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BUSINESS DISCIPLINES**

**ASSOCIATION OF  
BUSINESS INFORMATION  
SYSTEMS**

**Proceedings and Directory**

**March 13-17, 2007  
Town and Country Resort  
San Diego, California**

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**ASSOCIATION OF BUSINESS  
INFORMATION SYSTEMS**

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**2007 Refereed Proceedings**

**San Diego, California**

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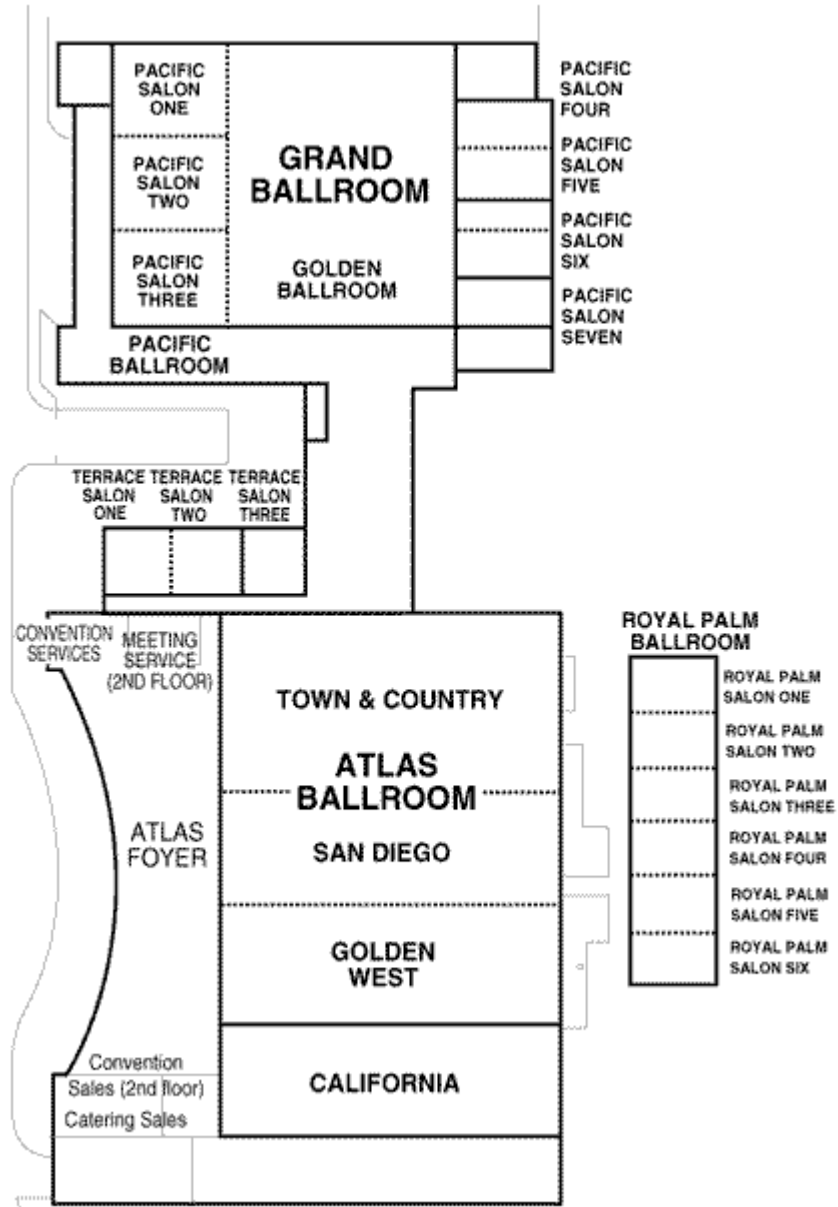
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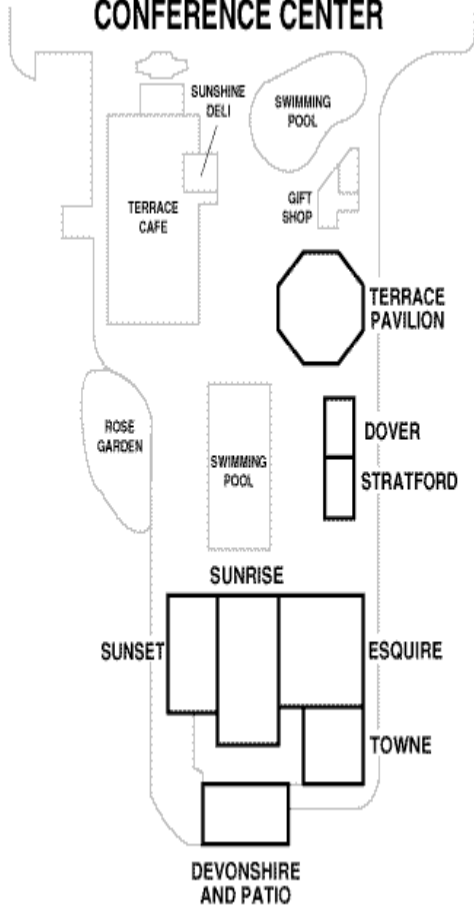
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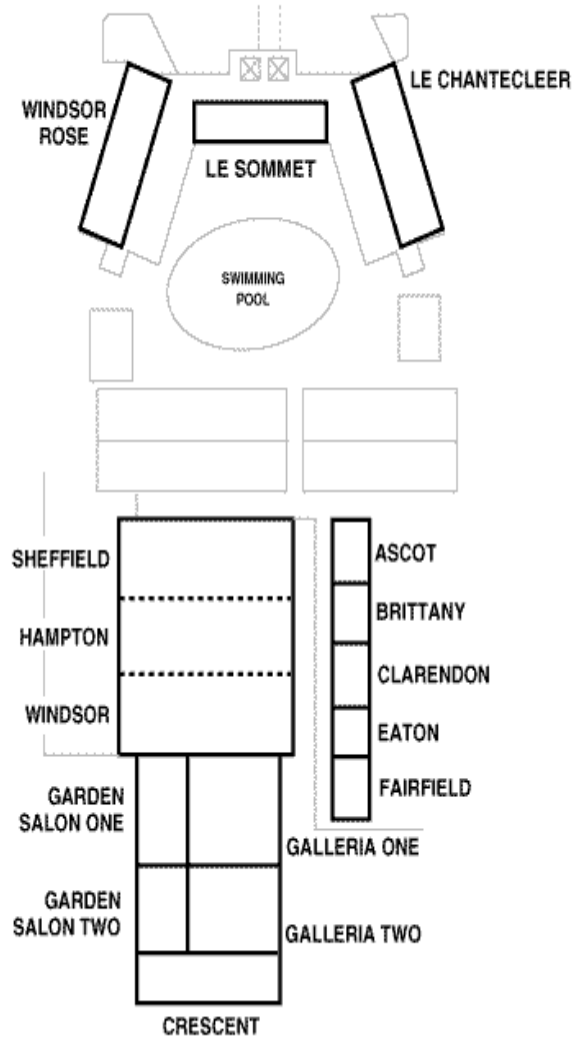




## MEETING HOUSE EXECUTIVE CONFERENCE CENTER



## REGENCY BALLROOM & CONFERENCE ROOMS



**Association of Business Information Systems  
A Division of FBD**

**Annual Conference in San Diego, CA**

**March 14, 2007 (Wednesday)**

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**1:30 p.m. – 3:00 p.m.**

**Towne**

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**SESSION A Effects of Technology and Innovation on Business Programs**

Session Chair: **Julie McDonald**, Northwestern State University

*The Mediating Effect of Technology on Administrative Management*

**Chynette Nealy**, University of Houston-Downtown

**Carolyn Ashe**, University of Houston-Downtown

*Innovation: The Strategic Opportunities of Collaboration*

**Jacob Olusola Ogunlade**, Walden University

**Barbara Davis**, University of Memphis

March 14, 2007 (Wednesday)

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3:30 p.m. - 5:00 p.m.

Towne

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**SESSION A Cyber Skills and Competencies**

Session Chair: **Chynette Nealy**, University of Houston-Downtown

*Computer Application Employability Skills*

**Susan Evans Jennings**, Stephen F. Austin State University

**S. Ann Wilson**, Stephen F. Austin State University

**Jim Rucker**, Fort Hays State University

**Sandy Braathen**, University of North Dakota

**Recipient of the 2007 McGraw-Hill/Irwin Distinguished Paper Award**

*Analysis of Competencies Needed by Systems Analysts as Perceived by IT Professionals*

**Janet L. Bailey**, University of Arkansas at Little Rock

**Robert B. Mitchell**, University of Arkansas at Little Rock

**Michael Douglas**, University of Arkansas at Little Rock

**Diane Parker**, University of Arkansas at Little Rock

*An Instructional Assignment for Business Students: Analyzing Sales Data in Microsoft Excel*

**Constance M. Lehmann**, University of Houston-Clear Lake

**Cynthia D. Heagy**, University of Houston-Clear Lake

March 15, 2007 (Thursday)

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8:30 a.m. - 10:00 a.m.

Windsor Rose

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**Special Session: ABIS Member Breakfast and ABIS Business Meeting**

**8:30 a.m. Breakfast** All ABIS members welcome

**9:00 a.m. ABIS Business Meeting**

Presiding **Julie McDonald**, Northwestern State University  
**President, Association for Business Information Systems**

March 15, 2007 (Thursday)

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10:00 a.m. - 10:30 a.m.

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**FBD Coffee Break**

Please make plans to visit the exhibits for information on the latest books & newest educational technologies.



Please let exhibitors know how much we appreciate their presence and continued support!

*Drawing for complimentary FBD 2008 & FBD 2009 registration (\$150 value).  
Must be present to win.*

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10:30 a.m. – 12:00 p.m.

Windsor Rose

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**SESSION A Dynamics Affecting the ABIS Environment**

Session Chair: **Chynette Nealy**, University of Houston-Downtown

*Profile of College Business Courses Offered over the Internet*

**Walter Creighton**, Northwestern State University

**Margaret S. Kilcoyne**, Northwestern State University

*Copyright Law and Online Education: Revisiting the T.E.A.C.H. Act (2002) and Its Implications for Business Information Systems*

**J. G. Igwebuike**, Alcorn State University

*Hurricane Katrina's Silver Lining: E-Learning at Southern University at New Orleans*

**Adnan Omar**, Southern University at New Orleans

**Samuel Tabi**, Southern University at New Orleans

*Incorporating Emerging Web Collaboration Tools into the Business Information Systems Curricula—Knowledge Management in Practice*

**C. Steven Hunt**, Morehead State University

**Lola Smith**, Morehead State University

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12:00 p.m. – 1:30 p.m.

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**Lunch Break**

March 15, 2007 (Thursday)

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1:30 p.m. - 3:00 p.m.

Windsor Rose

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**SESSION A Business Degree Programs: Profile and Analysis of Efficaciousness**

Session Chair: **Robert B. Mitchell**, University of Arkansas at Little Rock

*Alumni Perceptions of Degree Preparation: Are Business Programs Effective?*

**Julie McDonald**, Northwestern State University

**Margaret S. Kilcoyne**, Northwestern State University

**Joel Worley**, Northwestern State University

*Job Demand in the IT Industry*

**Robert B. Mitchell**, University of Arkansas at Little Rock

**Janet L. Bailey**, University of Arkansas at Little Rock

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3:00 p.m. – 3:30 p.m.

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**FBD Coffee Break**

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March 15, 2007 (Thursday)

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3:30 p.m. – 5:00 p.m.

Windsor Rose

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**SESSION A E-Learning and E-Commerce**

Session Chair: **Margaret S. Kilcoyne**, Northwestern State University

*Online and Hybrid Courses: The Transformation of the Business Classroom*

**Betty S. Johnson**, Stephen F. Austin State University

**Marsha L. Bayless**, Stephen F. Austin State University

*Importance of Interpersonal Communication Skills for Successful Live Chat in eCommerce*

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**Betty A. Kleen**, Nicholls State University

**Lynn R. Heinrichs**, Elon University

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**DISTINGUISHED PAPER AWARD**

**2007**

*Analysis of Competencies Needed by Systems Analysts as  
Perceived by IT Professionals*

**Janet L. Bailey**, University of Arkansas at Little Rock  
**Robert B. Mitchell**, University of Arkansas at Little Rock  
**Michael Douglas**, University of Arkansas at Little Rock  
**Diane Parker**, University of Arkansas at Little Rock

# ANALYSIS OF COMPETENCIES NEEDED BY SYSTEMS ANALYSTS AS PERCEIVED BY IT PROFESSIONALS

Janet L. Bailey, University of Arkansas at Little Rock  
Robert B. Mitchell, University of Arkansas at Little Rock  
Michael Douglas, University of Arkansas at Little Rock  
Diane Parker, University of Arkansas at Little Rock

## Abstract

According to the Bureau of Labor Statistics, the position of “systems analyst” is among the top 30 occupations to have both the fastest percentage growth and the largest projected job growth in actual positions between 2004 and 2014. The literature identifies a combination of technical, business, and soft skills as important to systems analysts. This study identified the comparative value of the knowledge, skills, and abilities needed by systems analysts as reported by industry. This analysis was designed to provide guidance to educators and career counselors to assure that systems analysts have the skill set demanded in the strengthening job market.

## Introduction

As organizations further realize the strategic value of information resources and as the hype surrounding outsourcing and offshoring subsides, the demand for computer-related professionals is again expanding. According to the Bureau of Labor Statistics, from 2004 to 2014 computer and mathematical science occupations are projected to experience the fastest growth of the eight professional subgroups. Thirty percent of all new jobs will be in computer systems design and related services. The position of “systems analyst,” a component of the computer systems design and related services subgroup, is expected to experience a 31.4 percent increase in employment with an additional 153,000 positions. This occupation is one of only two in the computer field in the top 30 in both fastest and largest job growth. When ranked by median annual earnings, systems analyst places in the highest quartile (Hecker, 2005).

To succeed in the continually changing and increasingly competitive business

environment, organizations must demand that employees assure a return on the IT investment. This research study focused on the skill set needed by systems analysts in this evolving workplace.

## Review of the Literature

The literature documents the need for a well-rounded skill set for IT professionals: technical, business, and soft skills. The documentation for a combined skill set for systems analysts is less extensive. With the changing technical and competitive business environment, however, the breadth of skill base will likely become more important.

Strong business acumen and the ability to move between business and IT have become, in recent years, assets for IT professionals possessing them. CIOs are moving toward more alignment of business and IT (Pratt, 2006), with an obvious impact on systems analysts. Gartner analysts Morello and Blechar (2005) indicated that the rapidly evolving and expanding role of the systems analyst is becoming that of “business analyst.” They emphasized that today’s analyst must have strong expertise in the business domain and a “reasonable” understanding of how IT can enable business through redesign and strategic directioning. Lee (2005) reported in a study of job ads that knowledge of the business is a critical requirement in 80 percent of ads. The increased demands for higher levels of business performance necessitate an understanding of business processes and how to exploit technology. Further, outsourcing strengthens the need for analysts to understand business systems and their interdependencies and relationships to IT (Morello & Blechar, 2005).

The literature reflects that the IT job market is increasingly demanding soft skills in



addition to technical and business skills. Authorities have indicated diverse skill sets needed by 21<sup>st</sup> century IT professionals—team, flexibility, change management, creativity, interpersonal, communication, problem solving, conceptual, strategic management, continuous improvement, and technical skills; some of these studies reflected that these skills are needed by systems analysts (Buhler, 1997; Gupta & Wachter, 1998; Kendall & Kendall, 1999; Lee, 2005; Nakayama & Sutcliffe, 2001; Schenk, Vitaliani, & Davis, 1998; Shah & Martin, 1997). Schenk, Vitalari, and Davis (1998) reported that a systems analyst’s problem-solving skills are key to success, even though technologically advanced tools are available. A synthesis of research by Nakayama and Sutcliffe (2001) indicated that employers want IS professionals who are more knowledgeable of their industry, have business acumen and management expertise, and possess human relations and behavior skills. Globally IT professionals are expected to be strategic business enablers and contribute to the success of the organization (“Update IT skills in the line of change,” 2002).

Based on a 2000 study of hiring directors by the Information Technology Association of America (ITTA), Harris Miller, president of ITAA, stated that technical skills must be combined with “employability skills”—written and oral communications, project management, problem solving, and analytical skills (The 21<sup>st</sup> Century Work force Commission, 2000). Other researchers used additional descriptions of the desired nontechnical skill set, such as “emotional intelligence.” Identified emotional intelligence traits include self-awareness, trust, attitude toward others, adaptability to ambiguous situations, self control, motivation, and other factors that impact productivity and socially appropriate behavior (Abell, 2000; Barbian, 2001; Caudron, 1999; Nakayama & Sutcliffe, 2001; Tucker, Sojka, Barone, & McCarthy, 2000; Yost & Tucker, 2000).

The importance of the combined technical/soft skill set for systems analysts was validated by Lerouge, Newton, and Blanton (2005) in a study of 124 systems analysts. Although the responding systems analysts viewed all of these skills to be at least somewhat

important, they seemed to perceive interpersonal skills more important than political skills and knowledge, technical skills, and business task knowledge. A study by IDC Canada and Mastech Quantum reported the importance of an IT professional fitting into the culture of an organization and the relationship of cultural fit and increased performance (Himmelsbach, 1999).

The literature has identified a skill set of knowledge, skills, and abilities—including technical, business, and soft skills—needed by IT professionals. This study investigated the integrative skill set needed specifically by systems analysts.

### **Methodology**

This study identified the knowledge, skills, and abilities (KSAs) needed by systems analysts as reported by industry. The research consisted of a four-step process involving web research, site interviews, focus groups, and a web-based survey. Five major Arkansas IT companies participated in site interviews and focus groups. Data from the web research, site interviews, and focus groups were examined, analyzed, and validated by industry CEOs and other top-level executives before being incorporated into the web survey to insure that IT industry needs would be accurately identified by the process.

#### Step One: Web Research

During the research phase literature was reviewed to identify major job clusters or categories within the IT industry. In addition, researchers used content analysis to evaluate and categorize web-based electronic postings of job descriptions and traditional hard-copy job descriptions provided by the IT companies. These data were further supplemented with information gleaned from step two. Due to the voluminous nature of the data collected for this study, this paper reports on the detailed findings of only one of the identified categories—systems analyst.

#### Step Two: IT Site Visits

During the site visits to the IT companies, two teams of four to five members conducted semi-structured interviews with four

to five company representatives including top-level supervisors, training directors, senior managers, and, in a few cases, the company CEO. Research team members acted in one of four prescribed roles: facilitator, “what about” questioner, probing questioner, and recorder. The facilitator insured that the group process worked and that the discussion remained on task. The “what about” questioner insured that all the predefined questions were asked. The probing questioner insured that issues generated by respondents were thoroughly investigated. The recorder kept a written record of all questions and corresponding responses, which were analyzed using content analysis.

Six questions were used to direct the discussion:

- What type of work does your company do?
- What kinds of jobs do you have in the company?
- What type of education would be appropriate for these positions?
- If you had to divide each of the jobs into four or five major job functions, what would they be?
- What type of person would you most like to see in this organization?
- Considering the kinds of jobs that you believe will be important in the next 5-10 years, what do you think will be the knowledge, skills, and abilities needed for those jobs?

#### Step Three: Focus Group Sessions

The participating companies selected 20 division heads and mid-level managers to attend one of two group sessions to clarify job cluster definitions and to develop a detailed list of the soft skills and business concepts needed by IT professionals, in general, as well as the specific technical KSAs needed in each job cluster. Focus group members met at an electronic group decision support center to brainstorm and categorize ideas. A professional facilitator provided the necessary technical support and insured that the sessions focused on the issues at hand. The results were content analyzed to remove duplication and to create a questionnaire suitable for administration via the web.

#### Step Four: Creation and Administration of Web-Based Survey

The results from the focus-group sessions were compiled to create a web-based survey. The questionnaire was administered via WebSuevayor and was available over a two-and-a-half-week period to all IT professionals in the state of Arkansas. Three hundred twenty-four IT professionals responded to the survey; of these, 124 responded to the systems analyst section of the survey. The respondents possessed a wide range of experience, skills, and abilities. The survey instrument consisted of four main sections: demographic information, non-technical soft-skills, business concepts, and technical KSAs. The importance of each skill was identified using a five-point Likert scale. The technical KSAs were subdivided into job clusters. All respondents completed the demographic, soft-skill, and business concepts sections. Individuals responded to each technical section for which they had expertise. In addition, individuals who had been systems analysts but were now in other technical areas, such as programmers, responded to the technical section for systems analysts.

