "We are dealing with a mass volume of user interactions every month, and can't afford to wait for analysis—it has to happen in real time. Literally, everyone at our business needs access to data."

To free up the time of his 30-person data team, Asgari started to think about how he could empower data-savvy employees within the organization.

To increase data democracy, Domain reexamined its data stack

Within Domain's 800-person company, about 10% of folks are more advanced data users; internally, they're referred to as "data heroes." To help departments make decisions without waiting on the data team, Asgari wanted to tap into the data savviness of these folks within the company.

As a starting point, he reexamined Domain's data stack to see what tools could help their data heroes be as self-sufficient with data as possible. Bringing Mode in was a part of that strategy.

"Before Mode, if Domain wanted to launch a product to help millions of customers plan their property investments better, the product manager would come to the data team and say 'Tomorrow, we will roll this out. Can you please provide us with some reports on how adoption is going?' The data team would then look into it, and be able to provide some insights a week later," Asgari explains.

"Now, with Mode, that same product manager has someone within their own department who possesses the skills to query the data in Python or R. When the product launches, that person uses Mode to connect to the data warehouse of billions of records in real time—and within minutes, can see live trends, conduct analysis, and take action." After the data team connected Mode to Tableau and Snowflake, data heroes were able to access data without always requiring their support. They quickly saw returns on speed to decisions.



“Now, members of the centralized data team are only brought in to provide advanced support on more complex questions.” It was shortly after Domain had set up more data accessibility that the company experienced even more volatility with the pandemic. The company’s existing data democracy practices helped them field volatility as a marketplace and iterate faster to launch COVID-safe products to keep the business running smoothly.

Domain

“ A good chunk of that pressure was removed by the ability for teams to answer their own questions.



Pooyan Asgari

Chief Data Officer at Domain

Domain launched six products in a matter of weeks

The pandemic brought more volatility. To survive changes in consumer demand, Domain had to quickly adapt to changing market needs and conditions.

Large and small businesses of every kind wanted to understand where they stood and what the real estate market looked like. The demand for bespoke, unprecedented analytics went through the roof “cryptocurrency style.” As Asgari put it, “You couldn’t find one individual working with data who had three free seconds to chat with you.”

With teams having better access to data, Domain was able to quickly deliver products that let people move forward on their real estate goals from home.

“Our team would have been bombarded by all 800 employees at Domain, but a good chunk of that pressure was removed by the ability for teams to answer their own questions,” Asgari said.

In a matter of weeks, they launched six products, including virtual home inspections and a platform for online bidding. “We had just a few days to build products that weren’t even on the roadmap,” explains Asgari. “All of these were powered by Mode and the other elements of our data tech stack.”

With data-savvy employees having access to data, made possible by Mode and other tools, Domain was able to keep up with an already fast-moving market by giving stakeholders the ability to move forward without relying on the data team for simple asks. This system of data democracy let them pivot even faster and overcome the business challenges of operating throughout the pandemic.



03

Patreon keeps up with explosive growth

STRATEGIES

- Supply and demand, using leading indicators

Patreon's data team set up leading and lagging indicators to help prioritize goals during extreme growth.

Patreon is a platform that allows content creators across the globe, including artists, musicians, models, gamers, and others, to get paid directly by their fans.

At the start of 2020, the company was focused on further expanding its international presence and helping its more than six million patrons (paying fans) find other creators to support. But a few months into the year, they started to see explosive growth from shelter-in-place initiatives. Maura Church, who leads the ten-person data team at Patreon, reflected on the initial signs of user growth.

“We saw a huge influx of launches, with creators signing up and basically saying, “Hey, my tour got canceled,” Church recalls. “We had over 30% month-over-month growth in new patrons and the highest creator acquisition we’ve ever seen which is super exciting.”

After seeing the huge uptick in growth, they needed to revisit their immediate and long-term goals, and the data team was called into action to help. Church recalls some early discussions. “We saw a huge need for operational scale, additional capabilities, and content for [thousands] of new creators.”

Monitoring supply and demand with an increase in user growth

Patreon's data team began to monitor the high spike in growth looking for any changes. "We got really clear on what matters to the business as a leading indicator and lagging indicator of growth, activity, retention and acquisition," Church said.

The leading and lagging indicators were referenced nearly every morning to see if there was any reason to believe growth might be heading in a direction that was bad for business.

At this time, the data team also amped up communication around indicators and other insights to the rest of the team to help them understand the sharp increase of creators and how that would influence their yearly goals. Bi-weekly growth updates helped make sure the business was focused on the right initiatives. "Our strategy has been metric alignment and frequency of check-ins. We also talk about what took too much time and what was helpful. Constant feedback from both the data team and other teams helped us recalibrate."

The rapid influx of creators led to some early discussions about if the company should stay on its course of long-term goals or pivot and invest in better live streaming. "We couldn't have seen this coming. There was so much they could do with this moment," Church said.



