

Executive Summary I

- 1 We built a data capability from the ground up
- 2 Version beta of THE BRAIN is up and running. Best part, it is free!
- 3 Multiple API connections were coded and are now live
- 4 We have now a streamlined data architecture
- 5 Several cutting-edge machine learning models and strategies are being tested as both predictive and prescriptive analytics tools

Initial Goal I

Test a new capability whiten the brand to use emerging technologies (e.g. ai & big data) to enable more informed decision making across R&D, NPD & marketing.

APPROACH

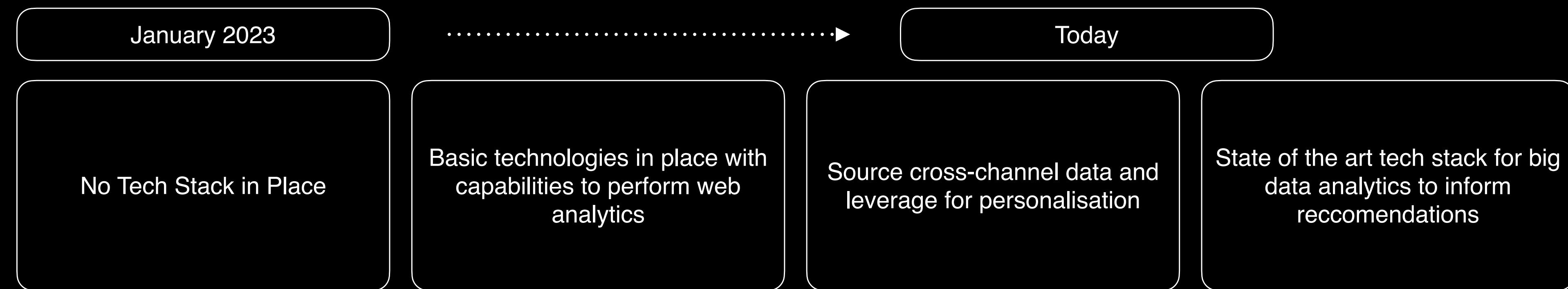
Identify available emerging technologies that are “right-sized” for start-up use.
Develop core competencies internally whiten the company in order to ask the right questions / analyse the data
Implement agile processes into the company that enable data & insights to help inform key decision making.

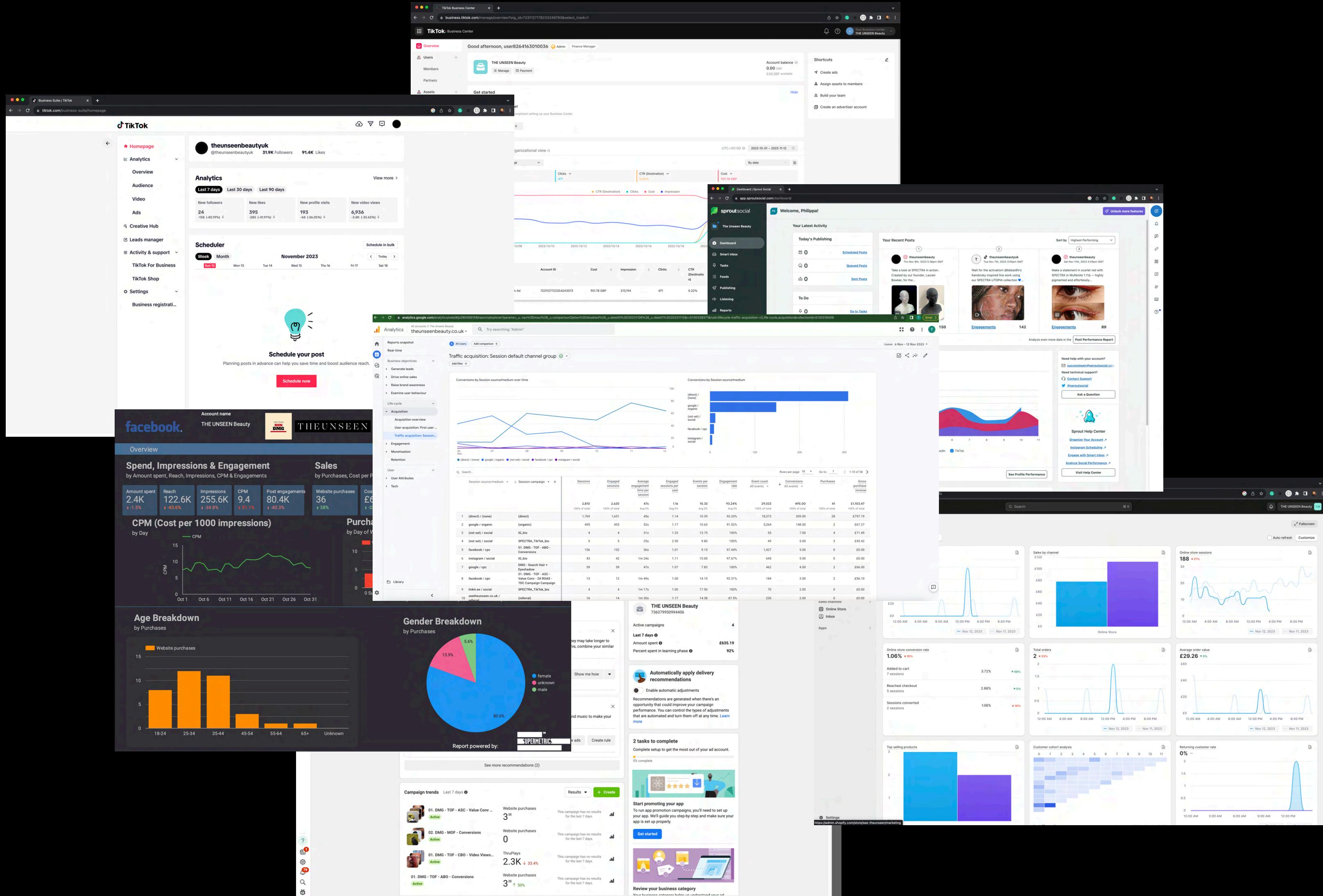
INITIATIVES FOR THE YEAR

Test & learn with technology & software that provides us with a competitive edge to better understand our community, our products (concept & technical) & our marketing positioning.

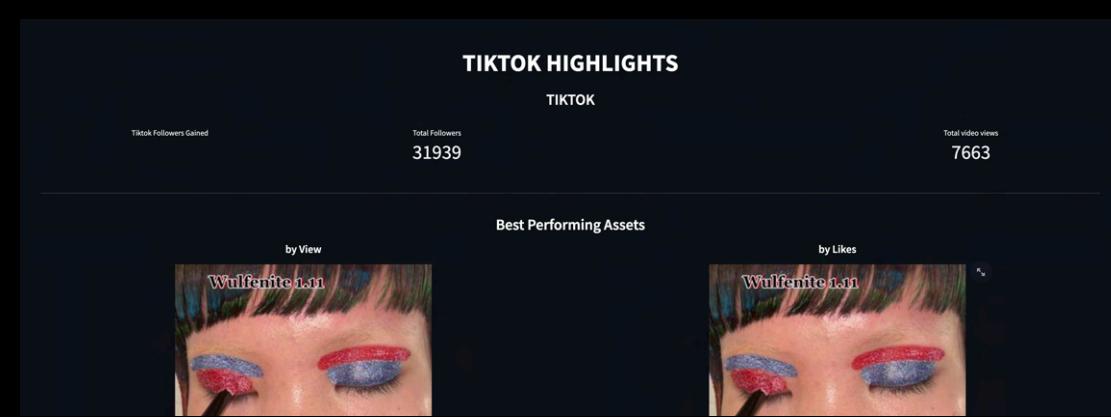
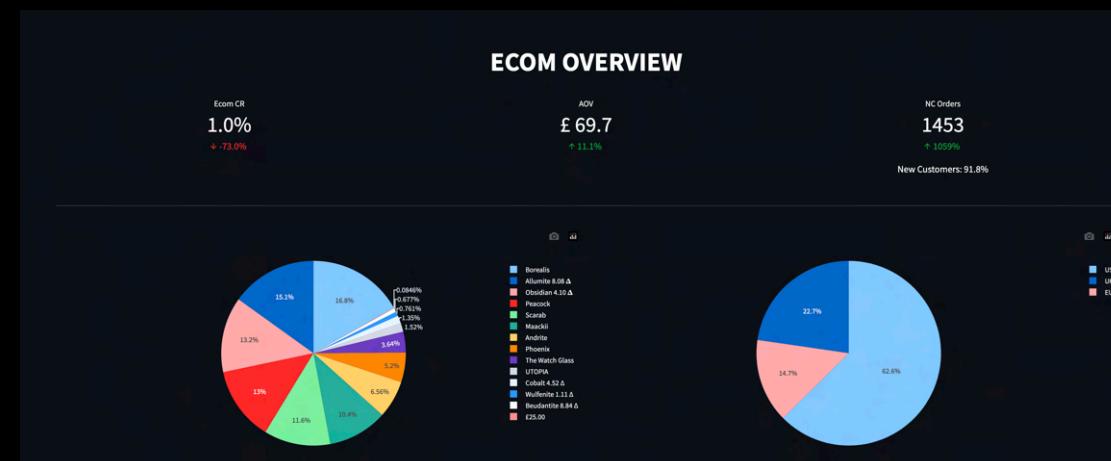
Initial Status