The CEOs of the initial participating IT companies were contacted via phone to notify them of the availability of the web survey. They in turn notified CEOs of additional companies, who also requested that their employees complete the survey. The support of the CEOs played a major role in the large number of responses.

A field study approach was selected to support the primary goal of the survey phase, which was to collect as detailed and comprehensive a set of data as possible without influencing the responses of the IT professionals. The lack of control in a field setting was considered to be a strength because the approach met the study’s broad data needs in comparison with data that could have been collected in a more tightly controlled approach. In addition, the potential for bias in the self-reported data was considered. However, this was a minor concern because it was believed the IT professionals had nothing to gain or to lose by misrepresenting information. Respondents were required to provide their names, e-mail

addresses, and company names. The data were verified to make sure that a single response was submitted by each respondent.

#### Step Five: Classification of KSAs and Analysis

The rated KSAs were then classified into the following categories for analysis:

- Broad-based Business
- Communication
- Interpersonal
- Narrow-based Business
- Personal
- Project Management
- Technical

Six experts reviewed the 64 items on the questionnaire and assigned each to one of the seven categories of KSAs. In cases of differing categorization, the majority assignment was used. The average of the items in each category was determined. ANOVA was then conducted on the overall means of the items within each of the seven categories. The dependent variable was “mean ratings”; the independent variable was “category.”

As previously stated, this paper focuses on the desired KSAs for systems analysts. By understanding which skills are the most important to a systems analyst in the field, academic and industry training programs can be better structured to help individuals develop an appropriate skill set.

#### **Findings and Conclusions**

The focus groups identified a total of 64 skills that were important to systems/business analysts; these skills were later classified into 7 KSA categories. Tables 1-7 report the mean ratings for each item. The categories of responses for the questionnaire were based on a 5-point Likert Scale: extremely important (5), very important (4), somewhat important (3), not very important (2), and not important (1). Thus the higher the mean rating, the more important the skill is perceived to be.

The ANOVA found significant differences between groups with a reported p-value of <0.0001. A Tukey’s Honestly Significantly Different Post Hoc Test was performed to find which groups were significantly different. Table 8 reports the

results. Category “Narrow-based Business” was rated significantly lower than the other categories of KSAs; no other statistically significant differences were observed. This analysis is graphically displayed in Figure 1.

The only KSA category with mean ratings of less than 3.0 is “Narrow-based Business.” While these skills may be important as a student is developing a broad view of the business environment, they are not perceived as critical to effective performance in the systems analyst role.

Systems analysts need an eclectic mix of skills—technical, soft, and business. The findings of this study support the contention that the skills most needed by systems analysts are broad in nature: the ability to analyze and solve problems, the ability to interact with users and technical staff, and the ability to manage projects. Analysts’ performance depends more on collecting and understanding the concepts provided by customers to meet the customers’ needs than possessing the detailed knowledge themselves. In addition, broad-based skills cut across all technologies and applications and thus provide a mechanism for success in a dynamic and rapidly changing environment.

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**TABLE 1: Rating of Broad-based Business KSAs**

<b>KSA Description</b>	<b>Mean Rating</b>
Ability to Determine Customer Needs	4.661
Ability to Analyze Business Process	4.460
Knowledge of Basic Business Concepts	4.240
Business Culture (priorities, schedules, self-initiating)	4.230
Ability to Anticipate Future Needs	4.153
Knowledge of Business/Technology Integration	4.090
Knowledge of Business Processes	4.008
Knowledge of Customer Industry	3.887
Knowledge of Departmental Interdependency	3.548
Knowledge of Business Management	3.484
Knowledge of Business Administration	3.480
Average Rating	4.022

**TABLE 2: Rating of Communication KSAs**

<b>KSA Description</b>	<b>Mean Rating</b>
Ability to Communicate with Customers	4.659
Ability to Maintain Open Communication with Customers	4.613
Ability to Ask Probing Questions to Determine Customer Needs	4.573
Listening	4.556
Verbal Communication	4.486
Constructive Criticism (delivery and receipt)	4.108
Inter-team Communication	4.041
General Writing Skills	3.905
Technical Writing	3.554
Presentation Skills	3.472
Mediation Skills	3.233
Interviewing Skills	3.068
Average Rating	4.022

**TABLE 3: Rating of Interpersonal KSAs**

<b>KSA Description</b>	<b>Mean Rating</b>
Team Work (Long-Term)	4.432
Ability to be Diplomatic	4.363
Ability to Act as Liaison Between Customers and Programmers	4.347
“Be the Customer” Mentality	4.319
Interpersonal Skills	4.189
Leadership (interactions with peers, servant leadership)	3.851
Diversification (different culture)	3.432
Average Rating	4.134

**TABLE 4: Rating of Narrow-based Business KSAs**

<b>KSA Description</b>	<b>Mean Rating</b>
Knowledge of Accounting	3.250
Knowledge of Corporate Finance	2.968
Reading a Budget (and understanding)	2.838
Use of Capital (risk and return)	2.808
Marketing	2.781
Role Playing	2.548
Basic Accounting	2.534
Reading a Balance Sheet and Income and Expense Summary	2.315
Average Rating	2.755

**TABLE 5: Rating of Personal KSAs**

<b>KSA Description</b>	<b>Mean Rating</b>
Problem Solving Process (decision tree, problem identification, analysis, solving)	4.622
Ability to Multi-Task	4.405
Time Management	4.351
Investigative Skills (probing questions)	4.329
Visualize/Conceptualize	4.257
Organizational Skills	4.027
Stress Management	3.986
Idea Initiation	3.945
Average Rating	4.240

**TABLE 6: Rating of Project Management KSAs**

<b>KSA Description</b>	<b>Mean Rating</b>
Ability to Prioritize Project Needs	4.306
Knowledge of Project Management Principles	4.153
Ability to Implement Project Management Methodology	4.040
Ability to Control Project	4.024
Ability to Define Project Management Critical Paths	4.016
Project Management	3.918
Ability to Manage a Meeting of Ten Users	3.726
Average Rating	4.026

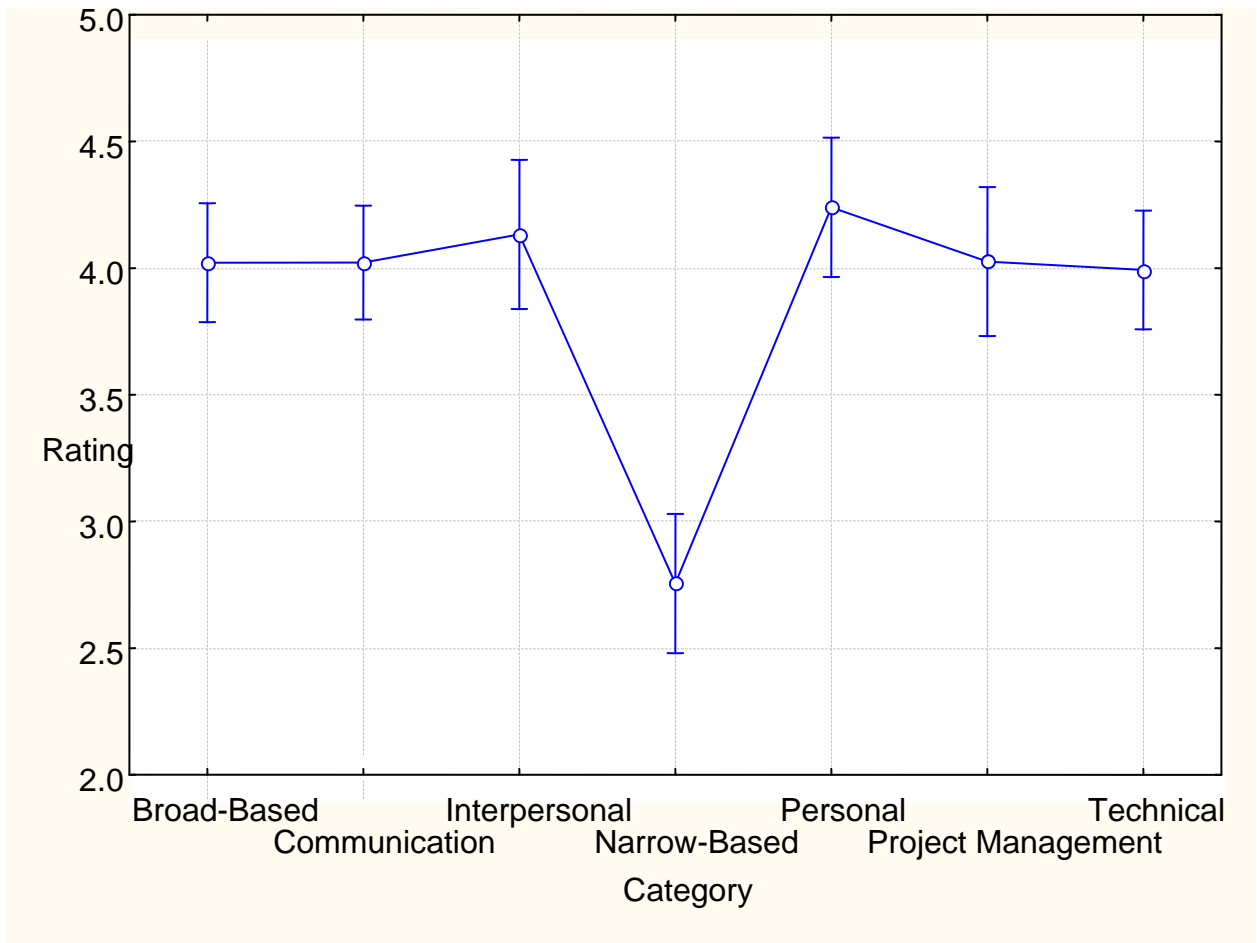
**TABLE 7: Rating of Technical KSAs**

<b>KSA Description</b>	<b>Mean Rating</b>
Transferring Knowledge to Application	4.446
Adaptability to New Technology, New Languages	4.405
Ability to Conduct Needs Assessment	4.290
Ability to Analyze Systems Inputs and Outputs	4.236
Knowledge of System Processes	4.180
Knowledge of Data Flows	4.164
Ability to Write a Functional Business/System Analysis	3.968
Knowledge of Database Design and Utilization	3.748
Knowledge of Hardware/Software/OS Interactions	3.634
Knowledge of Distributed Computer Environments	3.574
Knowledge of E-Commerce	3.279
Average Rating	3.993

**TABLE 8: ANOVA p-Values**

<b>Category</b>	<b>BB</b>	<b>C</b>	<b>I</b>	<b>NB</b>	<b>P</b>	<b>PM</b>	<b>T</b>
<b>BB</b>	n/a						
<b>C</b>	1.000000						
<b>I</b>	0.996798	0.996560					
<b>NB</b>	0.000134*	0.000134*	0.000134*				
<b>P</b>	0.887532	0.879718	0.998311	0.000134*			
<b>PM</b>	1.000000	1.000000	0.998570	0.000135*	0.935858		
<b>T</b>	0.999998	0.999997	0.988843	0.000134*	0.815415	0.999997	n/a

Figure 1 Mean Ratings by Category



## The Mediating Effect of Technology on Administrative Management

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### Abstract

The emergence of technological advancements has caused criticism from industry that business programs need to redefine their curricula. This paper discusses the mediating effect of technology on the major, Administrative Management. An exploratory study was conducted focusing a single business unit within an oil and gas company and students from a single major, Administrative Management.

### Introduction

Given the importance of this topic and to provide credence; we offer the following definition of Administrative Management to better understand the evolution process in the management field. Administrative Management was developed during the same time period of scientific management which focused on mainly individual workers and efficiency at the operational level. In contrast, this branch emphasized management functions and attempted to generate broad administrative principles that would serve as guidelines for the rationalization of organizational activities (Boje & Rosile, 2001; Calas & McGuire, 1996; Clegg, Kornberger & Pitsis, 2005).

What follows, is a discussion of related literature and findings from an exploratory study, which we posit that are redefining both academic and practitioners approaches to Administrative Management. An understanding of this transformation and the ability to act is essential to meeting workforce and workplace challenges.

### Related Literature

The limited amount of time focused on real world practices rather than scientific models of business is often identified as the top detriment of most business programs producing graduates with skill sets needed for the marketplace. This theoretical and practical gap

with respect to technological skills needed by graduates from business programs can be costly (Bennis & O'Toole, 2005). Supporting this assertion is the number of American businesses that indicated outsourcing is due to limited pools of skilled employees that are capable of leadership positions (Gregersen, et. al, 1998).

Outsourcing, the procurement of services or products from an outside supplier, is a standard business practice (dbaDirect, 2004). According to Bulla (2004) this trend may be linked to the Information Age that has created competitive pressures. The Bureau of Labor Statistic (2004) estimated that by the year 2015 approximately 3.3 million service jobs and 1.7 million back office jobs such as accounting will have been outsourced.

In response to such competitive pressures, Administrative Management programs have redefined their curriculums to better position graduates to compete in the global talent pool. This is especially so given the Associate to Advance Collegiate Schools of Business (AACSB) accreditation guidelines denoting information technologies as they influence the structure and processes of organizations and economies and as they influence the roles and techniques of management (AACSB, 2004, p.71). Clearly, outsourcing trends have and will continue to impact current and future managers. Even more so, given the evolution that outsourcing has reached its third wave, *transformational* which is when companies view outsourcing as a necessary business practice (dbaDirect, 2004).

So, what methods can be used to bring theory and practice together for majors in Administrative Management programs? The functional approach of planning, directing, organizing and controlling describes what the manager is to do. Most managers adopt business practices that reflect their organizational culture. As indicated above, technology is a major



change agent that can drive strategic change in organizations.

### **Statement of the Problem**

Efficient and effective use of information technology has been identified as a major change agent in academia and the competitive global marketplace (Matthews, 1998; Alavi. & Gallupe, 2003; Brynjolfsson & Hitt, 2003). However, findings from studies focusing the quantifying value to businesses are inconclusive ( Seltsikas,1999; Grey et.al., 2003; Eid *et al.*, 2002). Taking the aforementioned into consideration, an exploratory study was conducted to explore the mediating effect of technology on Administrative Management which focuses on the management process characterized as a functional approach. Although critics of the functional approach underscore inflexibility; it is still the dominant way of organizing management knowledge (Lamond, 2004). We therefore, posit this study to be worthy as it relates to value to academicians and practitioners.

### **Method**

The contingency framework considers technology as a competitive contingency variable. The theory suggests that organizations adapt technology that mirrors their business strategies to improve performance (Teo & Pian,2003). Thus, multiply types of technology may be used within an organization. As such, we limited our study by focusing on a single business unit within an organization. We further limited the study by surveying populations of companies from a single industry, oil and gas and students from a single major, Administrative Management. We believed these limitations provide a suitable framework for studying the mediating effect of technology on Administrative Management.

### **Discussions**

Findings supported the need for academicians and practitioners' dialogue about the mediating effect of technology on Administrative Management. A significant number (85%) of respondents in the study indicated having the ability to apply and understand multiple technological applications

gained from their major, Administrative Management. Examples included: electronic communication media and project auditing including functions such as forecasting and inventory management. The findings also indicated a significant number of respondents that had been affected due to outsourcing. This supports related literature focusing on the limited pools of skilled U. S. employees as it relates to technological gaps.

The prior findings: required technological skill sets for the workplace and labor trend shifts such as outsourcing, provide benchmarks to extend this study. This data is relevant to academic and industry given the current environment of changing technology and evolving organizations. Moreover, it will contribute to related literature and a current industry trend that denoted a competitive organization must be a "learning organization."

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## Computer Application Employability Skills

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### Introduction

Among the skills that employers have desired of new employees over the years, computer literacy still ranks very highly. In fact, according to the National Association of Colleges and Employers' (NACE) 2006 Job Outlook survey, these skills include: (1) Communication skills (verbal and written); (2) Honesty/integrity; (3) Teamwork skills (works well with others); (4) Strong work ethic; (5) Analytical skills; (6) Flexibility/adaptability; (7) Interpersonal skills (relates well to others); (8) Motivation/Initiative; (9) Computer skills; and (10) Detail-oriented. No definition for computer skills was given. The Michigan State University's Alumni Career Services lists the results of a 1995 Collegiate Employment Research Institute employer survey that found that due to automation and increased use of computer technologies, almost every job within business, education, and government agencies requires abundant computer work (What do employers want from new hires, n.d.) This trend has continued to increase, not decrease, with new and emerging technologies. With the considerably increased availability of computer usage, has the need for basic computer skills: word processing, spreadsheets, and databases been replaced or augmented by the need for webpage design, programming, and desktop publishing skills? What are the computer skills today's employers desire?

### Purpose

The purpose of this study is to extend a pilot study that was conducted in 2005 designed to determine current employers' attitudes toward basic application software skills that employees need. All universities wish their curriculum to be as pertinent as possible. Therefore, this study extended the pilot survey to include a larger sample of employers (300 surveyed as opposed

to 100 in the original survey at the original university) in Texas and the addition of two other universities, one in Kansas and one in North Dakota, thus creating a sample of a cross section of the central United States. In this study the research question remains: What computer skills should we be teaching students to prepare them best to meet employers' needs and expectations.

### Review of Related Literature

Each year numerous companies send recruiters to university campuses looking to hire graduates. Since technology is continually transforming the world, colleges and universities are beginning to recognize that graduates must develop and be able to demonstrate their competency in the use of technology. In fact, the Educational Testing Service has coined a new designation for technology as the fourth basic literacy (Landgraf, 2005).

Over a decade ago in the 1995-96 study by Michigan State University (Scheetz, 1996) on recruiting trends, the synopsis of needed skills for acquiring a job included not being "cyber-shy." The report showed that employers wanted to recruit those who had a command of popular office technology software. Today's employers are still looking for much the same things. In fact, Sharon Thomas Pratt, vice president of external relations and regulatory assurance for DeVry Institute of Technology, Chicago, asserts, "a background in technology is a strong skill set that is required for employment in many industries today, and will continue to become increasingly important in the future." (Expanding Workforce Greets New Grads, 2005, April 16). The Chicago-based global outplacement firm of Challenger, Gray & Christmas, Inc. stresses that since technology is prevalent in almost every type of business, to keep from being left behind, all graduates must

have technical skills regardless of their chosen field. (Expanding Workforce Greet New Grads, 2005, April 16). According to Hansen and Hansen with Quintessential Skills, "Almost all jobs now require some basic understanding of computer hardware and software, especially word processing, spreadsheets, and email." Challenger (2003) indicates that as our nation's use of and dependency on technology increases, even more jobs will require computer skills.

The fact that almost every occupation requires some degree of computer or technical skills seems often to be overlooked. McCune (1999) felt that education was "too separatist." She indicated that for those pursuing a liberal arts degree, instruction in technical skills was not considered important. However, it appears today that more universities are informing students of the computer skills for which employers are looking. The Clemson University career page, titled "Qualities Employers Desire in New College Graduates," lists the need for "established word processing, spreadsheet, database and presentation software skills" and "excellent computer literacy." Similarly, the Central Washington University career page, titled "Simply Having A Degree Is Not Enough To Get A Job In The Current Labor Market," lists the "ability to appropriately apply technology and effectively use office software and the web to accomplish job responsibilities" as a need for today's graduates. Due to the fact that businesses and organizations are relying more and more on the extensive use of information technology, Virginia's George Mason University has developed an innovative and popular undergraduate degree program to give students information technology skills that they can use to make sound business decisions (Ascoine, 2006).

In a 10-month study (January 2004 – October 2004) conducted by the Canadian government using the *Toronto Star*, *The Globe*, and the *Toronto Sun*, data was obtained on the technical skills required by employers advertising job positions. Results of their study showed how many ads specified a particular type of software proficiency such as: office suite, spreadsheet, word processing, database, and also software such as drafting, multimedia, presentation, and other specialized software.

