The World's Largest Automotive Study on Instagram

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Data Science Meetup Münster

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Overview

In Germany, the automobile industry alone spends almost 2B Euros per year on advertisement.

Objective	Showcase how car brands win on Instagram.
Background	• Via **234** hashtags we identified **890** car accounts with at least **100K** followers. • Of these, **112** were found to be official brand accounts, further divided into **38** different brands. • Time window: 26 April – 24 May 2017.
Scope	131.599.539 Followers, 4.273 Postings, 276.654 Comments.

Data Acquisition

AUTO - BRAND   ⊕ NEW   ☑ EDIT   🗑 DELETE

AVG. FOLLOWER (GROWTH 4W)	AVG. SCORE	AVG. LIKE-FOLLOWER-RATIO ❓
13m (-4.46%)	46.2	1.50

LIST MEMBERS 94 / 1000   ⬇ DOWNLOAD AS EXCEL

SORT BY: NAME   **FOLLOWER**   GROWTH   LIKE-FOLLOWER-RATIO   SCORE

🅱	bmw	👥 12.3m (3.4%)	🖤 1.7%	📷 84	🗑 ☑
★	mercedesbenz	👥 9.7m (4.2%)	🖤 1.5%	📷 77	🗑 ☑
◎	audi	👥 8.3m (3.8%)	🖤 2.1%	📷 81	🗑 ☑
●	lamborghini	👥 7.9m (5.6%)	🖤 2.3%	📷 89	🗑 ☑
●	porsche	👥 7.5m (4.4%)	🖤 1.9%	📷 66	🗑 ☑
AMG	mercedesamg	👥 5.4m (3.8%)	🖤 1.3%	📷 65	🗑 ☑
Ψ	maserati	👥 5.0m (4.7%)	🖤 2.3%	📷 76	🗑 ☑
▲	jaguar	👥 4.7m (4.5%)	🖤 1.4%	📷 64	🗑 ☑
⬤	bugatti	👥 4.3m (5.3%)	🖤 2.2%	📷 79	🗑 ☑

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Followers

Number of accounts with more than 100K followers

Brand	Count
Mercedes	17
BMW	9
Audi	7
Chevrolet	6
Toyota	6
Jaguar	5
VW	5
etc.	
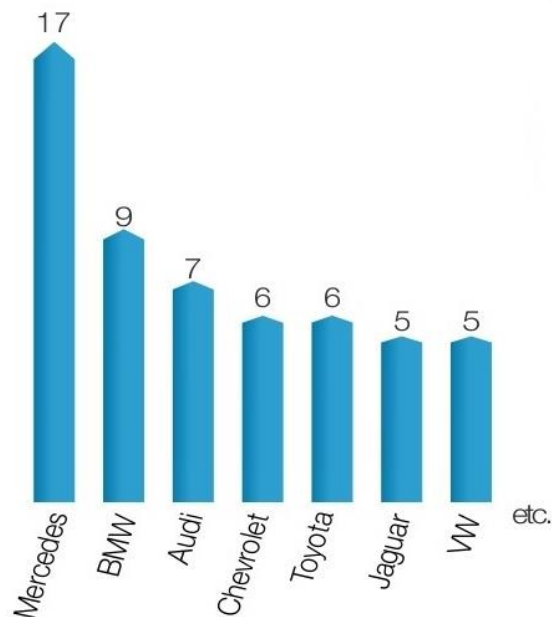
Number of accounts with more than 1M followers

Brand	Count
Mercedes	5
BMW	4
Jaguar	2
Ferrari	2
Mclaren	2
etc.	