Core technology I

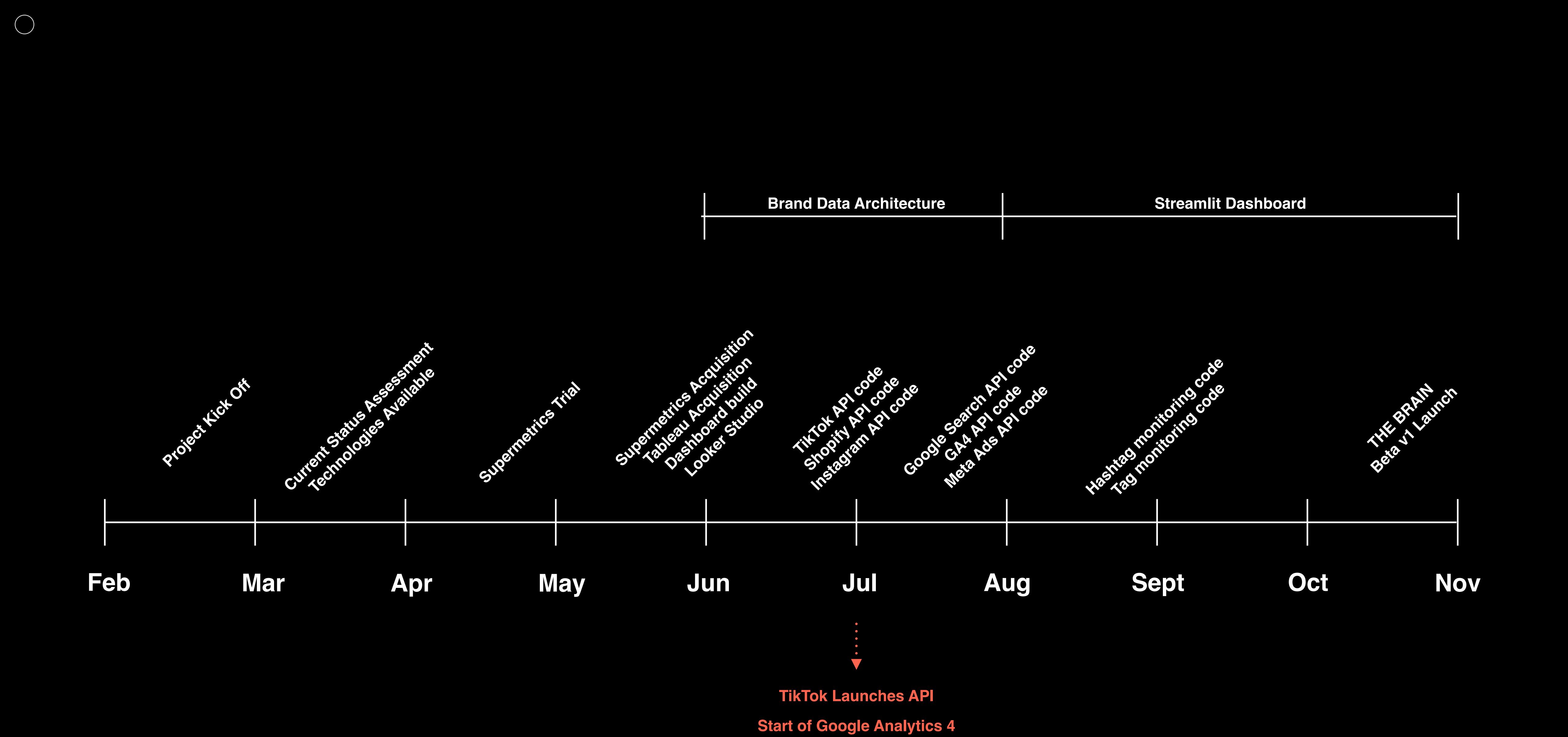




Current Status

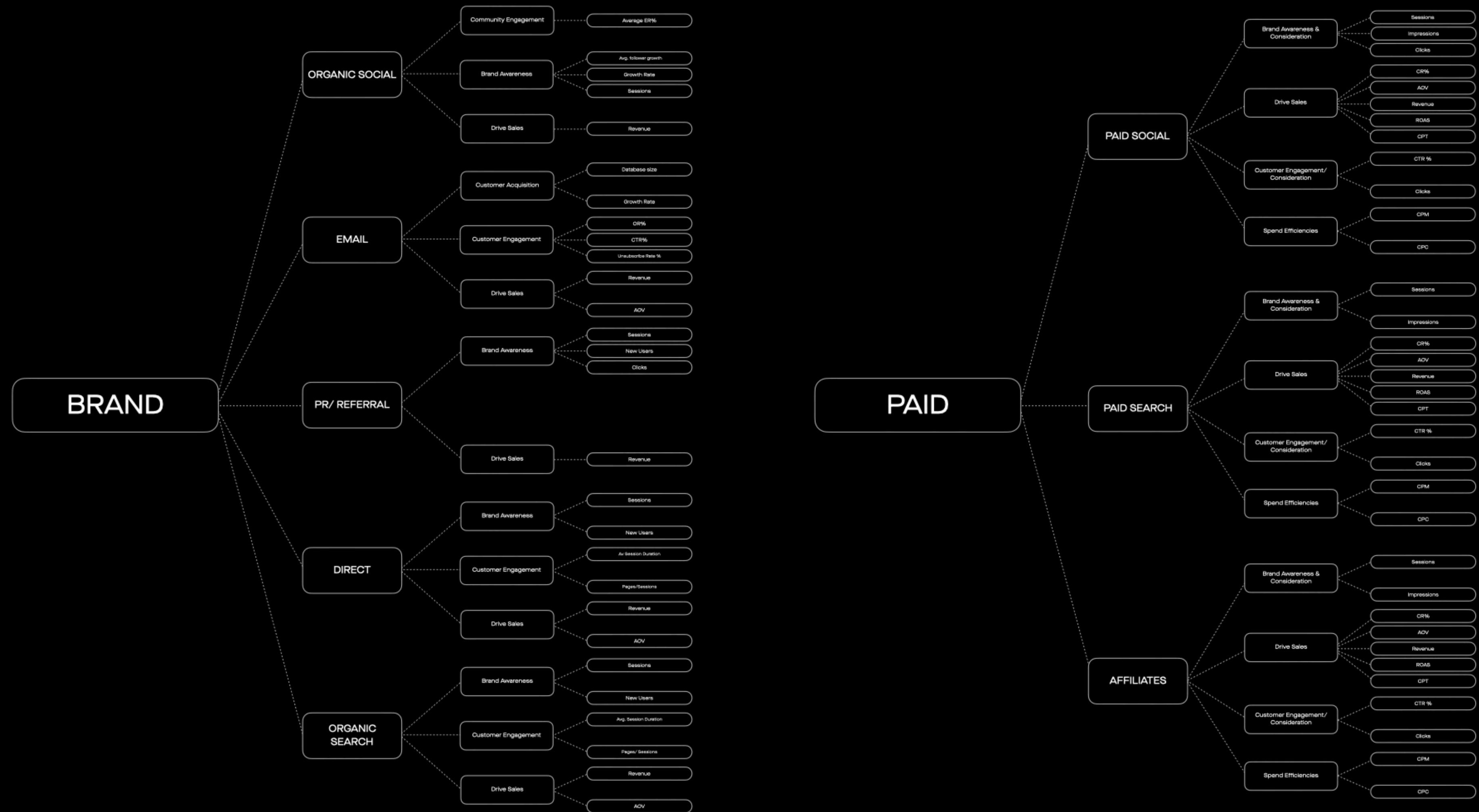


The journey so far

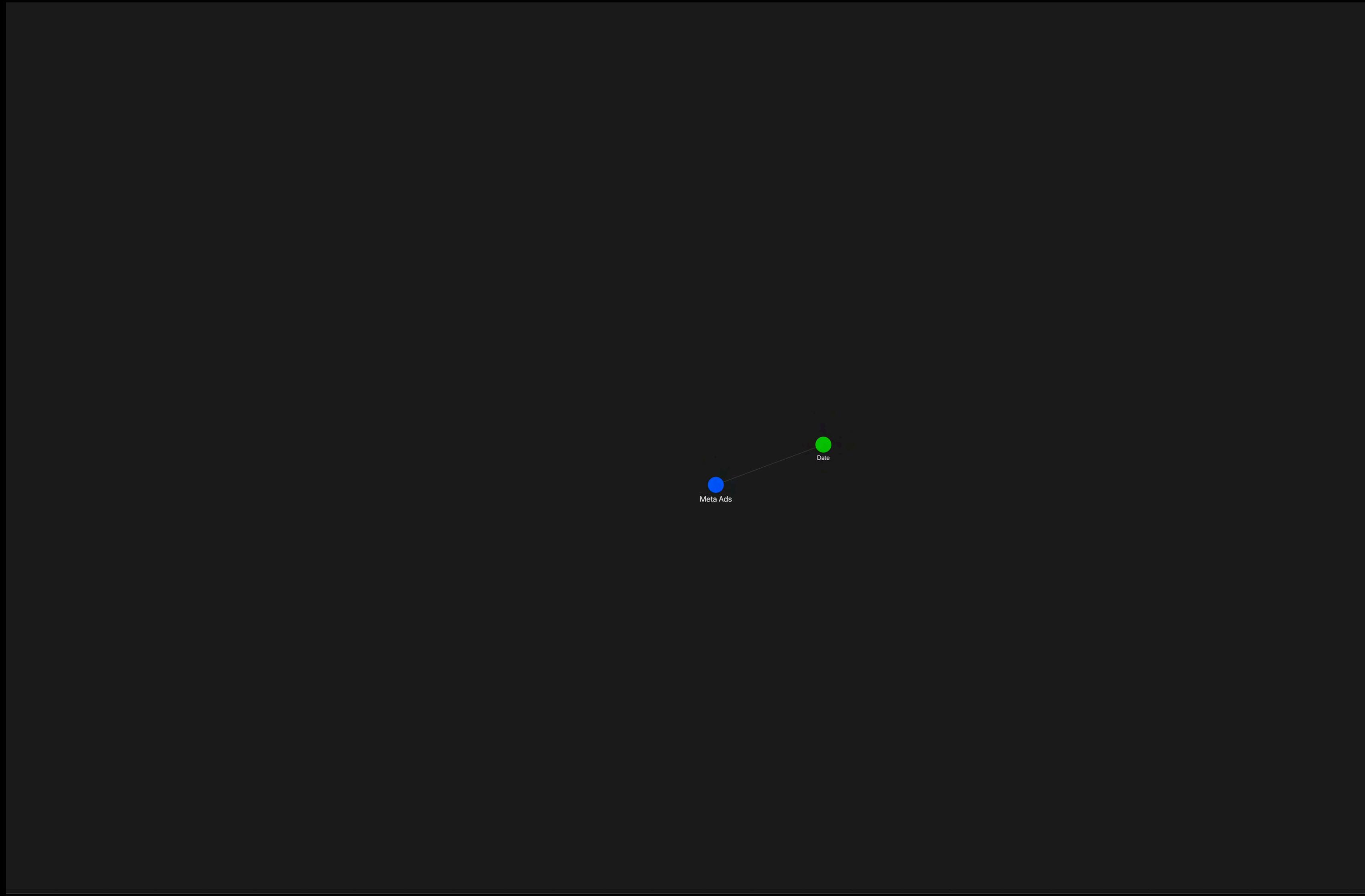


Brand Architecture

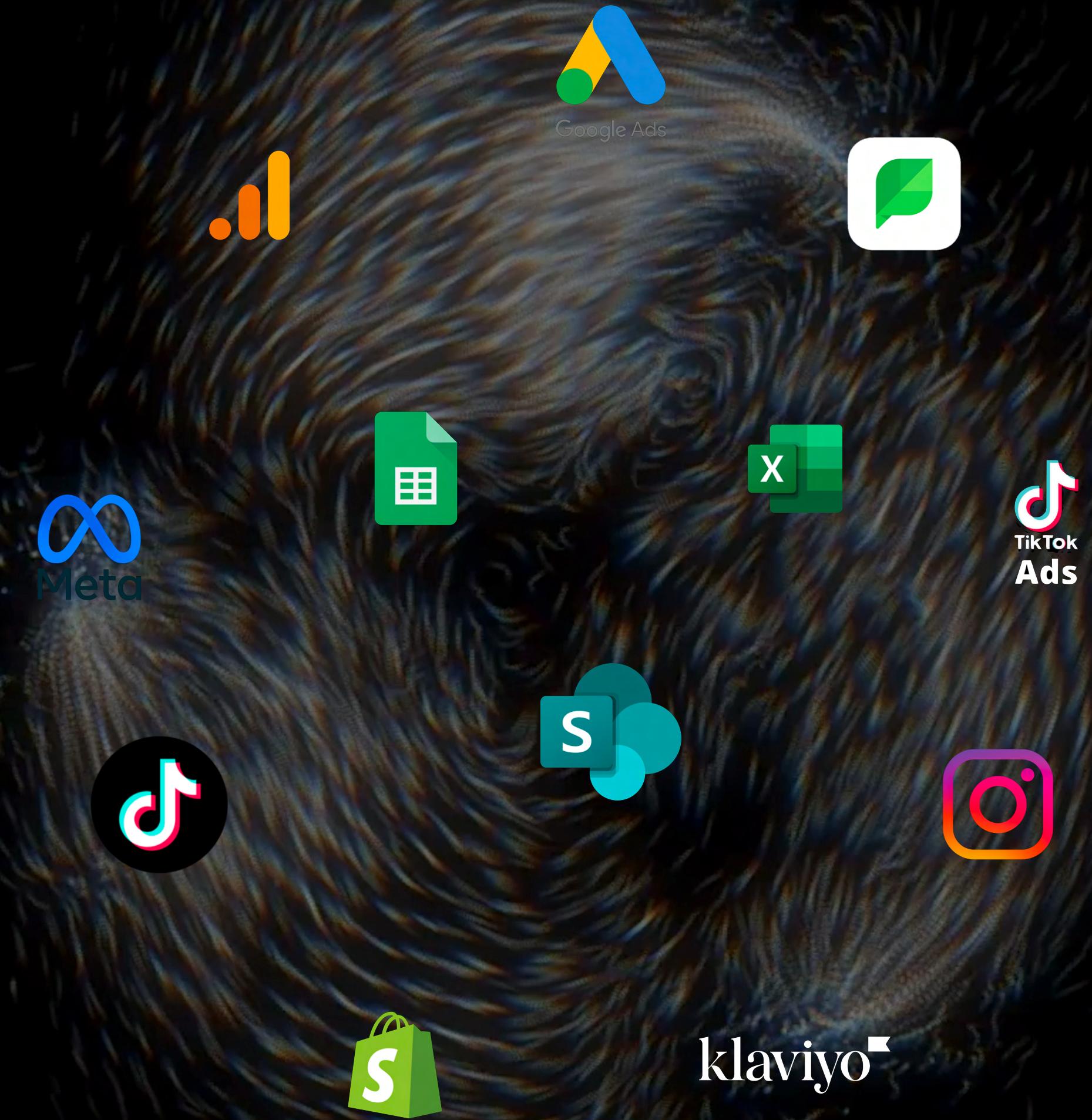
TUS Data Architecture: Ideal Model



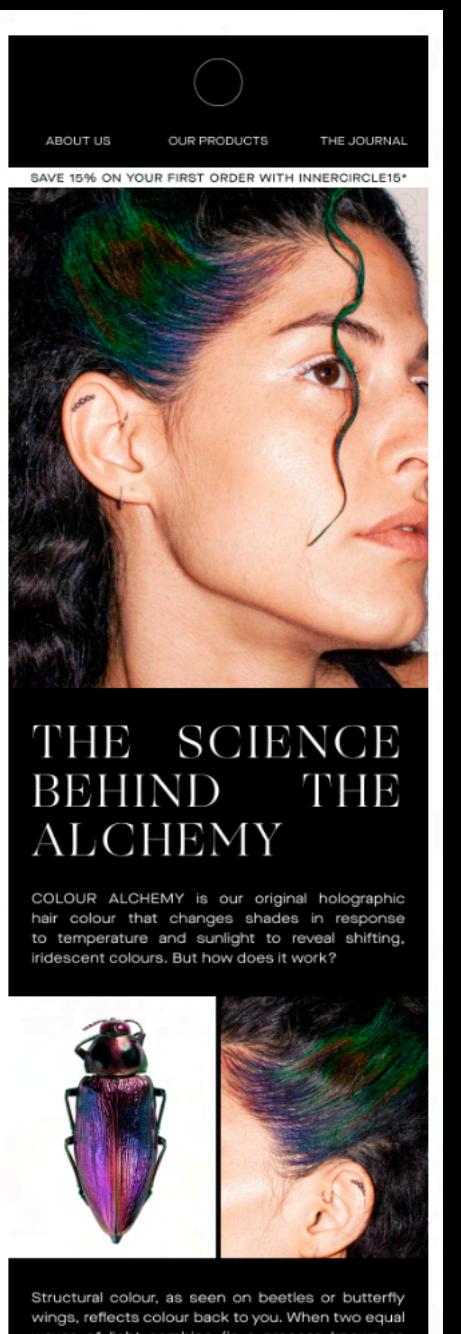
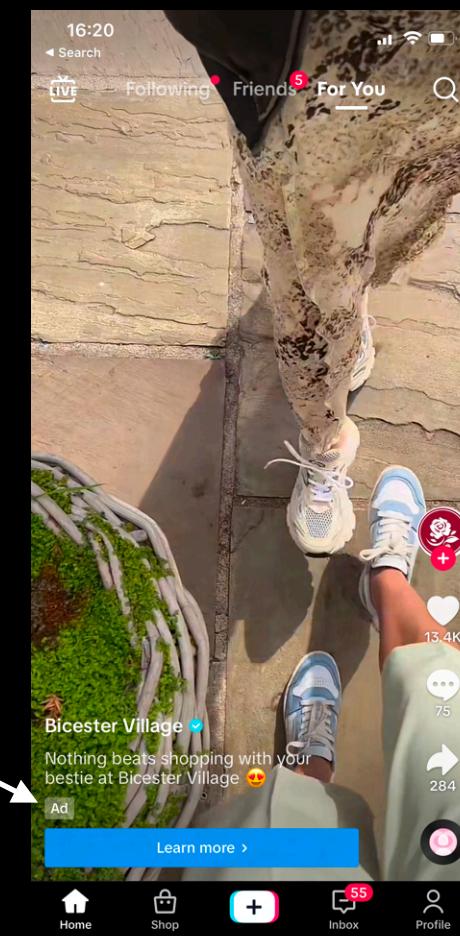
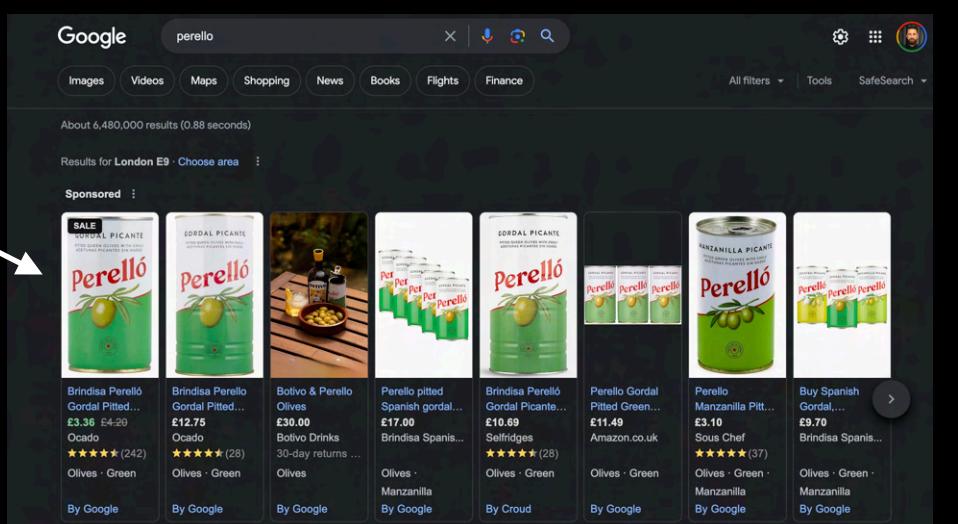
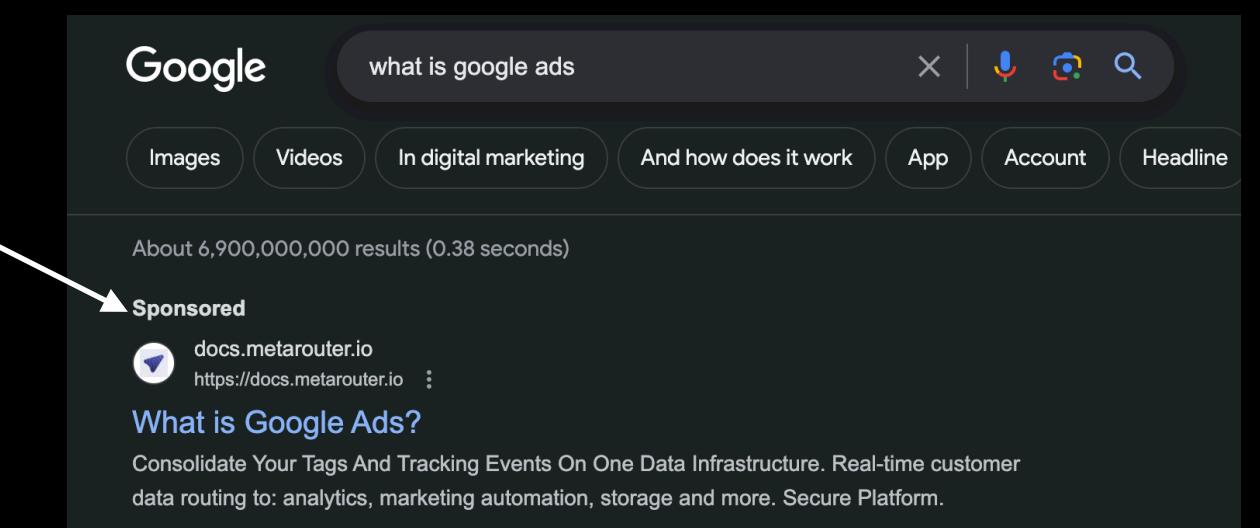
TUS Data Architecture: Reality



Where is our
data stored?



Paid search, Paid Social & e-mail Marketing platforms





Sprout Social is a social media management and intelligence tool for brands and agencies of all sizes to manage conversations and surface the actionable insights that drive real business impact.



Instagram is a social media platform that emphasizes photo and video sharing via its mobile app. You can take, edit, and publish visual content for both followers and non-followers, as long as your account is public. Users can interact with your content via likes, comments, shares, and saves.



Google Analytics is a web analytics service offered by Google that tracks and reports website traffic and also the mobile app traffic & events, currently as a platform inside the Google Marketing Platform brand.



TikTok is a video-sharing app that allows users to create and share short-form videos on any topic. It's mainly mobile-based, although you can still watch TikTok videos using the web app. The platform allows users to get creative with their content using filters, stickers, voiceovers, sound effects, and background music.



Shopify is a popular e-commerce website builder that small businesses can use to build online stores or sell products on third-party marketplaces or social media platforms. Shopify also sells point-of-sale, or POS, software that small businesses can use in their brick-and-mortar stores.

How does
THE BRAIN
works?

```
url = 'https://open.tiktokapis.com/v2/video/list?fields=id,title,like_count,comment_count,share_count,view_count,share_url,embed_html,embed_link,video_description,title,create_time,cover_image_url'
data = {
    # "open_id": '000RygiA9wPJQFzR_zxr6BG4wJvVbJBZws9',
    'max_count': 20,
}
headers = {
    "Authorization": "Bearer "+access_token,
    "Content-type": "application/json"
}

response = requests.post(url, headers=headers, data=json.dumps(data))
// 0.4s

df_videos = json.loads(response.content)
// 0.0s

# df_videos.loc['videos']['data']
df_tiktok = pd.DataFrame(pd.DataFrame(df_videos).loc['videos']['data'])
// 0.0s

for i in range(len(df_tiktok)):
    df_tiktok['create_time'].iloc[i] = datetime.datetime.utcfromtimestamp(df_tiktok['create_time'].iloc[i])
// 0.0s

df_tiktok.to_csv('df_tiktok.csv')
// 0.0s

df_tiktok
// 0.0s

create_time embed_html share_url title view_count comment_count cover_image_url embed_link id like_count share_cou
0 2023-11-10 14:30:00 <blockquote class="tiktok-embed" cite="https://... https://www.tiktok.com/@theunseenbeautyuk/vide... @katerinacry remakes her SPECTRA UTOPIA look... 517 0 useast2a.tiktokcdn.com/tos... https://www.tiktok.com/static/profile-video?id... 7299508858047843617 48
1 2023-11-09 14:25:27 <blockquote class="tiktok-embed" cite="https://... https://www.tiktok.com/@theunseenbeautyuk/vide... Want to see colour changing hair in action? Watch... 576 1 useast2a.tiktokcdn.com/tos... https://www.tiktok.com/static/profile-video?id... 7299468369068166432 48
2 2023-11-07 15:05:00 <blockquote class="tiktok-embed" cite="https://... https://www.tiktok.com/@theunseenbeautyuk/vide... Wait for the activation! @bbaldin's Kandinsky... 1098 0 useast2a.tiktokcdn.com/tos... https://www.tiktok.com/static/profile-video?id... 7298733427522620705 144
3 2023-11-03 14:55:49 <blockquote class="tiktok-embed" cite="https://... https://www.tiktok.com/@theunseenbeautyuk/vide... Watch us create this look! ALCH... 6286 4 useast2a.tiktokcdn.com/tos... https://www.tiktok.com/static/profile-video?id... 7297249694416227617 327
