

# LINKNYC: UNDERSTANDING ENGAGEMENT, EQUITY, AND 5G EXPANSION ACROSS NYC



By Ayema Qureshi & Ibrahima Diallo



# Meet the Team



**Ayema  
Qureshi**

PM & Data Analyst



**Ibrahima  
Diallo**

Data Analyst & Epic  
Coder

# How LinkNYC Evolved (2015–2025)

2015-2016

## Pilot & Launch

The *goal*: replace old payphones with free public Wi-Fi kiosks that also support digital ads.

Roughly 500 kiosks were installed in 2016

2017-2018

## Rapid expansion

The biggest wave of installations happened in 2017 — over 900 kiosks were added citywide.

Expansion focused on Manhattan, Brooklyn, and Queens — areas with high ad visibility.

2019-2021

## Lorem Ipsum Text

Installations slowed significantly after 2018 due to infrastructure costs and public feedback (privacy, screen brightness, etc.).

2022-2025

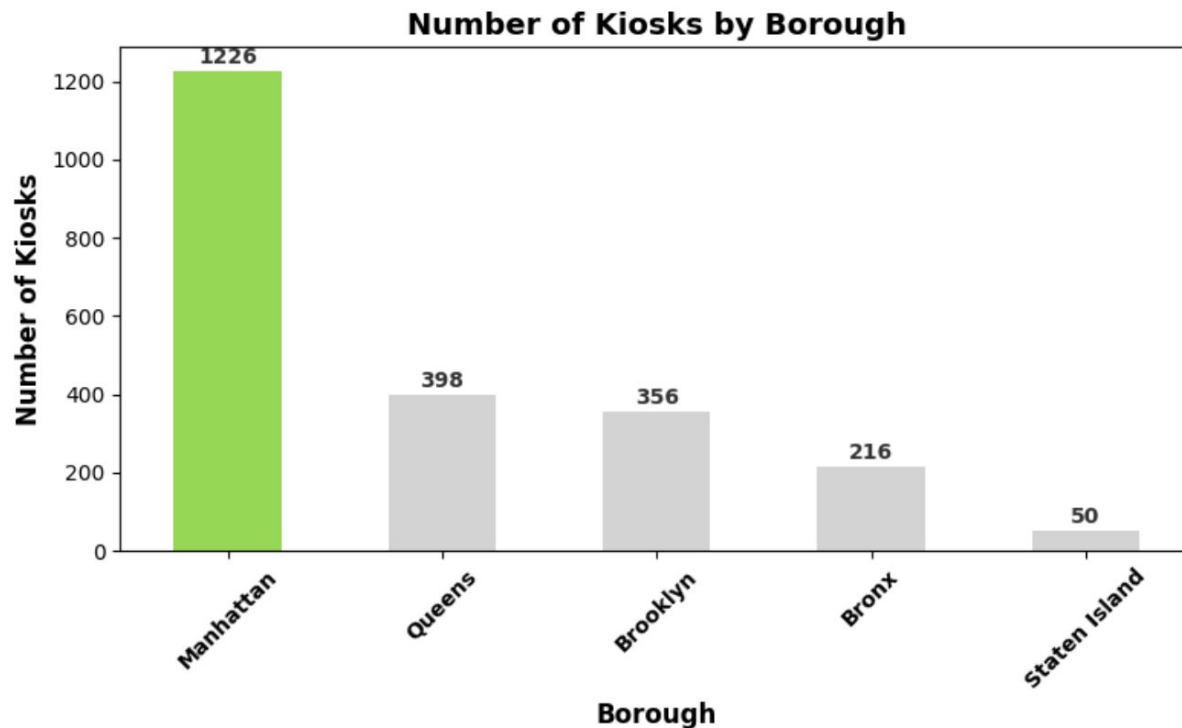
## Lorem Ipsum Text

Link5G expansion — small batches of new kiosks are being installed, mostly in **outer boroughs**, to improve equity in digital access.

