Chapter 6.23
Introducing GIS for Business in Higher Education

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ABSTRACT

Schools of business can benefit from adoption of geographic information systems (GIS). A brief overview of GIS technology is presented along with an example showcasing how it can be presented in a business school. GIS benefits for business schools, their students, and faculty are discussed. A comprehensive approach for promoting such spatial thinking is presented. The goal is to empower faculty to adopt GIS for their research and teaching, producing a large number of business school graduates that can promote spatial thinking in their organizations.

INTRODUCTION

This article discusses the introduction of GIS for higher business school education in departments such as management, marketing, economics, finance, and information systems. The goal is to have business school students, faculty, and administrators thinking about location and time issues relating to their research, teachings, and business decisions using GIS technology to illustrate and to implement business ideas in terms of location and time. We begin with an overview of GIS and its benefits to business sectors and focus on business education. A detailed discussion of the approach ensues. It consists of an awareness campaign in which business school faculty, administration, and students are made aware of the benefits of thinking about business and business education in terms of location and time. Once an agreement is reached regarding the importance of spatial business thinking, resources must be secured to implement the approach. These include the purchasing and setup of GIS software, hardware, and data. Faculty must be trained in the use of GIS technology as well as in incorporating spatial thinking in the classroom. Faculty members also should be introduced to the benefits of GIS in their research activities. The article concludes

with lessons learned from the author's experience, including the impact of spatial thinking and GIS technology on course curriculum.

California State University Los Angeles (CSU-LA) is reaching out to introduce spatial thinking in business education to build more academic-business bridges in the world. The school of business at CSULA, an AACSB accredited institute, is working to promote the use of GIS technology in business education as well as in the multicultural business community that it services.

GIS Overview

GIS is an integrated computer system capable of capturing, storing, retrieving, analyzing, and explaining spatial information that provides the user with knowledge of the location information in the context of time about the world, a business, a project, or an objective. GIS is also a location-based, decision-making tool that helps to produce useful information in a cost-effective manner. The ability of GIS to analyze spatial data frequently is seen as a key element in its definition and often has been used as a characteristic that distinguishes GIS from other systems. GIS facilitates spatial analysis, which is a set of analytical methods. It requires access to both attributes of objects under study and to their locational information and allows referencing traditional data sets to maps. Geographic Information Systems consist of a number of key components. These include computer hardware, software, data, procedures, and people. GIS data consists of spatial or mapping objects as well as non-spatial attribute data. Spatial data include points, lines, polygons, and other graphical representations, as well as text that represents buildings, customers, roads, and other real-world entities. GIS can help to answer different types of questions. It can help one to find what is at a particular location, where something specific is located, what has changed, what is the best way to get somewhere, what the pattern is, and what if certain conditions arise.

Higher education institutions have focused largely on training a select number of GIS specialists in certificate and Master's programs. Many of these specialists were hired by governmental organizations, which has resulted in a penetration of the technology in government and some private organizations. GIS currently is entrenched heavily in all levels of government across different departments and is making a substantial impact where it is used, including planning, coordination, and monitoring activities.

GIS Learning Case

Business school students may use GIS to learn about a way to make business decisions based on location. For example, consider using technology to define where a new health food store should be located in a city such as Los Angeles. The students may gather business data about different restaurants in the city, as well as their locations and what type of food they offer. The students then should gather information about the income of the citizens and other demographic information about the population (e.g., age, type of employment) based on zip codes in the city. This information can be overlaid visually on a map of the city using a GIS program such as ArcGIS. The students then can query the software to highlight the location of those zip codes where the income is the largest, the population is the youngest, and that currently do not have a store of the type the student is interested in, starting within a 10-mile radius of the zip code. The student learns that the GIS software supports their decision-making process.

GIS BENEFITS FOR BUSINESS

Business knowledge is power, which can be increased by looking at business data in terms of location and time. GIS enables one to view business information graphically, share infor-

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