The results were then broken down further to show within a general software category whether or not a specific software package was indicated. Fang, Lee, and Koh (2005) reported an "interesting finding," in that recruiters rated personal productivity skills such as use of operating systems and packaged software (e.g., spreadsheet, word processing) as more important for new IS (information systems) hires than the "traditional programming skills such as high level and object oriented programming skills" (p. 63).

### **Methodology**

The researchers from each university in Texas, Kansas, and North Dakota surveyed employers who recruited on their university campus. In Texas, the researchers received the recruiter database from the Office of Career Services and selected those with email addresses. A personalized email message was developed indicating a web address for them to respond to on an online survey. Surveys were tallied and results were graphed. In Kansas and North Dakota, the researchers mailed out their surveys via U.S. mail.

Participants were asked to rank on a Likert-type scale the software skills needed by the employees they were recruiting. The scale ranged from a 10, indicating required for employment, to a 1, indicating that particular software knowledge was not beneficial for job performance. The software programs included on the survey were: Microsoft Word, Microsoft Excel, Microsoft Access, Microsoft PowerPoint, Microsoft Internet Explorer/Netscape Navigator, Corel WordPerfect, Microsoft FrontPage, Macromedia Dreamweaver, Macromedia Flash, Macromedia Fireworks, Instant Messenger/Virtual Team Environment, Adobe Photoshop, and Java Programming.

### **Findings**

Responses for the participating employers included 22 from Kansas, 44 from North Dakota, and 50 from Texas. There was no attempt to target particular employers or types of businesses. However, all employers were those who have recruited on the university campuses. The employers were from a variety of business types, which included manufacturing, service,

food service, hotel/hospitality, education, government, distribution, medical, other financial, banking, accounting, law enforcement, and other. The breakdown in percentage is shown in Figure 1 below.

In addressing the research question, “What computer skills should we be teaching students to prepare them best to meet employers’ needs and expectations,” it was clear from the responses that Microsoft Word and Excel are the most widely “required” software applications for the employers who recruit on these university campuses with a combined average of 83 and 82% respectively. Both North Dakota and Texas had the highest percentage requiring Microsoft Word, while Kansas had the highest percentage requiring Microsoft Excel. When looking at the breakdown of industry representatives who completed the surveys, Kansas was more heavily weighted in the accounting area, which could explain this difference. As shown in the following chart, all of the Microsoft applications were highly desired by employers recruiting in all three states (see Figure 2).

The other categories included “Needed or Useful” and “Not Needed or Useful.” The breakdown of the other categories by states is shown in the following table.

	Needed or Useful			Not Needed or Useful		
	ND	KS	TX	ND	KS	TX
Word	7%	18%	22%	0%	0%	3%
Excel	7%	14%	27%	2%	0%	3%
Access	32%	36%	63%	9%	18%	24%
Power-Point	27%	36%	46%	2%	0%	17%
I/E	11%	18%	33%	5%	9%	3%
Word-Perfect	39%	27%	39%	50%	68%	56%
Front-Page	36%	32%	46%	55%	64%	51%
Dream-weaver	39%	27%	39%	57%	68%	61%
Flash	41%	32%	36%	55%	64%	61%
Fireworks	32%	27%	32%	61%	68%	68%
IM	45%	36%	34%	41%	50%	53%
Photo-shop	39%	36%	36%	50%	59%	54%
Java	36%	27%	34%	59%	68%	63%

When expanded to include “Useful for Performing Job” software knowledge with the “Required” software knowledge, the number for Microsoft Word rises to a combined average of 99% followed by Microsoft Excel with a combined average of 98%. Closely following at 94% each are Microsoft PowerPoint and Microsoft Internet Explorer/Netscape Navigator (see Figure 3).

These survey results correspond closely to the recommendations found at a job search website on basic computer user skills. At this About.com site, information is provided that indicates, “many employers consider Microsoft Office skills to be among the basics.” It was also interesting to note that following the Microsoft Office Suite of programs, the next highest scoring computer application desired by employers was the use of Instant Messenger or other forms of Virtual Team Environment.

Several software applications were not considered “useful” or even needed at all by a large number of the companies included in this study. More than 50% of the companies surveyed indicated that Corel WordPerfect, Microsoft FrontPage, and Adobe Photoshop fell into this category. Macromedia Dreamweaver, Macromedia Flash, Macromedia Fireworks, and Java Programming were not needed by more than sixty percent of respondents (see Figure 4).

### Conclusions and Recommendations

Though some regional differences were encountered, overwhelmingly the need for proficiency in the Microsoft Suite is alive and well. Colleges and universities need to examine their current curriculum to ensure it is providing their business students with the knowledge needed for students to be successful in their careers—specifically, the first five applications listed in Figure 3.

Though there will always be those who try to boycott the “Microsoft Empire,” unless those boycotters can “build a better mousetrap,” it appears that the Microsoft trap is here to stay for a while. Other considerations that must be made are the levels of proficiency needed to meet the needs of employers. The next step in determining these proficiency and resulting curricula needs might be further studied to determine what features of the various programs

are most important for students to master. Though most universities do not want to be considered technical or trade schools, at what point does the lack of advanced technical skills prevent students from being able to present their knowledge in the best possible light? This is a question each university must answer for itself.

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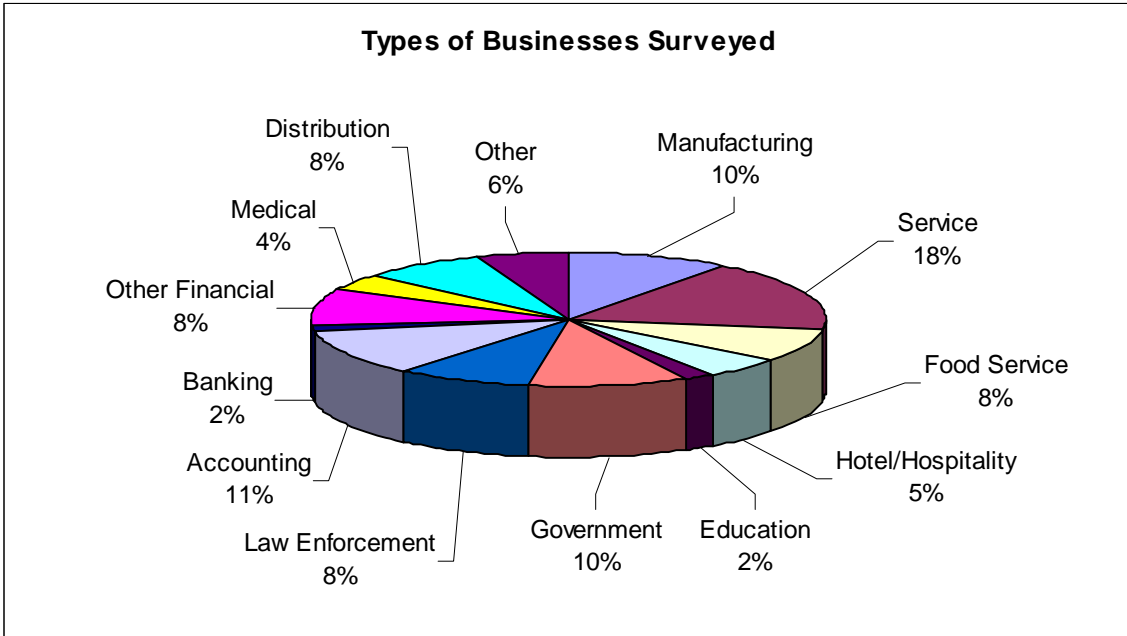


Figure 1

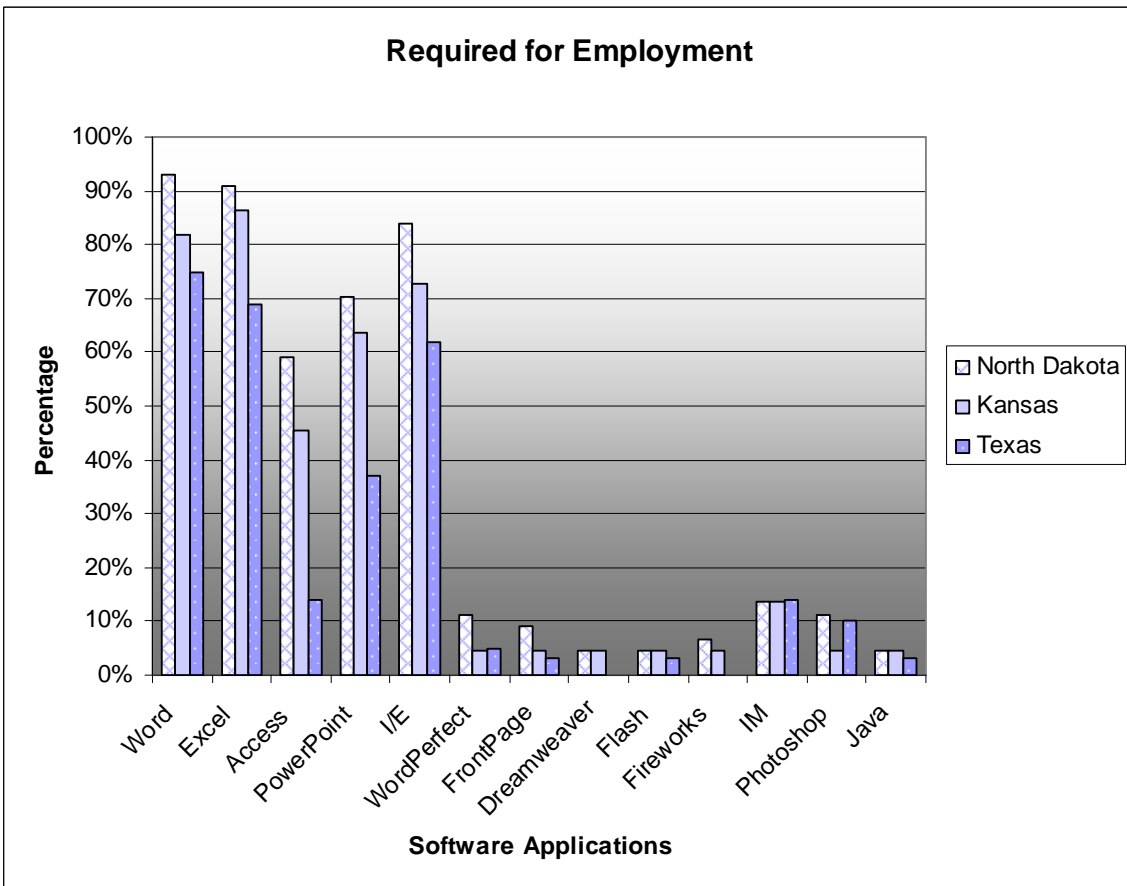


Figure 2

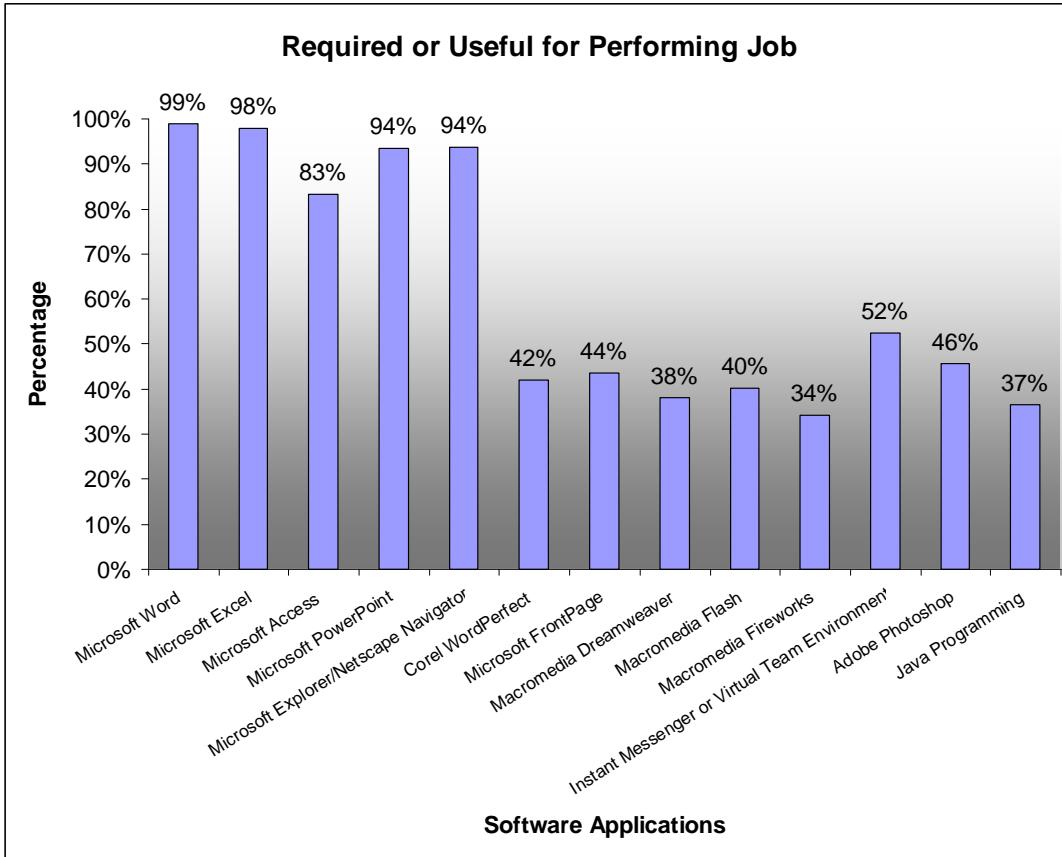


Figure 3

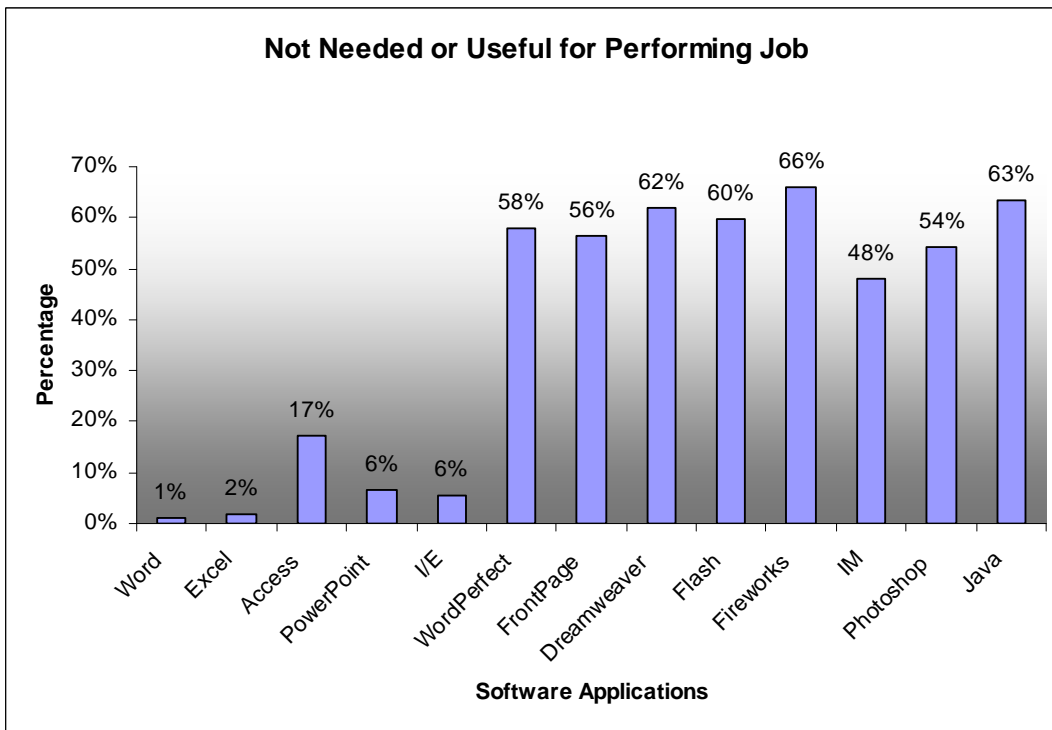


Figure 4

## **An Instructional Assignment for Business Students: Analyzing Sales Data in Microsoft Excel**

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### **Abstract**

This instructional assignment helps students improve their spreadsheet skills by introducing them to sales data manipulations using Microsoft Excel. Academics and practitioners agree that knowledge of the capabilities of spreadsheets for data analysis is an essential skill for accountants and auditors, as well as other business school graduates as they become managers (Messner 2005, Reckers 2002). The skills taught in this assignment include: 1) the creation of pivot tables, 2) the use of the “SORT” and “IF” functions, 3) the creation of simple macros using the “RECORD MACRO” function, and 4) the graphing of data using the “CHART WIZARD.” We provide the assignment, data, and lab notes. Solutions (and complete data files) are available from the first author.

### **Introduction**

An issue that we, as educators, face is the attempt to provide our graduates with the skill sets required by future employers. Particularly with regard to the accounting profession, much criticism has been heaped upon the state of the accounting curriculum and its lack of response to the needs of the market. Albrecht and Sack (2000) criticize the memorization of content and emphasis on bookkeeping skills in basic accounting courses. They strongly suggest that the emphasis should more closely track with changes in the profession. Although there are sometimes disconnects between what faculty consider important skills and what practitioners consider important skills (Hastings et al. 2002), spreadsheet software skills were ranked the highest in importance by both practitioners and faculty in the Albrecht and Sack (2000) study. In addition, interviews with our business school’s Accounting Advisory Board have indicated the importance of spreadsheet skills such as creating

pivot tables, sorting data, graphing data, and using simple command macros. Messner (2005), the chairman and CFO of Robert Half International, the world’s largest specialized (accounting and finance) staffing firm, posits that accountants who have advanced spreadsheet skills are at an advantage. The annual AIS Educators’ Conferences (begun in 1999) have consistently provided either training sessions in Excel, discussed the results of surveys of practitioners (Bland 2002, Jackson 1999), or had presentations of Excel assignments for accounting information systems (AIS) instructors.

At the 1999 AIS Educators Conference, William Jackson presented the results of a survey of 66 public accounting firms and 58 management accountants with more than ten employees. Both groups of accounting employers ranked spreadsheet skills as the top skill desired of their new employees. Reckers’ (2002) address to the Austin APLG Conference indicated that practitioners ranked spreadsheet skills highly of new graduates. The Hastings et al. (2002) survey of accounting program directors and practicing professionals in accounting showed that 81% of the professionals surveyed desired three or more weeks of class time devoted to Microsoft Excel. Of the 151 academic respondents, only 24% indicated that their curriculum included three to four weeks of exposure to Microsoft Excel. Sandra Bland (2002) surveyed academics and practitioners in Iowa, Minnesota, North Dakota, and Wisconsin on whether entry-level accountants should have various technology skills to be able to perform effectively. On the topic of spreadsheet software including the design and preparation of spreadsheets, academics unanimously indicated the topic was relevant. Practitioners indicated it was very relevant, although not unanimously so.

To this end, we developed a spreadsheet assignment to address the development of useful



skill sets for the business professional. This assignment is used in our undergraduate and graduate accounting information systems classes (AIS) to help students become more familiar with spreadsheet applications commonly used to analyze information. We introduce the assignment with a short lab to demonstrate the procedures necessary to complete the requirements. Although this assignment is used in our AIS classes, it could be used in any business class, as it requires the students to analyze sales data using Microsoft Excel. It could also be expanded to require the students to write up an analysis of their findings related to, for example, total credit sales versus cash sales for the year.

### **The Assignment**

#### Purpose of Assignment

Sometimes an accounting information system package will not produce reports with the data presented in a manner conducive to management decision-making. One way to prepare the desired reports is to download a file from the system that stores the data into a spreadsheet; manipulate the data in the spreadsheet; and then prepare reports from the spreadsheet. This assignment gives students the opportunity to manipulate the sales data in a sales transaction file and produce reports for sales analysis. Instead of downloading a file from an accounting information system package, they create the file in the spreadsheet software.

Even if the student is not proficient in the use of spreadsheets, this assignment can be completed by using the instructions presented in the requirements (Appendix A), the lab notes (Appendix C), and the “Help” function of the spreadsheet program.

