Introducing Business Faculty to GIS

JaNae Kinikin
Shaun Spiegel

Abstract

Librarians at Weber State University introduced faculty members in the School of Business & Economics to GIS. The first stage of the project was obtaining grant money to purchase software, hardware, and data necessary for a GIS laboratory. Next, the librarians completed the Environmental Systems Research Institute’s online course “Introduction to Successful Marketing Using ArcView GIS.” The final stage of the project was the development of a workshop to encourage business faculty to incorporate GIS into their courses, so that students entering the workforce have a basic knowledge of the applications and benefits of GIS.

Introduction

Geographic Information Systems (GIS) consist of “…a set of computer tools for storing, analyzing, and displaying data that includes hardware, software, and geographic data” (Badurek 110). Over the past decade, GIS have become more common in academic library settings. In 1997 the Association of Research Libraries (ARL) conducted a survey to determine GIS implementation and usage in ARL libraries. Of the 72 reporting institutions, 64 reported serving users of Geographic Information Systems and 53 reported that GIS services were provided by the library. Additionally, the survey reported half of GIS users require assistance to become familiar with the software (Davie et al 4,10).

GIS is an ideal tool to use in the application and analysis of spatial data, which can be an integral component in business and marketing. Applications of GIS in the marketing process include customer profiling, site planning, and market research. GIS allows for the analysis of
spatial data to improve key decision-making in business planning (Galbraith and Coonin 10). The significance of GIS in the business field will in the future require that both business students and faculty have a greater awareness and understanding of this technology and its applications.

**Background**

Stewart Library is in its second year of implementing GIS services. Before creating our own GIS laboratory, we conducted a survey of 268 libraries at smaller institutions (Carnegie Classification Master’s Colleges and Universities I & II) (Carnegie Foundation 1997-2003) to determine how many had implemented GIS. Sixty-three percent (168) of the surveys were completed and returned. We found that only 13% of the respondents have GIS; however, several (16%) said that GIS would be incorporated into the library in the future (Kinikin and Hench 3).

In those libraries with GIS, we examined how the GIS implementation had been accomplished. The majority of institutions with GIS had arrangements similar to the initial GIS set-up at Weber State University (WSU). This set-up consisted of a workstation loaded with ArcView GIS software (distributed by the Environmental Systems Research Institute) in the reference area of the library and made available for patron use. Unfortunately at WSU this computer was not dedicated as a primary GIS workstation, but was also loaded with other software applications. In addition, the steep learning curve of GIS and the lack of knowledgeable GIS personnel resulted in the software being underutilized. To make others aware of the utility of GIS, we decided to promote GIS in the library and across campus at WSU. The School of Business & Economics was selected as a logical place to begin due to the many applications of GIS in the business field.
Objectives

In the Fall of 2003, we introduced GIS to Stewart Library patrons and potential GIS users across the WSU campus. We started with three objectives:

- improve the GIS skill of library faculty
- demonstrate to business faculty the value of using GIS in marketing research
- introduce business students to the use of GIS

Methodology

Initially, we applied for a Higher Education Technology Initiative (HETI) grant sponsored by Weber State University. In this grant we requested an online course entitled *Introduction to Successful Marketing using ArcView 3.x* created by ESRI, CensuSmart Census data, a large-format printer, a computer, and a monitor. Using the hardware and the software purchased with the grant funding, a GIS computer laboratory was established in a separate area of the library to be utilized only for GIS projects.

During Spring 2003, we completed two GIS courses, *Introduction to Computer Mapping and GIS* and the online ESRI GIS marketing course. The final project for the *Introduction to Computer Mapping* course involved a study of patron usage of the Weber County Library System in northern Utah. This project was completed using the newly created GIS laboratory. The online GIS marketing course provided an introduction to the ESRI ArcView software, as well as examples of GIS applications in marketing.

