

Is Competition Only One Click Away?

The Digital Markets Act Impact on Google Maps

Louis Pape, Télécom Paris, Institut Polytechnique de Paris

Michelangelo Rossi, HEC Paris and CESifo

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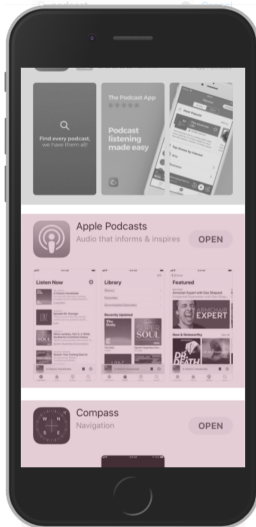
Introduction

Increasing Scrutiny of GAFAM's Market Power



Introduction

Favoring Own Products: Apple



If you opened the App Store on an iPhone in May 2018 and typed “**podcast**” in the search box, you would have seen something like this.

The first result (after an **ad**) would have been an **app made by Apple**: Apple Podcasts.

The next result would have been Apple's Compass app.

Introduction

- Increasing scrutiny and criticism of GAFAM's market power
 - Accusations of favoring own products in online sites and marketplaces
 - Allegations based on impact of search result presentation on consumer behavior
 - GAFAM's counter-argument: “**competition is one click away**”
- Platform design choices do not prevent users from seeking the best product

This Paper

- Examines impact of Google search result presentation on search volumes and online traffic
- Focus on changes to comply with the Digital Markets Act (DMA) in the EU
- **Study design:**
 - Difference-in-differences (DiD) approach (EU vs. non-EU countries)
- **Results:**
 - Significant increase in `maps` and `google maps` queries in the EU
 - Google Maps increasingly accessed through organic searching
 - **No change in traffic to Google Maps**
 - But **less time spent per visit**
 - No increase in traffic to Bing Maps and Google.com

Regulatory Context: the DMA and its Implementation

- The EU **Digital Markets Act (DMA)** aims to ensure fair and open digital markets.
- Aims to **prevent anti-competitive practices** such as self-preferencing from gatekeepers.
- Six gatekeepers must **comply with the DMA by March 2024**.
- Alphabet, as a gatekeeper for mapping services, adjusted its platform:
 - **Removed direct access** to Google Maps (desktop only) from search results.
 - No maps signet nor clickable maps.

The DMA Impact on Google Search Results

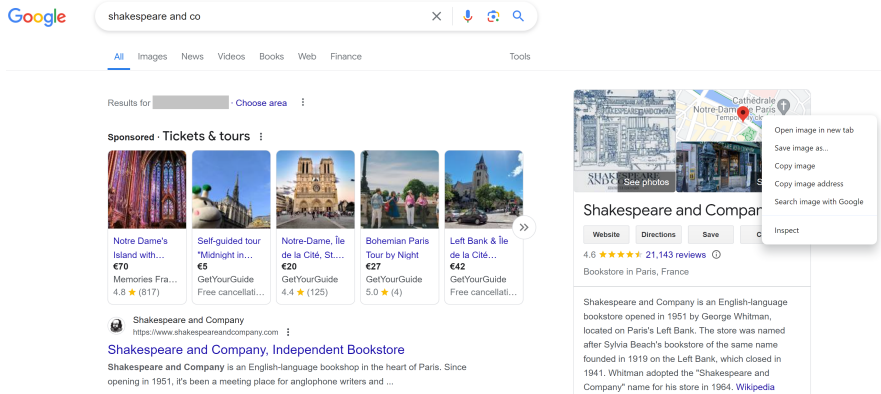


Figure: Snapshot of Google results for the query `shakespeare and co`. from France (July 3, 2024).

The DMA Impact on Google Search Results

- **January 2024: Google changed search page** design in the EU.
 - Map is no longer clickable for location-based queries.
 - Users need to search for mapping services separately.
 - Google's **one-click advantage** in the online mapping services is over.
 - ↑ Users are more likely to discover alternative map services.
 - ↓ Users are likely to be redirected to Google.com or Google Maps.

Data

Google Trends and Glimpse Data

- Weekly data from Google Trends from Jan. 2023 to Dec. 2024, across 52 countries.
 - *Treated*: All EU countries (25), except Cyprus and Malta
 - *Control*: Non-EU Countries: European non-EU (13); OECD North Hemisphere (9); Other OECD and BRICS (5)
- **Google Trends**: normalized web-search intensity for specific search queries over time
- **Glimpse**: estimated search volumes
 - convert query rate changes into query volumes
- Six queries: `maps`, `google maps`, `apple maps`, `bing maps`, `mappy`, and `openstreetmap`