#### Instructions

The first part of the assignment explains the coding scheme for the data, since part of the assignment is to extract coded data for analysis (e.g., using the positions in the code that pertain to type of sale to analyze total credit sales). The data that the students use can either be created by them based on the instructions given in part (a) of the assignment (Appendix A), which uses the “AUTOFILL” function, or the instructor can

provide the data to the students (Appendix B). Part (b) of the assignment requires the student to prepare a monthly and annual analysis of sales by division. This requirement teaches the student how to construct a pivot table, and we provide “lab notes” with screen shots (Appendix C) to help the students create pivot tables and perform the other functions required to complete the assignment. Part (c) requires the students to analyze monthly and annual sales by sales type (i.e., cash, credit, or installment). The students must also use the “HIDE” function so that the type of sales labeled “miscellaneous” is not included in the pivot table reported. Part (d) has the student analyze sales by division, again using a pivot table. Part (e) requires use of the “SORT” function to compare the individual transaction amounts to average daily sales. In addition, the “IF” function is utilized to determine whether an individual sales is greater than 1.2 times the average daily sales amount. Part (f) has the students create a simple “print” macro using the “RECORD MACRO” function. This macro sets up the table from part (c) to fit to one page and print out in landscape, rather than portrait orientation. The final part of the assignment asks the students to graph cash versus credit sales from the data in part (c). They can use either a line chart or a column chart.

When the students print out their results, we also ask them to format the report. In other words, we want them to think about how best to present their results to a supervisor. We have found that many students use this opportunity to get quite creative, and that they find that they use the manipulations taught in this assignment later in their post-graduate jobs. Our solutions are provided in Appendix D. Note that electronic versions of all materials in the appendices are available from the first author.

#### **Final Comments**

We have used this assignment in various forms for a number of years. It is fairly easy to adjust the data to change the assignment. One thing to watch for when changing the data is to determine whether or not the year being analyzed is a leap year. Use of the autofill function will put in the correct dates, allowing the totals to change. While we encourage the students to discuss their assignment with others

and the lab assistant, we require that each individual turn in their own assignment.

Based on feedback from employers of our graduates, this assignment teaches spreadsheet skills that are useful to managers and accountants.

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## **Appendix A The Assignment (Fall 2006)**

*This is the information provided to the students regarding the requirements of the assignment.*

### **Purpose of Assignment**

Sometimes an AIS package will not produce reports with the data presented in a manner conducive to management decision-making. One way to prepare the desired reports is to download a file from the AIS that stores the data into a spreadsheet, manipulate the data in the spreadsheet, and then prepare reports from the spreadsheet. This assignment gives you the opportunity to manipulate the sales data in a sales transaction file and product reports for sales analysis. Instead of downloading a file from an AIS package, you will create the file in the spreadsheet.

Even if you are not proficient in the use of spreadsheets, this assignment can be completed by using the instructions presented in the requirements, the appendices at the end of this assignment and the “Help” function of the spreadsheet program.

### **Sales Transaction File**

The records in the following table show the sale transactions in an organization with four divisions. The organization uses the following chart of accounts coding system to facilitate retrieval of data for reporting and analysis:

First three positions (XXX):	Event code (400 = sales transaction)
Fourth position (X):	Type of sale: 1 = cash sale
	2 = credit sale (30-day terms)
	3 = installment sale
	4 = miscellaneous
Fifth and sixth positions (XX):	Division where sale originated (50, 60, 70, and 80)

**Note that in order for Excel to properly sort the months, you must either spell out the month for all months, or use the same number of characters for your abbreviations. For example, if you abbreviate February as “Feb,” but write out “March,” Excel will put March after “Dec.” If you abbreviate, be consistent in the number of characters that you use!**

**Appendix A (continued)**

<b>Sales Transaction File</b>		
<b>Date</b>	<b>Account No.</b>	<b>Amount of Sale</b>
1/1/06	400160	270
1/2/06	400180	670
1/3/06	400350	1145
1/4/06	400260	95
1/5/06	400280	580
1/6/06	400170	2520
1/7/06	400450	145
1/8/06	400160	520
1/9/06	400480	55
1/10/06	400250	140
1/11/06	400280	1070
1/12/06	400370	400
1/13/06	400150	150
1/14/06	400160	220
1/15/06	400450	105
1/16/06	400260	920
1/17/06	400270	3770
1/18/06	400360	420
1/19/06	400180	140
1/20/06	400450	45
1/21/06	400350	330
1/22/06	400370	180
1/23/06	400260	1470
1/24/06	400170	620
1/25/06	400370	2770
1/26/06	400260	695
1/27/06	400350	1220
1/28/06	400250	360
1/29/06	400460	570
1/30/06	400150	320
1/31/06	400270	1520

General Requirement: You will expand the data to one full year and analyze the data in various ways. **Note: The instructor may provide the completed data set, in which case the students will not have to complete this part of the assignment.**

## Detailed Requirements and Instructions

### a. *Creating a sales transaction file for 365 days*

Enter the data in the spreadsheet program. Begin the data entry in cell A1 and expand the data to one full year (365 days) so your spreadsheet will include data for 1/1/06 through 12/31/06. Your spreadsheet will look similar to the table below and can be created by following the steps below the table.

#### Appendix A (continued)

#### C O L U M N S

	A	B	C	
	1	<b>Date</b>	<b>Account No.</b>	<b>Amount of Sale</b>
<b>R</b>	2	1/1/06	400160	270
	3	1/2/06	400180	670
<b>O</b>	4	1/3/06	400350	1145
	5	1/4/06	400260	95
<b>W</b>	6	1/5/06	400280	580
	7	1/6/06	400170	2520
<b>S</b>	8	1/7/06	400450	145
	.	.	.	
	.	.	.	
	.	.	.	
	362	12/27/06	400450	45
	363	12/28/06	400350	330
	364	12/29/06	400370	180
	365	12/30/06	400260	1470
	366	12/31/06	400170	620
	367	Total	<b>146105050</b>	<b>273765</b>

The following steps will help guide you in completing this requirement:

- Key in the “Account No.” and “Amount of Sale” columns of the data in columns B and C of the spreadsheet. The column headings should be in row 1, and the data should be in rows 2-32. Do NOT key in the “Date” column, but do leave column A blank so you can have the spreadsheet automatically fill the dates in for you.
- Copy the data in the “Account No.” and “Amount of Sale” columns eleven times to row 33 and below. Keep the account numbers in column B and the amounts of the sales in column C. One way to do this is to first select the cells to be copied (not including the column headings). Copy this selection to the clipboard. Next, select the cell in column B of the first

blank row at the end of the data being copied and paste the data here. Copy the original data (rows 2-32) eleven more times. Disregard the fact that the number of days in February and other months may be less than 31.

- Delete the last seven rows (367-373). You now have data for 365 days.
- Insert “Date” as a heading for column A. Key in 1/1/06 in cell A2. Use the “autofill” function (the black “+” in the lower right hand corner of cell A2) to enter the twelve months of dates (1/1/06 through 12/31/06) in column A.

Check your work (this is VERY IMPORTANT). You should have one row for the headings and 365 rows of data. Sum the “Account No.” column in row 367. Your check figure should be “**146105050.**” Sum the “Amount of Sale” column in row 367. Your check figure here is “**273765.**”

**b. Analyzing sales data by type and division (account number) for each month and for the entire year**

To perform this analysis, use the pivot table report feature in Excel (See Appendix A). The pivot table report wizard can be used to create the report. But before creating the pivot table report, you need to group the data by month. One way to do this is to insert another date column in the table (title it “Month”) and assign “Jan.” to all of the January dates, “Feb.” to all of the February dates, etc. Be sure to use only three letters (with or without a period) for your months. If you use more letters for some months, e.g., “March”, the months will not print out in the correct order.

This table will now have a column for “Month,” “Date,” “Account No.” and “Amount of Sale” and should appear as follows:

Month	Date	...
Jan.	1/1/06	
Jan.	1/2/06	
	.	
	.	
	.	
Jul.	7/15/06	
Jul.	7/16/06	
	.	
	.	
	.	
Dec.	12/30/06	
Dec.	12/31/06	

To invoke the pivot table report wizard, select any cell in the transaction file. Choose DATA | PIVOT TABLE AND PIVOT CHART REPORT. Follow the instructions in the Appendix.

**Required: Print this table of data.**

This table will now be referred to as the “original” data.

The report showing the total sales by month and division (account number) for each month and for the entire year will have the following check figures:

<b>Account Number</b>	<b>Jan.</b>	<b>Feb.</b>	<b>Mar.</b>	<b>Apr.</b>	<b>May</b>	<b>...</b>	<b>Dec.</b>	<b>Total</b>
400150	470	150	470	470	470		470	5320
400160	1010	1010	1010	1010	1010		1010	12120
.								
.								
.								
400480	55	55	55	55	55	...	55	660
<b>Grand Total</b>	23435	21025	23435	23075	23435	...	23435	273765

**Required: Print this report and write a paragraph explaining what this report tells you.**

*c. Analyzing sales data by three types (cash, credit, installment) for each month and for the entire year*

To perform this analysis, you can create another pivot table report from your original data. But first, you need to arrange the account coding system to give you information about each of the types of sales. One way to do this is to parse (distribute the contents of a single column to fill several adjacent columns) the account number in the original table of data into the main account number, the sale type code, and the division code. Copy your original data to a new sheet. Insert three columns between “Account No.” and

“Amount of Sale” to allow for three separate fields for the main account number, the sale type code, and the division code. Highlight column C except for the column heading and the total in row 367. Select

DATA | TEXT TO COLUMNS, fixed width. Use the wizard to walk you through the process of dividing up the account number. The destination should be \$D\$2:\$F\$2. The wizard has three steps, and each step has detailed instructions.

Using the knowledge you gained in part (b.), create a pivot table report for only the cash, credit, and installment sales, you will need to use the “Hide Items” feature. Your final report should look similar to the table below:

Sale Type	Jan.	Feb.	...	Dec.	Total
Cash	5430	5110		5430	64840
Credit	10620	9100		10620	124865
Installment	6465	6465		6465	73590
Total	22515	20675		22515	263295

**Required: Print this report.**

*d. Analyzing credit sales for each division for the entire year*

To perform this analysis, you can create another pivot table report from your data in part c. You will need to again use the “Hide Items” feature. The new report should look similar to the following:

	Sale Type	
Division	2 (credit)	Total
50	5640	5640
.	.	.
.	.	.
.	.	.
80	19800	
Total	124865	124865

**Required: Print this report.**

**e. Using the “Sort” and “If” functions to analyze certain transactions**

Create a report to analyze January sales transactions. The report should be sorted by dollar amount first and then date, from smallest to largest sales transaction, oldest to most recent date. Indicate the difference between the amount of the sale and the average daily sale. In addition, indicate on which dates sales were greater than the 1.2 times the average daily sale for the month of January. This should be copied to another report. If you were the manager requesting this report, you would want this “exception report” issued separately to allow you to investigate individual transactions that are unusual in nature. The report should be formatted as follows:

	Account	Amount of	Average		Greater than
Date	No.	Sale	Daily Sale	Difference	1.2*Average Sale



**Required: Format\* and print this report.**

**f. Using a simple “Print” macro**

Create a simple “Print” macro using the “Macro” menu (i.e., “Record Macro” and “Stop Macro”). This macro should have you change the page orientation to landscape, and should fit the report from part (c) to one page. Once you have printed this information, be sure to change the orientation back to “portrait” when printing your other reports.

**Required: Print the report from requirement c) on one page.**

**g. Graphing data for analysis**

Copy the pivot table from part (c) to a new worksheet (this will cause the function of the top left cell—“Sales Type”—in the new table to be disabled. Use the Chart Wizard to graph cash versus credit sales by month based on the new table. Plot the data on either a line chart (with one line for cash sales, and one for credit sales) or a column chart.

**Required: Print your graph (a color printer is not required).**

**\*NOTE: To format a report, make the spreadsheet “look” more formal by aligning the data and columns and make it look more like a formal report you would submit to your boss. Just printing the spreadsheet as it is will result in a reduction of points. Be creative and professional!**

## Appendix B

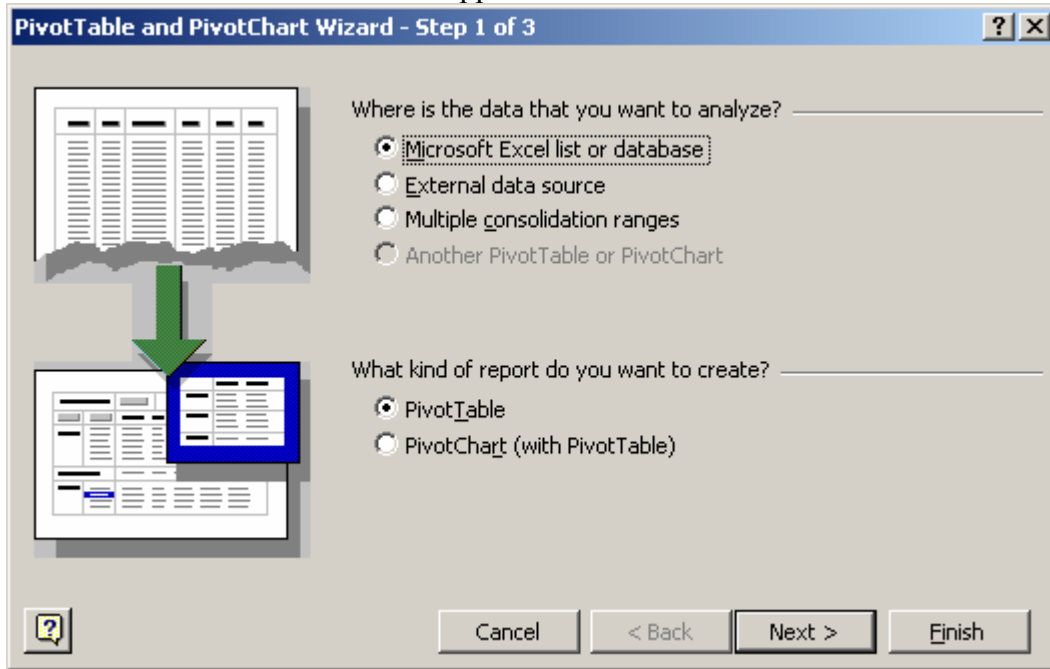
### Data File for Students

*This data file can be provided to the students, rather than having them create the file using the “COPY” and “PASTE” functions, as suggested in part a of the assignment (an electronic copy with all data for 2006 is available from the first author). Only the first two months are shown here.*

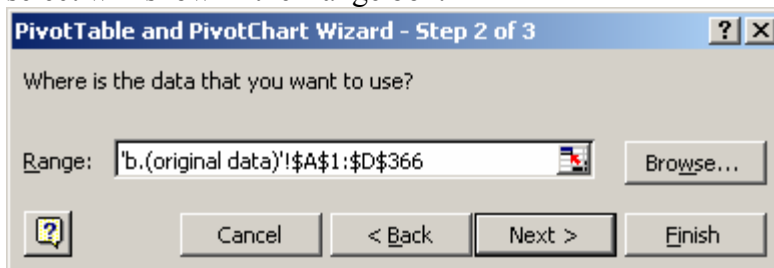
<b>Date</b>	<b>Account No</b>	<b>Amount of Sale</b>	<b>Date</b>	<b>Account No</b>	<b>Amount of Sale</b>
1/1/2006	400160	270	2/1/2006	400160	270
1/2/2006	400180	670	2/2/2006	400180	670
1/3/2006	400350	1145	2/3/2006	400350	1145
1/4/2006	400260	95	2/4/2006	400260	95
1/5/2006	400280	580	2/5/2006	400280	580
1/6/2006	400170	2520	2/6/2006	400170	2520
1/7/2006	400450	145	2/7/2006	400450	145
1/8/2006	400160	520	2/8/2006	400160	520
1/9/2006	400480	55	2/9/2006	400480	55
1/10/2006	400250	140	2/10/2006	400250	140
1/11/2006	400280	1070	2/11/2006	400280	1070
1/12/2006	400370	400	2/12/2006	400370	400
1/13/2006	400150	150	2/13/2006	400150	150
1/14/2006	400160	220	2/14/2006	400160	220
1/15/2006	400450	105	2/15/2006	400450	105
1/16/2006	400260	920	2/16/2006	400260	920
1/17/2006	400270	3770	2/17/2006	400270	3770
1/18/2006	400360	420	2/18/2006	400360	420
1/19/2006	400180	140	2/19/2006	400180	140
1/20/2006	400450	45	2/20/2006	400450	45
1/21/2006	400350	330	2/21/2006	400350	330
1/22/2006	400370	180	2/22/2006	400370	180
1/23/2006	400260	1470	2/23/2006	400260	1470
1/24/2006	400170	620	2/24/2006	400170	620
1/25/2006	400370	2770	2/25/2006	400370	2770
1/26/2006	400260	695	2/26/2006	400260	695
1/27/2006	400350	1220	2/27/2006	400350	1220
1/28/2006	400250	360	2/28/2006	400250	360
1/29/2006	400460	570			
1/30/2006	400150	320			
1/31/2006	400270	1520			

## Appendix C Lab Notes Provided to Students

- a. Follow directions in assignment, or use the data file given to you by your instructor.
- b. After the “original” data has been prepared, choose DATA/PIVOT TABLE REPORT on the menu bar. A window will appear as below:

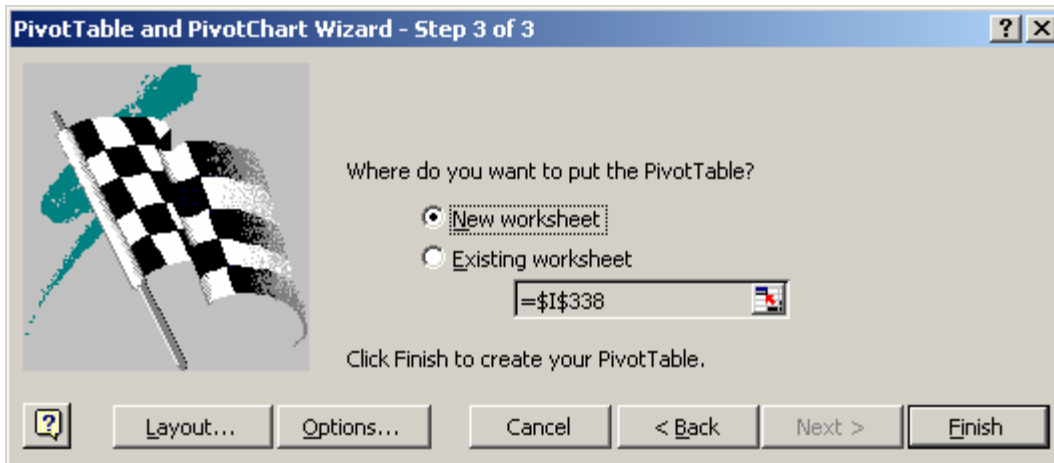


Make sure that the “Microsoft Excel list or database” and “PivotTable” radio buttons have been checked. Then click the “Next >” button. Another window will appear. Use your mouse to select all “original” data including column headers in the worksheet. The area you select will show in the Range box.

