

# Chapter VIII

## Incorporating Geographic Information Systems 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 is presented along with an example of showcasing how it can be presented in a business school. 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 chapter discusses the introduction of GIS for business higher education in departments including management, marketing, economics, finance, and information systems. Although the value of geographic information systems (GIS) technologies is recognized by practitioners and educators alike, GIS instruction has yet to make significant inroads into business curricula (Miller, 2006). 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 implement business ideas in terms of location and time. We begin with a discussion of GIS in general and its benefits to business sectors and focus on business education. A detailed discussion of the approach ensues. It consists of an awareness campaign where 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 complement the approach. These include the purchasing and setup of GIS software, hardware and data. Faculty must be trained in use of GIS technology as well as in incorporating spatial thinking in the classroom. Faculty should also be introduced to the benefits of GIS in their research activities. The chapter concludes with lessons learned from the authors experience including the impact of spatial thinking and GIS technology on course curriculum.

California State University Los Angeles (CSULA) 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 multi-cultural business community that it services.

## **OVERVIEW OF GIS**

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 decision making tool that helps produce useful information in a cost-effective manner. The ability of GIS to analyze spatial data is frequently seen as a key element in its definition, and has often been used as a characteristic which 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 includes points, lines, polygons, other graphical representations, as well as text that represent buildings, customers, roads and other real-world entities. GIS can help answer different types of questions. It can help you find what is at a particular location, where something specific is located, what has changed, which is the best way to get somewhere, what the pattern is, “what if” certain conditions arise.

GIS technology originated from computer aided design and drafting (CADD) systems initially used for engineering purposes. CADD systems were adapted, mainly by geographers to manage geographic and environmental data about earth.

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

## **BENEFITS OF GIS FOR BUSINESS**

Business knowledge is power and it can be increased by looking at the business data in terms of location and time. GIS enables viewing business information graphically, sharing information with others as well as making appropriate business decisions. GIS can be used for managing information about a business, a business sector, business activity in a region, country or worldwide (Grimshaw, 1999).

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