BETTER NETWORK MANAGEMENT + FASTER SERVICE WITH DEMAND INTELLIGENCE

HOW ON-DEMAND COMPANIES USE DEMAND-DRIVING EVENTS FOR MORE ACCURATE FORECASTS

UNLOCKING THE IMPACT OF EVENTS ON YOUR DEMAND

On-demand business are only for the brave. With so many moving parts and variables day-by-day (and even hour-by-hour), demand planning teams are constantly working to improve their processes and outcomes.

More accurate, real-world aware forecasts enable on-demand companies to:

- Preempt and avoid traffic/delays before they occur
- Mobilize delivery and independent worker networks in advance
- Grow and retain independent worker networks through proactive enablement
- Ensure warehouses are stocked well for periods of peak demand
- And most importantly, ensure faster deliveries with fewer out-of-stocks for your customers through all of these improvements.

Understanding impactful events in your neighborhoods is key to understanding demand and disruptions. Knowing this for each of your locations is not only possible, but highly profitable. The right kind of event data provides context and actionable insight into your **demand drivers** so you can switch from reactive to proactive.

It's called demand intelligence - and this report will introduce you to how leading companies are using it to ensure they have the right amount of staff and contractors ready to go for each day's demand.

HOW ON-DEMAND COMPANIES USE DEMAND INTELLIGENCE

On-demand is a broad industry and there's a big difference between shipping hot meals, groceries and people and more! So here's how customers across each on-demand niche use intelligent event data.

The good news is the process for using intelligent event data to improve labor optimization follows the **same five steps**.

UBER

PredictHQ works with several of the world's largest rideshare companies, which use our data to alert their drivers about peak demand periods and when events such as sports, concerts and festivals are ending. Advance notice ensures short wait times, happy customers and more profitable work for drivers.

GOPUFF

GoPuff stocks an impressively wide range of products and they deliver these rapidly across multiple cities. They use demand intelligence to know which products are likely to be in demand and where, as well as to plan around big shifts in demand such as school holidays and college dates.

STOOVO

Delivery drivers, shoppers and independent workers are the core of on-demand businesses. Stoovo works directly with drivers to empower them to plan the most efficient and profitable ways they can work across mulitple platforms, using events such as concerts, school holidays and sports games.

FAVOR

Favor delivers meals and groceries, and needs to factor in both large shifts in demand such as school holidays as well as Live TV Events that cause sharp surges in demand in the evenings. Smart planning means they can look after both their delivery and restaurant partners better than competitors.

STEP 1: UNDERSTAND THE IMPACT OF EVENTS

The pandemic's peak impact is over, but its impact on demand patterns remains. One demand pattern that has become a habit for many is increased usage of on-demand services - from ordering meals to groceries to opting for a car or bike over public transport, on-demand business have never been busier.

But as schools returned, colleges swung back into session and major events returned, traffic, people movement and demand all began to be impacted by hundreds of new variables in each city *every single week*.

Here are just some of the ways the four different types of events PredictHQ tracks impacts on-demand companies:

Attendance-based events
These are your classic events and are high impact for transport on-demand. These events take place at a venue with a clear start and end time, drive major people movement and cause huge surges in demand for many on-demand companies.
- Sports
- Concerts and festivals
- Expos and conferences
- Performing arts
- Community events (including parades)

"Adding real-world, real-time data to our platform is a game-changer for our users." Stoovo CEO Hantz Févry

Non-attendance based events
Don't let the odd name confuse you - this is the highest impact type of event for on-demand companies. These are massive, distributed events that impact demand for sustained periods.
- School holidays (at the district level)
- College events/key dates (per college)
- Public holidays
- Observances

Unscheduled events
Sudden, high impact and requiring data-driven solutions, these impact most on-demand companies.
- Severe weather
- Natural disasters
- Flight delays
- Terrorist attacks
- Health warnings

