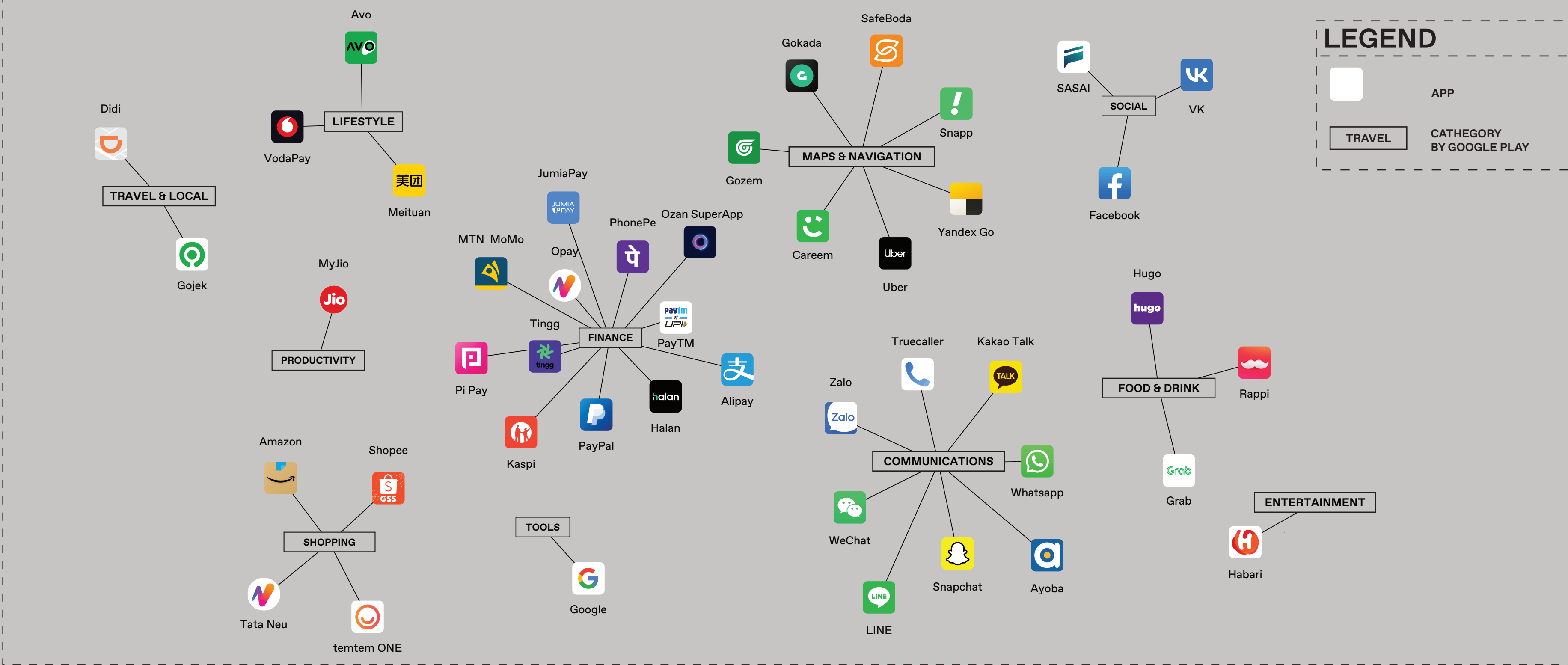


THE EVOLUTION OF [SUPER] APPS

DATA COLLECTION METHODOLOGY

The data for this project was collected by selecting 44 apps from expert lists and retrieving their data from the Google Play store using the ASI App Store Scrapers. Additional information was collected manually by reading the apps' descriptions and websites, to see whether these apps call themselves super apps and which features they have. We proceeded categorizing the apps according to their Google Play store categories and their features. We engaged in an emergent coding process to identify shared features across the different apps. Finally, we retrieved the 'family of apps' from all our 44 super apps using the app analytics service data.ai. For the complete set of apps, we collected their launch dates and store removal dates from data.ai.