Total Count Followers

- Mercedes — 22M
- BMW — 17M
- Audi — 9.6M
- Lamborghini
- Porsche
- Jaguar
- Maserati
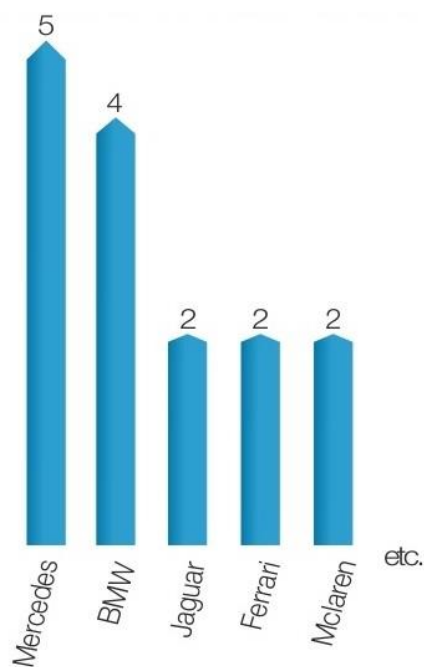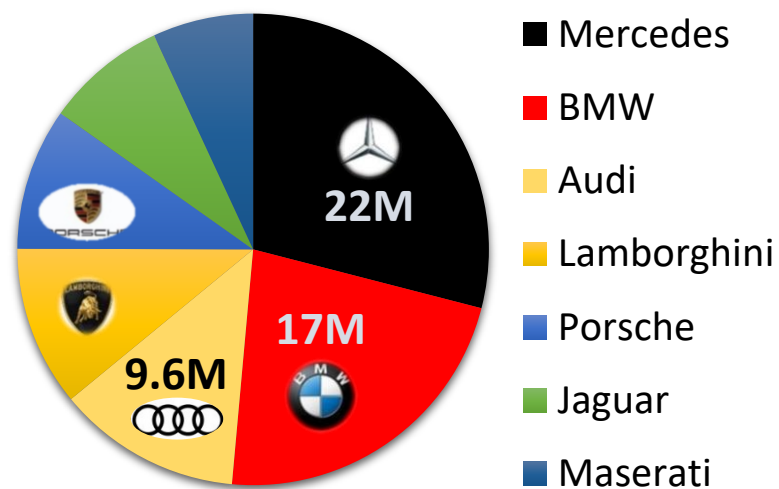
Follower Growth

PERCENTAGE-WISE

Brand	Growth
Ferrari	11.04%
Alfa Romeo	7.9%
Tesla	6.73%
Lamborghini	6.70%
Dodge	6.18%
Jeep	6.04%
VW	5.92%

BY ABSOLUTE NUMBERS

Number	Brand
913.179	Mercedes
726.306	BMW
557.179	Lamborghini
503.290	Ferrari
404.163	Audi
337.327	Porsche
296.997	Jaguar
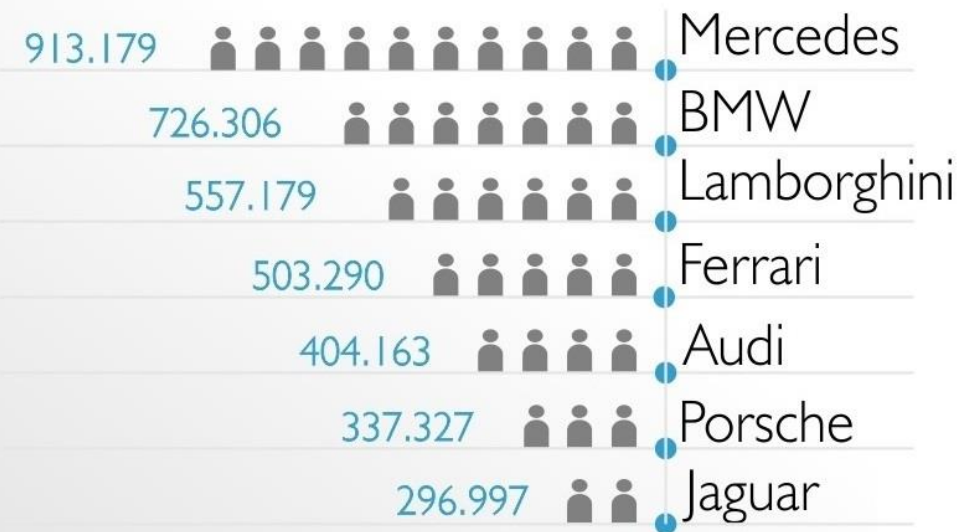
More Numbers