Live TV Broadcasts
Particularly impactful for meal, grocery and alcohol delivery companies, accurate future predictions of how many people will be watching major sports games drives a lot of orders.
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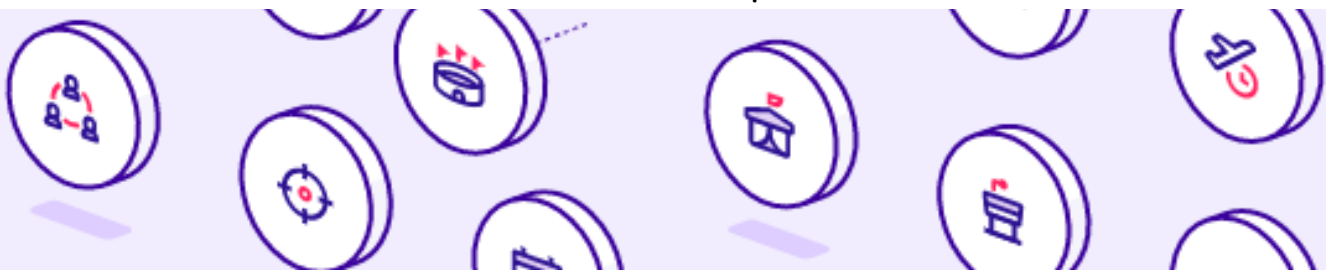
HOW EVENTS IMPACT ON-DEMAND

We all know events impact demand, but the question for every business is exactly how much impact events drive, and how can they tap into those changes? Demand drivers are events that impacts demand significantly enough, driving it either higher or lower, to deserve attention and updated strategies. In 2022, more than 12,000 events occur each month in the USA and are worth around $5 billion in economic spend (source).

$485M

Conservative models estimate the Live TV Event of the NFL kick-off drives around $485 million in food and beverage demand as people gather to watch the game.

More info

$2B

Modelling of event-driven economic spending in March 2022 puts the total food and meal spend at ~$2 billion, and that's not including the huge surge school holidays.

More info

6% improvement in MAPE

On-demand snack delivery company Favor was able to improve their mean average percentage error rate by a huge 6% incorporating event data. Favor's forecasting models work with both long- and short-term forecasting horizons. Certain levers can be pulled two weeks in advance compared to the most impactful levers on the day of. Both can be high impact, so the data science team is always working to improve their forecast KPIs.

Read the full case study.

STEP 2: UNDERSTAND WHICH EVENTS IMPACT YOUR BUSINESS

There are thousands of impactful events every week, so how do you know which ones impact your operations?

There are two ways to think about event impact for on-demand companies:
1. Events that cause demand to increase or decrease for their services.
2. Events that disrupt the neighborhoods they service and need to be factored into their daily plans such as route planning and warehouse selection.

We'll dive into point 2 on the next page, but until then let's talk about identifying your most relevant events. We know from our existing on-demand companies that event impact for on-demand companies falls into three categories:

Transport and Mobility
Whether you're in the business of rideshare, bike hire or similar, the most impactful events for transport on-demand include:
- Sports
- Concerts and festivals
- Expos and conferences
- Performing arts
- Community events (including parades)
- School holidays
- Severe weather + natural disasters
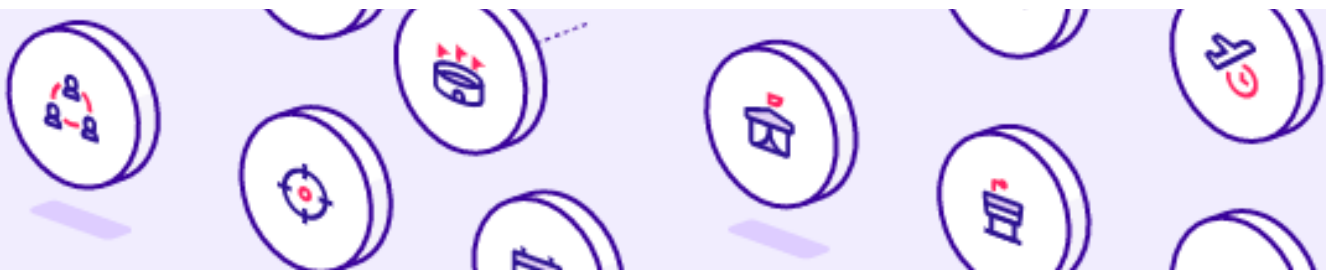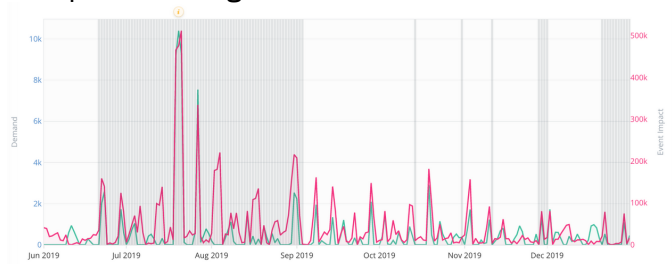
Grocery, snack and hot meal delivery
Your classic events, sports and concerts etc, have less impact on this category than the broader events that change demand patterns including:
- School holidays (at the district level)
- College events/key dates (per college)
- Public holidays
- Live TV Events i.e. sports broadcasts
- Severe weather and natural disasters

