

Three Ages of GI Users

Three ages of Geographic Information Users may now be discerned: past, in public administration; current, commercial; and future, personal.

Past

The 1970s saw Geographic Information Systems (GIS) proposed to encourage use of the then new electronic data processing machines to reduce duplicated spatial information collection and maintenance costs in public administration. Multi-purpose cadastres were designed to integrate data based on location; improve urban planning and maintenance of urban infrastructure and avoid accidents. The Harvard Graphics Lab (USA) then included researchers like Jack Dangermond and Nick Chrisman, both still actively influencing GIS today.

Present

In 1990 the U.S. Bureau of the Census put street centerlines online, and topography became available from USGS. These datasets allowed commercial users to geo-code client data with street addresses and use spatial-analysis tools. GPS receivers and mobile communication devices helped logistics business to manage and improve vehicle dispatch. Mapquest, Google and car-navigation systems now hold improved street network and traffic data and sell guidance information, often paid indirectly by advertisement. There is more and more public use of location related information in daily life.

Future

People manage personal information electronically on multiple devices: calendars on the internet cloud; address list and phone directory on PC or mobile phone. Personal digital photograph archives grow quickly. My new digital camera includes a GPS receiver and all my photographs are geo-coded, but I can't ask how this place looked when last I visited. My smart-phone allows GPS trailing of my movements during the day, but the tools producing and managing my personal data are mostly location-blind and non-cooperative. Location could in the future serve as organising principle. I expect the next generation of personal information management system (PIM) to be spatially aware (sPIM): a personal GIS (pGIS).

Killer App

Two concluding observations: firstly, the market for public administration systems is generally saturated, and the much larger commercial market still growing. Imagine the market for pGIS - virtually everybody is a potential user! Secondly, the time elapsing from research stage to wide application is much longer than expected: ten to twenty years for GIS in public administration and commerce. The research required to make pGIS a reality will be the foundation of the killer application of the 2020s.