“Our strategy has been metric alignment and frequency of check-ins.”



Maura Church

Director of Data Science at Patreon

They could invest in livestream, something they knew would help creators, or keep on track with their yearly goals of pursuing more internationalization, which included tax and currency projects.

With data showing a continued growth trajectory, Patreon ultimately decided to maintain and accelerate its yearly goals and make room for smaller short-term goals, like building content for creators on how they can best sustain their work through the pandemic.

Church added that if they had woken up in a different world, where the pandemic had brought sharp declines, they may have needed to change their long-term goals.

“The majority of the data team’s work is designed to reach goals for growth, retention, and user experience. I can see more of it helping creators and patrons get the most out of the platform in the future through content and support.”

Predicting supply and demand

This influx of new signups presented an interesting challenge for the data team. Many of the new creators joining the platform were small business owners hoping to find alternative revenue streams as their brick-and-mortar operations shut down, but the team didn't know how long they'd rely on the platform for revenue streams. "Everyone wanted to take advantage of this unexpected surge in business, so we tried to make assumptions about how these new creators will grow compared to their pre-COVID counterparts."

To assess future options and prepare for specific cohort usage, Patreon wanted to understand growth with and without the external event, using time-series growth.

"We've been trying to make assumptions about how these creators and cohorts will grow compared to historical cohorts. We look at cohort growth by medium so we can say 'podcasters on average grow X percent by their twelfth month, and musicians grow this percent and video creators grow this percent.'"

Church says flexibility is key for navigating data teams in fluctuating markets stating that they "need to quickly understand what's driving metrics is important, even if it means stopping and shifting priorities for a few days to dig into something before plowing forward."

"Going forward, I think we'll look deeper into language analysis to find patterns early. People tell us why they signed up, for example, and seeing early indicators can help us create better content and get ahead of a big surge in users."



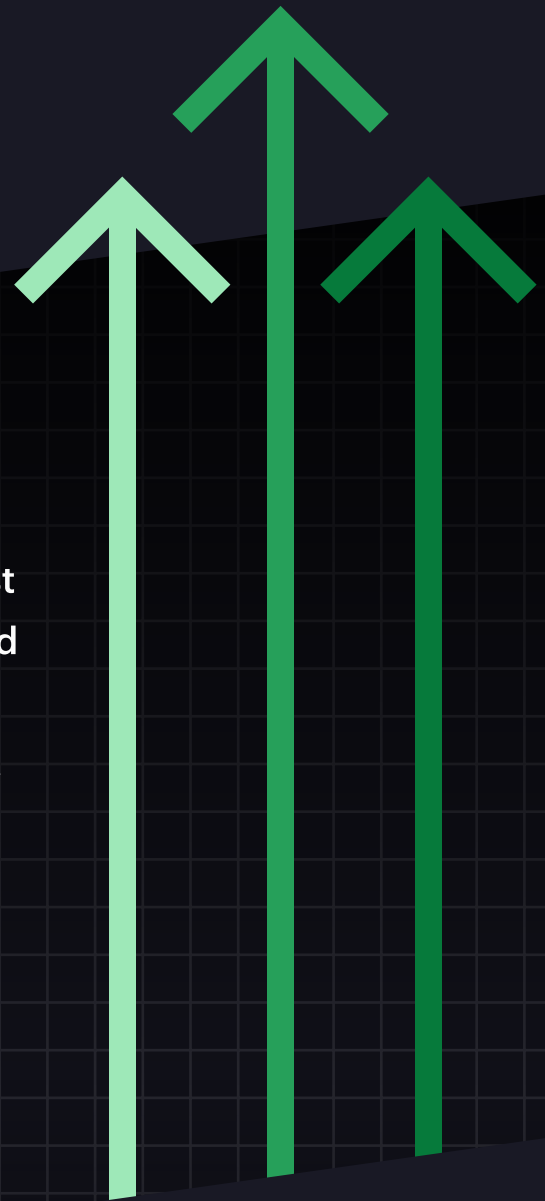
Using data to understand what growth means for the organization

With biweekly reports on leading and lagging indicators, and exploring the magnitude of growth, Patreon's data team was able to continue on with its initial yearly goals but took the opportunity to help creators with new blog posts and resources for navigating through these new changes. Church reflected, "In a lot of ways, our path forward was in response to the data."

Marketplaces that use data efficiently, win

As we've seen in these stories, successful marketplaces need strategic and organized data teams to field fluctuation and keep up with growth. When data teams are able to clean and sort massive amounts of complex data with a [modern tool stack](#), get trustworthy data available company wide, and closely monitor supply and demand, decision-makers can make the best choices about growth.





Mode is an advanced analytics solution providing the ideal environment for an analyst workflow—writing SQL, analysis in Python and R notebooks, visualizing results, and sharing insights—all in a single, seamless experience.

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