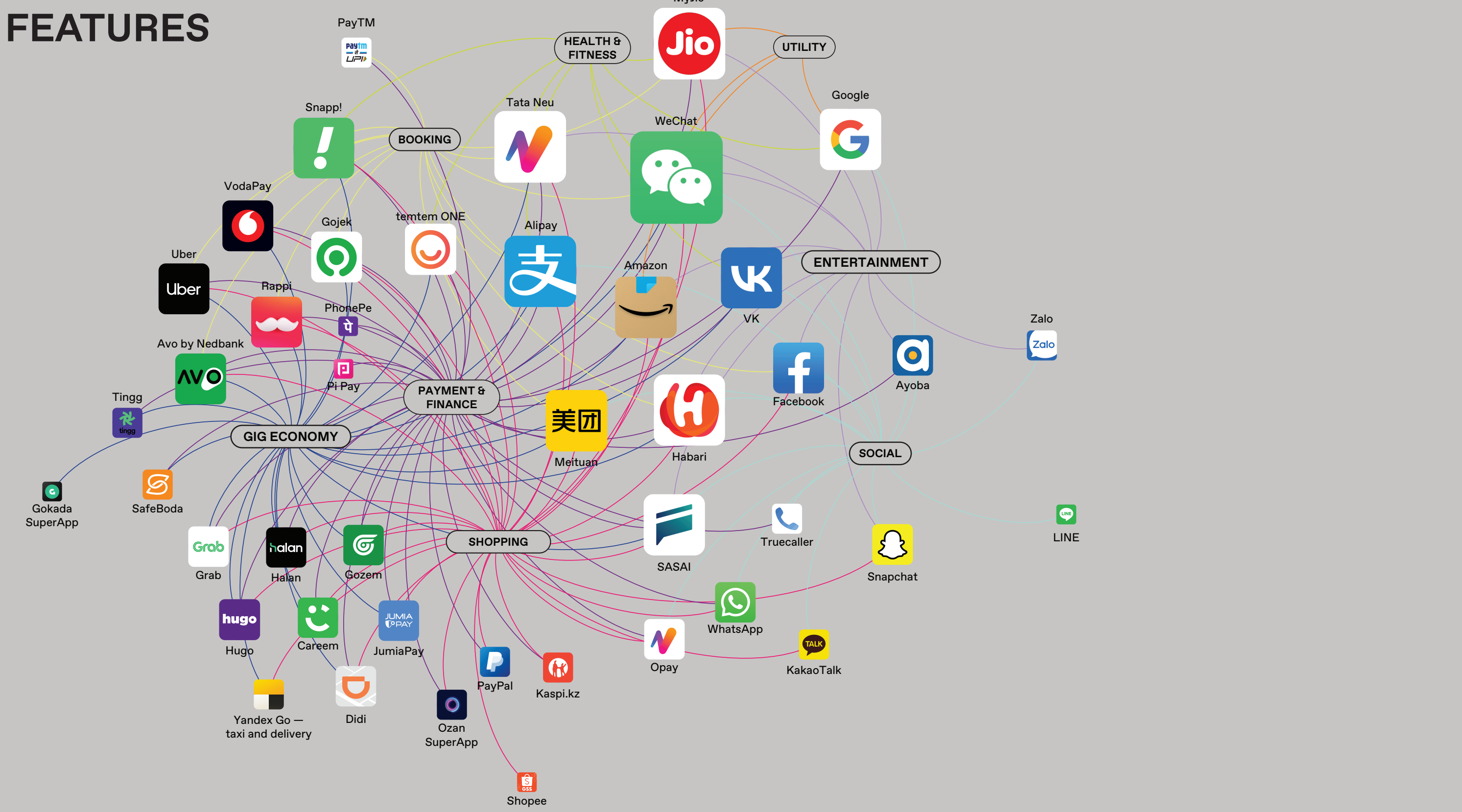
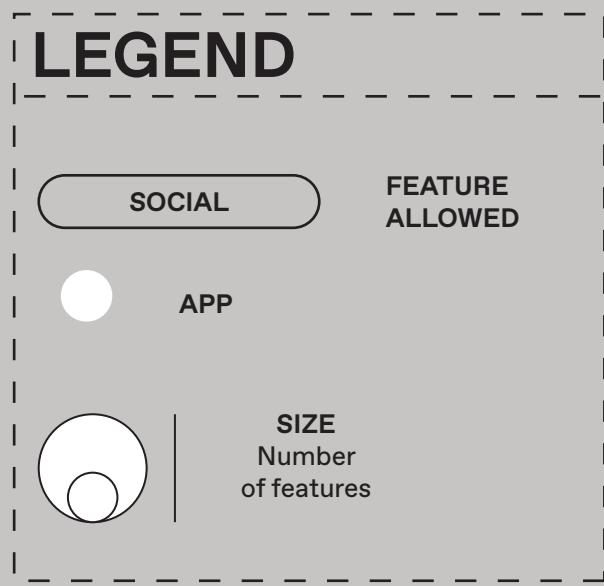
SUPER APP CATEGORIZATION ACCORDING TO GOOGLE PLAY