FROM POSTS TO COMMENTS AND LIKES

❤️ LIKES		✍️ POSTS		💬 COMMENTS	
Mercedes	49,670,073	Mercedes	1,133	Mercedes	84,637
BMW	25,244,460	BMW	485	BMW	43,635
Ferrari	6,828,053	Audi	344	Audi	13,365
Ford	5,897,363	Toyota	247	Mclaren	10,950
Nissan	5,525,024	Jaguar	181	VW	10,096
Audi	4,778,547	VW	160	Lamborghini	9,709
Toyota	4,709,552	Hyundai	139	Jaguar	8,761
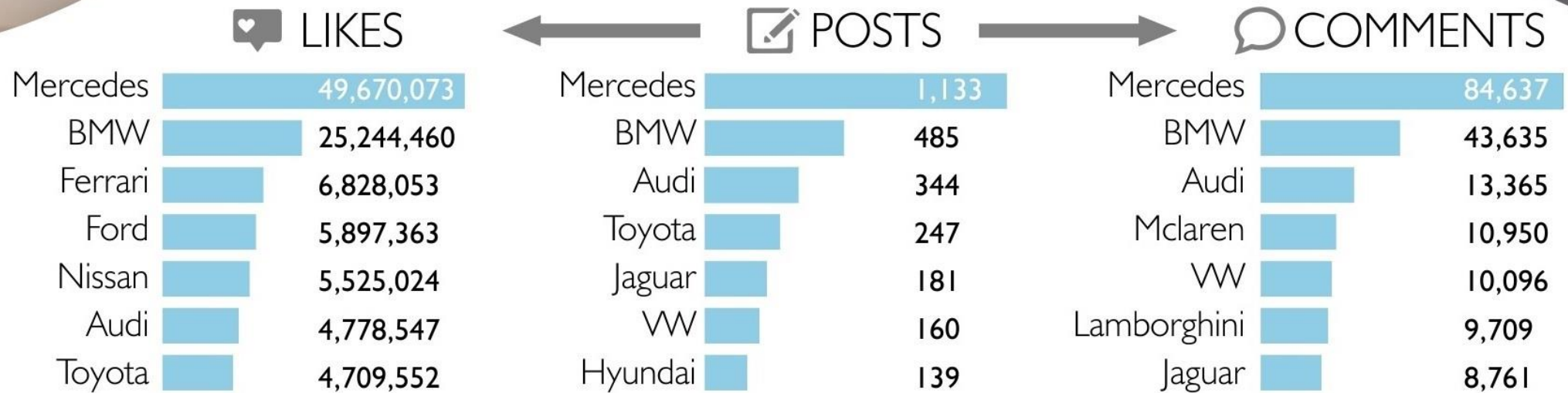
Better Metrics For The Win

Like Follower Ratio

Alfa Romeo	Dodge	Volvo	Ferrari	Bugatti	Tesla	Mini
3.25%	3.10%	2.96%	2.70%	2.70%	2.60%	2.30%

Comments Per Post

Tesla	Ford	Porsche	Bugatti	Audi	Lamborghini	Honda
776	474	473	464	390	325	286

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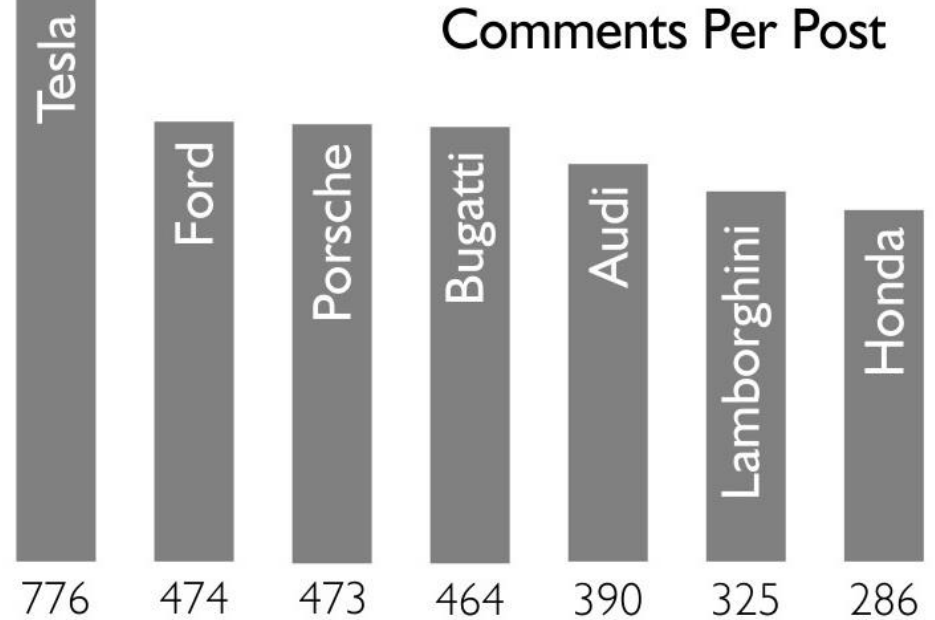
Effectivity and Efficiency