# **BUSINESS QUESTION:**

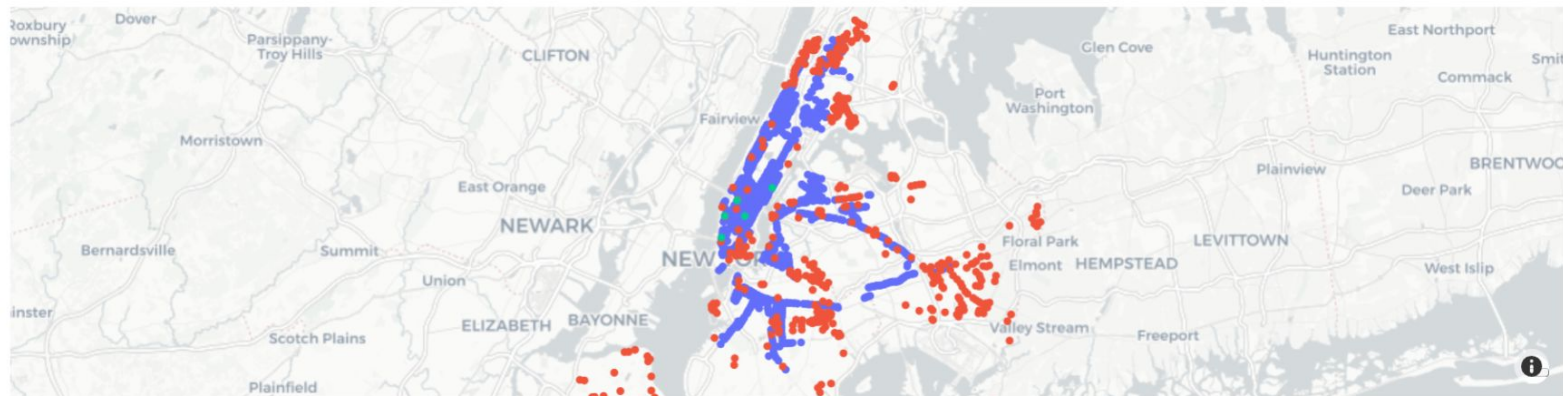
How has engagement with LinkNYC kiosks — especially Link5G — varied across seasons and quarters since July 2022, and what patterns can help the City optimize ad visibility and sponsorship strategies while ensuring access remains equitable across boroughs?

# EDA - LOCATIONS



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LinkNYC: Original, Replaced, and Link5G Kiosk Distribution