When app developers publish apps to Google Play, they have to choose an app category which "help[s] users to search for and discover the most relevant apps in the Play Store" (Google). Although super apps provide a range of services, the Google Play categories reveal what super apps present as their core business, and may indicate the initial purpose of the app (which seems to be the case for the majority of the apps we have collected for this analysis).

The three main clusters in the graph (Finance, Maps & Navigation, and Communications) coincide with Ajene's (2021) super app archetypes. Even though this categorization was first thought to describe the super app ecosystem in Africa, it still holds to our scoping of super apps globally. For instance, the Maps & Navigation category correlates with Ajene's mobility-driven apps, the Finance category corresponds to Financial Services-Driven, and Communications to Telco-driven.

SUPER APP SHARED FEATURES



Through emergent categorization, we isolated 18 shared features between the super apps we collected:

1. Banking / Financial;
2. Payment;
3. Rewards;
4. Marketplace / E-Commerce;
5. Food Delivery;
6. Package Delivery;
7. Ride Hailing;
8. Microtasking;
9. Chat / Messaging / Calls;
10. (Social) Content;
11. Events / Restaurant / Movies;
12. Travel;
13. Health & Fitness;
14. Series / TV / Music-Streaming;
15. News;
16. Games;
17. Work / Office;
18. Cloud / Data Storage.