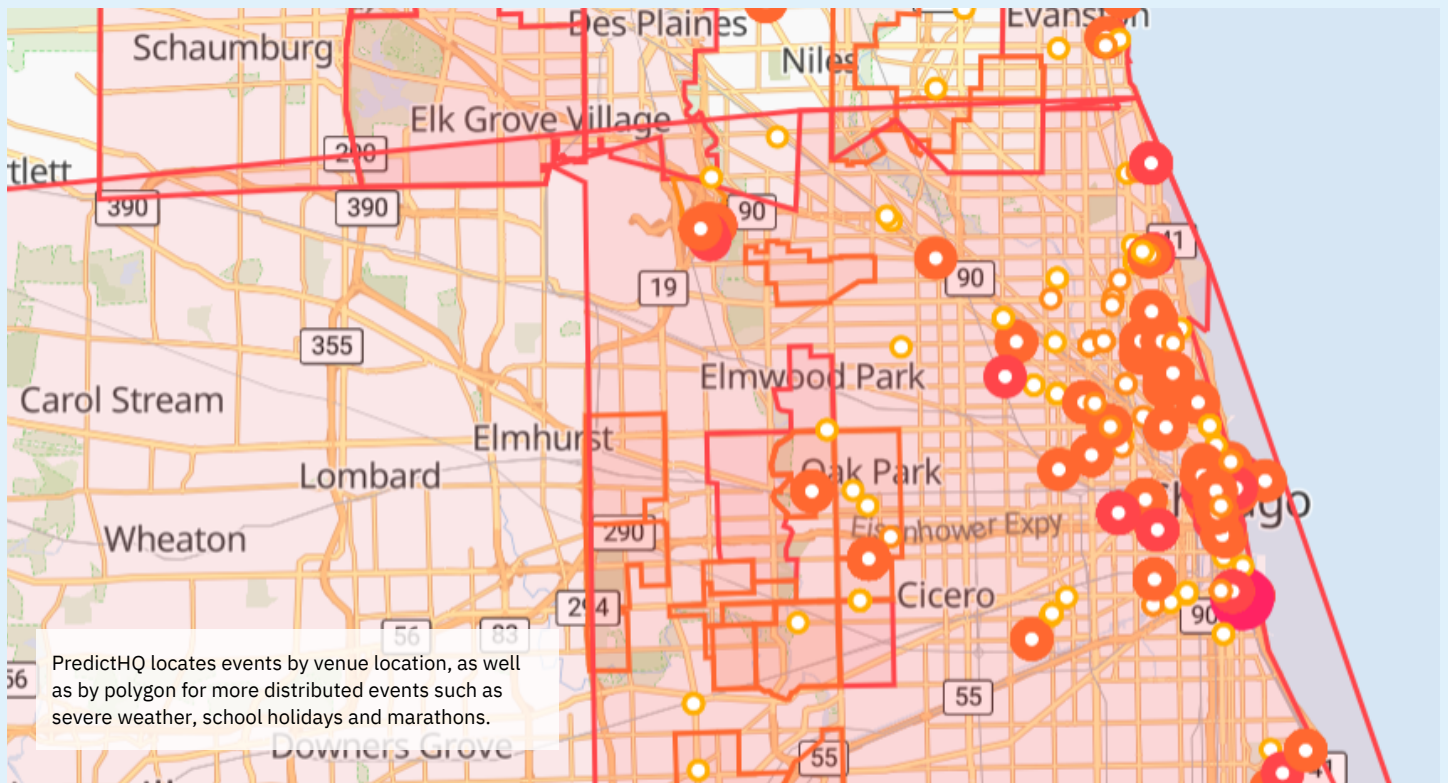### Focusing on the most impactful elements for your operations
To truly get value from events, you will need to analyze your transactional data with event data.