4 2023-11-02 15:27:33 <blockquote class="tiktok-embed" cite="https://... https://www.tiktok.com/@theunseenbeautyuk/vide... SPECTRA Eye Colour spotted at @Chet Lo SS24 sh... 871 0 useast2a.tiktokcdn.com/tos... https://www.tiktok.com/static/profile-video?id... 7296886784485510433 68
5 2023-10-30 15:18:33 <blockquote class="tiktok-embed" cite="https://... https://www.tiktok.com/@theunseenbeautyuk/vide... The City of Beauty Exhibition at the Wellcome ... 506 0 useast2a.tiktokcdn.com/tos... https://www.tiktok.com/static/profile-video?id... 7295771208849624353 22
6 2023-10-27 09:57:07 <blockquote class="tiktok-embed" cite="https://... https://www.tiktok.com/@theunseenbeautyuk/vide... Are you ready for Halloween? Here come SPECT... 564 0 useast2a.tiktokcdn.com/tos... https://www.tiktok.com/static/profile-video?id... 7294575280509689248 18
7 2023-10-25 14:35:07 <blockquote class="tiktok-embed" cite="https://... https://www.tiktok.com/@theunseenbeautyuk/vide... Come join us in THE UNSEEN LAB's: we're making... 631 2 useast2a.tiktokcdn.com/tos... https://www.tiktok.com/static/profile-video?id... 7293904587457629472 43
8 2023-10-23 16:16:00 <blockquote class="tiktok-embed" cite="https://... https://www.tiktok.com/@theunseenbeautyuk/vide... COLOR ALCH... in shade Phoenix 🔥 Free sh... 625 0 useast2a.tiktokcdn.com/tos... https://www.tiktok.com/static/profile-video?id... 7293188165244898592 35
9 2023-10-20 15:48:58 <blockquote class="tiktok-embed" cite="https://... https://www.tiktok.com/@theunseenbeautyuk/vide... It's our 2nd Birthday! Celebrate with us and ... Mondrian inspired look 581 1 useast2a.tiktokcdn.com/tos... https://www.tiktok.com/static/profile-video?id... 7292068196096412960 42
0 2023-10-18 17:53:00 <blockquote class="tiktok-embed" cite="https://... https://www.tiktok.com/@theunseenbeautyuk/vide... ... 815 2 useast2a.tiktokcdn.com/tos... https://www.tiktok.com/static/profile-video?id... 7291352846434356513 73

reporting_shopify_data_acquisition.ipynb* ✘ import pandas as pd
Code + Markdown | ▶ Run All | □ Clear All Outputs | □ Outline ...
from sklearn.linear_model import ElasticNet
from sklearn.ensemble import RandomForestRegressor
from sklearn.ensemble import VotingRegressor
from sklearn.model_selection import GridSearchCV
from sklearn.preprocessing import StandardScaler
from sklearn.metrics import r2_score
from xgboost import plot_importance

import warnings
warnings.filterwarnings('ignore')

pd.set_option('display.max_rows', 50)
pd.set_option('display.max_columns', 50)
pd.set_option('display.width', 1000)

# define Seaborn color palette to use
palette_color = sns.color_palette('bright')

plt.style.use('seaborn-v0_8-colorblind')



## SHOPIFY DATA ACQUISITION


hostname = 'see-theunseen.myshopify.com'
version = '2023-07'

api_key = pd.read_csv('api_key.csv')
api_key = pd.DataFrame(api_key)

apikey = api_key['apikey'][0]
password = api_key['password'][0]

resource = 'products'
url = "https://(apikey):(password)@{hostname}/admin/api/{version}/{resource}.json?#published_status=published"
# url = "https://(apikey):(password)@{hostname}/admin/api/{version}/inventory_items.json"
response = requests.request("GET", url)
df_products=pd.DataFrame(response.json()['products'])

df_products_aux1 = []

for i in range(len(df_products)):

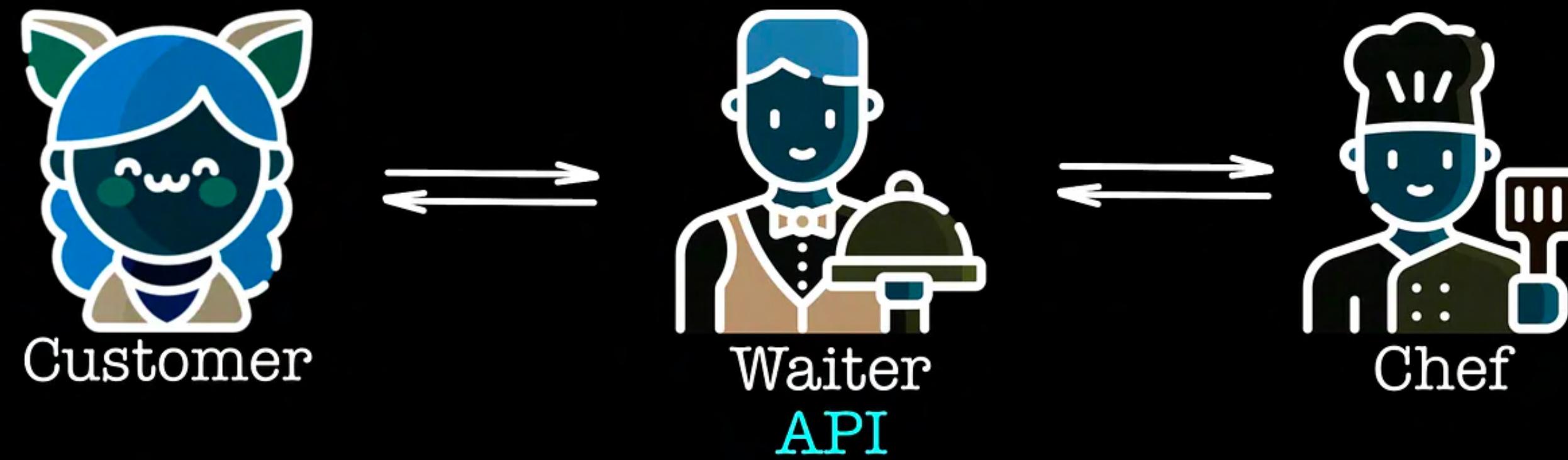
    p_title = df_products['title'].iloc[i]
    p_type = df_products['product_type'].iloc[i]
    p_v_size = len(pd.DataFrame(df_products['variants'].iloc[i])['title'])

    for j in range(p_v_size):

        p_v_title = pd.DataFrame(df_products['variants'].iloc[i])['title'][j]
        p_v_id = pd.DataFrame(df_products['variants'].iloc[i])['id'][j]
        p_v_sku = pd.DataFrame(df_products['variants'].iloc[i])['sku'][j]
        p_v_summary = [p_title, p_type, p_v_title, p_v_id, p_v_sku]
```