Total Follower Count, Absolute Follower Growth, Likes, Comments -> ``Effectivity´´

follower		absolute follower growth		likes		comments	
100000,00	0,10	500,00	0,10	10000,00	0,10	100,00	0,10
200000,00	0,30	1000,00	0,30	20000,00	0,30	200,00	0,30
500000,00	0,60	5000,00	0,50	50000,00	0,50	500,00	0,50
1000000,00	0,80	10000,00	0,60	100000,00	0,60	1000,00	0,60
2000000,00	0,95	20000,00	0,70	250000,00	0,75	2500,00	0,75
5000000,00	1,05	50000,00	0,80	500000,00	0,85	5000,00	0,85
10000000,00	1,15	100000,00	0,90	1000000,00	0,95	10000,00	0,95
30000000,00	1,20	250000,00	0,95	3000000,00	1,00	20000,00	1,00
		500000,00	1,00	6000000,00	1,05	40000,00	1,05
		1.500.000,00	1,05	15000000,00	1,10	80000,00	1,10
				45.000.000,00	1,15		

Follower Growth [%], Like to Follower Ratio, Avg. Comments per Post -> ``Efficiency´´

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Developing a Metascore
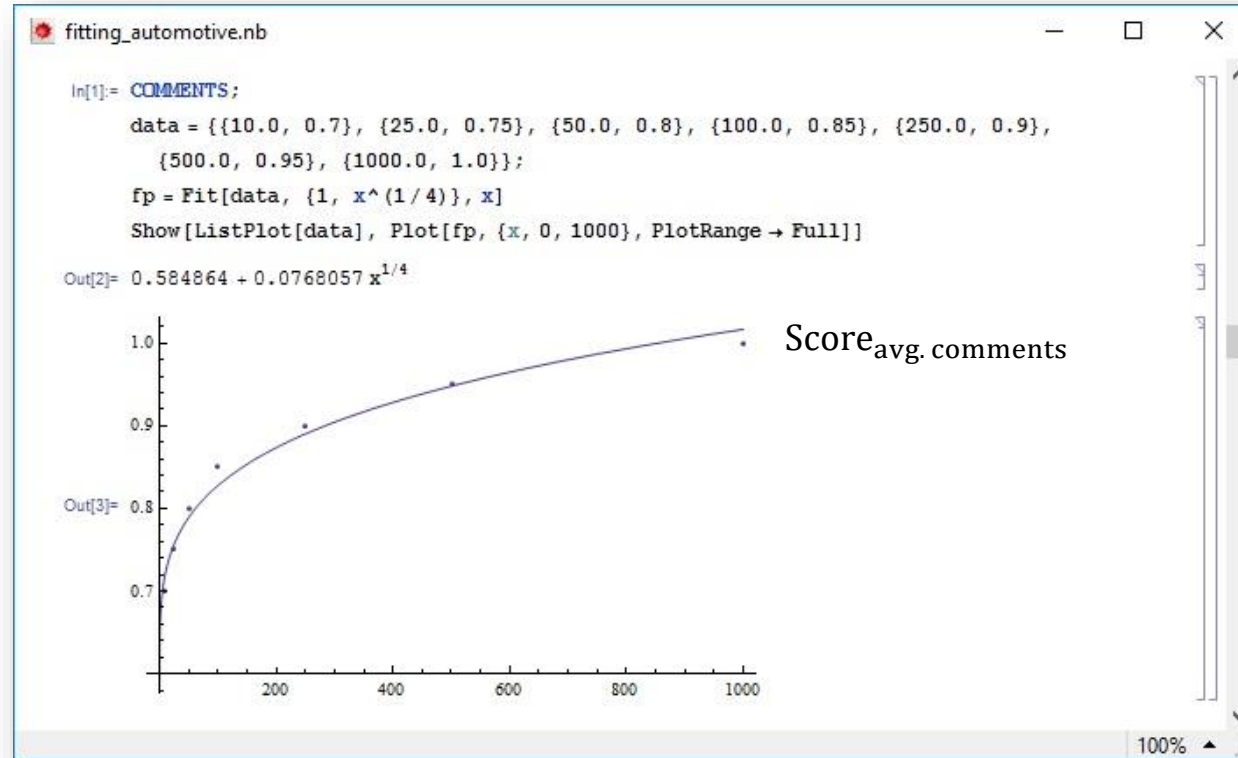
Score$_{\text{avg. comments}}$