Difference-in-Differences Design

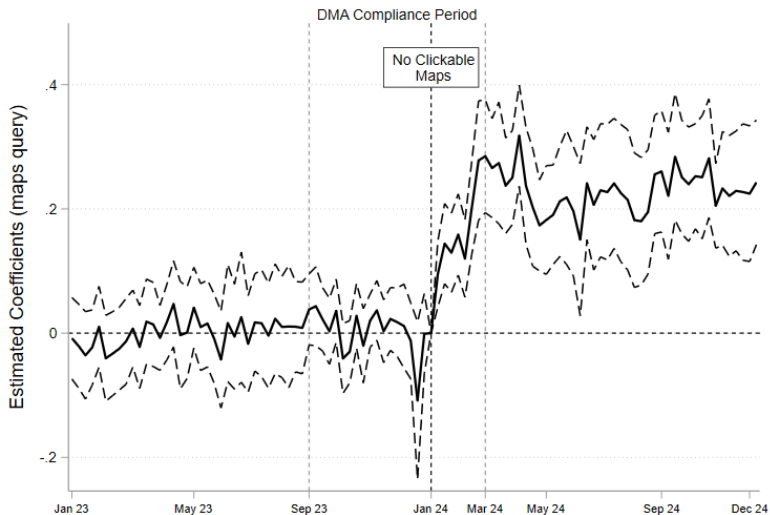
$$\ln(Y_{it}) = \alpha_i + \omega_t + \gamma_{\text{DMA}} EU_i \times post_t^{\text{DMA}} + \varepsilon_{it}$$

- Y_{it} denotes the search volumes for the query of interest for country i in week t .
- α_i and ω_t are country and time fixed effects (at the week level).
- γ_{DMA} is our target treatment effect parameter.

Robustness Checks: Different controls, Synthetic Control, and Triple-Diff.

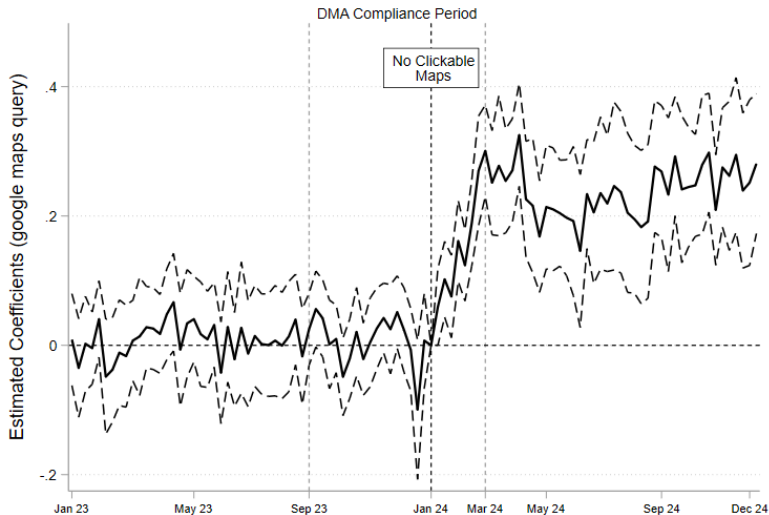
EU Users search MORE maps

Compared to European Non-EU Countries



EU Users search MORE google maps

Compared to European Non-EU Countries



EU Users search MORE maps and google maps

Table: Difference-in-Differences: log of Google Search Volumes for Queries maps and google maps

	(maps)			(google maps)		
	(1)	(2)	(3)	(4)	(5)	(6)
$EU \times post^{DMA}$	0.244*** (0.027)	0.233*** (0.030)	0.214*** (0.036)	0.244*** (0.028)	0.233*** (0.031)	0.212*** (0.036)
Country FEs	✓	✓	✓	✓	✓	✓
Week FEs	✓	✓	✓	✓	✓	✓
Control Contries	All	North Hem.	Only Euro	All	North Hem.	Only Euro
R^2	0.997	0.997	0.997	0.995	0.995	0.995
N	5,304	4,794	3,876	5,304	4,794	3,876
Mean Dep. Var.	12.795	12.731	12.511	12.150	12.116	11.923

Google Searches for Mapping Services

Before the DMA

Table: Google Search Volumes and Shares before January 2024

	EU		Non-EU	
	Search Volumes	Share (%)	Search Volumes	Share (%)
Before DMA (Jan 23 - Dec 23)				
apple maps	1,943	.16	9,223	.32
bing maps	10,780	.9	6,804	.23
google maps	311,485	26.24	923,512	32.25
mappy	92,609	7.8	742	.02
maps	768,390	64.74	1,921,755	67.11
openstreetmap	1,609	.13	1,148	.04

Google Searches for Mapping Services

After the DMA

Table: Google Search Volumes and Shares after January 2024

After DMA (Jan 24 - Jun 24)	EU		Non-EU	
	Search Volume	Share (%)	Search Volume	Share (%)
apple maps	2,832	.17	10,526	.37
bing maps	12,526	.76	6,025	.21
google maps	398,166	24.3	819,681	29.39
mappy	82,458	5.03	699	.02
maps	1,140,828	69.62	1,950,741	69.94
openstreetmap	1,703	.1	1,256	.04