WTF are APIs?

API receives a request
Waiter receives order from customer



API collects and processes a response, then returns with
that response

As waiter would take order from customer, report it to chef and delivers the answer -
completed meal from kitchen

API vs GUI

API (Application Programming Interface)	GUI (Graphical User Interface)
An API permits the communication between two programs.	GUI allows interaction between a human and a computer program.
APIs require high technical skills to leverage.	GUI doesn't require too much technical know-how or the need to leverage.
API requires back-end storage that is backed by a logical architecture, a library of scripts, and regular management.	GUI requires few resources.
APIs tests are fast in action.	Graphical User Interface tests tend to take longer.
API is cheaper.	GUI is expensive.
API allows the exchange of data through XML or JSON.	GUI doesn't allow the exchange of data through XML or JSON.
API allows more flexibility when it comes to automation and innovation.	GUI is less flexible when it comes to automation and innovation.
API allows your program to interact with servers.	GUI allows users to interact with your program.
An API is an interface to a library that needs to use GUI.	Implementing a GUI can involve an API.
Types – Web API, Internal API, Partner API, Open API, etc.	GUI includes Microsoft Windows, macOS, Ubuntu Unity, etc.

Example of API request

The image displays two screenshots illustrating the configuration of an API request.

Left Screenshot (Google Cloud Platform API section):

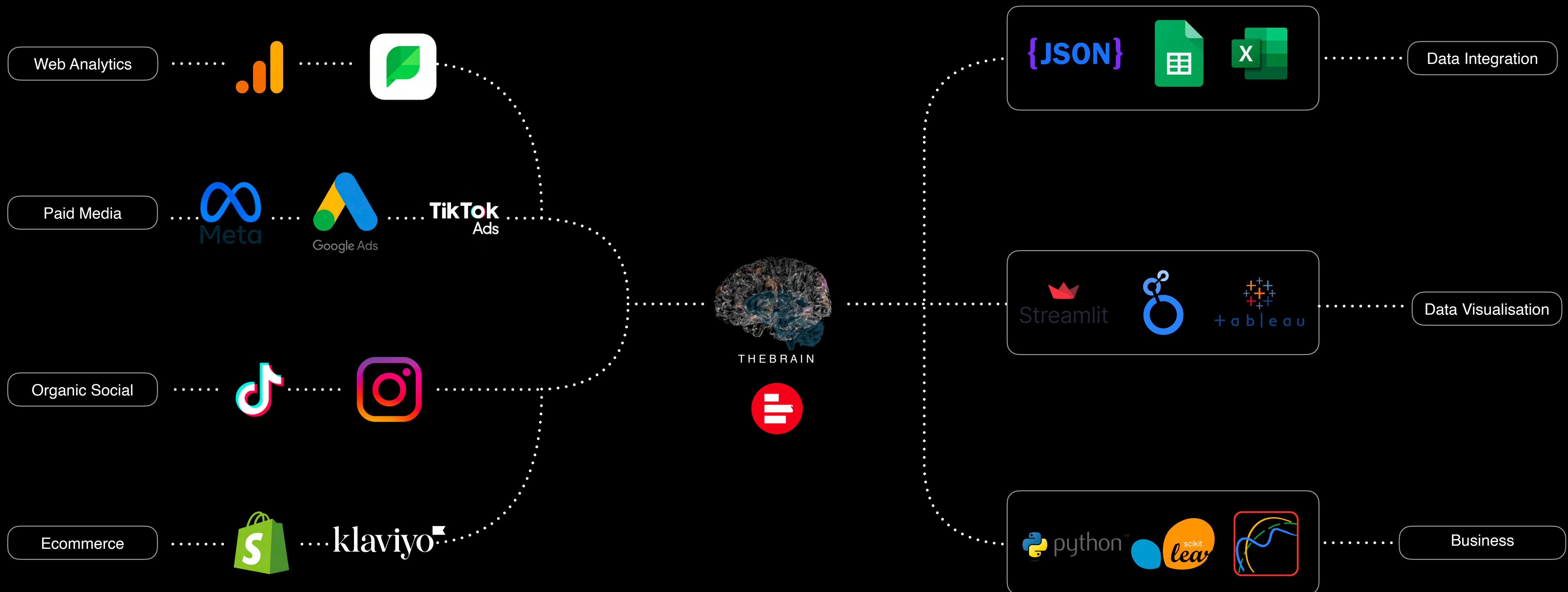
- Enabled APIs and services:** Shows a list of available APIs.
- Credentials:** A table showing OAuth 2.0 Client IDs. One entry is visible: "THEBRAIN" (Client ID: 70036473611-d015e...).
- OAuth consent screen:** Shows no consent screens displayed.
- Page usage agreements:** Shows no agreements displayed.

Right Screenshot (TikTok developer console App details page):

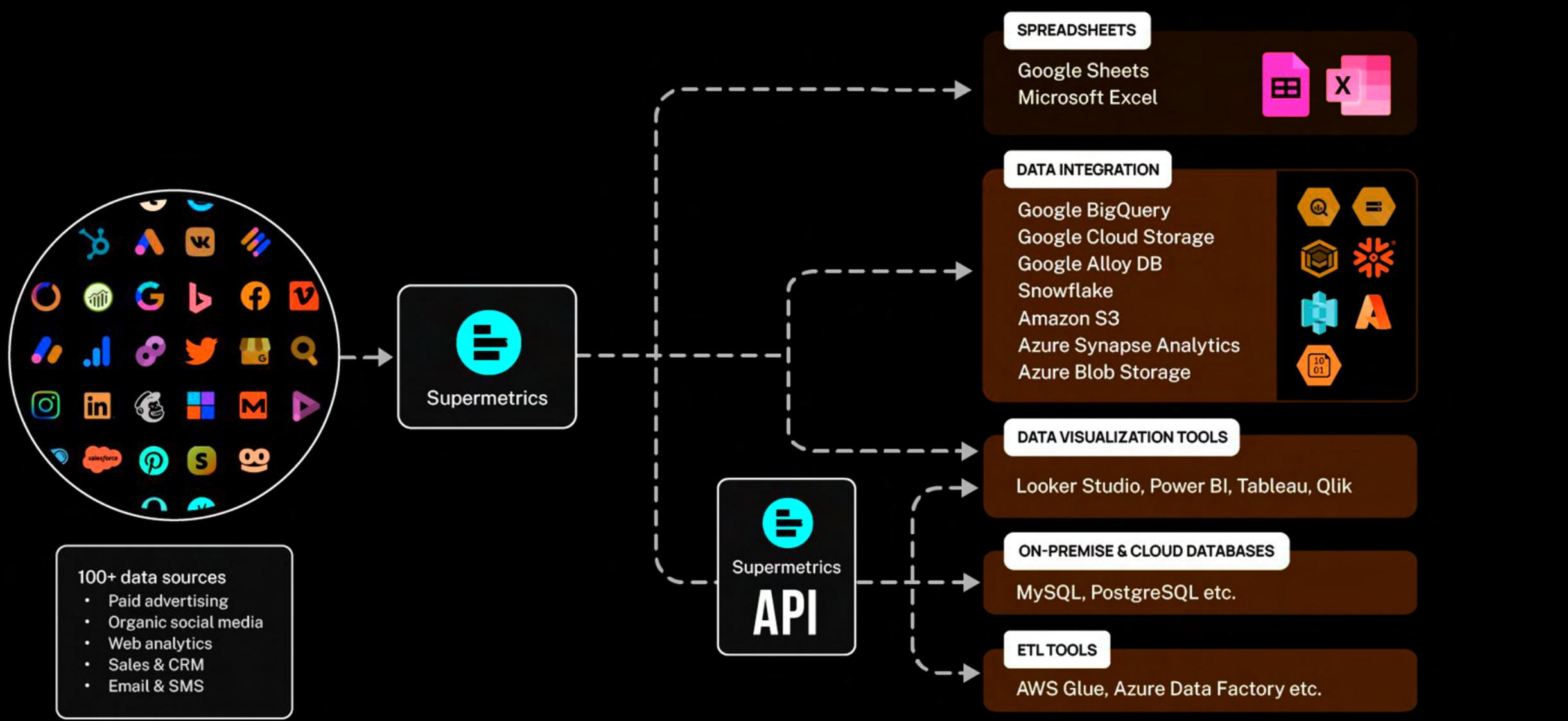
- App details:** Shows the app ID (726892956024121398), client key, client secret, and status (Live in production).
- Configuration:** Includes fields for App name (The Unseen Beauty - Internal Insights), Category (Business), Description, Terms of Service URL, Privacy Policy URL, and Platform configurations (Configure for Web, Configure for Android, Configure for iOS, Configure for Desktop).
- History:** A table showing audit logs for app updates and status changes.

Back to how does
THE BRAIN
works?

The Brain Architecture



Why not just Supermetrics?