PredictHQ assists with this process, using our seven years of verified, historical event data. Below is an example output of a correlation analysis, where the pink line is the customer's demand (adjusted to remove cyclical impacts) and event impact is the green line.

PredictHQ locates events by venue location, as well as by polygon for more distributed events such as severe weather, school holidays and marathons.

LET'S TALK ABOUT TRAFFIC + DISRUPTIONS

The second way events are powerful for on-demand companies is using them to better understand the neighborhoods they service, as well disruptions to delivery routes, warehouse and restaurant access as well as traffic caused by events.

Event impact example 1: On-demand grocery and snack delivery company

It's the first weekend of the school holidays, and you're grappling with a surge in demand, impacting both the volume of orders (requiring more drivers) and the amount being ordered (requiring more fulfilment staff) as parents stock up for the coming week. But a cluster of two major sports events and 9 concerts with between 250 to 12,000 attendees has drivers occupied elsewhere.

### Event impact example 2: Transport on-demand company

It's a busy Saturday and 70% of your hireable bicycles are in use. Your inventory team are busy gathering and re-allocating bikes that are at residential hubs and unlikely to be used again that day, and taking them back to hot spots. But a large community parade that wasn't in your forecasts is snarling up traffic, meaning getting your assets to their new location (and into the hands of paying customers) is taking far longer than anticipated.

Event impact example 3: Rideshare + grocery on-demand

Your team is feeling confident heading into what should be a busy but well-resourced Friday afternoon, when orders start booming. A severe storm you weren't aware of has arrived, and people are seeking your support to get home or get supplies, just as your drivers are logging off and heading home themselves.
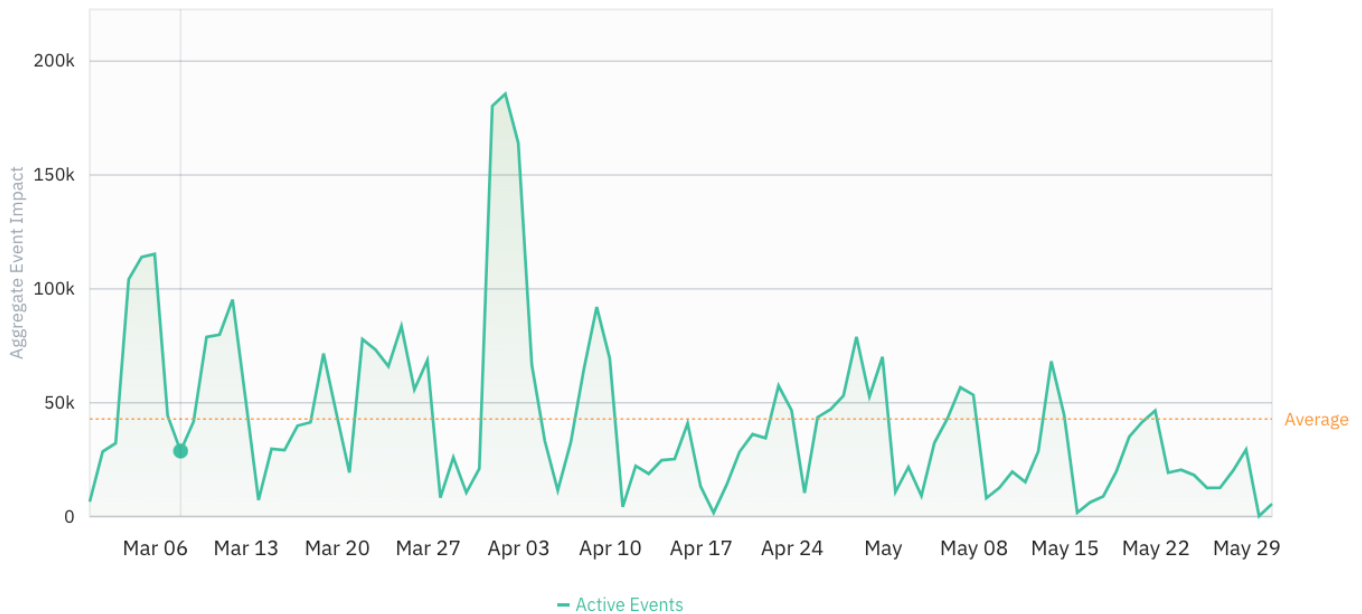
STEP 3: UNDERSTAND EVENT CLUSTERS