$$\text{Effectivity} = \tfrac{1}{4}\big(\text{Score}_{\text{follower}} + \text{Score}_{\text{abs. growth}} + \text{Score}_{\text{likes}} + \text{Score}_{\text{comments}}\big)$$

$$\text{Efficiency} = \tfrac{1}{3}\big(\text{Score}_{\text{avg. comments}} + \text{Score}_{\text{rel. growth}} + \text{Score}_{\text{LFR}}\big)$$

$$\textbf{Metascore} = \textbf{Effectivity} + \textbf{Efficiency}$$

Metascore

Central Results

- German automotive manufacturers dominate the field. They combine more than 75% of the ~132M followers.

- Mercedes has the highest follower count of ~22M.

- Ferrari and Alfa Romeo have the highest percentages regarding follower growth (11% and 8%, respectively).
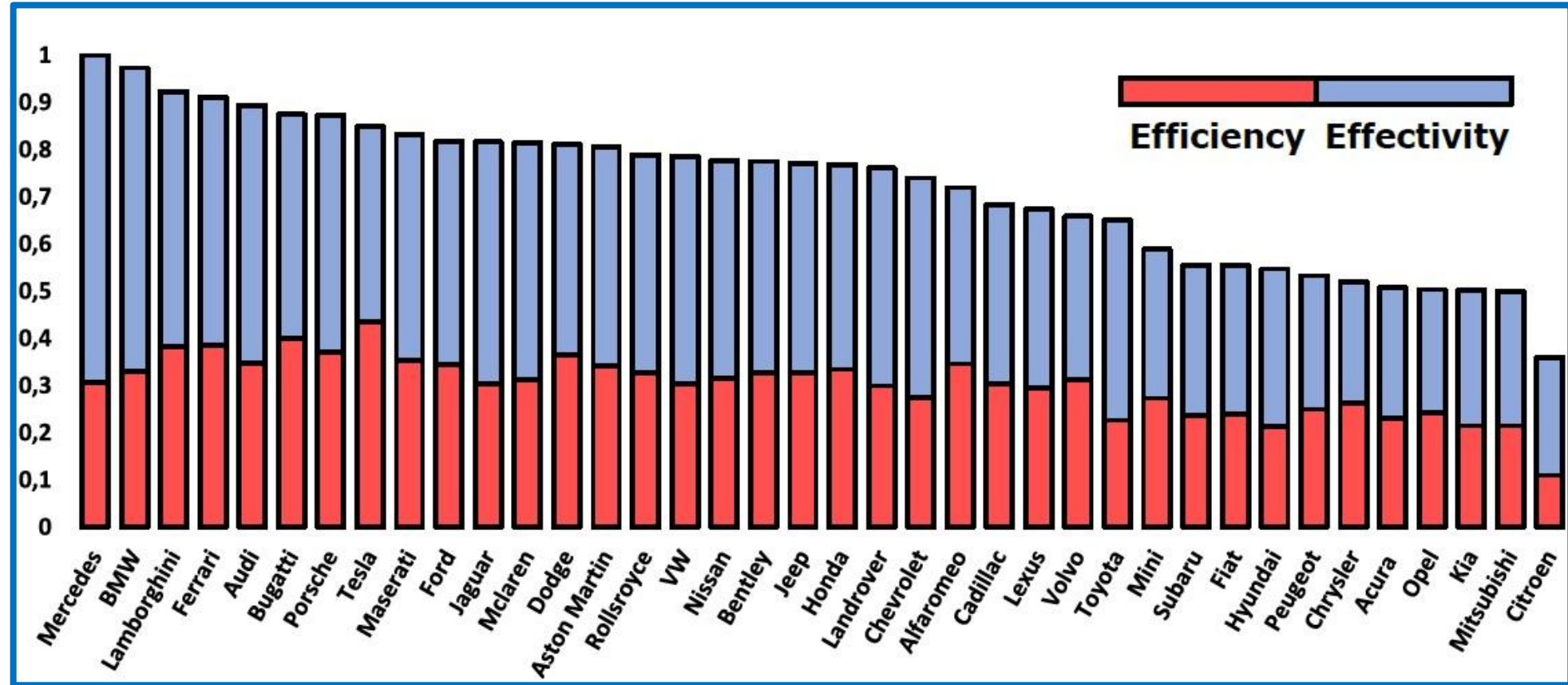
- Mercedes has the best Metascore, followed by BMW and Lamborghini.