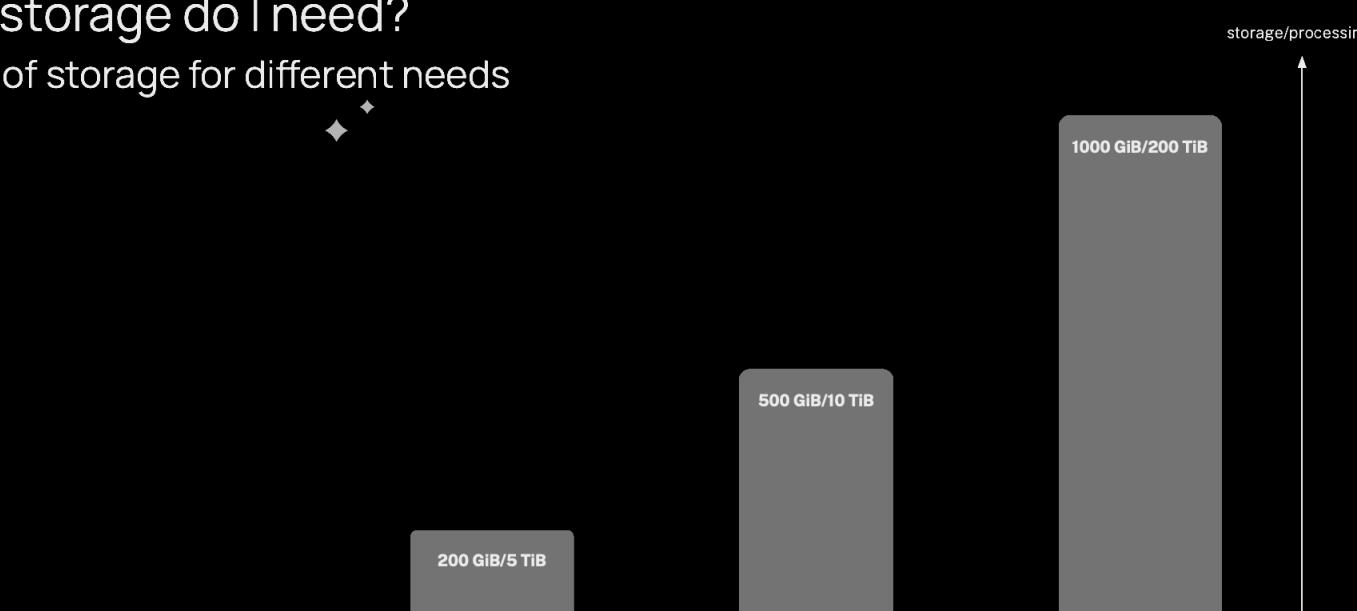
Supermetrics Marketing Intelligence Cloud pricing

	Cloud Core	Cloud Core+	Cloud DWH
Team members	5	10	20
# data sources connectors	26*	26*	26*
# of accounts (per source)	20	30	40
Destinations	Looker Studio, Excel, Google Sheets, monday.com	Looker Studio, Excel, Power BI, Google Sheets, monday.com	Looker Studio, Excel, DWH, Google Sheets, monday.com, Power BI
Support level	Standard	Standard	Premium
Transform features	Custom fields, Data blending	Custom fields, Data blending	Custom fields, Data blending
Storage features	Storage/Processing 200GiB/5TiB*	Storage/Processing 500GiB/10TiB	Storage/Processing 1000GiB/20TiB
Analyze features	Supermetrics Charts, ChatGPT results summaries	Supermetrics Charts, ChatGPT results summaries	Supermetrics Charts, ChatGPT results summaries
Annual price in EUR	+15,000 ⁰⁰	+25,000 ⁰⁰	+45,000 ⁰⁰

* Cloud Core storage features limited to 1 year historical data

How much storage do I need?

Different tiers of storage for different needs



Appropriate # of ad accounts	10-20	20-40	40+
Historical data storage	1 year	2 years	2 years

Data visualisation tools

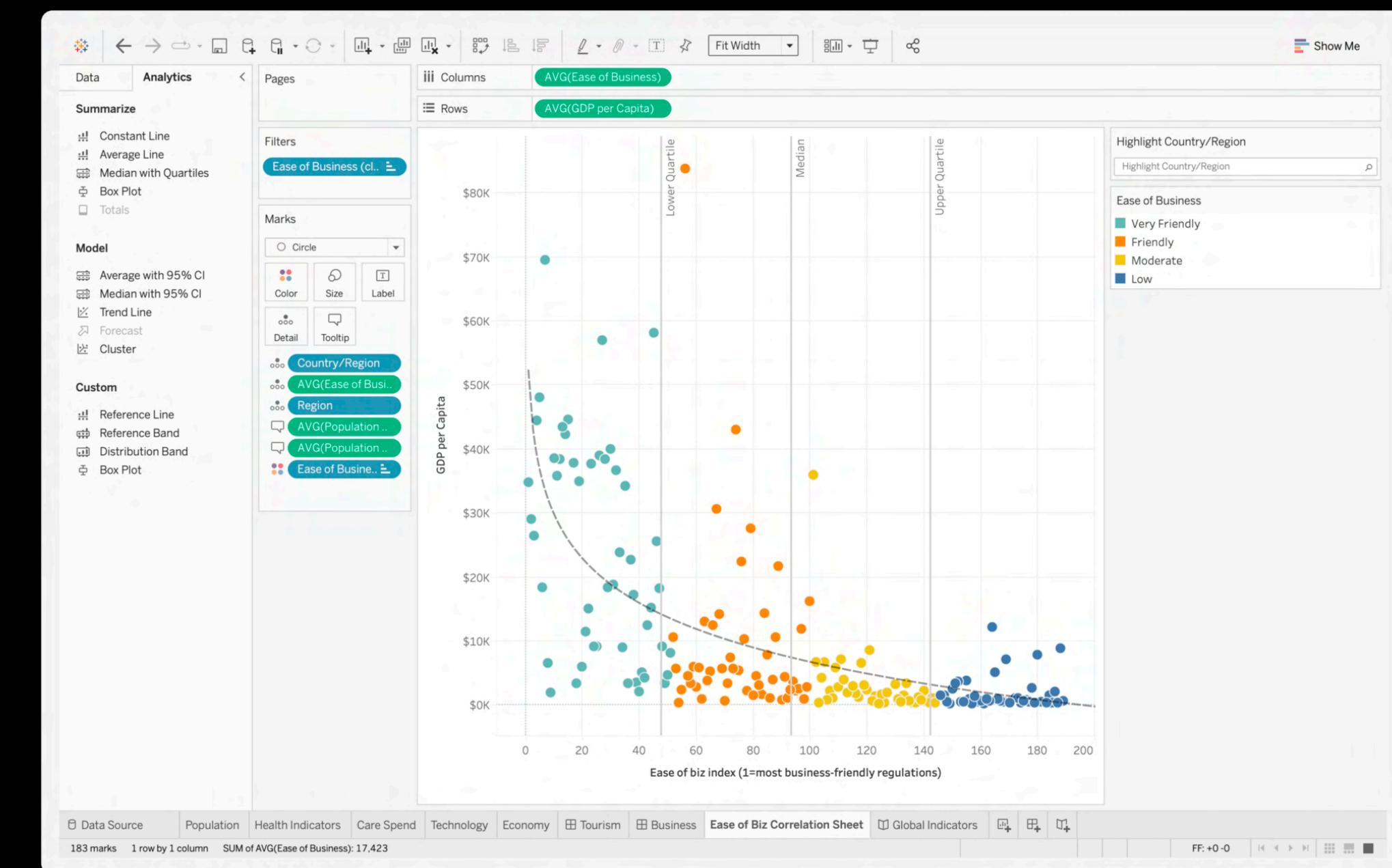
Looker Studio

Looker Studio is a free cloud-based data visualisation tool that allows you to import data from multiple sources and visualize them on a report that is easy to read and share. You can import data from any source using Google Sheets or Data Connectors to create the report you want.



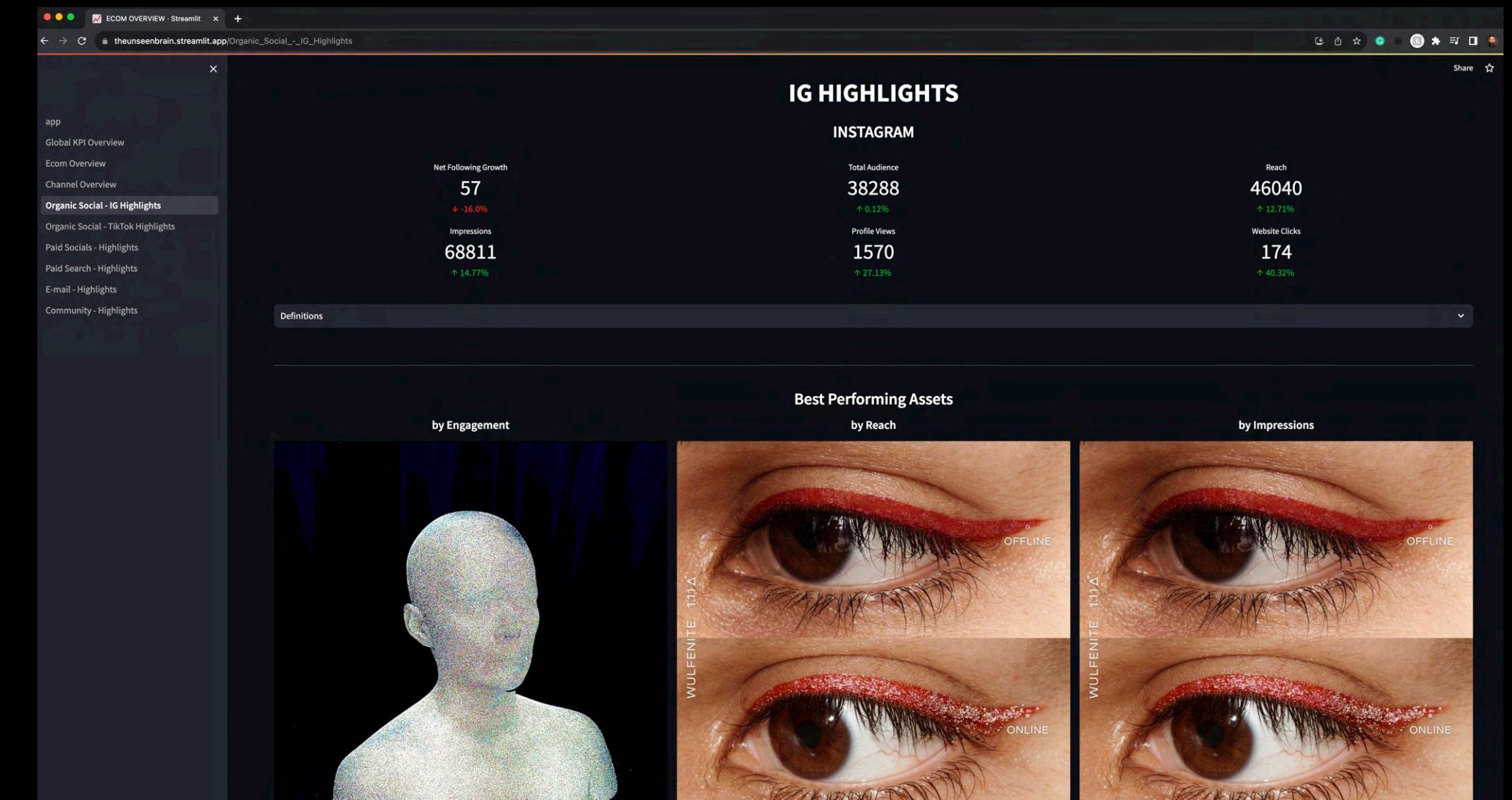
Tableau

Tableau is a desktop and cloud-focused BI tool. With Tableau, you can connect with multiple data sources to create a comprehensive data dashboard. The tool supports data blending and data joining. This means that you can create reports from data collected from multiple sources (data blending) or a single source (data joining).



Streamlit

Streamlit is a free and open-source framework to rapidly build and share beautiful machine learning and data science web apps. It is a Python-based library specifically designed for machine learning engineers.



WELCOME TO THE
BRAIN

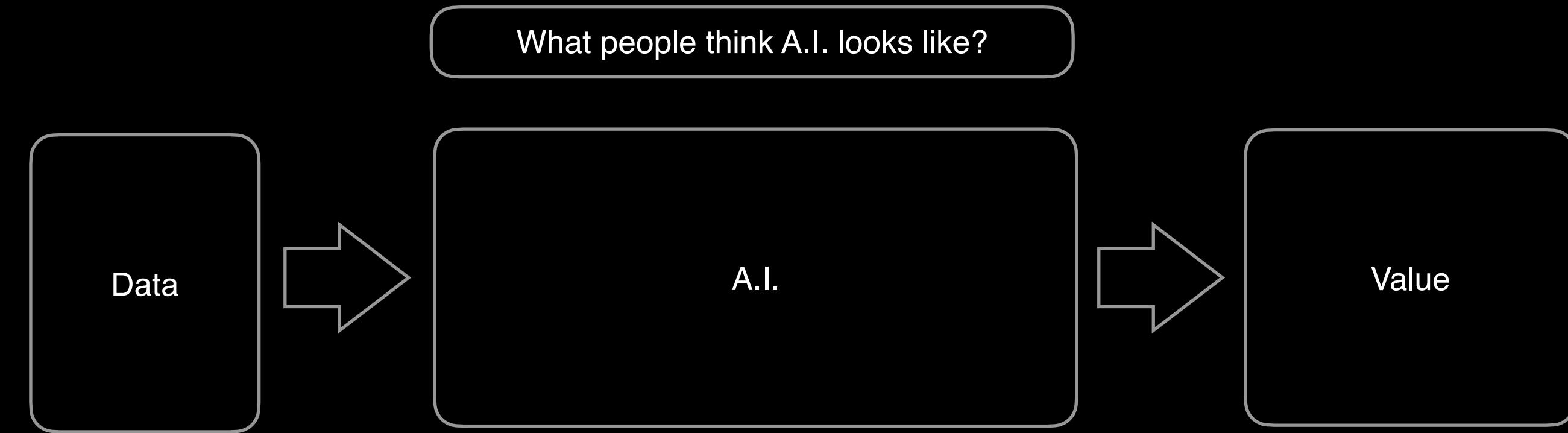
Cool (I hope), so what?