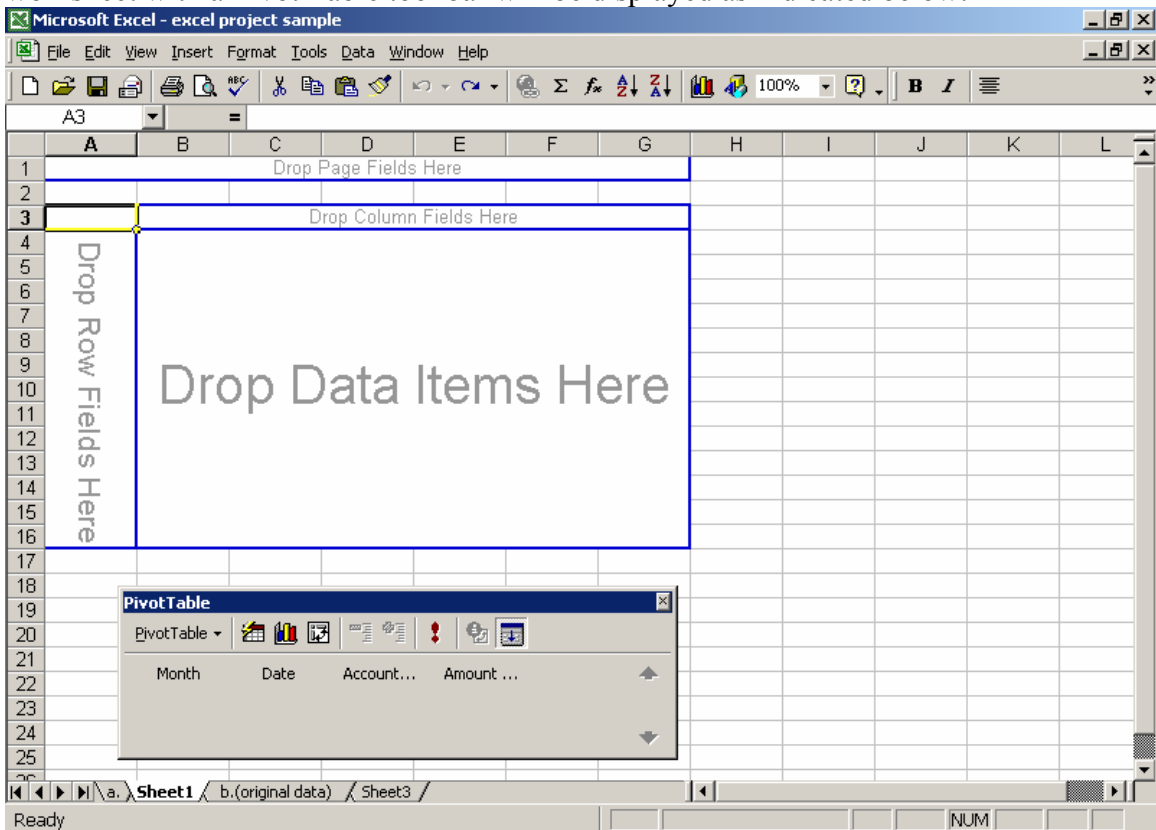


Click the “Next >” button, and you will see the last window for PivotTable Wizard:

### Appendix C (continued)



Click the “New worksheet” radio button and click the “Finish” button. Now your Excel worksheet with a Pivot Table tool bar will be displayed as indicated below:



Drag the “Month” from the Pivot Table tool bar to the “Drop Column Fields Here” area on work sheet. Drag the “Account...” on the Pivot Table tool bar to the “Drop Row Fields Here” area on work sheet.

Drag the “Amount...” on Pivot Table tool bar to “Drop Data Items Here” area on work sheet. Then close the Pivot Table tool bar.

Format and print this report.

- c. Follow directions for creating a pivot table above. To use the “HIDE ITEMS” feature, click on the downward-pointing arrow next to the column heading “Sales Type” and check the sales types that you wish to show on your report.
- d. Follow directions for creating a pivot table above.
- e. Copy the January transactions Data (3 columns) from requirement a) to a new worksheet. With a cell in the data area active, choose DATA/SORT menu on menu bar. The Sort dialog box will display as below, click the “Sort by” box arrow and select “Amount of Sale,” making sure the “Ascending” radio button beside has been checked. Click the first “Then by” box arrow and select “Date,” making sure the “Ascending” radio button beside has been checked. Then click the “OK” button.

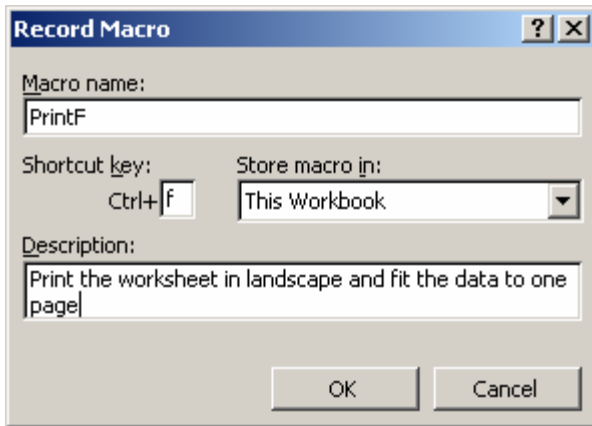


The data area has been sorted as required.

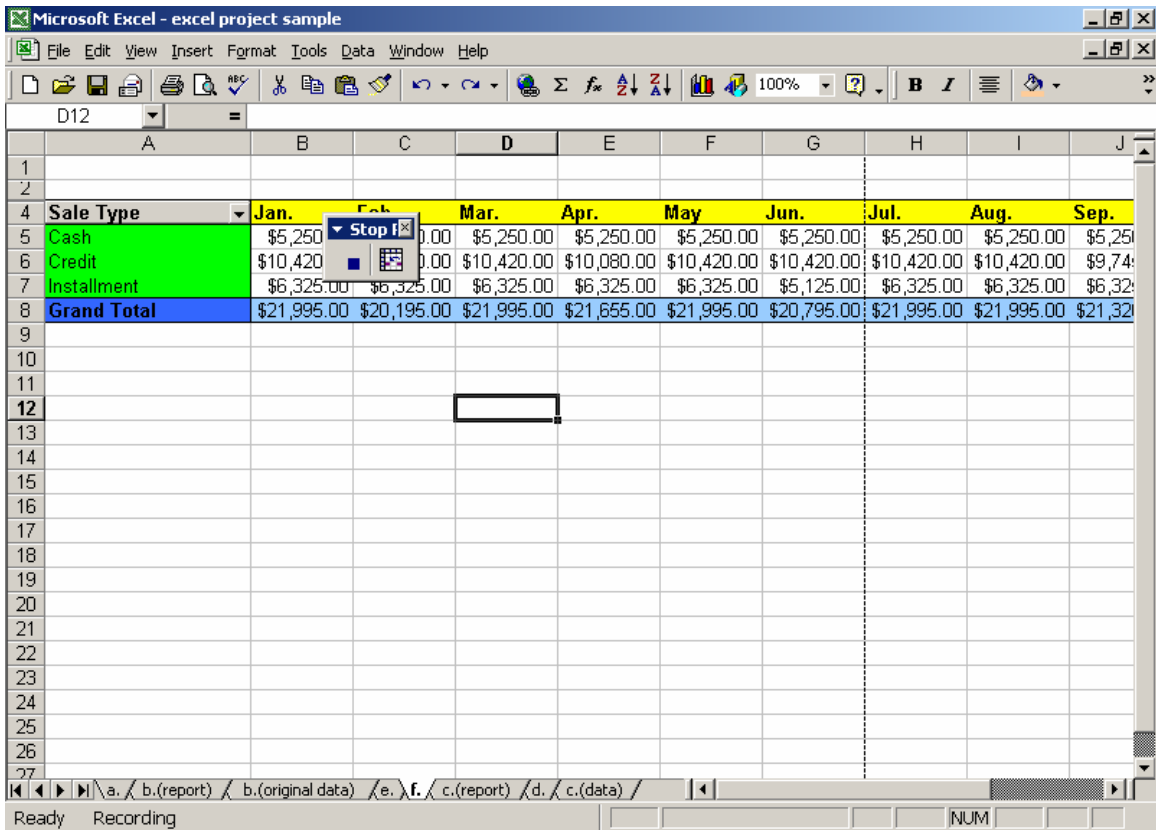
Then add a column heading for “Average Daily Sale” in cell D1. Click cell D2, then type “=AVERAGE(\$C\$2:\$C\$32)”, then deselect it. Add a column heading for “Difference” in cell E1. Click cell E2, then type “=C2-\$D\$2”, then deselect it. Reselect cell E2 and drag the autofill handle to

E32. Add a column heading “Greater than 1.2\*Average” in cell F1. Click the cell F2, then type “=IF(C2>1.2\*D2, "Yes", "No")”, then deselect it. Reselect cell F2 and drag the autofill handle to cell F32. This completes the requirement.

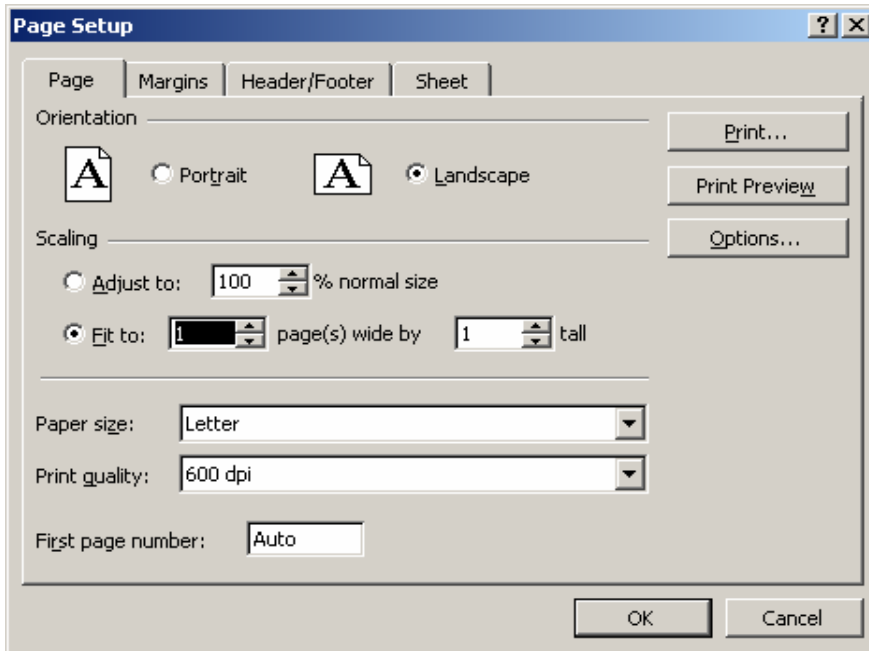
- f. Choose TOOLS/MACRO/RECORD NEW MACRO. When the “Record Macro dialog box displays, type the Macro name, Shortcut key and Description as follows:



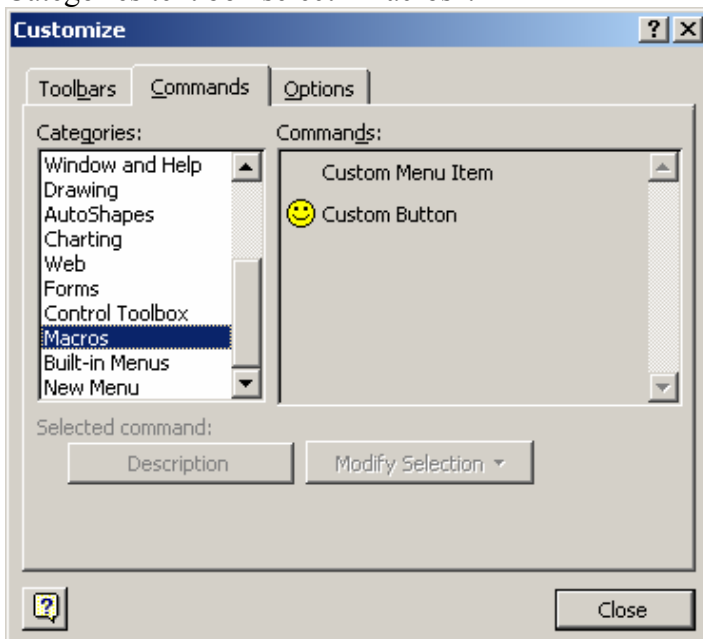
Click the “OK” button. The “Stop Recording” tool bar is then displayed, which means you can record your action now.



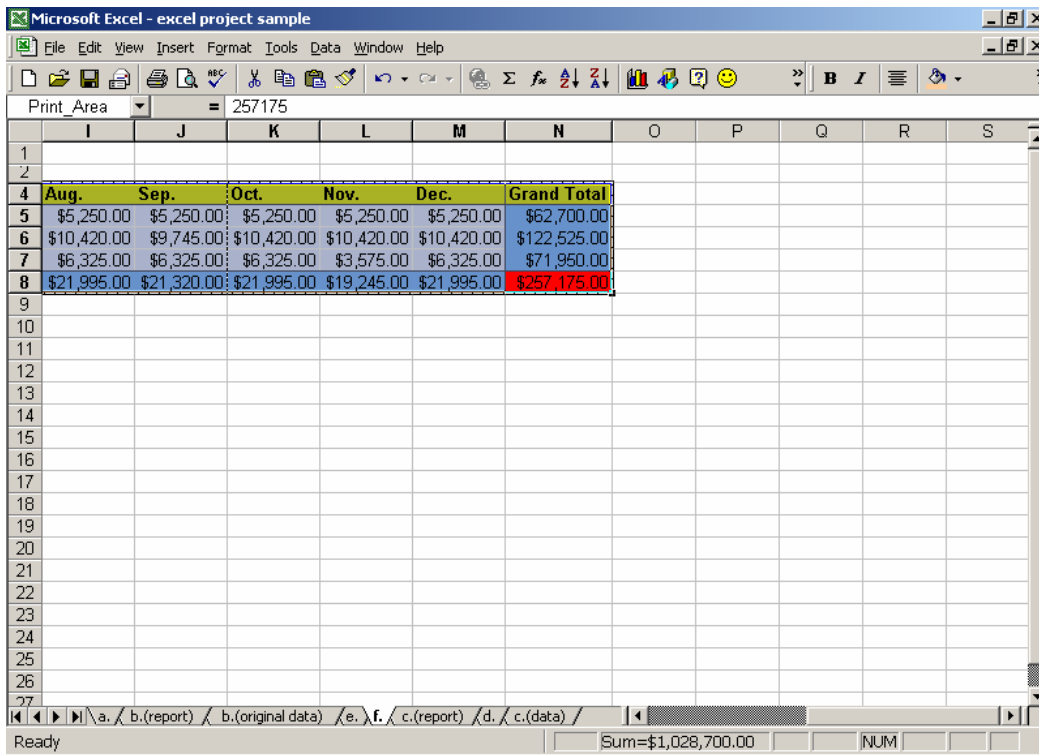
Choose FILE/PAGE SETUP. On the menu bar, the Page Setup dialog box is then displayed. Check the “Landscape” and “Fit to 1 page(s) wide by 1 tall” radio button, then click ”Print” button.



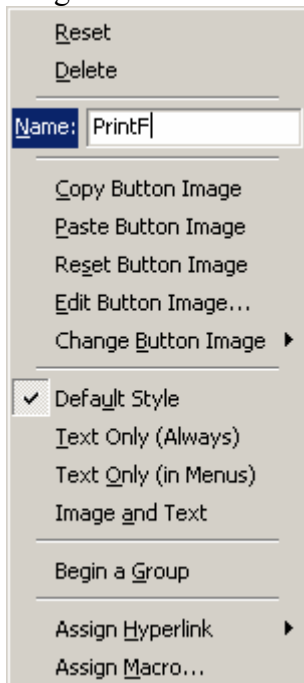
Choose FILE/PAGE SETUP on the menu bar again. The Page Setup dialog box will display again. Check the “Portrait” and “Adjust to 100% normal size” radio buttons, making sure the “normal size” is 100%. Then click “OK” button. Click the “Stop Recording” button (the left button) on the Stop Recording tool bar, then choose TOOLS/CUSTOMIZE on the menu bar. The Customize dialog box will then open. Select “Commands” tab, then in the Categories text box select “Macros”.



Drag the button with the smiley face image in the Commands list to the right of the “Help” button on the standard toolbar.

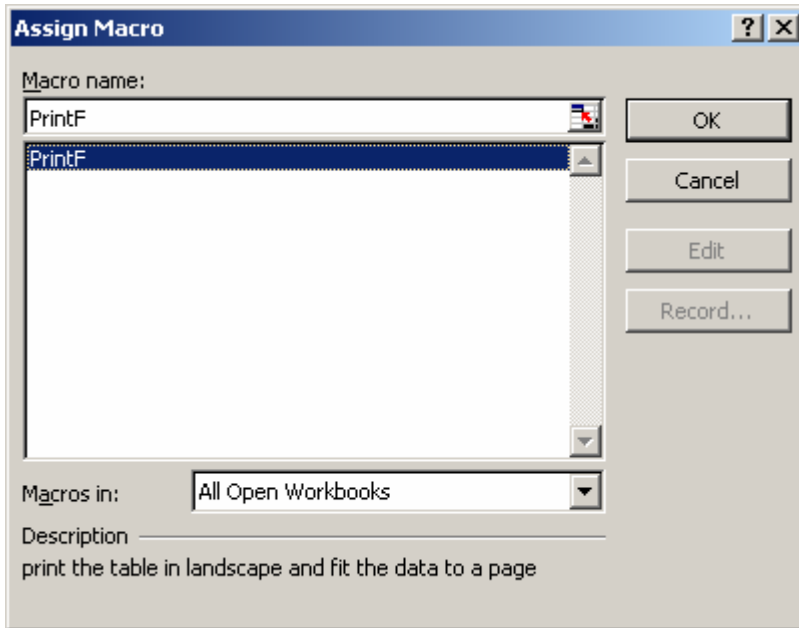


With the customized dialog box not closed yet, right-click the button with the smiley face image on the Standard tool bar. A shortcut menu will display as follows:



Type “PrintF” in the “Name” text box and click the “Assign Macro...” menu, When the Assign Macro dialog box displays, select “PrintF” and click the “OK” button.





Click the “Close” Button on the “Customize dialog” box. Now try to use the macro you created.

g. Use “Chart Wizard” to graph data.