Whether it's demand driving or disruptive events you're here to understand and take charge of, on-demand companies pride themselves on being data-driven. This means most have a list of larger events - usually key holidays such as Christmas, big sports events or festivals in their key cities - because they have experienced their impact before.

But one of the best elements of forecast-grade data is realizing how many more events have been skewing your demand.

For example, in Dallas, Texas in April 2022, there were:
- 26 conferences + 13 expos
- 3 festivals and 245 concerts with 300+ attendees
- 37 sports games plus hundreds of sports broadcasts
- Plus 11 schools districts breaks
- Plus 9 colleges in session, each with different student totals, session dates and break scheduled

Understanding how events overlap and compound impact is key. The graph above shows the total impact of events in Dallas for March to May - and these are just attendance-based events.

For non-attendance based events, we provide this information as polygons, as this is the fastest way to understand which of your neighborhoods or key locations will be impacted. For example, below are some of the school holidays and severe weather events in Dallas in April 2022:
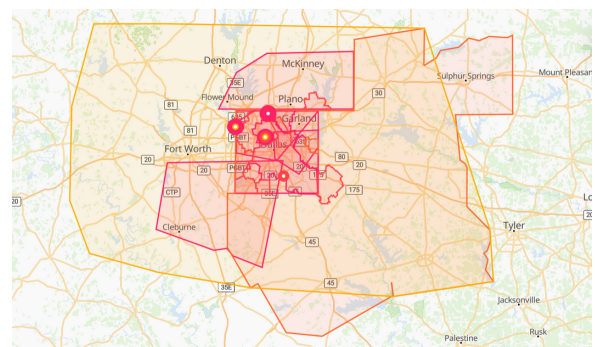
If this feels like a lot of information to take in, don't worry. We work with our customers to identify their unique demand drivers, so they can focus on the signal rather than the noise.

STEP 4: UPDATE YOUR STRATEGIES TO BE REAL-WORLD AWARE

How on-demand companies operationalize events varies on goals. Many of PredictHQ's users use our verified and enriched event data for multiple goals.

Companies seeking events to shorten wait times and deliveries
Better understanding both what drives orders and what disrupts fulfilment enables smarter and proactive strategies at scale. Use events to plan routes for the day well in advance of traffic or road blockages; stock up optimally positioned warehouses or re-allocate your assets as events are ending to snap up available demand.

Companies seeking to more competitively engage independent workers and build their driver/worker network loyalty
Optimize your demand forecasts so your incentives can mobilize your partner network to perfectly match spiking demand or use events to improve the explainability of your recommendations. Enabling drivers, shoppers or delivery teams to plan their schedules with your jobs as a key plank ensures availability and builds loyalty.

It also helps for last-minute mobilization, say for incoming severe weather, flight delays or people seeking the fast way out of congested hubs full of event activity. For delivery groups, it provides insight into independent worker availability, which often drops when school holidays start, but can increase when college exams are over.

