Two data-driven information systems

Introduction

In my daily life, I commonly use data-driven information systems such as WeChat and Google Maps. These platforms provide essential services that enhance communication, navigation, and access to a wide range of information and functionalities.

WeChat

Normally, I use WeChat for communicating with friends and family via video, voice, or text, sharing updates on Moments, making mobile payments via QR code, and accessing various mini-programs (apps within WeChat) for services like gaming (majiang or poker), news and more.

WeChat is a comprehensive social media platform developed by Tencent (Wikipedia:2019). It is widely used in China and around the world. WeChat uses a variety of data types, including:
personal information (name, phone number, profile picture)
messaging data (text, voice, video, and images)
social interactions (friend lists, likes, comments)
location data (share location in real time)
transaction data (payments made via WeChat Pay, or other deposit card)
content data (posts, articles, and videos shared on Moments)

A large amount of data is generated every day. When I message my friends or family members, data is created. When I post a moment, data is created. When I make a transaction, data is created. When I use third-party service providers, like mini-programs, data is created. Once data is created, it is sent to servers, where it is analyzed and checked for legality. After a series of checks, the data is sent to the target users. All this data is stored on Tencent's servers (in my opinion, the platform will use

hybrid storage for data storage). Tencent employs large-scale databases and advanced data management practices to ensure data integrity, availability, and security. The data is managed to enhance the user experience, deliver personalized content, and facilitate seamless transactions.

It is no doubt that the data is managed to enhance the user experience. However, there are significant concerns regarding the security and privacy of user data on WeChat. The app collects a vast amount of personal and sensitive data, which, if breached, could lead to identity theft, financial loss, and privacy invasion. Additionally, there are concerns about government surveillance and data sharing with third parties without user consent. Ensuring robust data encryption, user control over data sharing, and transparency in data handling practices are critical to mitigating these risks.

As you can see, WeChat plays an important role in my life, it's hard to imagine life without WeChat. If this data were not available, my ability to communicate and share information with my social network would be severely hampered. My family members will worry about not being able to connect me. I would also lose access to convenient payment methods and various services integrated within WeChat. The user experience would be significantly degraded.

Google Maps

When I need to travel to an unfamiliar location, I utilize Google Maps to determine its location and navigate there. I recall that when I first arrived in Australia, I used Google Maps to locate the nearest HSBC branch.

Google Maps is a web-based mapping platform and consumer application provided by Google (Wikipedia:2019). It offers a range of features, including satellite imagery, aerial photography, street maps, 360-degree interactive panoramic street views (Street View), real-time traffic conditions, and route planning for travel by foot, car, bicycle, air (in beta), and public transportation. The platform leverages various

types of data, such as geographical data, traffic data, user-generated content (including reviews and photos), GPS data, and business information (such as operating hours and contact details).

Every day, I use Google Maps for navigation, finding nearby amenities (like restaurants or ATMs), checking traffic conditions, and planning travel routes. Without this data, it would be challenging to navigate unfamiliar areas, find specific locations, or estimate travel times. It would also hinder my ability to make informed decisions about where to go based on current traffic or business reviews.

Data in Google Maps is generated by users (reviews, photos), businesses (listing details), and sensors (GPS data, traffic cameras). All these data are combined to create convenient life for people. When users search route, or use GPS devices, Google Maps captured data and stores this data in its cloud infrastructure, using extensive databases and servers. They manage the data through various data management practices, ensuring it is regularly updated and accurate.

There are also significant privacy concerns, especially regarding location data. If this information were to be accessed by malicious parties, it could be used to track individuals' movements. Additionally, data breaches could expose sensitive information, such as users' travel patterns and personal preferences.

Reference

Wikipedia (2019). "WeChat." Wikipedia, Wikimedia Foundation, accessed 18 July 2024, https://en.wikipedia.org/wiki/Wechat.

Wikipedia (2019). "Google Maps." Wikipedia, Wikimedia Foundation, accessed 18 July 2024, https://en.wikipedia.org/wiki/Google_Maps.