### Appendix D: Solutions

**Part (a) is the data created (available electronically, check figures included in assignment instructions in Appendix A)**

**Part (b): First six months only (July-December and Totals available in electronic form from first author)**

Sum of Amount of Sale	Month					
Account No	Jan	Feb	Mar	Apr	May	Jun
400150	\$470.00	\$150.00	\$470.00	\$470.00	\$470.00	\$470.00
400160	\$1,010.00	\$1,010.00	\$1,010.00	\$1,010.00	\$1,010.00	\$1,010.00
400170	\$3,140.00	\$3,140.00	\$3,140.00	\$3,140.00	\$3,140.00	\$3,140.00
400180	\$810.00	\$810.00	\$810.00	\$810.00	\$810.00	\$810.00
400250	\$500.00	\$500.00	\$500.00	\$140.00	\$500.00	\$500.00
400260	\$3,180.00	\$3,180.00	\$3,180.00	\$3,180.00	\$3,180.00	\$3,180.00
400270	\$5,290.00	\$3,770.00	\$5,290.00	\$5,290.00	\$5,290.00	\$5,290.00
400280	\$1,650.00	\$1,650.00	\$1,650.00	\$1,650.00	\$1,650.00	\$1,650.00
400350	\$2,695.00	\$2,695.00	\$2,695.00	\$2,695.00	\$2,695.00	\$1,475.00
400360	\$420.00	\$420.00	\$420.00	\$420.00	\$420.00	\$420.00
400370	\$3,350.00	\$3,350.00	\$3,350.00	\$3,350.00	\$3,350.00	\$3,350.00
400450	\$295.00	\$295.00	\$295.00	\$295.00	\$295.00	\$295.00
400460	\$570.00		\$570.00	\$570.00	\$570.00	\$570.00
400480	\$55.00	\$55.00	\$55.00	\$55.00	\$55.00	\$55.00
<b>Grand Total</b>	\$23,435.00	\$21,025.00	\$23,435.00	\$23,075.00	\$23,435.00	\$22,215.00

**Part (c): First six months only (July-December and Totals available in electronic form from first author)**

Sum of Amount of Sale	Month					
	Jan	Feb	Mar	Apr	May	Jun
Cash	\$5,430.00	\$5,110.00	\$5,430.00	\$5,430.00	\$5,430.00	\$5,430.00
	\$10,620.0		\$10,620.0	\$10,260.0	\$10,620.0	\$10,620.0
Credit	0	\$9,100.00	0	0	0	0
Installment	\$6,465.00	\$6,465.00	\$6,465.00	\$6,465.00	\$6,465.00	\$5,245.00
<b>Grand Total</b>	\$22,515.0	\$20,675.0	\$22,515.0	\$22,155.0	\$22,515.0	\$21,295.0
	0	0	0	0	0	0

**Part (d):**

Sum of Amount of Sale	Sale Type	
	Credit	Grand Total
50	\$5,640.00	\$5,640.00
60	\$37,465.00	\$37,465.00
70	\$61,960.00	\$61,960.00
80	\$19,800.00	\$19,800.00
<b>Grand Total</b>	<b>\$124,865.00</b>	<b>\$124,865.00</b>

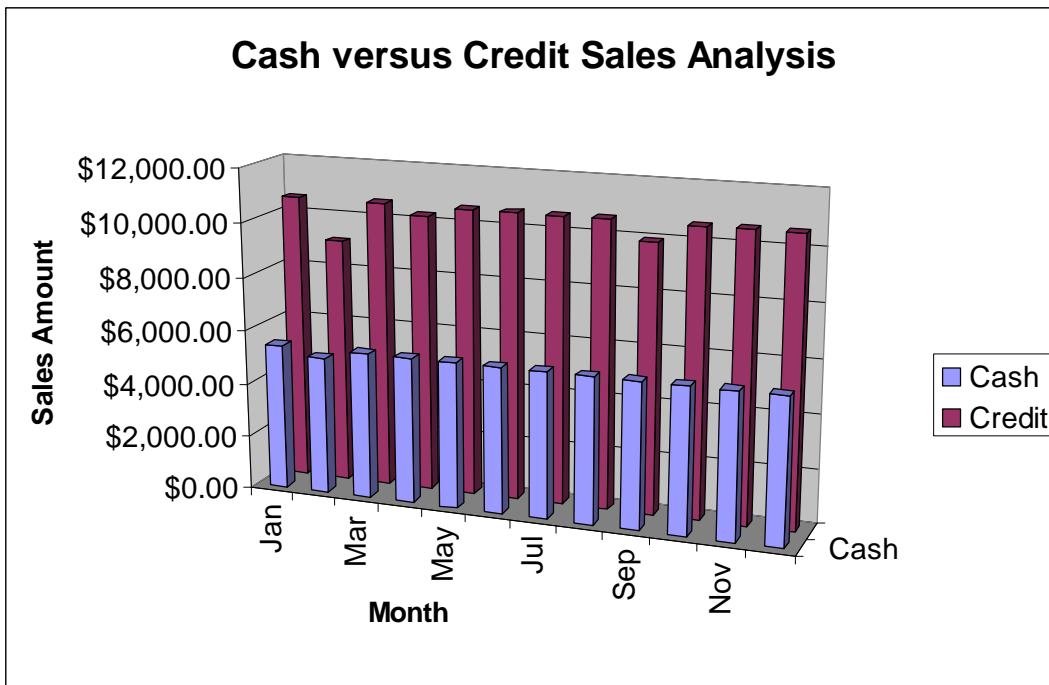
**Part (e):**

Date	Acct No.	Amt of Sale	Avg Daily Sale	Difference	> 1.2 * Avg Sales
1/20/2006	400450	45	756	-711	No
1/9/2006	400480	55	756	-701	No
1/4/2006	400260	95	756	-661	No
1/15/2006	400450	105	756	-651	No
1/10/2006	400250	140	756	-616	No
1/19/2006	400180	140	756	-616	No
1/7/2006	400450	145	756	-611	No
1/13/2006	400150	150	756	-606	No
1/22/2006	400370	180	756	-576	No
1/14/2006	400160	220	756	-536	No
1/1/2006	400160	270	756	-486	No
1/30/2006	400150	320	756	-436	No
1/21/2006	400350	330	756	-426	No
1/28/2006	400250	360	756	-396	No
1/12/2006	400370	400	756	-356	No
1/18/2006	400360	420	756	-336	No
1/8/2006	400160	520	756	-236	No
1/29/2006	400460	570	756	-186	No

1/5/2006	400280	580	756	-176	No
1/24/2006	400170	620	756	-136	No
1/2/2006	400180	670	756	-86	No
1/26/2006	400260	695	756	-61	No
1/16/2006	400260	920	756	164	Yes
1/11/2006	400280	1070	756	314	Yes
1/3/2006	400350	1145	756	389	Yes
1/27/2006	400350	1220	756	464	Yes
1/23/2006	400260	1470	756	714	Yes
1/31/2006	400270	1520	756	764	Yes
1/6/2006	400170	2520	756	1764	Yes
1/25/2006	400370	2770	756	2014	Yes
1/17/2006	400270	3770	756	3014	Yes
<b>Total</b>		<b>23435</b>			

**Part (f):** we require the students to turn in their electronic copy so that we can make sure the macro runs. They turn in a landscape-oriented printout of their report from part (c) for this part.

**Part (g):**



# A Profile Of College of Business Courses Offered Over The Internet

Walter Creighton, Northwestern State University  
Margaret Kilcoyne, Northwestern State University  
Joel Worley, Northwestern State University

## Introduction

As the popularity of Internet courses continues to increase, colleges and faculty struggle to offer more courses on-line. These online courses may take time and effort away from traditional “on-campus” courses. The main purpose of these courses, in many cases, is to reach students who are not currently enrolled in the college and/or courses. That is, they are designed to increase enrollment by making courses available to students who could not otherwise take these courses. Many Colleges of Business are struggling to compete in the “Internet” war for students in order to maintain and increase their enrollments.

## Objectives

The research will seek to determine/develop (1) a profile of Northwestern State University’s College of Business Internet courses, (2) the grade point averages of Internet students and (3) the rate of withdrawals/ dropouts for Internet students.

## Review of Related Literature

Gibson, Tesone, Hodgetts, & Blackwell, (2001) found one main audience for distance learning programs to be the non-traditional adult learner those beyond the traditional 18 to 22 year olds at the undergraduate and graduate levels, who balances work and family demands with part-time degree completion. That study noted the aspects that appeal to the adult learner included convenience of working from office or home, flexibility of time, and diverse group interactions. Another group of learners were the out-of-state traditional students who wanted to continue their college or university courses during the summer months from their own hometowns through programs using distance-learning delivery. Also, there were students who were working in full-time internships away from a campus who needed

to continue their course work through asynchronous online methods (Tesone, 2000).

## Results

The data for this paper was collected from the university’s student information system (SIS). For this paper we analyzed the following variables: students’ earned grades in Internet courses, students’ classification level, course term, and semester. The variables semester and course term are nominal data. Each semester courses may be offered as a full term course (sixteen weeks), A-term course (first eight weeks of the semester), and/or B-term course (last eight weeks of the semester). For this analysis, the 2005 fall semester and 2006 spring semester Internet courses were used. The variables, students’ earned grades in Internet courses, and students’ classification level are ordinal data. We coded the students’ earned grades as follows: A = 4, B = 3, C = 2, D = 1, F = 0. If a student withdrew from the course within the appropriate deadlines, the student received a W, W (with a letter grade), or WN (never attended). Students are classified by levels as entering freshman (first time student), freshman (less than 30 credit hours earned), sophomore (30-59 earned credit hours), junior (60-89 earned credit hours), and senior (90 or greater). We clumped masters, specialist and non-degree seeking all into the masters category as there were too few of those to analyze otherwise.

Northwestern State University students could enroll in more than one internet course during the fall 2005 semester and the spring 2006 semester. During the fall 2005 semester and the spring 2006 semester, 1,508 students enrolled in internet courses and 244 students withdrew or were dropped for excessive absences from the internet courses. For several of the data analysis, a total of 1,264 duplicated students was used. During the fall 2005 semester and the spring 2006, a total of 993 students (unduplicated) were enrolled in one or more internet course at Northwestern State University. Four students were enrolled in 7 internet

courses during the fall 2005 semester and the spring 2006 semester.

During the fall 2005 and spring 2006, 939 students (62.3%) were enrolled in full-term courses; 190 students (12.6%) were enrolled in A-term courses; and 379 students (25.1%) were enrolled in B-term courses.

Analysis of the data revealed during fall 2005 450 unduplicated students enrolled in College of Business Internet courses. Of the 450 students, 26 (5.8%) were classified as an entering freshman; 44 (9.8%) were classified as a freshman; 108 (24%) were classified as a sophomore; 114 (25.3%) were classified as a junior; 153 (34%) were classified as a senior; and 5 (1.1%) were classified as a master's degree. In spring 2006 543 unduplicated students enrolled in College of Business Internet courses. Of the 543 unduplicated students, 24 (4.4%) were classified as an entering freshman; 50 (9.2%) were classified as a freshman; 127 (23.4%) were classified as a sophomore; 126 (23.2%) were classified as a junior; 211 (38.9%) were classified as a senior; and 5 (0.9%) were classified as a master's degree level.

Students from the College of Business, the College of Education, the University College, the College of Liberal Arts, the College of Nursing, the College of Science and Technology, the College of Graduate Studies, and the Scholars College took internet courses. During the fall 2005 semester 210 (46.7%) students were majoring in a degree under the College of Business and during spring 2006 semester, 253 (46.6%) students were majoring in a degree under the College of Business (see Table 1).

Table 1  
Unduplicated Students by Colleges for Fall 2005 and Spring 2006

Semester	College	Unduplicated Students
Fall 2005	Business	210
	University	68
	Liberal Arts	59
	Science and Technology	54
	Nursing	42
	Education	10
	Scholar's College	5
	Graduate School	2
Total		450
Spring 2006	College	
	Business	253
	Liberal Arts	81
	Science and Technology	75
	University	56
	Nursing	56
	Education	20
	Scholar' College	1
	Graduate School	1
Total		543

The college reporting the largest number of students enrolled in full-term (16 weeks) College of Business Internet courses for Fall 2005 and Spring 2006 was Business (n=307; 50.7%). Also, the college reporting the largest number of students enrolled in A-term (1st six week) College of Business courses and B-term (2nd six weeks) College of Business courses was Business (n=46, 35.7%) (n=110, 42.5%) respectively (see Table 2).

Table 2  
Unduplicated Students Reported by Colleges  
and Term Course Taken

Term			Unduplicated Students	
Full Term (16 weeks)	College	BU	307	
		LA	76	
		ST	73	
		UC	70	
		NU	50	
		ED	24	
		SC	3	
		GS	2	
		Total		605
A-Term (1st six weeks)	College	BU	46	
		NU	22	
		LA	21	
		UC	20	
		ST	15	
		ED	4	
		GS	1	
		Total		129
		B-Term (2nd six weeks)	College	BU
LA	43			
ST	41			
UC	34			
NU	26			
SC	3			
ED	2			
Total				259

Of the 1,508 duplicated students, 58 (3.8%) were entering freshman; 128 (8.5%) were freshman; 362 (24%) were sophomore; 417 (27.7%) were juniors; and 532 (35.3%) were seniors and 11 (.7%) were master's degree, specialist, or non-degree students. In the fall 2005 semester, 230 students earned an A; 125 students earned a B; 67 students earned a C; 34 students earned a D; and 109 students earned a F. Ninety-one students withdrew with a grade of W; 6 students withdrew for never attending with a grade of WN, and 3 student withdrew with a grade

(WA, WB, or WF), and 9 students were dropped for excessive absences with a grade of X. In the spring 2007 semester, 243 students earned an A; 179 students earned a B; 84 students earned a C; 35 students earned a D; and 157 students earned a F. Two students audited courses, 117 students withdrew from courses with a grade of a W; 11 students withdrew for as never attending with a grade of WN; and 5 students were dropped for excessive absences with a grade of X. Of the 1,264 graded students (fall 2005 and spring 2006), 266 (17.6%) students earned a F; 69 students (4.6%) earned a D; 151 (10%) earned a C; 305 students (20.2%) earned a B; and 473 students (31.4%) earned an A in internet courses. (see Table 3)

Table 3  
Students' Earned Grades in Internet Courses for  
Fall 2005 and Spring 2006

Grade	Semester		Total
	Fall 2005	Spring 2006	
A	230	243	473
B	125	179	304
C	67	84	151
D	34	35	69
F	109	157	266
Total	565	698	1,263

To determine if a difference existed between students' earned grades and the term (which the course was taken), students' earned grades and the semester, and students' earned grades and students' classification level (entering freshman, freshman, sophomore, junior, senior, other), we used an ANOVA at .05 *a priori* for data analysis. The data revealed that no difference existed between students' earned grades and the semester in which the course was taken.(see Table 4) The data revealed that a substantial difference existed between students' earned grades and the term in which the course was taken (see Table 5) and students' earned grades and students' level-entering freshman, freshman, sophomore, junior, senior, and master's level (see Table 6).

Table 4  
Students' Earned Grade Point Average by Semester

Semester	N	Mean	Std. Dev	Min	Max
Fall 2005	565	2.59	1.53	0	4
Spring 2006	698	2.45	1.55	0	4

Table 5  
Students' Earned Grade Point Average by Full-term, A-term, and B-term

Term	N	Mean	Std. Dev.	Min	Max
A-term	165	2.59	1.54	0	4
B-term	332	1.88	1.63	0	4
Full-term	767	2.77	1.42	0	4

Table 6  
Students' Earned Grade Point Average by Classification (Level)

Level	N	Mean	Std. Dev.	Min	Max
Entering Freshman	45	1.13	1.58	0	4
Freshman	108	1.71	1.64	0	4
Sophomore	294	2.24	1.67	0	4
Junior	351	2.56	1.47	0	4
Senior	456	2.97	1.27	0	4
Graduate	10	3.00	1.41	0	4

The mean earned grade for B-term courses was 1.88; for A-term courses was 2.59; and for full-term courses was 2.77. The difference in means is significant ( $F = 41.240$ ,  $p < .000$ ) (see Table 5).

The mean earned grade for students classified as entering freshman was 1.13, mean earned grade for students classified as freshman was 1.71, mean earned grade for students classified as a sophomore was 2.24, mean earned grade for students classified as a junior was 2.56, mean earned grade for students classified as a senior was 2.97, and the mean earned grade for students classified as a master's degree was 3.00. The difference in means is significant ( $F = 25.241$ ,  $p < .000$ ) (see Table 6).

The percent of students unsuccessfully completing an Internet course ranged from a low of 7% in BUAD 4800 – Microcomputer Applications II to a high of 72% in ACCT 2000 – Financial Accounting. Grade point averages in the courses ranged from a low of .77 in ACCT 2000 to a high of 3.4 in OFAD 2140 – Applied Office Procedures (see Table 7).

Table 7  
College of Business Internet Courses General Information

	# Sections/ Enrollment	GPA	# Dropped / F	% Unsuccessful (Drop + F/ Enrollment)
ACCT 2000 F/S	4/81	.77	23/35	72%
ACCT 2010 F/S	1/21	.86	7/8	71%
BUAD 1040 F/S	7/214	2.3	30/52	38%
BUAD 4800 S	1/28	2.7	0/2	7%
CIS 1010 F/S	2/46	2.1	24/8	70%
CIS 1030 F	1/10	1.9	1/3	40%
CIS 1800 F/S	3/82	3.3	11/7	22%
CIS 3100 F/S	3/99	3.3	8/4	12%
ECON 2000 F/S	3/97	2.4	9/19	29%
ECON 2010 F	2/46	2.5	5/6	24%
FIN 2150 F/S	8/242	2.5	39/48	36%
MGT 2500 F/S	8/238	2.9	27/24	21%
MKTG 2200 F/S	7/204	2.1	43/35	38%
OFAD 1010 F/S	2/63	2.7	11/6	27%
OFAD 2140 S	1/8	3.4	1/0	13%
OFAD 2180 F	1/20	2.4	3/6	45%
OFAD 2190 S	1/9	2.3	0/2	22%

F- Fall S- Spring

### Discussion

When studying the data from this research, several issues become apparent. The first is that it appears that B-term students score substantially lower than A-term students or full-term students. The difference is statistically significant ( $p < .000$ ). What could cause a substantial difference in the grades between the B-term and the other terms? The researchers have observed that many of the students enrolling in B term classes say they are doing so because they were failing one or more full term classes, and are dropping those and picking up B term offerings. It is likely that several factors explain the poorer performance.

One is, that it is the weaker student who was failing and has dropped and added to maintain a full schedule. Coupled with that is the probability that they may be in a course that does not really

interest them. The pace of material coverage is necessarily twice as fast as in a full term section, and if they have not had one of these “double time” courses they may fall behind before realization sets in.

Table 6 indicates that internet courses are problematic for freshmen, especially those in their first semester of college. While the determination of the causes are not part of this study, it is likely that the common freshman problem, lack of self discipline, is exacerbated by the lack of structure inherent in an internet course.

Perhaps some classes just should not be offered over the Internet. In particular – Financial Accounting. In reviewing the course in other semesters, the “unsuccessful” rate is consistently over 70%.

#### Implications.

It is apparent that more study is needed to determine some of the causes of the disparities noted above. Additionally, there are clear indicators for advisors. Freshmen, overloaded, and weaker students need to be encouraged to avoid, if not outright prohibited from taking internet offerings, especially those on an accelerated schedule.

Additionally, advisers should monitor performance, and those teaching the more problematic courses need to take steps to ensure timely and effective work. If students are perceived to be in trouble, they can be encouraged, directed to tutoring sources or perhaps it could be suggested that they drop the course rather than receive a failing grade.

Online and accelerated offerings are still somewhat new, and various factors affecting performance need to be identified, and strategies for dealing with them developed.

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## **Hurricane Katrina's Silver Lining: E-Learning at Southern University at New Orleans.**

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### **Abstract**

Most universities view E-learning as the wave of the future. However, at Southern University at New Orleans (SUNO), E-learning has become a necessity for the school's survival. For the past several years, universities regarded E-learning as a means to meet the needs of their students, thereby increasing enrollment, retention and quality while lowering tuition. However, after Hurricane Katrina, several Gulf Coast Universities have resorted to E-learning as a means to simply provide basic education to their students. Pre-Katrina, approximately 2% of the SUNO student body participated in on-line courses. In the spring 2006 semester, 21% of the student body is participating in on-line courses. Not only has E-learning allowed SUNO to keep its doors open, but it has also allowed the school to move forward with its mission of providing higher education to students from diverse backgrounds. Furthermore, E-learning will allow the University to not only recover but also play a vital role in preparing individuals to meet the labor needs of the city.

*Key Words: E-learning, Disaster, Displaced, Recruiting, Retention, Enrollment, Katrina.*

### **Introduction**

The current emphasis on E-learning at SUNO is being fueled by five major events: the prevalence of natural disasters, the convergence of communication and computing technologies, the constant need for workers in all sectors of the economy to remain knowledgeable and highly skilled without interrupting their schedules for extended periods of time, the favorable economics of E-learning, and the fierce competition among institutions, colleges, and universities. Such technology can make a tremendous impact on helping underachieving students progress academically while helping

over-achieving students remain challenged and motivated (Taylor, 2004). The new demand of the New Orleans business industry insures a place for SUNO students in a vibrant and recovering economic environment.

Since the day after Hurricane Katrina's landfall, the Louisiana Board of Regents, the state's coordinating board for higher education, has hosted regular meetings of the Louisiana Higher Education Response Team (LaHERT). LaHERT is composed of system presidents, university presidents/chancellors, campus representatives, and invited guests who address the many issues facing higher education as a result of the two hurricanes. More than 80,000 Louisiana public and private college students and 10,000 faculty and staff were displaced by the two storms. "The impact of the storms on postsecondary education in Louisiana has been both broad and deep. ([www.regents.state.la.us](http://www.regents.state.la.us)).

In the wake of Hurricane Katrina during the 2005 fall semester, SUNO students were displaced from the damaged university. Many continued their education through E-learning or at other institutions. SUNO's main campus was damaged by the flood. The University is currently housed temporary modular campus, in which both on-line and traditional face-to-face classes are offered (Figures 1 and 2).



Figure 1: Pre-Katrina Class Room, Southern University at New Orleans



Figure 2: Post-Katrina Classroom

### **Literature Review**

Education is the root of our future growth. Both skills and technology advance every minute in an effort to strengthen our educational process, to better focus our teaching skills, and to incorporate interactive learning tools to work with students rather than for them. Above all, such educational measures must be available to every student regardless of geographic location (Glenn, 2001).

At its most basic level, distance education takes place when a teacher and student(s) are separated by physical distance, and technology, that is voice, video, data, and print is used to bridge the instructional gap (Boettcher, 1996).