Business Analytics

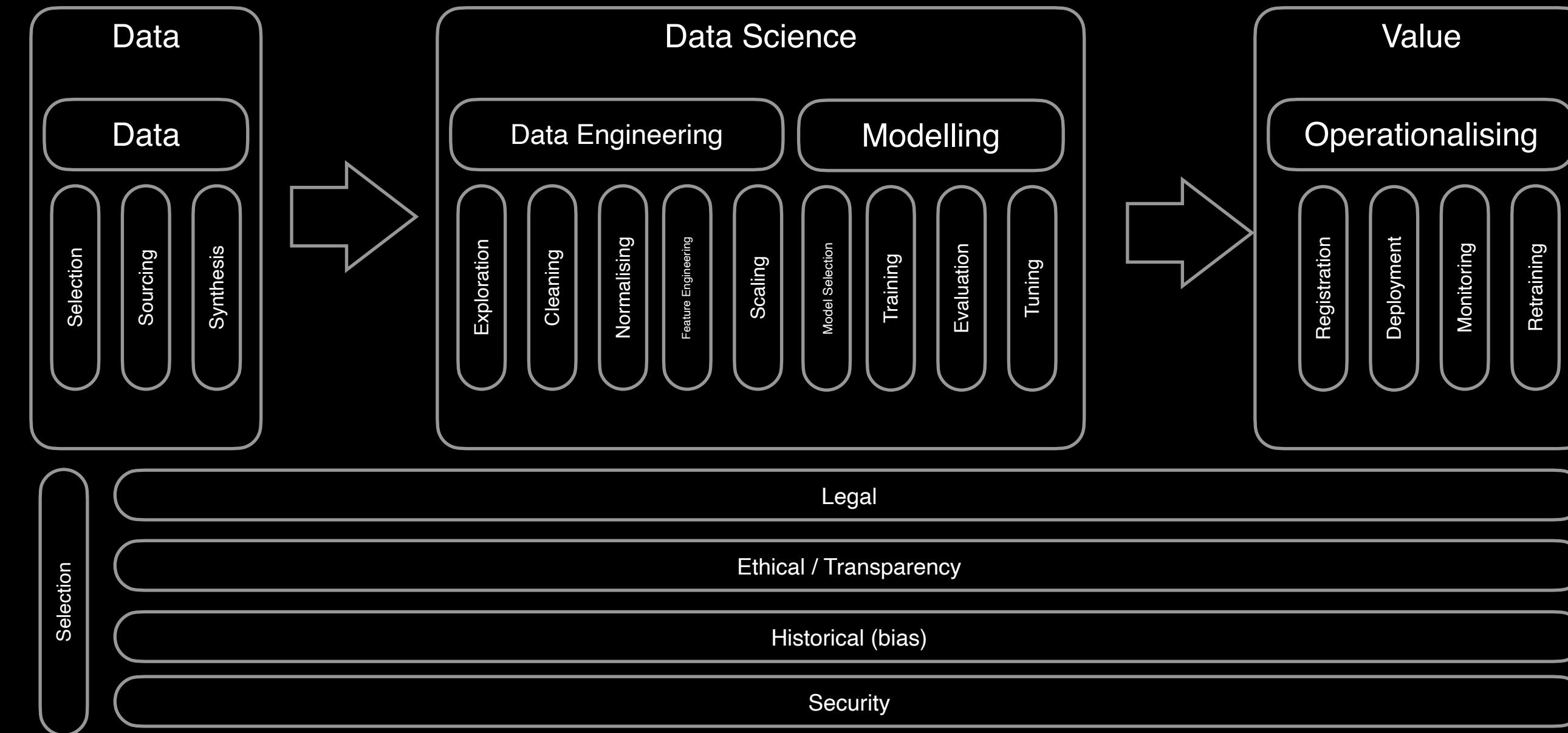
Future Proofing Strategy

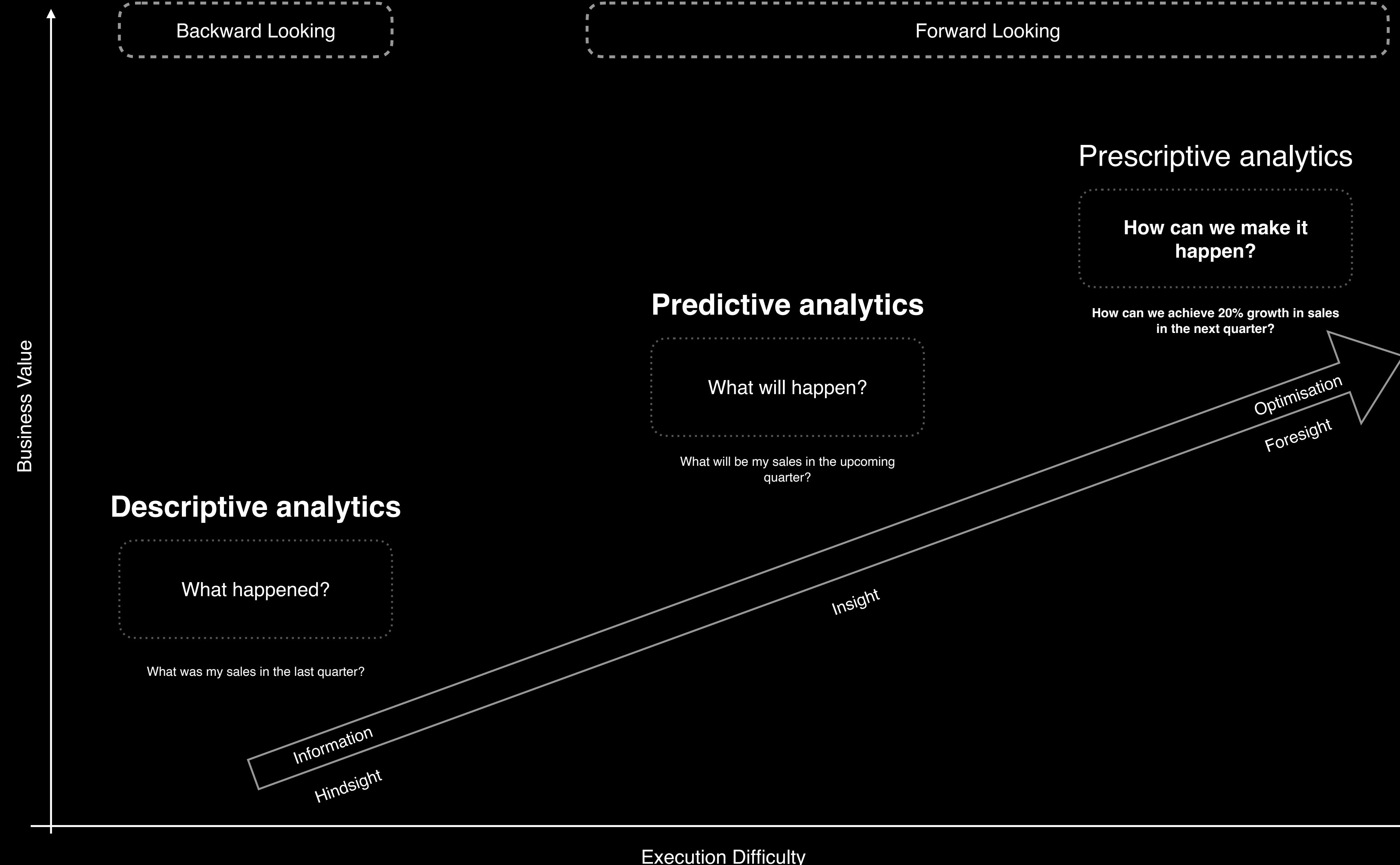
“**Chemistry Is Not About Test Tubes: Data Science Versus
the Work of the Data Scientist**”

Foster Provost, Tom Fawcett

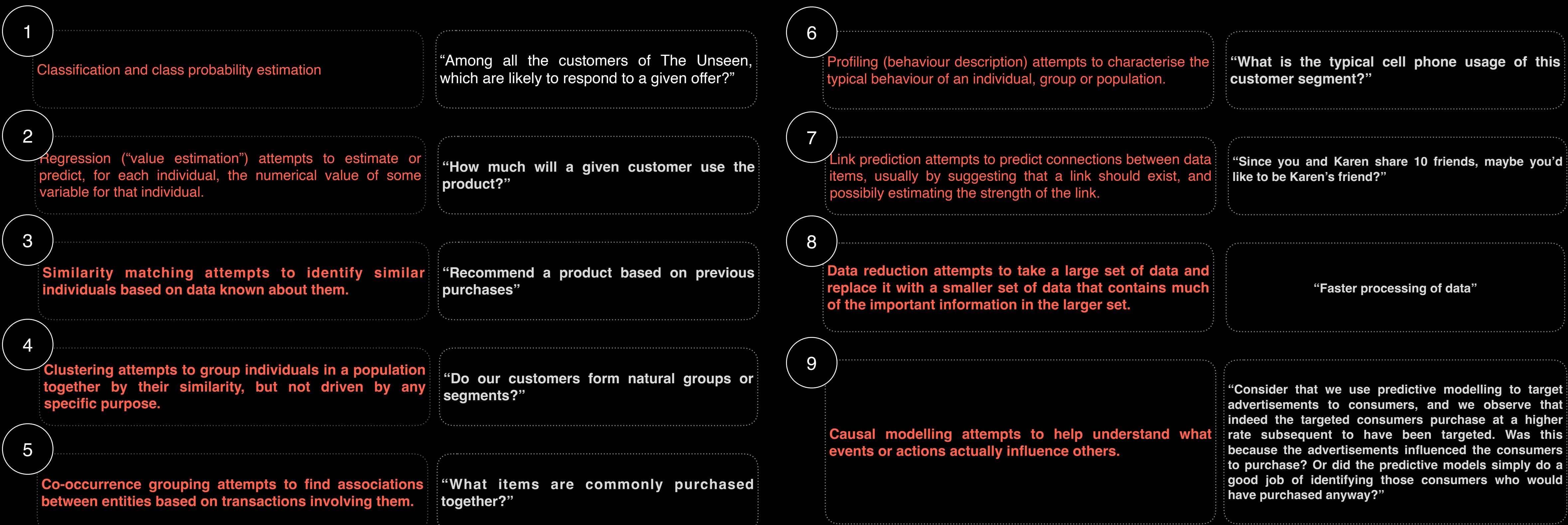


What it actually is?