Limited Effect for Google Maps competitors



⚡ QUICK READ • July 24, 2024

Apple Maps on the web launches in beta



Today, [Apple Maps on the web](#) is available in public beta, allowing users around the world to access Maps directly from their browser.¹

Now, users can get driving and walking directions; find great places and useful information including photos, hours, ratings, and reviews; take actions like ordering food directly from the Maps place card; and browse curated Guides to discover places to eat, shop, and explore in cities around the world. Additional features, including Look Around, will be available in the coming months.

Figure: Beta Apple Maps on the web for all users (July 24, 2024)

Effect on Traffic Volume

Semrush Data

- **Monthly data** on online traffic per country based on anonymized **clickstream data**
 - Spanning from January 2023, to Dec 2024, across 52 countries
 - Sum traffic from www.google.com/maps and www.google.fr/maps for France
- Focus on **extensive and intensive margins**

Large Increase in Desktop Organic Search

Table: Desktop Visits for www.google.com/maps - Direct and Organic Search

	(Direct)			(Organic Search)		
	(1)	(2)	(3)	(4)	(5)	(6)
$EU \times post^{DMA}$	0.019 (0.069)	0.063 (0.075)	0.063 (0.106)	0.329*** (0.102)	0.422*** (0.103)	0.401*** (0.126)
Country FEs	✓	✓	✓	✓	✓	✓
Month FEs	✓	✓	✓	✓	✓	✓
Control Contries	All	North Hem.	Only Euro	All	North Hem.	Only Euro
R^2	0.978	0.978	0.971	0.963	0.966	0.960
N	1,248	1,128	912	1,248	1,128	912
Mean Dep. Var.	14.565	14.517	14.270	12.603	12.532	12.283

Google Maps Is Not Losing Visits

Table: Difference-in-Differences: log of Visits for `www.google.com/maps` - Desktop and Mobile

	(Visits Desktop)			(Visits Mobile)		
	(1)	(2)	(3)	(4)	(5)	(6)
$EU \times post^{DMA}$	0.077 (0.066)	0.122* (0.072)	0.122 (0.099)	0.031 (0.082)	0.022 (0.096)	0.094 (0.144)
Country FEs	✓	✓	✓	✓	✓	✓
Month FEs	✓	✓	✓	✓	✓	✓
Control Contries	All	North Hem.	Only Euro	All	North Hem.	Only Euro
R^2	0.980	0.980	0.975	0.883	0.880	0.839
N	1,248	1,128	912	1,248	1,128	912
Mean Dep. Var.	14.867	14.819	14.569	13.940	13.873	13.566

Analysis

Extensive Margin

- Most people go to Google Maps directly by the address bar
- End of clickable maps affects small share who search more

→ No change in overall traffic

Implications:

- No great loss for Google
- No great gain either

But, there is **more to the story...**

Intensive Margin

Has usage of Google Maps changed?

Definitions:

- Average duration (in seconds) spent on a domain name
- Bounce rate : share of users spending less than 10 seconds on domain

Intensive Margin:

- If users search more, do they spend less time to compensate?
- If users search more, do they stay longer to compensate?

People are spending less time on Google Maps

Table: Difference-in-Differences: log of Duration and Bounce Rates for `www.google.com/maps`

	(Duration)			(Bounce Rate)		
	(1)	(2)	(3)	(4)	(5)	(6)
$EU \times post^{DMA}$	-0.051*** (0.012)	-0.052*** (0.013)	-0.031* (0.016)	0.169*** (0.045)	0.173*** (0.048)	0.121** (0.052)
Country FEs	✓	✓	✓	✓	✓	✓
Month FEs	✓	✓	✓	✓	✓	✓
Control Contries	All	North Hem.	Only Euro	All	North Hem.	Only Euro
R^2	0.905	0.912	0.830	0.855	0.852	0.823
N	1,248	1,128	912	1,248	1,128	912
Mean Dep. Var.	6.939	6.938	6.951	2.043	2.010	1.955

Analysis

Intensive Margin

- Reduction in time spent and increase in bounce rate
- Result of more time spent searching?
- Is search abandoned after using “Directions” button?

→ In any case, bad sign for Google

Also: no change in number of visitors or number of pages per visit

Conclusion

- DMA-induced design change increased search activity for **maps** and **google maps**
- Increased search volume directed back to Google Maps
- No evidence of search for competitors
- Limited migration to alternative mapping services

Current DMA design change:

- does not *enhance* competition
 - does not significantly *hurt* Google
 - Higher search costs for users and less time spent per visit
- **In the long run, gradual shift to alternatives?**