The power of on-line or distance learning lies in its ability to enable all those interested to have equal access to available educational materials regardless of time and place. The opportunities and applications distance learning offers include reaching a wider student audience, conferring with experts around the world, linking students from different cultural and economic backgrounds, facilitating new research, and providing access to knowledge and experiences, which otherwise would not be available (Kinnaman, 1995). Furthermore, it provides educational opportunities in the workplace, community, or the home, for those unable to attend school or college because of cultural, economic, geographical, or social barriers.

In the hands of able teachers, distance learning plays a prominent role in fostering the development of important skills in students such as critical thinking, problem solving, written

communication, and the ability to work collaboratively. Thus, teachers can encourage students to employ all available technology with the goal of having them weigh evidence, judge the authenticity of data, compare different view point on issues, analyze and synthesize diverse sources of information, and construct their own understanding of the topic at hand. By doing so, students will be well on their way to developing invaluable critical thinking and problem solving skills (Weinstein, 1997).

Students who successfully complete distance learning programs are generally very motivated, highly disciplined, and have a clear vision of the goals that they want to accomplish. Furthermore, successful students tend to be independent leaders and mature adults who are comfortable in the realm of textual materials (Glenn, 2001).

E-learning revolutionized the learning experience by making vital material available on-demand via the web and a company's intranet. Now the same content can be offered using familiar wireless tools, making the learning experience even more convenient and flexible. (Koschembahr, 2005)

### **The Pathway to E-Learning**

In order for e-learning to become successful students need uninterrupted access to technology, curriculum, and activities that are meaningful to students' lives, and immediate feedback in order to maximize student achievement. (Starkman, 2006)

It is the goal of the university to provide all faculty and students with a laptop in order to utilize the technology to its full potential. SUNO's e-learning mission which is to design and implement a model for teaching and learning that will meet the needs of all learners through the use of best practices, adaptive technologies and instructional techniques (Figure 3).

During the wake of Hurricanes Katrina and Rita, SUNO administration assumed an aggressive approach to reach, retain, and recruit students by establishing the Department of E-learning and implementing on-line curricula. All faculty were encouraged to implement at least

one on-line course in his/her field. Consultants from the Tennessee Board of Regents specializing in the design of on-line curricula conducted workshops aimed at teaching SUNO faculty instructional design for on-line courses. A national blackboard was established for on-line course materials, thereby providing students with unlimited access. Faculty members were awarded wireless laptops and financial incentives for successful course implementation as set forth by the standards and recommendations of the consulting firm. All online students enrolled were required to complete the SUNO Online Orientation and the Online Knowledge and Skills Mastery Test. The test assisting students in assessing their knowledge, skills, technical requirements, support students services, technical assistance, and listing of academic resources to support students online.

With the implementation of E-learning, the number of on-line classes at SUNO has increased from 11 pre-Katrina to 88 post-Katrina (Table 1). Furthermore, the Departments of Criminal Justice, Early Childhood Education, and General Studies currently offer on-line undergraduate degree programs. An on-line Master degree program in Museum Studies is also available. The number of students enrolled in on-line courses also increased from 90 pre-Katrina to 521 post-Katrina (Table 2).

Table 1: Number of On-line Classes Offered at SUNO Spring 2005-Fall 2006

Semester	Number of Classes
Spring 2005	11
Spring 2006	64
Fall 2006	88

Table 2: Number of Students Enrolled in On-line Courses

Semester	Number of students
Spring 2005	90
Spring 2006	427
Fall 2006	521

The E-learning program has also positively impacted university enrollment. Overall, enrollment has increased from a student

body of about 700 in the Fall of 2005 to 2100 in the Spring of 2006. Currently, the university has an enrollment of 2500 (Table 3).

Table 3: Student Enrollment at SUNO

Semester	Number
Fall 2005 (Pre-Katrina)	3681
Fall 2005 ( September)	700
Spring 2006	2100
Fall 2006	2500

### Conclusion and Recommendations

As technology advances, course developers must plan for interactive collaborations among faculty and students in the most convenient setting. E-learning allows faculty and students to join in networks that overcome institutional or geographical boundaries.

We conducted a survey based on five statements and the results of the study support the need for implementing E-learning at SUNO. Not only did E-learning play a key role in the survival of SUNO post-Katrina and Rita, but it also revitalized the academic environment with motivated faculty/staff and eager students. SUNO's E-learning program has grown from 11 to 88 courses over a 12-month period, partly out of necessity but also for convenience. The number of students participating in on-line classes has also increased from 90 pre-Katrina to approximately 521 post-Katrina. Such statistics attest to the success and popularity of SUNO's E-learning program and signify the start of a new beginning. Based on its overall positive result, the E-learning program implemented by SUNO may serve as a model for other institutions in regions affected by natural disasters. This model has shown that change in teaching and learning, and in attitudes on campus, can be affected by including e-learning technologies as part of a pedagogical design change.

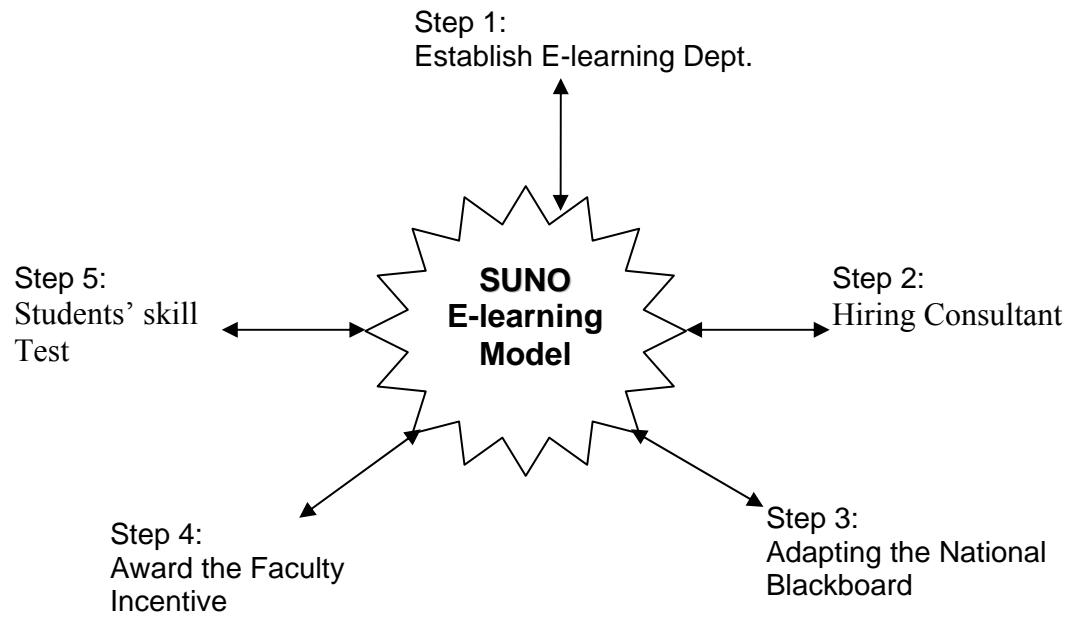
The effectiveness of E-learning depends on many factors. Faculty should notify the Recruitment and Retention Department of student participation in on-line curricula by the end of the second week of the semester. On-line course content should strictly adhere to course

syllabi presented to students. Prompt faculty response to student concerns/questions is critical. Faculty should advise students as to their course loads (traditional and on-line) based on their commitments, and work responsibilities.

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**Figure 3: SUNO's E-learning Model**



# Incorporating Emerging Web Collaboration Tools into the Business Information Systems Curricula—Knowledge Management in Practice

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## Introduction

Business in the Internet age is continuous, with wild change at breakneck speed; and an unrelenting integration of the newest technology. Barriers between organizations are becoming more edgeless with permeable boundaries than anytime before, and the volume and speed of communication and collaboration has accelerated. Escalating globalization of industries has created amplification in strategic alliances and intercultural negotiations. The need for rich, business communication/collaboration has increased due to globalization, decentralization, economic deregulation, telecommuting, and rapid technological changes. “Never before have teams been so essential to organizations,” (Kelly, 2006, p. 341). People now must often join forces to solve hard-hitting problems across physical and temporal barriers, as well as face-to-face negotiations (Chaney & Martin, 2004; Lipnak & Stamps, 2000; & Nunamaker, Briggs, Mittleman, Vogel, & Balthazard, 1996).

Due to the cost of time and money involved in travel, virtual conferences are replacing many face-to-face meetings. META Group research (2003) indicated that full-time telecommuters (those who have no workplace other than a home office) have doubled in number since 2000. Furthermore, add to this figure, teleworkers who spend more than 50 percent of their time working outside an office, and the number becomes stunning. Even explorers on Antarctica are “connected” through the single satellite that orbits between poles (Kelly, 2006). Although most companies still maintain a divisional structure, they increasingly are forming external relationships with other firms in the form of strategic partnerships, alliances, and outsourcing contracts (Mowshowitz, 1994). The Internet increasingly plays a greater role in collaborative efforts via electronic communication which is an “enabler

of changed organizational forms,” (Fulk & DeSanctis, 1995, p. 337).

Given the increased utilization of collaborative technology in a global marketplace, the challenges of change in this knowledge management area are now front and center for academicians. Our business students, whose lives and careers are affected by our leadership, must be equipped to enter this global workplace. Research indicates that groups trained in Group Decision Support Systems (GDSS), as compared with untrained groups, exhibit higher team participation, waste less time and energy, work together better, and make significantly more accurate judgments than untrained groups (Kelly, 2006). The revised *Organizational & End-User Information Systems (OEIS) Curriculum Model for Undergraduate Education in Information Technology* (OSRA, 2004) addresses this need as well with an entire course module included as a recommended elective for all business information systems students. This presentation will first focus on the literature review supporting this need and will also address major concepts involved in delivering a collaborative technologies and knowledge management course.

## Communication – Key Virtual Ingredient

Communication is fundamental to any form of organization, but it is paramount in virtual organizations. “Without communication, the boundary spanning among virtual entities would not be possible. Electronic communication enables parties to link across distance, time, culture, departments, and organizations, thereby creating ‘anyone/anytime/anyplace’ alternatives to the traditional same-time, same-place, functionally centered, in-house forms of organizational experience,” (DeSanctis & Monge, 1999, p. 694). Electronic communication takes on

characteristics of both written and face-to-face conversation. Like face-to-face conversation, electronic communication is interactive, but like written communication, electronic communication is typically edited. DeSanctis & Monge note the real power of the virtual form is realized when relationships among electronically connected people or firms “produce new and/or qualitatively different communication that yields product or process innovation,” (p 695).

Some studies show that individuals, when conversing electronically, take longer to form impressions of one another because it takes longer to decode social cues, (Walther, 1993). However, DeSanctis & Monge (1999) note the removal of visual cues may actually improve the quality of message understanding, at least in some cases, by removing the distraction of irrelevant stimuli. They conclude that given sufficient contextual information, mutual understanding can be very high in electronic communication. However, Zach (1993) notes that face-to-face communication may be more appropriate for building a shared interpretive context among parties, while computer-mediated communication may be more appropriate for communicating within an established context. DeSanctis & Monge (1999) concur that “groups are more effective in divergent-thinking tasks when communicating electronically, especially (but not only) if the communication is done anonymously,” (p. 697).

While communicating across borders and oceans amplifies the diversity of teams, and adds richness to their problem-solving ability (Katzenbach & Smith, 2001), it creates a greater potential for conflict. Conducting negotiations across cultures creates more problems than communication within the same culture. Bazerman (2000) describes conflicting cultural perspectives as if “one person is doing a waltz and the other a tango,” (p. 43). The implication is that certain organizational tasks, or types of work, may be more effective when performed in virtual mode than others; and that tasks involving conflict resolution may be more difficult. At any time, “Building harmonious relationships and achieving mutual understanding can be difficult,” (Covey, 1992, p. 113). Nonetheless, compared to face-to-face communication, most studies find that

implementation of electronic communication increases the overall amount of communication (Hiltz, Johnson, & Turoff, 1986). Furthermore, when people know they are at a distance – culturally and linguistically as well as spatially – they tend to be more conscious of the need to be explicit and intentional about communication (Lipnak and Stamps, 2000).

### **Collaboration as Communication Subset**

Collaboration is a subset of communication (Ward, Coleman, & Rasan, 2003a). In distinguishing communication from collaboration, Ward et al. note that for “real-time communication to occur effectively, people, process, technology, and economic considerations need to be aligned. Collaboration only begins to have a clear value when it occurs around specific content,” (p. 17). Collaboration denotes a team approach where there are shared goals and tasks are taken on collectively. The single thing that transforms people who share a goal into a team is their ability to communicate, and to be virtually united for real-time dialogue. A time is considered virtual if it is located in different places or if it functions at different times. Advances in collaboration technology make it easier to distribute information within a company as well as to make it possible for widely dispersed knowledge workers to work together effectively.

### **Virtual Collaboration**

While traditional collaboration denotes communicating and working together across organizational boundaries (Baker, 1992), a virtual team is a group of people who work interdependently with a shared purpose across space, time, and organization boundaries using technology (Lipnack & Stamps, 2000). A purely virtual team is one whose members never (or almost never) meet. (Currently, hybrid teams who meet face to face sometimes tend to make up the majority of organizational teams.) Virtual collaboration, or e-collaboration, refers to the use of interactive computer technology for supporting the collective interaction among multiple parties involved (Kock, 2000). By using e-collaborative capabilities in an organization, “people can operate as a single business entity, thus making joint decisions of

added value,” (Karacapilidis, 2005, p. 939). Group writing is a common collaboration in today’s organizations, which emphasize team work at all levels and in all activities. Pfeiffer (2004) notes, a successful proposal or technical manual may result from the combined effort of technical specialists, marketing experts, graphic artists, editors, and word processing. As such, group writing benefits from the collective experience and specialties of all participants.

Nonetheless, approaches for the development of a framework for e-collaboration have to address both behavioral and technical aspects (Zigurs, Poole, & DeSanctis, 1988). Behavioral issues concern the diffusion of responsibility, pressures toward group consensus, and problems of coordination. Such work is also called computer-supported cooperative work (CSCW). The most successful CSCW technology to date is electronic mail. Karacapilidis (2005) notes that other well-developed technologies so far comprise computer conferencing, teleconferencing or desktop videoconferencing, group authoring, and group decision support systems (GDSS). Groupware has helped in the communication and collaboration process by helping participants share information, build rich databases, interact across time zones, and store and access complex work products. Groupware has also helped in people assessment, group counseling, negotiating, teamwork and trust building, as well as multi-cultural/diversity activities (Weatherall & Nunamaker, 2000).

### **Group Decision Support Systems**

Group decision support systems (GDSS) are interactive computer –based environments that support concerted and coordinated team effort toward completion of joint tasks. Groupware refers to software products that allow people who share a common task or goal to collaborate to accomplish it. The collaboration may involve people who are in the same room or who are geographically dispersed (Rainer, Jr., Turban, & Potter, 2007). While cross-cultural collaborations introduce the problem of participants having different native languages, because GDSS technology allows participants to “contribute in their language of choice and gives them time to interpret the input

of others independently and/or to use a centrally based translator, participants are able to sustain an electronic conversation that would be impossible under traditional circumstance,” (Nunamaker et al., 1996, p. 170). In these instances, GDSS not only supports information access, it can radically change the dynamics of group exchanges by improving communication. Such groupware frequently includes the following collaboration/communication tools: workgroup e-mail, distributed databases; bulletin whiteboards, text editing, electronic document management, workflow capabilities, instant virtual meetings, application sharing, instant messaging, consensus building, voting, and ranking. It may be that electronic communication products, such as conversations and documents stored in knowledge repositories, can provide stability to otherwise tenuous relationships (DeSanctis & Monge, 1999).

Group Decision Support Systems most often use wireless networks to connect people, even if the people are in the same room. Two types of groupware technologies include electronic teleconferencing and real-time collaboration tools. Electronic teleconferencing is the use of electronic communication that allows two or more people at different locations to hold a simultaneous conference (Rainer, Jr. et al., 2007). The major types of electronic conferences are: telephone conference call, video teleconferencing, and web conferencing. Real-time collaboration tools (RTC) support synchronous communication of graphical and text-based information. Synchronous means that group members carry on simultaneous computer “conversations” in real time. Perhaps the greatest advantage RTC tools lend to group work is the openness encouraged by such on-line discussion (Pfeiffer, 2004). The availability of anonymity helps to disconnect ideas from the politics behind them, as well as alleviating the pressure of being criticized for personal opinions.

### **E-Meetings/Virtual Classrooms/Webinars – Other Collaborative Frontiers**

E-Meetings are at the “nexus of a number of converging technologies including: collaborative team spaces, instant messaging, high security, and support for the meeting process (Ward et al.,



2003a). E-meetings include small, rich, intense, and ad-hoc (or scheduled) interactions. Virtual classroom e-learning and e-training have classroom size groups led by from one to three designated instructors/subject matter experts. Large events and E-Presentations called “webinars” have a leader and support very limited interaction. E-meeting characteristics that distinguish it from other types of data/web conferencing systems are as follows:

- 1) Integrated voice, video, and data;
- 2) Persistence of content after meeting ends;
- 3) Presence and status detection – creates an organized list, and determines if they are online;
- 4) Highly secure;
- 5) Effective meeting process; and
- 6) Process-oriented collaboration.

Virtual Classrooms primarily refer to the live E-learning systems. They deliver an experience in which students participate in an event at the same time as if they were in the same room, when in fact they may be widely geographically distributed (Ward et al., 2003b). A few key trends specific to the virtual classroom marketplace begins with the idea of blending. Blended learning is one of the most significant long-term developments in the market. Blended learning incorporates traditional classroom training with a virtual classroom (live broadcast streaming and asynchronous content delivered on an intranet or via the Internet). Such classrooms have been shown to evolve their own communication patterns that are kindred to – yet substantively different from traditional classrooms (Hiltz, 1994). Large events and E-presentations or “Webinars” tend to have a clear leader/moderator and support very limited interaction (if at all, and often only back to this leader or his/her “behind the scenes” assistants) (Ward et al., 2003c).

### **People, Technology, & Economic Barriers to Virtual Collaboration**

Ward et al. (2003a) note that real-time virtual communication is not yet achieving its full potential, and notes the inherent organizational realities these technologies need to address:

- 1) People and process challenges;
- 2) Technology and standards; and
- 3) Economic barriers

“It takes the right mix of people, process, economics, and technology in order to facilitate effective collaboration of any kind. The people side is comprised of the a) corporate culture at the employee level, and b) leadership and the state of “politics” among executives,” (p.67). A negative consideration concerning the ‘people issue’ has been put forth by scholars at Stanford’s Graduate School of Business who suggest that virtual teams may extract an unexpected price: People who add their hard-won knowledge to a common pool may become alienated from the organization and even fear that they are sowing the seeds for their own replacement. The Stanford scholars noted that often a virtual worker (who works alone) perceives them self as giving away their knowledge but not having the chance to “replenish their own reservoir of knowledge” by learning from their own colleagues.

In addition, while these collaborative technologies, such as Group Decision Support Software, help people share expressions, opinions, and thoughts it lacks many of the informal essentials of communication and collaboration that only face-to-face interactions can provide. The technology itself neither defines a challenge nor resolves a conflict. Collaborators still need to build trust, apply strong leadership skills, integrate the complementary skills of the different team members, and insist on individual and mutual responsibility and accountability. Another consideration for companies to consider in adopting new collaborative technology are budget limitations which continue to be one of the biggest obstacles that companies face in improving collaborative efforts (Zaino, 2002).

### **Delivery of a Collaborative Technologies & Knowledge Management Course**

To better prepare business students for work in the new global economy, it is paramount that students be introduced to technological instructional strategies that focus on students’ use of group decision support systems (GDSS) to facilitate computer mediated team work. The revised *Organizational & End-User Information*

*Systems (OEIS) Curriculum Model for Undergraduate Education in Information Technology* (OSRA, 2004) addresses this need. The OEIS model curriculum is sponsored by the Organizational Systems Research Association (OSRA), an international research association that desires to advance research and education in information technology, learning, and performance. The development of this curriculum was in and of itself facilitated by the use of collaborative technologies that allowed the OEIS committee to brainstorm and to action plan for the generation, capturing, categorizing, surveying and building of input from geographically dispersed experts. One major element of the OEIS curriculum—which can be retrieved from [www.osra.org](http://www.osra.org)--focuses on a collaborative technologies and knowledge management course.