replacement\_status

- Original/Unchanged
- Link5G (New Install)
- Replaced Original

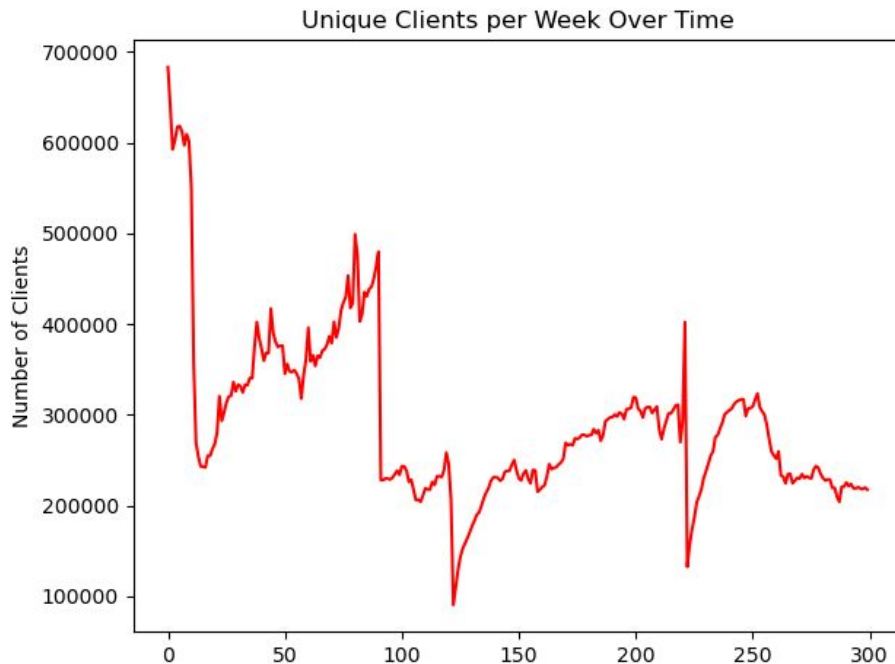
# EDA - WEEKLY USAGE

Weekly summaries include sessions, users, session length, and TB data

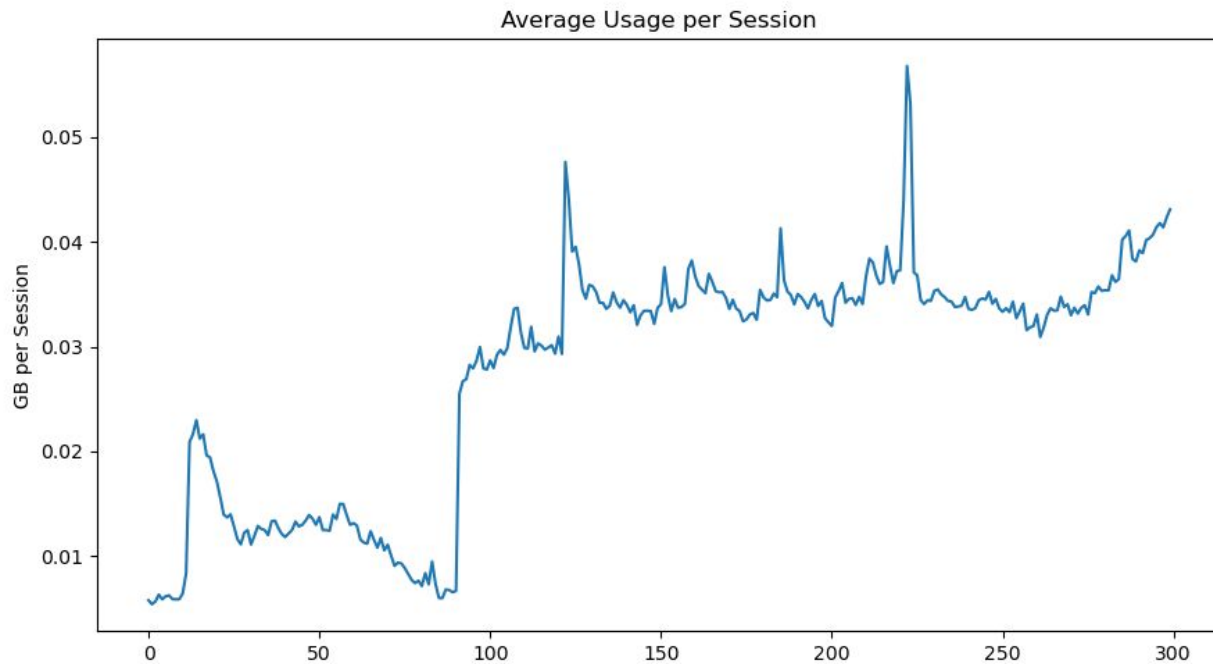
Standardized weekly time series

- (report ending → Sunday-based)
- Shows steady engagement with periodic spikes

External factors (e.g., tourism, weather) likely influence demand



# EDA - WEEKLY USAGE





# DATA PREPARATION & NORMALIZATION

Calculated new features:

- $\text{GB\_per\_session} = (\text{downloaded} + \text{uploaded terabytes} \times 1000) / \text{sessions}$
- $\text{sessions\_per\_user} = \text{sessions} / \text{unique users}$

Applied percentile thresholds (75th percentile) to identify weeks of high activity and strong engagement, ensuring consistency across varying usage levels.

Filtered dataset to focus on the post-2022 period, when Link5G kiosks began rolling out — removing older data and cumulative fields (like total bandwidth/sessions) that could distort week-level patterns.

# KPIS



KPI	What It Measures	Why It Matters
● <b>Activation</b>	When LinkNYC sees high weekly activity (75th percentile for users + sessions).	Shows <i>reach</i> — how many people connect and when volume peaks.
● <b>Conversion</b>	High-quality, heavy-usage sessions (GB/session $\geq 0.035$ ).	Captures <i>depth</i> of engagement — when users stay long enough for ads to matter.
● <b>Retention</b>	Continuous engagement (2+ active weeks within 4-week window).	Reflects <i>consistency</i> — do users keep returning week to week?
● <b>Experience / Quality</b>	GB/session and Sessions per User combined.	Measures <i>interaction intensity</i> — whether use is meaningful, not just frequent.

# FEATURE ENGINEERING

## **GB per Session:**

Measures average data used per connection (depth of engagement).

Distinguishes between light browsing vs. streaming-heavy use.

Tied to Conversion & Experience KPIs, shows ad visibility potential.

## **Sessions per User:**

Tracks how often users return week to week.

Highlights loyalty vs. one-time usage.

Feeds into Retention KPI — signals consistent audience behavior.

## **Heavy-Usage Week Flag:**

Marks weeks above the 75th percentile of engagement.

Separates casual from meaningful usage.

Used to define Activation: Conversion funnel stages.