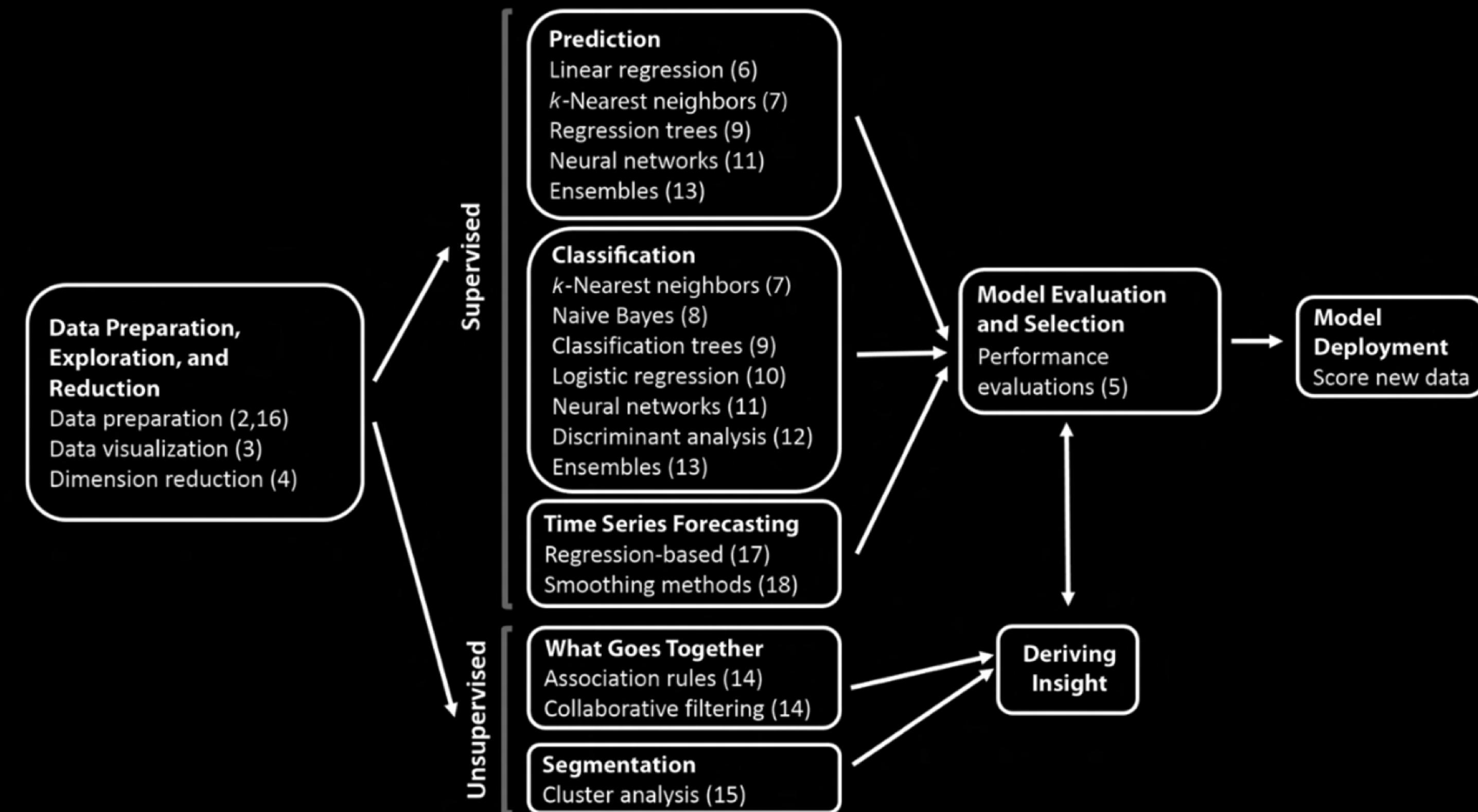




Common types of machine learning problems



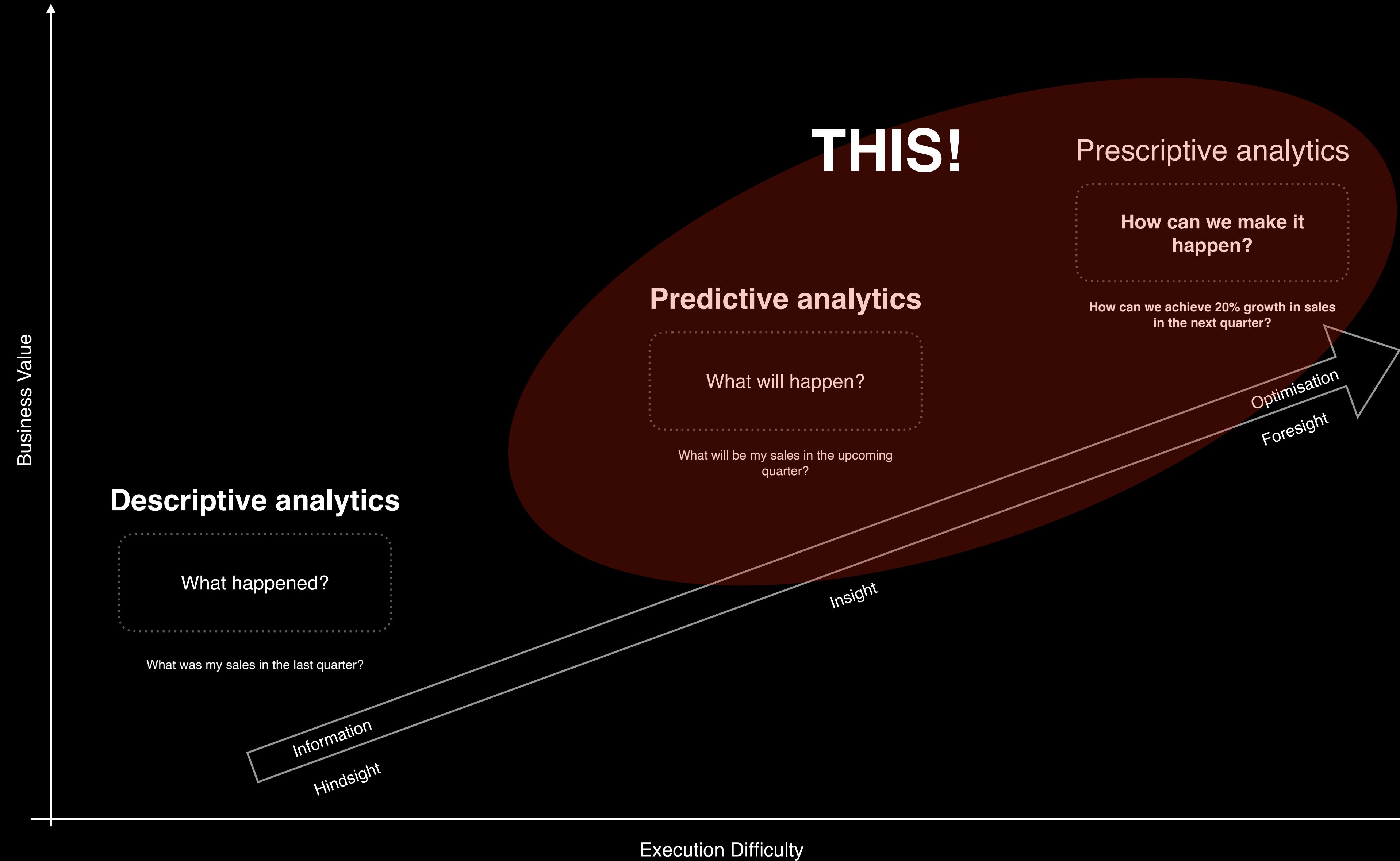
Common types of machine learning models



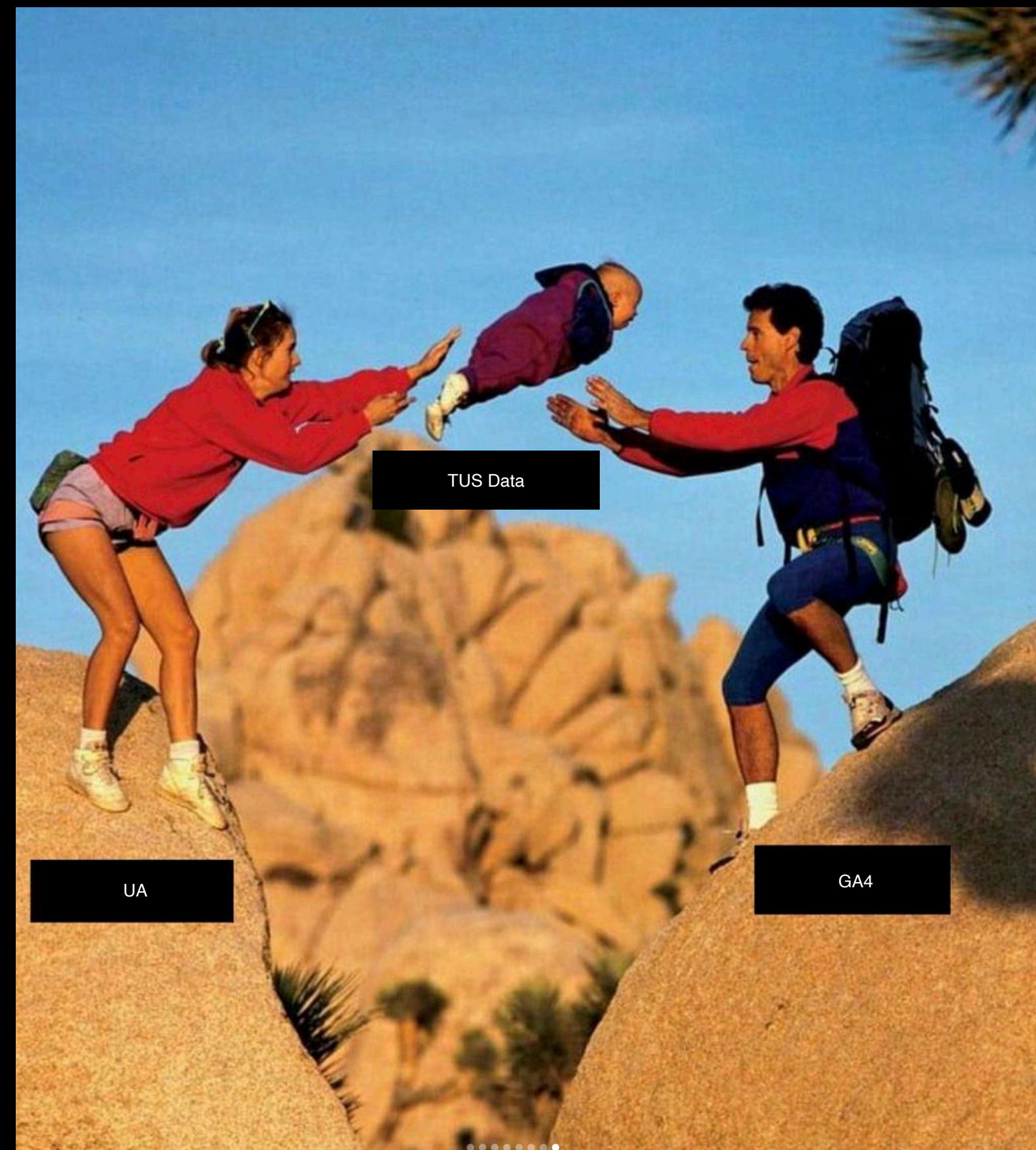
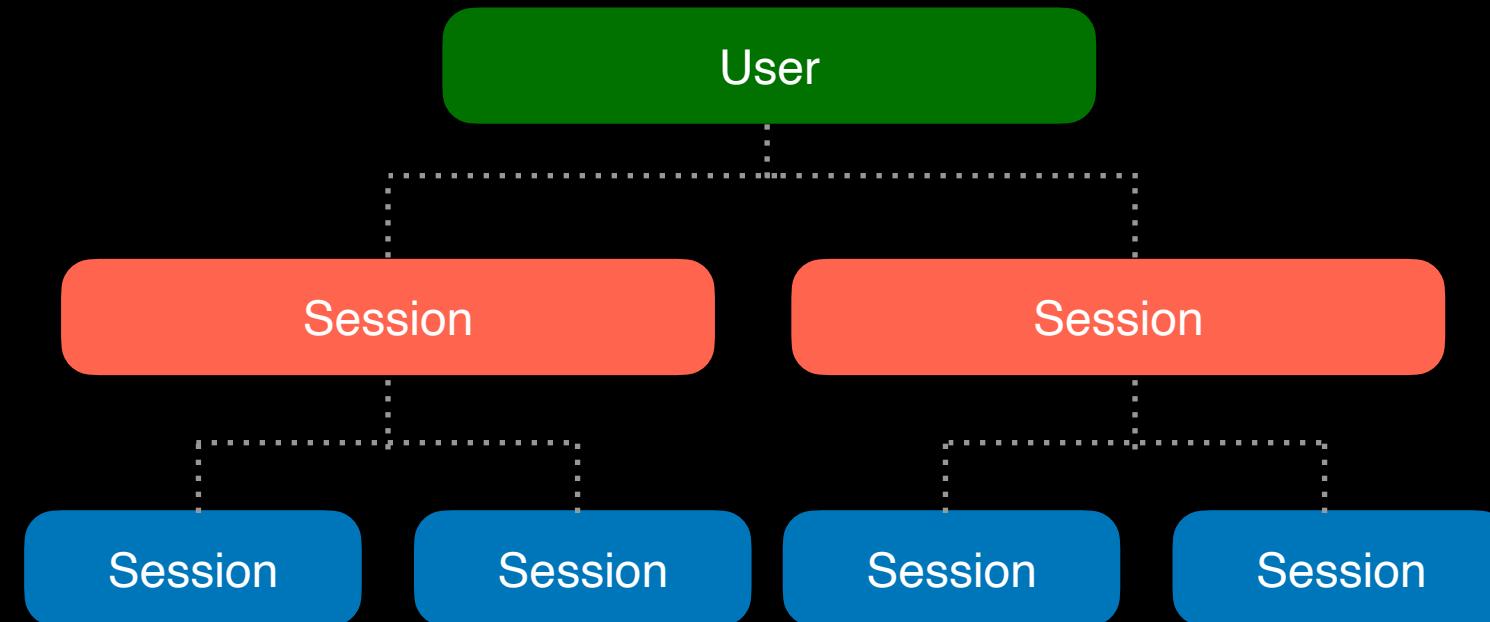
“Art is a lie that helps you understand the truth. Models are abstractions that help you understand reality.” — Pablo Picasso

