

Capturing, Using, and Storing Users' Locations

Summary

Location adds useful context to a wide variety of mobile Internet services. Social network and social media service operators leverage information about users' locations to provide more utility and more social experiences. This position paper is contributed to enable discussion of key technical, interface design, and privacy issues surrounding the capture, use (including sharing), and storage of location information in social networking applications.

Background

Socialight is an active developer of social communication services that rely on members' locations for capture and delivery of media. Socialight provides both content and community management systems as well as interfaces onto these systems, including mobile, web, and application programming interfaces (APIs).

There is a large and growing number of applications that utilize users' locations. These include location-based services in the following categories (among others):

- **data** (weather, retail prices, venue data, WiFi access points)
- **mapping and routing** (maps, point-to-point directions via driving, walking, or mass transit)
- **content** (venue reviews, local blog posts, stories, photos, videos, and sound)
- **communication** (communicate with people and businesses nearby)
- **person tracking** (friend or family tracker, workforce tracker)

Location information is especially useful for social network services with content, communication, and presence awareness applications simply because people are interested in where people are around them and what people around them have to say. At the same time, social network services sometimes carry greater risks than other services because of privacy implications surrounding sharing location information socially. With a better industry understanding of issues surrounding location information in social network services, services can be better designed to provide great value while minimizing risks.

Areas for Discussion

Many applications, including Sociallight, provide services that combine 2 or more of location-based service categories in a single platform. Often, single applications both capture and utilize the location information. Recently, services have begun to leverage the location information gathered and/or managed by another service. For example, one application might determine a user's location and store it on a server for other applications to access and use.

Until now, mobile network operators maintained control over the provision of location information to application providers. With embedded location-determination technologies in devices, this is less often the case today. This means there is less centralized control over users' location information, which has both positive and negative implications for users.

As location information is captured, used, shared, and stored more among separate and networked applications, important questions should be taken into account:

1. Location information capture:
 - 1.1. Is it clear to the user when their location is collected (automatically or manually)?
 - 1.2. Can the user turn location information collection off? If so, when?
 - 1.3. Does the user have control over the specificity of their location that is being captured?
 - 1.4. What methods are being used to determine the user's location (GPS, cell ID, cell tower triangulation, WiFi positioning, manual entry, etc.)? Can I control which methods are used?
 - 1.5. Can location information be captured worldwide or only in specific geographic locales?
2. Location information usage:
 - 2.1. Is it clear to the user in what instances their location is being used?
 - 2.2. Is the user's location being transmitted across the network? Are transmissions secure?
 - 2.3. Will the user's location be correlated with personally identifiable information?
3. Location information sharing:
 - 3.1. Will the user's location be shared with other user's of the application? If so, when and with what users?
 - 3.2. Will the user's location be shared with any third parties? If so, what third parties and with what specificity? What level of control does the user have over sharing?
 - 3.3. Can stored information be retrieved by the user?
 - 3.4. Can stored information be retrieved by another application?
 - 3.5. In what formats can the information be retrieved?

4. Location information storage:
 - 4.1. Will a historical record of past locations be retained?
 - 4.2. If so, for how long and how many records?
 - 4.3. If so, will this record be correlated with personally identifiable information? Will records be correlated with any additional information that is not directly personally identifiable?
 - 4.4. How secure are storage facilities?
 - 4.5. Can stored information be deleted by the user?

Conclusion

It is important to discuss today these questions and how they might be answered for various applications so as to help people develop better applications and help people to use them effectively and responsibly. Great utility and entertainment can be provided by applications integrating user location. These questions and their answers could yield shared industry best practices, technology standards and tools, and valuable discussion that brings up even more important questions.