- Tesla shows the highest efficiency, followed by Bugatti and Ferrari.

Hints on our Back-End

Instagram API

Via Proxies

Worker
Worker
Worker
Worker

Distribute Tasks

Celery Broker (RabbitMQ)

PostgreSQL:
Aggregate data, customer data

Elasticsearch Cluster:
Raw data such as counts on followers, posts, likes, hashtags

Django:
Web Framework

ELK Stack:
Customer metrics

Redis:
Caching back-end

Amazon S3 / CloudFront:
Backups, avatars / thumbnails
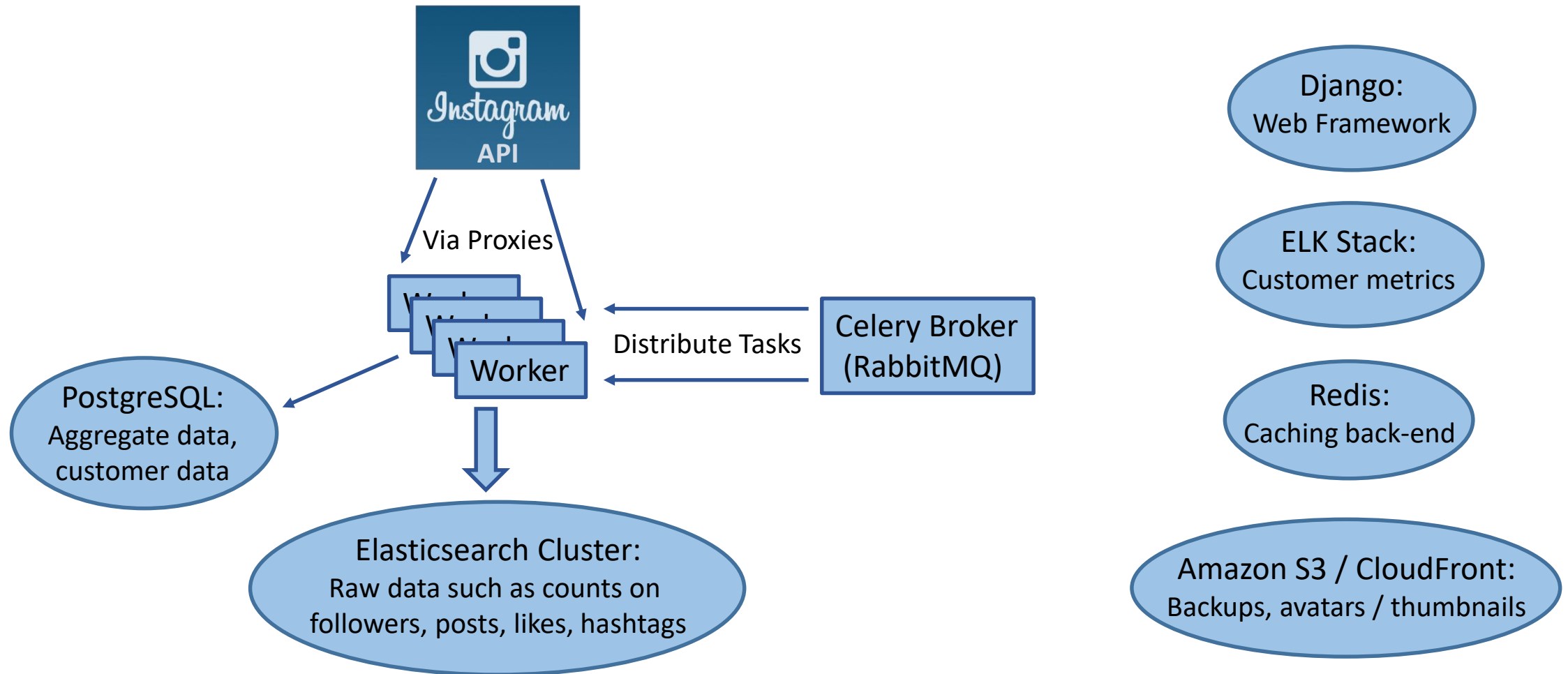
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