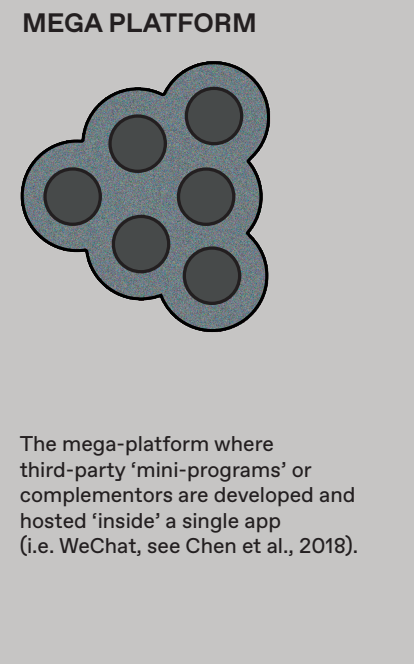
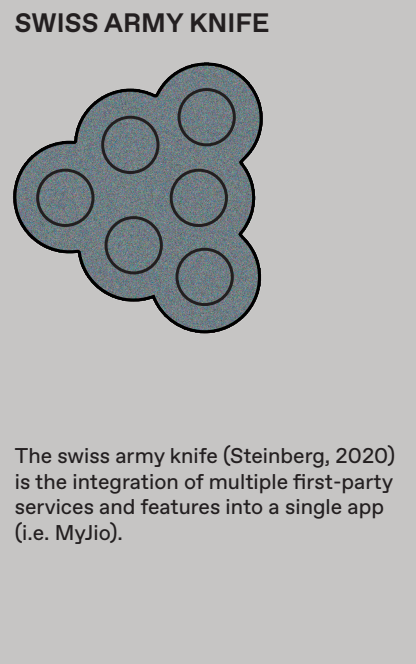
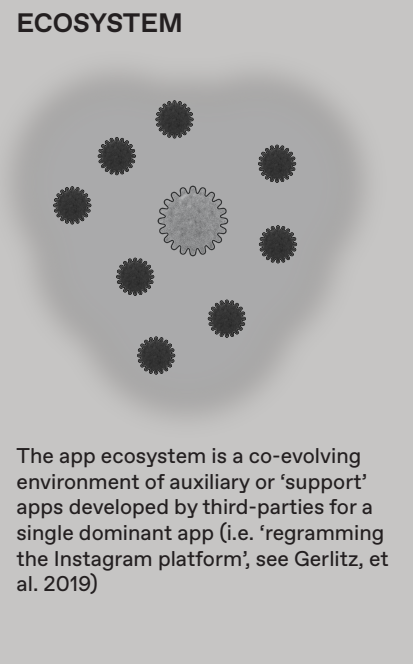
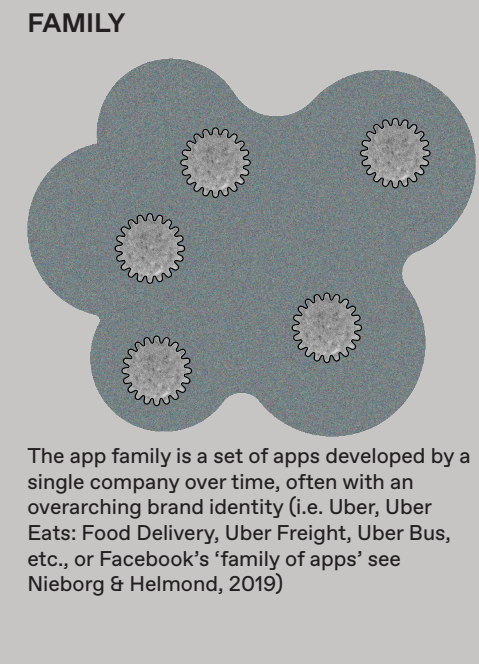
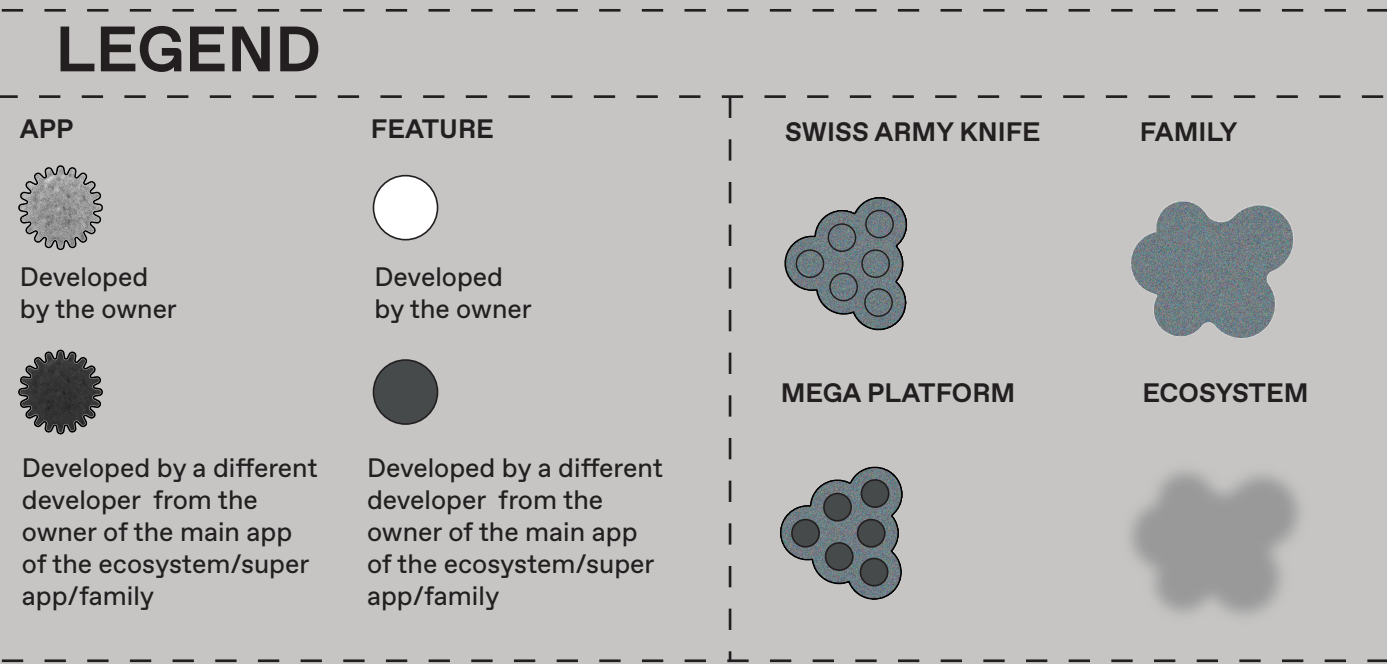
We then derived 8 overarching types from this initial categorization:

- Payment & Finance (1-2);
- Shopping (3-4);
- Gig Economy (5-6-7-8);
- Social (9-10);
- Booking (11-12);
- Health & Fitness (13);
- Entertainment (14-16);
- Utility (17-18).

This process provided us with an overview of shared super app features which could then inform other potential historical enquiries; for instance, allowing an analysis of how an app has evolved to acquire multiple features over time.

In our visualization, three main clusters of features emerge: Gig Economy, Shopping and Payment & Finance, with the latter being the central feature that supports and connects the others. This reveals that the rise of super apps go hand in hand with the rise of digital payments and fintech. It also explains why shopping is one of the main features of super apps, despite it not being a major category for super apps in Google Play

SUPER APP TYPOLOGIES: What defines a super app?



Given the competing conceptions and definitions of a super app that circulate within industry literature, we devised a typology to clarify common development strategies identified in our data. To codify our collection, we focused on the relationships between app features, whether it had supporting apps, features arising from first or third-party developers, or if it belonged to a family of apps from the same developer. Our typology consists of: the app family as a set of apps developed by a single company over time, often with an overarching brand identity (i.e. Uber, Uber Eats: Food Delivery, Uber Freight, Uber Bus, etc., or Facebook's "family of apps" see Nieborg & Helmond, 2019; van der Vlist et al., 2022); the app ecosystem as a co-evolving environment of auxiliary or "support" apps developed by third-parties for a single dominant app (i.e. "reprogramming the Instagram platform," see Gerlitz, et al. 2019); the swiss army knife as the integration of multiple first-party services and features into a single app (i.e. Mylio or Line, see (Steinberg, 2020); and, finally, the mega-platform where third-party "mini-programs" or complementors are developed and hosted 'inside' a single app (i.e. WeChat, see Chen et al., 2018). The different typologies are not mutually exclusive.

ATLAS OF SUPERMAPS

ATLAS
To understand the global spread and concentration of super apps, we plotted 14 representative super apps from our collection on a proportional map by taking into account the apps' superness, original features, and number of downloads.

Super apps with the characteristics of the swiss army knife model mostly originate in African and Asian markets, and are active in these respective regions. While WeChat also has swiss army knife characteristics, it also functions as a mega-platform, since it has mini-programs, and has an app ecosystem around it, making it uniquely structured in this region.

Apps with headquarters in the United States, such as Google and Uber, tend to follow the app family model and be active worldwide. Facebook slightly differs from the other two, since it not only has an app family, but also functions as a mega-platform, swiss army knife, and has an ecosystem of third-party apps. In this sense, it is somewhat closer to WeChat, including the fact that they both evolved from the same overarching category of social apps.

These geographic differences between super apps likely intersect with cultural, economic and geopolitical dynamics, including distinct regulatory and legal frameworks of platform governance, such as the GDPR in the EU and heightened focus on anti-trust legislation. We consider this a point for further research.

TREEMAP
The number of app downloads from the Google Play Store determines the size of the squares in the visualization.

It should be noted that due to the exceptional status of Chinese app stores (Goggin, 2021), the size of WeChat is not representative of its actual global usage. The number shows the downloads of WeChat's international app hosted by the Google Play Store, rather than from Chinese app stores.