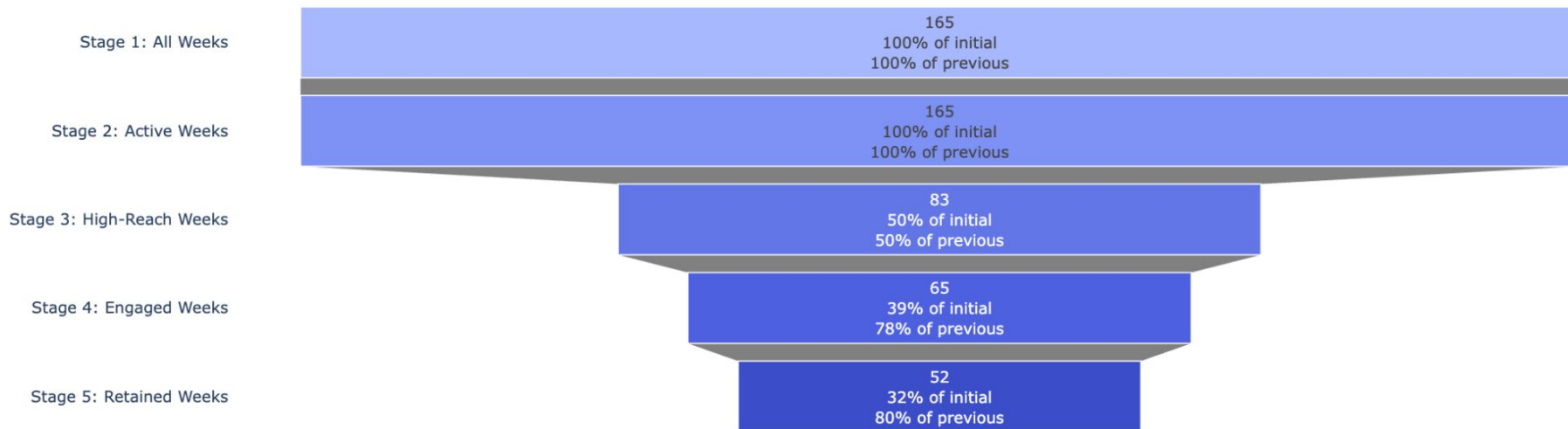
## **Seasonal Interaction (Summer x Heavy Usage):**

Tests if summer months drive higher engagement.

Helps plan ad timing and sponsorship pushes during peak seasons.

# FUNNEL ANALYSIS

5G LinkNYC True Engagement Funnel: Activity -> Retention



# COHORTS, RETENTION & EQUITY

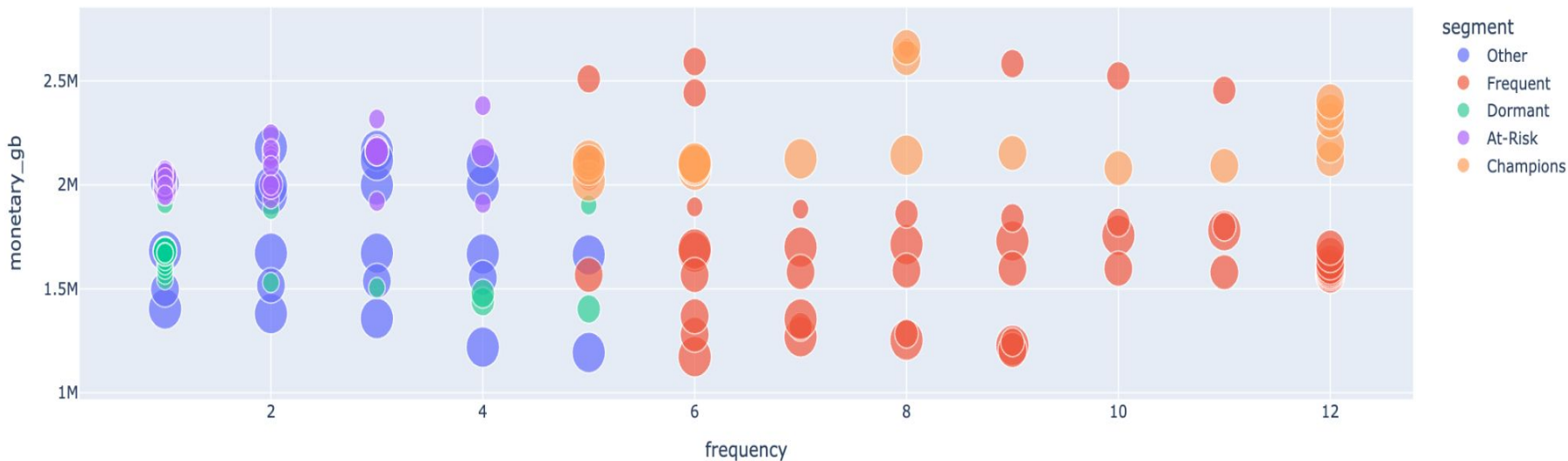
- Tracked how high-engagement weeks performed over time (W1–W4).
- ~80% of heavy-usage weeks stayed active the next month — showing steady habits.
- Consistent engagement = dependable ad visibility.
- Link5G rollout expanded access beyond Manhattan into outer boroughs.
- Engagement still follows population density — future joins could show outreach impact.



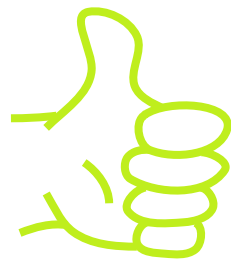






# RISKS & ROLLOUT PLAN



Data Limitations: Aggregated usage data — no kiosk-level joins yet

Equity Risk: Over-favoring high-performing zones may deepen access gaps

Rollout Plan:

- Pilot ad placements by RFM tier (1 quarter)
- Track ROI + engagement shifts
- Rebalance investments across boroughs for equity

**THANK YOU!**