Companies seeking to use event for marketing campaigns and to drive mobile prompts for their services
Whether it's a big sports game, a key observance or an incoming weather event, notify your team *and your users* to drive demand. An app pop-up letting customers know wait times will be longer if they order in an hour is a great way to proactively manage the influx you can prepare for with confidence.

"The granularity and diversity of PredictHQ's event categories has helped us get the full story, enabling us to identify and understand demand within individual neighborhoods at scale."
Favor's Head of Data Science
Kevin Johnson

Sunday 27 Feb	Monday 28 Feb	Tuesday 1 Mar	Wednesday 2 Mar	Thursday 3 Mar	Friday 4 Mar	Saturday 5 Mar
Chicago Dental Society Midwinter Meeting	NHL - Chicago Blackhawks vs St. Louis Blues	Logan Square Indoor Farmers Market	Logan Square Indoor Farmers Market	Logan Square Indoor Farmers Market	NHL - Chicago Blackhawks vs Edmonton Oilers	Milwaukee Bucks vs Chicago Bulls
LMT LAB DAY Chicago	Chicago Theatre Week	Cordae with Justine Skye	BakingTech Conference	Marquette Golden Eagles vs DePaul Blue Demons	Logan Square Indoor Farmers Market	Logan Square Indoor Farmers Market
Memphis Grizzlies vs Chicago Bulls	Logan Square Indoor Farmers Market	First Day of Women's History Month	Come From Away (Chicago)	Retrofit USA	BakingTech Conference	Lane 8
Chicago Theatre Week	St. John's Red Storm vs DePaul Blue Demons	Isra and Mi'raj	OneUs	BakingTech Conference	Alvin Ailey Dance Theater	Get the Led Out (Rescheduled from March 6, 2021
		First Day of	Ash Wednesday			

STEP 5: SECURE A FORECAST-GRADE EVENT DATA SOURCE

While each company has their own requirements and goals, the way PredictHQ customers use our data falls into three categories:

1.Visibility: empower your end users such as hotel managers, store or area managers, driver partners or revenue managers to know about impactful events so they can decide what action to take in response, or to better trust and respond to directions from head office. As the pandemic blew demand patterns to pieces, this is increasingly being viewed as a must-have source of insight.

2. Integration: factor events into existing business intelligence platforms and processes to make your planning or forecasting real-world aware. This is a low-code solution that ensures you are tapping into more of the impact of events, and is more feasible for organizations with more than five locations as it can help automate smarter decision making. This is our fastest growing approach to using our enriched and verified event data.

3. Machine-learning forecasting: ingest demand intelligence directly into your relevant machine learning models for better informed and more accurate forecasting at scale.

Whatever approach you choose, the PredictHQ team is ready to assist you to create your most accurate workforce strategies yet. Get in touch today.

UNIQUE FEATURES BUILT FOR THE ON-DEMAND INDUSTRY

PredictHQ has a series of unique features built specifically for our on-demand customers, including some unique core features for all our customers originally requested by on-demand customers.

Predicted Attendance

Every attended event in PredictHQ's systems is assigned a verified predicted attendance volume, so your teams or models can instantly understand the incoming impact of these events. This is important becasue attendance and venue information are commonly missing from the 350+ event data sources we use.

Predicted attendance is a series of complex data science models that use natural language processing to analyze event titles, descriptions, and times. It also draws on historical ticket sales, performer information and more.

Predicted attendance is essential both for identifying which events are relevant to you, but also identifying the cumulative total of smaller events that can combine for great impact.

Predicted End Times

Most event sources will give you a start time, but many won't give you an end time. Yet this detail is especially important for on-demand companies. Mobility and transport companies need to know when to turn up, and on-demand delivery groups need to know which locations to avoid sudden surges in traffic and congestion

Live TV Broadcasts

A huge driver of on-demand grocery, hot meal and alcohol deliveries is sports. PredictHQ is the only source of future TV viewership predictions, which we do at the county level so you can ensure you have enough stock, drivers and partner restaurants online and ready to go.

Polygons

As explored throughout this report, not all events happen at one location, so we offer polygons for severe weather events, parades, marathons and school holidays so you can instantly and accurately see where these events will have impact, and which areas you should avoid for faster deliveries.