

The Use of Geospatial Technologies in Geographical Information Systems

Analysis of maps plays an important role in understanding geographic space nowadays. This has changed the way maps are used till now since instead of emphasizing on the geography's physical description, importance is attached to interpretation of mapped data. This movement from a descriptive approach to prescriptive approach is the foundation of new [geospatial](#) concepts of today.

Some of the changes since the 1960's include:

- Decision-making process is attached at a quantitative level
- Mathematical models are used more on a common scale
- Use of computerized maps rather manual processing procedures

Use of Geospatial Technologies during the 1980s

During the 1980's, spatial database management systems were developed with innovative mapping capabilities along with traditional DBMS capabilities. Identification numbers were assigned to each geographic feature so that it would be easier to track a location in a map.

By the mid-1980's, it was decided upon that the nature of the data and the processing element required a standard data structure. Sharp boundaries were represented by lines describing real lined and certain data like property ownership. Other elements such as site index, and slope were terrain interpretations and hence were subject to judgment and classified spatial distributions. The nature of [GIS jobs](#) also changed course towards the IT field.

Hardware vendors continued improvement in digitization and there came up a new industry in the form of map encoding and database design. This industry dealt with digital map productions and necessary standards were introduced to ensure compatibility with systems.

Use of Geospatial Technologies during the 1990s

As GIS continued to evolve in terms of geospatial technologies its evolution, repeated distance and bearing calculations were thoroughly programmed with adept mathematical solutions. A user's daily activities were mimicked and automated. With automated systems, the savings were huge and hence the role of IT systems increased during this period.

GIS and geospatial technologies involved application of new theories of mapping which were revolutionary in nature. Geospatial analysis consisted of spatial statistics and spatial analysis for better mapping interpretation. Spatial statistics used both location and measurements at different locations to generate maps. Alternatively, spatial analysis applications involved context-based processing just as land planners can assess the visual exposure of different sites including roads and other scenic places.

The Present Day Scenario

Today, GIS solutions are reflected on everyone's desk, smart phone and the like. In just three decades. Now you can use a GIS app on your smartphone to get driving directions and even share interactive maps of a particular location to someone you want to recommend for a vacation.

Keeping in view the computer pervasiveness in today's world, the US Department of Labor has equated geospatial technologies to be one of the three "mega-technologies" of the 21st century joining the ranks of Nanotechnology and Biotechnology.

The new processing environment involving GIS technologies includes an integrated global positioning system and remote sensing

GIS Career Feature

technology. One can add ancillary systems including robotics for automated data collection procedures too. [Employment in the GIS sector](#) now includes GIS analysts and computer programmers who are required to perform duties related to cartographic design, data analysis, computer programming and system administration much like that of specialized IT professional.

With the advent of virtual reality, embedded hyperlinks, and immersive imaging, GIS has managed to cross all boundaries of a standard discipline and has merged itself with the whole world of information systems.

Conclusion

The GIS development has been of an evolutionary nature over four decades rather than revolutionary. Today's GIS professionals are willing to challenge and engage their resources to make GIS much more accessible than the smartphone. So what do you expect from the future?