“

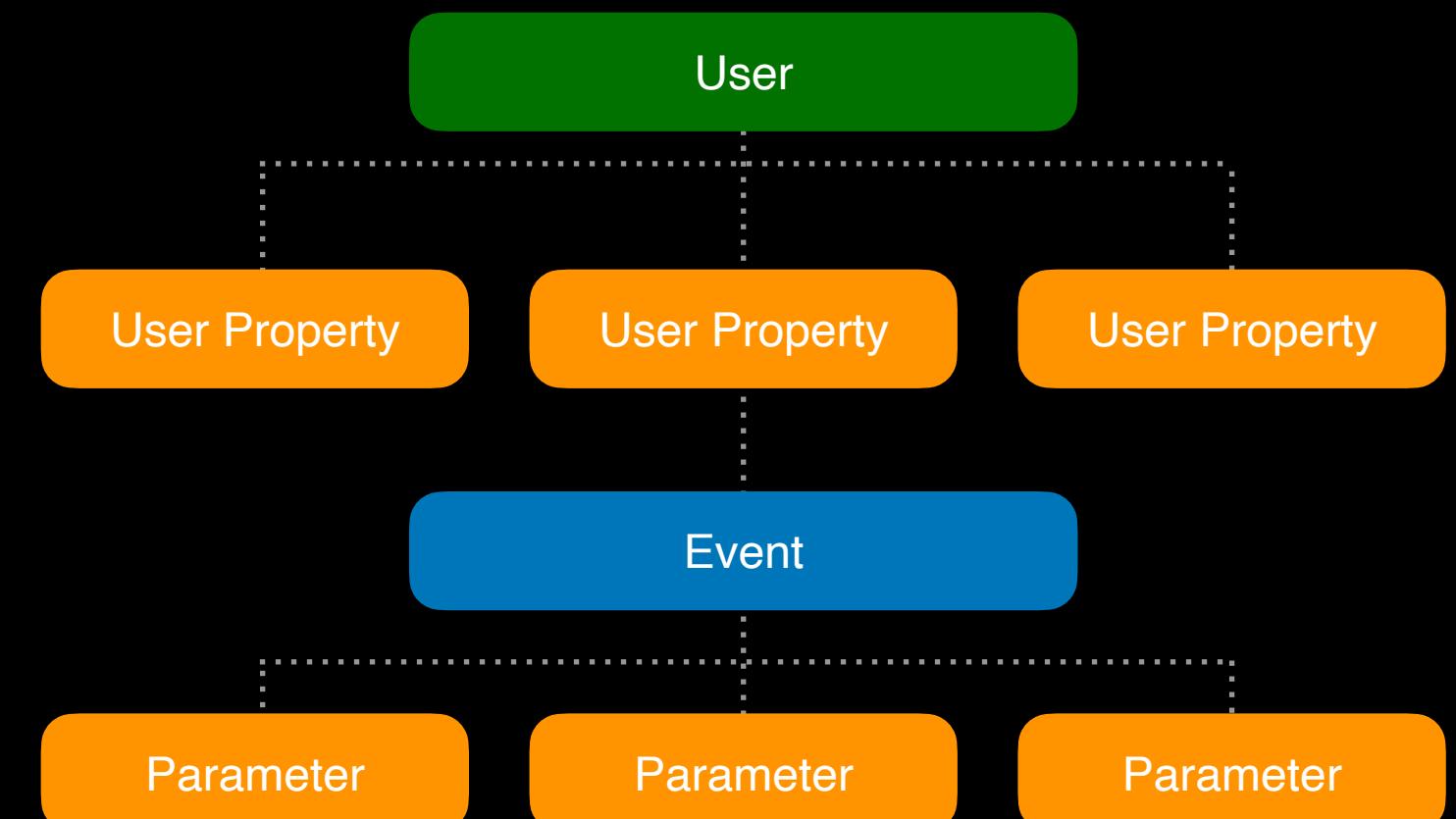
What's next?



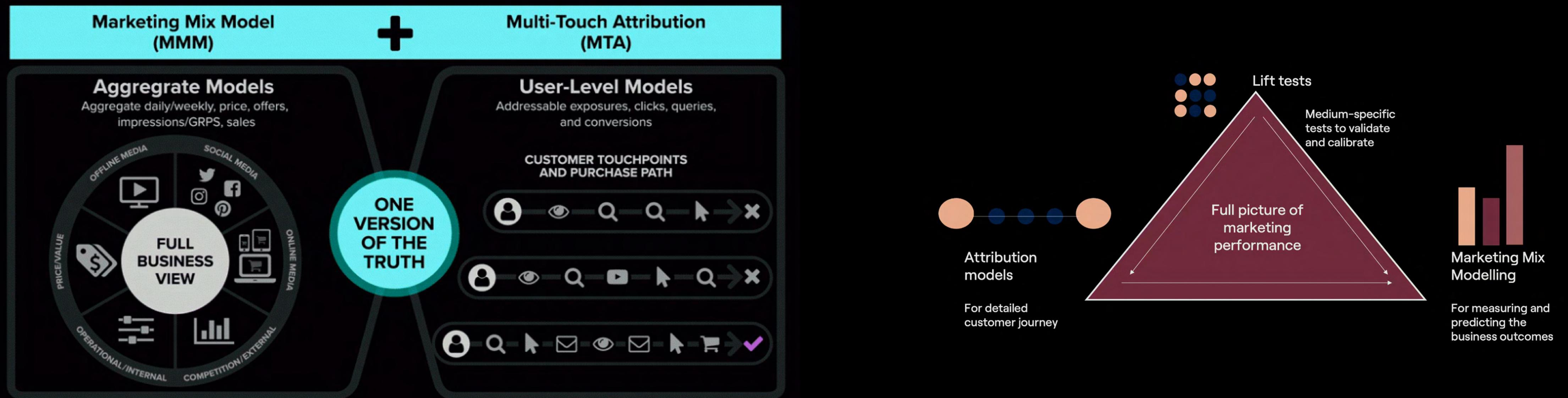
Universal Analytics



Google Analytics 4



Approach / Starting Point - MMM



Don't panic... it's just an example

Input

	wk strt dt	sales	Direct Mail	Insert	Newspaper	Radio	TV	Social Media	Online Display	me_ics_all	...
0	2014-08-03	72051457.64	678410.26	129759.66	507635.16	254134.14	216725.59	0.0	61364.75	82.5	...
1	2014-08-10	78794770.54	661097.71	70355.33	625719.37	106602.98	108919.26	0.0	132643.90	82.5	...
2	2014-08-17	70071185.56	1874338.43	107720.37	277532.61	59011.42	74032.19	0.0	76741.27	82.5	...
3	2014-08-24	68642464.59	306583.37	141708.61	186028.61	178010.46	110995.66	0.0	193043.55	82.5	...
4	2014-08-31	86190784.65	2366274.16	160691.30	706694.09	144097.56	225140.84	0.0	249612.89	84.6	...

Model

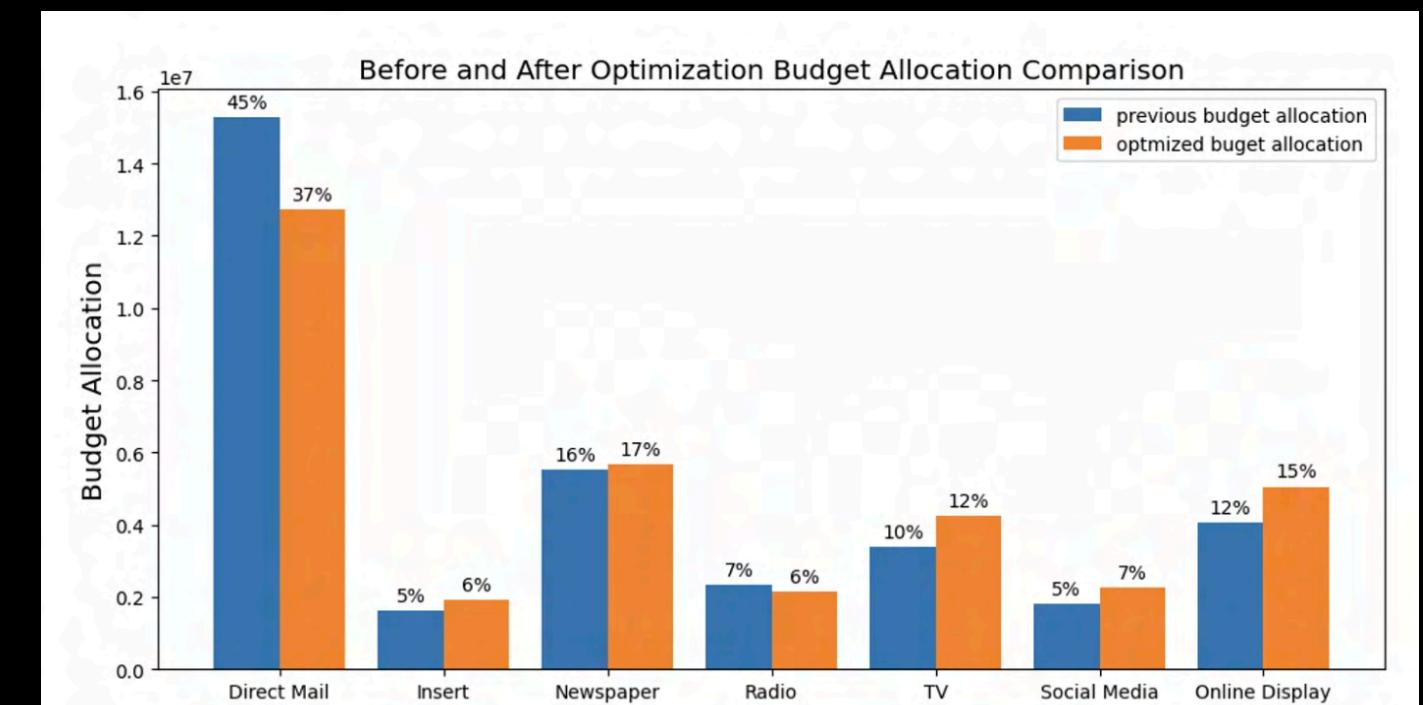
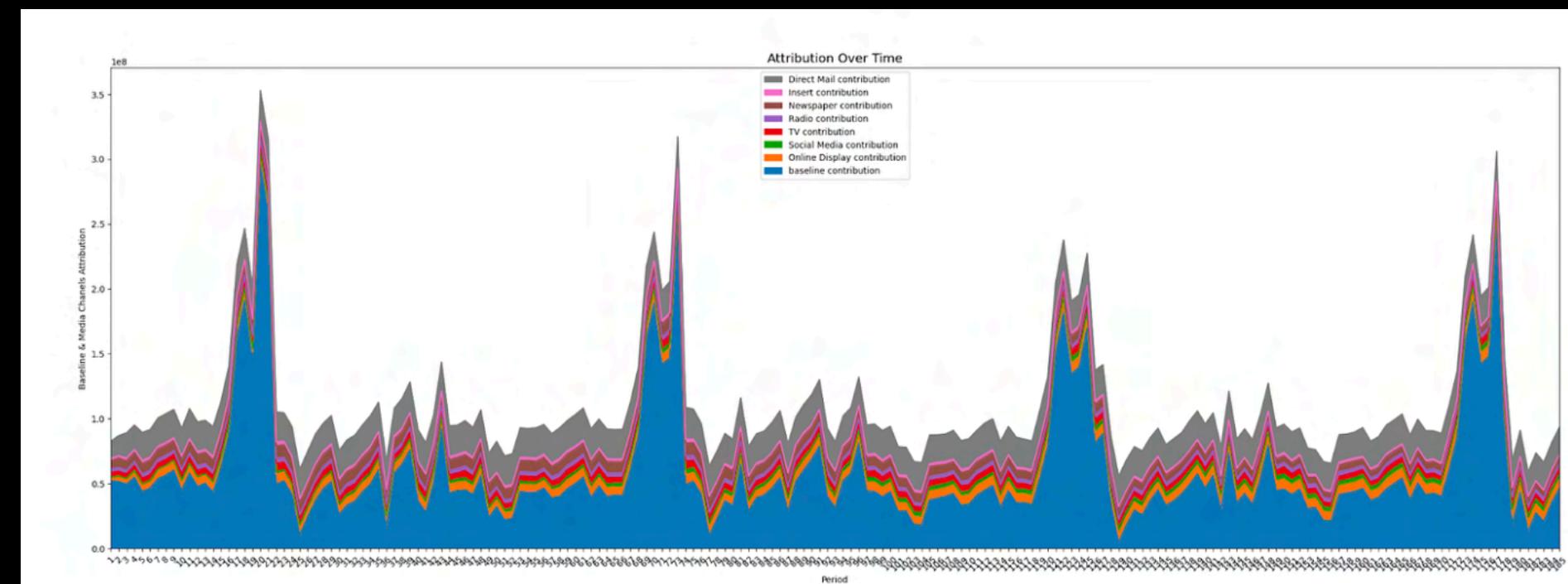
$$sales_t = baseline_sales + \sum_{m=1}^M \beta_m f(x_{t,m}) + \sum_{c=1}^C \beta_c z_{t,c} + \varepsilon_t$$

Media factors Control factors White noise

Saturation **Ad-stock**

$$\frac{1}{1 + (x_{t,m}/\mathcal{K}_m)^{-\mathcal{S}_m}}, \quad \frac{\sum_{l=0}^{L-1} w_m(l)x_{t-l,m}}{\sum_{l=0}^{L-1} w_m(l)}$$

Results



Conclusion

Initial Goal |

Test a new capability whiten the brand to use emerging technologies (e.g. ai & big data) to enable more informed decision making across R&D, NPD & marketing.

APPROACH

Identify available emerging technologies that are “right-sized” for start-up ✓
Develop core competencies internally whiten the company in order to ask the right questions / analyse the ✓ data
Implement agile processes into the company that enable data & insights to help inform key decision making. ✓

INITIATIVES FOR THE YEAR

Test & learn with technology & software that provides us with a competitive edge to better understand our community, our products (concept & technical) & our marketing positioning. ✓

SUPERMETRICS & LOOKER
STUDIO DEMO?