The next step was to design a 3-hour workshop to introduce faculty in the School of Business & Economics to GIS, specifically focusing on GIS applications in marketing. The workshop consisted of 4 sections. The first section introduced the faculty members to GIS and basic GIS concepts such as layers, raster and vector data, and geocoding. This component was followed by a presentation demonstrating GIS applications in the business environment with an
emphasis on marketing. Examples in this section included market area determination, site location, and vehicle routing. After this portion of the workshop, we took a break and gave the faculty members a tour of the newly created GIS laboratory located on the main level of the Stewart Library. Following the tour we discussed the different icons that are commonly used in ArcView 3.3 and presented a brief overview of their functionality.

We concluded the workshop with a hands-on demonstration of GIS. Using the ArcView software the participants created a map showing a well-known local furniture company’s stores and their locations in Salt Lake County. We provided the participants with the data required for this project and they then produced a map showing the outline of Salt Lake County, the company’s four furniture stores, the locations of their competitors, and major roads. We concluded the presentation by telling the participants that additional layers could be added. For example, demographic information could be used to show the characteristics of the people who would most likely purchase furniture at each of the company’s stores. This information could then be used in advertising and marketing the company’s stores to potential customers.

Results and Future Goals

At the completion of the workshop, faculty members were invited to complete an evaluation form. These evaluations were overwhelmingly positive and the majority of the business faculty responded that they now had a basic knowledge of GIS and a greater understanding of how GIS can be used for business applications. Many of the participants expressed interest in incorporating some aspects of GIS into their courses.

The final objective of the grant was to introduce business students to the applications of GIS in marketing research. As faculty become more aware of the utility of GIS, they will begin introducing the software to their students and eventually require its use for classroom projects.
The existing hesitancy of faculty in using GIS and introducing its use to their students is related to the steep learning curve of the software. We plan to overcome this hesitancy with the purchase of new Business Analyst software from ESRI. This software is more user-friendly and provides “wizards” to walk users through a simple marketing project using their own data.

With the success of the first GIS workshop, we plan to offer a second workshop during the Fall semester 2004 focusing on additional applications of GIS in the business environment, specifically marketing research. Both students and faculty from the School of Business & Economics will be invited to this workshop.

Faculty members in other departments have expressed interest in utilizing GIS in both the classroom and their research. Specifically, nursing faculty are interested in the application of GIS in the public health arena. We are currently working with the nursing department to map schools in Davis County, Utah, adding demographic information to determine where students of single mothers with low incomes live. This visual map will provide critical information showing the need for additional nurses in the public school system. Geosciences faculty members are also interested in utilizing GIS in their own research and for student projects.

We are excited about the progress that we have experienced in introducing GIS to the Weber State University campus. We believe that through additional promotion and word-of-mouth advertising, the benefits of using GIS in research will be established in many different campus departments including criminal justice, nursing, political science, and sociology. The many applications of GIS and the increasing user-friendliness of the software will assist us in this endeavor.
Acknowledgements

The authors wish to acknowledge the following people for their contributions: Keith Hench, PhD and Fran Zedney for their helpful comments and suggestions on the paper, Joan Hubbard for her support of GIS in the Stewart Library, and Michael Hernandez for his enthusiasm and interest in the promotion of GIS at Weber State University.
References


Kinikin, JaNae and Keith Hench. “A Survey of Carnegie Classification Master's Colleges and Universities I & II to Evaluate Geographic Information Systems (GIS) Utilization within the Libraries at these Institutions.” 2004 MPLA Annual Conference, Incline Village, NV.
Author Information:

JaNae Kinikin
Science Librarian
Weber State University
Stewart Library
Ogden, Utah 84408-2901
801-626-6093
801-626-7045 (fax)
jkinikin@weber.edu

Shaun Spiegel
Business & Economics Librarian
Weber State University
Stewart Library
Ogden, Utah 84408-2901
801-626-7570
801-626-7045 (fax)
sspiegel1@weber.edu