The collaborative technologies and knowledge management course is designed to provide “the senior-level business student with an introduction to group decision support systems (GDSS), electronic meeting management, desktop video conferencing, as well as other web-based groupware applications,” (OSRA, 2004, p. 31). The course content focuses on: 1) communication, organizational and instructional factors; (2) business process analysis and meeting facilitation; 3) technology implementation, and knowledge management. Upon completion of this course, students will be able to, among other things, discriminate among alternative collaborative tools and methods. Each of these tools has a slightly different way of leading participants through a meeting agenda. At the end of the course, students should also be able to identify best practices of GDSS use in today’s new digital and virtual organizations; and apply groupware technology principles as they pertain to the best practices and emerging needs for managing knowledge in contemporary organizations.

### **Suggested Instructional Strategies for the Classroom**

GDSS can be a useful pedagogical tool for many business courses wherein teamwork is an important component. A number of collegiate faculty have been using a Web-based GDSS for

years in a variety of IS, management and marketing related courses. A number of reasons exist why a Web-based GDSS is more desirable than a LAN-based GDSS. Web-based GDSS can be used in both face-to-face, different-place but same-time, or different-time and different-place meetings. Therefore, students can experience collaboration in various settings including membership on virtual teams.

The Web-based system can be provided via a hosted solution to reduce the cost of deploying such a system internally. In terms of functionality, no special computer classroom is required for the use of a Web-based GDSS. The instructor can demonstrate the system by means of a single station connected to the Internet using a slideshow to introduce the system’s functionality. Then, students only need to have an Internet connection and a Web browser to use a Web-based GDSS. They can immediately participate in group meetings. However, most faculty facilitators have found that some basic training for students is critical for successful use of a GDSS system. If a computer classroom can be arranged, it is better to initially provide some basic training to students so they are familiar with the fundamentals.

### **Summary and Concluding Remarks**

Students quarried in a GDSS discussion forum exercise during the Spring 2006, noted the following:

“GDSS should be integrated into all of business core courses at the university level. It is growing in popularity across the world, and any business student should know how it works... this would (also) encourage students that normally wouldn’t respond (in discussions), to speak up and to have a part of the conversation.”

“Many business classes require division into teams...GDSS supplies the brainstorming and organization (technology) to keep virtual teams focused and productive, while being time efficient.”

“GDSS technology can easily be integrated into other courses in the College of Business. This technology can make it very convenient in situations where traveling is a major factor in whether or not a student could take part in a course or project.”

With a whole array of affordable web-based GDSS products emerging, it now costs much less to deploy GDSS to support a course devoted to collaborative technology or to integrate such an approach into any course requiring collaborative learning and decision making. The possibilities are unlimited. GDSS can be offered as a standalone elective course in the management information systems program or an end-user information systems specialization. Another alternative is to integrate these concepts into existing courses such as knowledge management, business communications, information resource management, or introduction to MIS. Regardless of the instructional venue, high-speed desktop computing, and broadband networks connecting locations around the globe have initiated new opportunities for computer-mediated communication.

With this increased need for rich, business communication and collaboration in a globalized, digital economy, our students--as future knowledge workers--must be prepared to enter this global workforce. We, as academicians, must challenge our business students to engage in these processes by providing active, collaborative learning scenarios. The accountability and responsibility for these efforts reside in us as technology enablers and change agents for academic process reengineering.

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## **Alumni Perceptions of Degree Preparation: Are Business Programs Effective?**

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### **Introduction**

Do graduates have the job skills needed for employment? Are alumni educationally prepared for their first jobs after graduation?

Assessment of workplace skills is an important component of educational degree program requirements and accrediting agency standards. Many jobs have been redesigned because of emerging technology, globalization, and flattening organizational hierarchy.

### **Review of Literature**

According to Kilcoyne (2003) some of the traditional employment skills needed by yesterday's employees are inadequate in today's work environment. Educators are expected to prepare employees who possess the job skills needed in the workplace. Therefore, educators must determine what required job skills are needed and incorporate those job skills into the curriculum (Arneson, 1989; McMahan, 1972; National Skill Standards Board [NSSB], 1999; Prosser & Quigley, 1968; Secretary's Commission on Achieving Necessary Skills [SCANS], 1992c; Sullivan, 1995; Whetzel, 1992).

Universities and colleges must provide documentation that their curricular degree programs are reflective of the needs of the work force (American Assembly of Collegiate Schools of Business [AACSB], 1992; Association of Collegiate Business Schools and Programs [ACBSP], 1996). Educators can use several different sources such as advisory boards, alumni, employers, and professional organizations, to determine the skill requirements of the workplace (Kilcoyne, 2003).

Alumni should be consulted about skills needed for employment. Educators can collect skill requirement needs and degree

program satisfaction from these graduates and their employers (AACSB, 1992; ACBSP, 1996; W. Creighton, personal communication, July 20, 2001; J. Worley, personal communication, July 28, 2001).

### **Purpose of the Study**

Are alumni educationally prepared for the workplace? Are university curriculums preparing future employees for the workplace?

Since the workplace is evolving, educators need to assess the skills needed by graduates. Since students rely on educational programs to prepare them for their future jobs, the purpose of this study was to determine the perceptions of alumni about their general education preparation for their current jobs.

### **Methodology**

#### Instrument

The instrument was developed for AACSB purposes by members of the College of Business. It consisted of several sections. The first section included alumni demographics. An alumni job satisfaction section, which was divided into two areas, and an alumni current occupation section, which determined the degree of relationship between their major and their current occupation, were included. Also included was an education preparation section which was divided into specific business-related subject areas and general knowledge education areas. Three open-ended questions were included. One question asked the alumni to suggest areas/subjects to be emphasized either more or less in the curriculum. The next question asked the alumni to provide at least one thing that the COB could have done to better prepare them for their jobs/careers. The last open-ended question asked them to provide information about their future education plans. Another section asked the alumni to rate the faculty in their major field of study. At the bottom of the instrument was an area for other comments to be made.

On the alumni demographic section, the alumni provided written responses to five questions. On the two job-satisfaction sections the alumni used a Likert-type scale (1-Very Satisfied to 5-Very Dissatisfied) to rate their degree of satisfaction with their present job. On the current occupation section the alumni used a Likert-type scale (1-Highly Related to 5-Not Related) to rate the relationship between their current occupation and their major. On the specific business-related subject areas the alumni used a Likert-type scale (1-Good to 5-Poor) to rate their business-related education preparation to their current job duties. On the general knowledge education areas the alumni used a Likert-type scale (1-Good to 5-Poor) to rate their general knowledge education preparation to their current job duties. On the faculty rating section the alumni used the same Likert-type scale (1-Good to 5-Poor) to rate the faculty in their major field of study.

For reporting purposes only data and findings from a few sections are provided. A copy of the instrument is available upon request.

#### Population and Data Collection

Between 1983 and 2003, the College of Business collected names and addresses for 2,352 alumni. Of the 2,352 alumni, a random sample of 300 alumni was selected to receive the alumni survey. A total of 79 completed surveys were returned. Of the 79 surveys, 77 were alumni from 1993-2003. The same survey was sent in the spring of 2005 to 253 alumni who graduated between fall 2003 and fall 2004. A total of 95 alumni were sent a survey in the summer of 2006. These alumni were graduates of spring 2005, summer 2005, and fall 2005. For this particular study, a total of 648 COB alumni were sent a survey.

Of the 648 surveys, 125 were completed and used in this study. Using the Statistical Package for the Social Sciences (SPSS) the researcher calculated descriptive and inferential statistics using linear regression. The alpha level was set at .05 *a priori*.

#### **Findings and Conclusions of the Study**

The alumni were asked to indicate their satisfaction with the following aspects of their present job: degree of challenge, professional advancement, career potential, working conditions, and compensation and benefits. They were asked to indicate how satisfied they were with the way the university prepared them for their present occupation. Next, the researchers sought to determine if a relationship existed between the alumni's rating of job satisfaction on the five aspects of their current job and how closely related their current occupation was to their major.

Table 1 clearly shows a strong positive relationship between the alumni's NSU preparation for the job and the three variables: degree of challenge, professional advancement and career potential. This is intuitively appealing as these are the elements sought by those who design degree programs. It also seems likely that working conditions should be mostly unrelated to degree linked preparation. Conversely, the affect on compensation and benefits is not as easily explained. Perhaps this factor is explained by time on the job or specific job chosen.

Using ANOVA, the researchers found that subject area preparation had no effect on either job satisfaction or how closely related their current occupation was to their major. It appears that all of the business-related subject areas are adequate for the alumni.

The overall conclusion is that Northwestern State University College of Business alumni are satisfied with the preparation both overall and across the business disciplines. It can be concluded that the COB alumni are optimistic about advancement and career potential as well as, satisfied with the degree of challenge in their current jobs.

So to answer the original questions—graduates believe that they do have the job skills needed for current employment and the alumni perceive themselves to be educationally prepared for their first jobs after graduation.

#### **References (Available Upon Request)**

Table 1

	NSU Preparation for Job			Occupation Relation to Major		
	Std. Beta	R	Sig.	Std. Beta	R	Sig.
Degree Of Challenge	.265	.308	.005	.093	.095	.313
Professional Advancement	.299	.300	.002	.004	.090	.965
Career Potential	.311	.388	.001	.146	.151	.108
Working Conditions	.265	.177	.061	.168	.081	.075
Compensation and Benefits	.065	.092	.493	.158	.037	.102

## Job Demand in the IT Industry

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### Introduction

The number one concern for IT educators over the past five years has been program enrollment. After the bust of the dot-com bubble in late 2000, enrollment in computer-related programs in both business and computer science have declined. IT employment, however, is projected to increase over the next decade. In fact, IT employment in March, 2006, reached a level higher than during the dot-com era—4.72 million. This study investigated IT employment projections and implications for IT program enrollments and curriculum design. This information coupled with qualitative data from an IT employer focus group and a study of student attitudes toward and perceptions of IT careers provide a basis for IT student recruitment.

### IT Job Market Projections

Occupational employment projections to 2014 (Hecker, 2005) indicate a very positive outlook for IT jobs. Three out of 10 new jobs created will be in the computer field. Thirty occupations have projected growth rates of 30 percent or more (30 fastest growing occupations), which is at least twice the growth rate of all occupations; six of these are in the IT field: network systems and data communications analysts (54.6 percent growth rate); computer software engineers; applications (48.4 percent growth rate); computer software engineers, systems software (43.0 percent growth rate); network and computer systems administrators (38.4 percent growth rate); database administrators (38.2 percent growth rate); computer systems analysts (31.4 percent growth rate)—the first five occupations are in the top 12 of all occupations. Computer software engineers, applications (48.4 percent), and computer systems analysts (31.4 percent) are also in the top 30 occupations with the largest job growth.

The Computer and Information Systems Managers occupational group is projected to

grow faster than the average of all occupations through 2014 (Occupational Outlook Handbook, 2006-07 ed). The educational background stated as desired for this position is an MBA with a technology core component or an MIS degree, supplemented with strong “communication and administrative skills.”

Added to this increased job demand is the growing number of IT employees preparing to retire (IT staff shortage on the horizon?, 2006).

What skills will be in demand over the next decade?

- Collett (2006) identified these hot skills:
  - Enterprise architects
  - Project leadership
  - Business process re-engineering
  - Budgeting and scheduling
  - Systems analysts
  - Systems design
  - Network design
  - Systems auditing
  - IT security planning and management
  - Customer-facing application development
  - Customer-facing web application development
  - Data mining
  - Business intelligence
- Logan, vice president of Information Technology at Bentley College, states, “That [business skill set] is going to be more important than the straight technical skills they know, because you’re going to see a closer marriage between the business and IT” (Pratt, 2006).
- Monster Worldwide reported increased demand for entry-level IT workers (McGee, 2006).
- Outsourcing suppliers seeking experienced IT staff, with strong qualifications: project management, client relationship, and people management skills in addition to technical skills (Goodwill, 2006).



- Pappalardo (2006) reports three areas of demand: application development (customer-facing skills; infrastructure skills in networking, wireless, and security, enabling skills in project planning, management, and open sourcing), problem-solving skill, and network engineering.
- Overby (2004) reports CIOs needing an increased skill set from employees—business process knowledge, industry expertise, financial acumen, communication skills, people savvy, and project/risk management capabilities—to complement technical skills.

In November, 2006, a focus group of eight IT management personnel from eight different firms hiring IT staff in the Little Rock, Arkansas, area was asked to discuss the IT job market and related issues. The following market-related trends were identified:

- Increase in IT positions, resulting from increased workload and especially retirements.
- Increase in salaries (supply-demand relationship).
- High demand for select positions and specific knowledge/skill sets:
  - Systems/business analyst
  - Programmer analyst
    - esp .net, JAVA, COBOL, DB2
  - knowledge of leading/emerging technologies and operational value; evolutionary technology strategies
  - understanding of business process; life cycle evolution
  - understanding of team process; process improvement
  - highly developed soft skills
  - customer focus
  - personal ability to integrate into the global/virtual marketplace (telecommuting and bridging cultural bounds)

The group stated that often the available jobs are not in “bleeding edge” companies or not high profile technological positions that students find attractive; yet career potential is increasingly available. Overall, organizations are

seeking students who think logically, understand process, and can communicate well within and outside the IT area. Since organizations continuously seek ways to cut cost, IT personnel who view IT as an integral part of the organization, who understand the organization and its processes, and who communicate well with others and teams are most attractive and successful. Overall, projections of demanded knowledge and skill sets bode well for business graduates, who have breath in their technology and business foundation.

### Student Career Choice

Schwartz (2006) reports preliminary findings of a Forrester Research study which projects that the shortage of IT employees will become dire in the future if the IT industry itself does not become proactive in promoting IT careers and “seeding” new talent. He notes that the industry is aware of the technology image problem and is becoming more vocal about the skills shortage.

Why have students recently been hesitant to choose IT career tracks in college?

- Layoffs from dot-com bust?
- Negative perceptions of outsourcing?
- Perceived difficulty of the major?
- Inaccurate branding of the field by the media?

Students in an introduction to information technology course at the University of Arkansas at Little Rock (a regional public institution) were surveyed to reveal student perceptions of and attitudes toward IT careers and Management Information Systems as a career choice. One hundred fourteen students participated (all students enrolled in face-to-face classes during fall semester, 2006). Students were asked the following:

- Do you have an established career field/major?
- Have you considered the Management Information Systems major? Why?
- How would you describe the IT job market and future IT careers?

Of the 114 participants in the study, 63 percent were male. The age span was as follows:

21.9 percent, under 21 years of age; 63 percent, 21-29 years of age; 19 percent, 30-45 years of age; 7 percent, 46 years of age or older.

Ninety-one percent of the participants stated that they have chosen their career field/major; only 23.7 percent stated that they had considered a Management Information Systems major. The participants responding they had not considered MIS for a career (87, 76.3 percent) were asked why. They responded as follows:

- 55.3% more interest in another field of study
- 27.2% not interested in a computer-related field
- 19.3% not sure what the major prepares me for
- 9.7% concerned that outsourcing will continue to reduce IT-related jobs
- 7.0% fearful of not being able to get a job due to low job demand
- 5.3% difficulty of major
- 0.9% hard negative media reports directed at the IT industry
- 0.9% been advised to choose a non-IT career field

The respondents were asked to react to statements about job availability, growth, and salary in the IT industry to gauge the accuracy of their understanding. The respondents rated as “true” or “false” selected statements; “true” ratings were as follows:

- 86.0% Three out of 10 new jobs to be created over the next 8 years will be in the computer field.
- 89.5% Computer occupations, such as systems analysts, database administrators, and network analysts/administrators, are in the top 30 job growth areas.
- 77.2% Certain IT job positions are projected to grow at twice the rate of all occupations.
- 73.7% Salaries in the top-growth IT positions are projected to be in the “very high” category, top salary category for all jobs.

- 71.0% The Computer & Information Systems Manager occupation group is projected to grow faster than the average of all occupations through 2014.
- 75.4% IT employment in 2006 reached a level higher than during the dot-com era.

These findings indicate that students choose non-MIS careers not because of negative press toward the IT career field or fear of low job demand in IT or negative implications of the outsourcing phenomenon. They choose non-IT careers because of lack of interest in technology-related careers or lack of knowledge of the career opportunities in the field.

### **Marketing IT Educational Programs**

In the current educational climate, technology programs must be extremely proactive in recruiting majors. The marketplace indicates that the current employment environment nationwide is strong, with long run prospects, based on projected employment statistics, extremely bright. Yet most IT programs have not seen a significant reversal in the decline in majors. Based on this research, the following recommendations are provided for student recruitment:

- Assure that the most energetic, exciting, accomplished faculty teach intro classes from which majors can be recruited.
- Incorporate career information in early IT classes to assure that students have a clear understanding of employment and salary projections in the field.
- Include in course content and recruitment literature a view of the breadth of the field—areas of specialization that extend beyond pure technical components such as programming and telecommunications; identify unique components such as project management, business process design, and leadership (technical and human/customer).

- Stress the relevance of an IT major with a business core component: The business core and a business curricular focus provide a knowledge of business processes and a strong foundation for analyst positions, in particular. In addition, a wide range of skills essential in the IT marketplace are developed, including financial competencies as well as soft skills.
- Communicate that many career areas of projected high demand and growth are less likely to be outsourced—they are integrated in business processes.
- Solicit from current IT majors their reasons for choosing an IT major, strengths of the program, and where program improvements can be made (areas of interest, varied program components).
- Build student interest in IT careers and camaraderie among majors through student organizations such as AITP.
- Provide networking opportunities for students with IT professionals in the immediate job market—guest speakers, field trips.
- Package the program in an attractive brochure and via the web.

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## **The Importance of Interpersonal Communication Skills for Successful Live Chat in eCommerce**

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### **Introduction**

The emergence of online shopping as a retail phenomenon is undisputed. One feature that helps make the online shopping experience closer to the traditional bricks-and-mortar experience is live chat. A Web site's live chat feature represents a sales person who can provide assistance, direction, encouragement, and support for the shopper. The interaction between the shopper and the sales assistant is synchronous and text-based. Leigh Duncan, of KPMG Consulting, calls live chat "revolutionary" because it brings the cost of customer service down significantly and puts the retail sales rep in the home with customers while they are shopping" (Findlay, 2002).

This paper traces the growth of live chat and examines its advantages for online retailers. Next it lists the most common complaints and shortcomings of the live chat function. Implications for teaching interpersonal communication courses are explored. Finally, a case study is presented for use in the business communication classroom.

### **Benefits of Live Chat for Online Retailers**

Live chat is an exploding technology that brings the Web-shopping experience closer to the real-world. Retail sites have adopted the feature because it is a low-cost, simple way of communicating with customers. LivePerson, Inc., a leading provider of the software and support headquartered in New York City, has more than 4,000 client companies, including EarthLink, Hewlett-Packard, Microsoft, Verizon, Neiman Marcus, QVC, New Line Cinema, Charles Schwab, Qwest, and Sony. Their revenue for 2006 is projected to be over \$32 million, and they are experiencing quarterly revenue increases of

some 40 percent from the previous year (Internet Retailer, 2006).

The hosted software enables companies to identify and engage online shoppers, thereby increasing sales. Reports indicate that the greatest advantage of this feature is that it increases the "conversion rate," or the likelihood that a shopper will actually buy a product. Shoe company K-Swiss, Inc., for example, reports more than double the average conversion rate when customers use live chat, since 75 percent of chats are directly related to product knowledge (Findlay, 2002). Live chat also allows cross-selling and up-selling. It lowers shopping cart abandonment and increases the customer's confidence to complete a purchase. According to an Andersen Consulting poll, almost 62 percent of Internet consumers said they would purchase more products online if live customer support were available (Volusion, 2006).

Second, live chat does not require a huge technology investment. Vendors and analysts say the cost of implementing live chat on a commercial site is low. Generally, the application can be downloaded onto a retailer's server in under an hour. Customer service representatives merely need browsers on their computers.

Third, live chat costs less than customer service phone calls and emails. ServiceReps.com Inc., another major provider, offers these comparisons: depending on wait time, it can cost \$15 to \$35 to handle phone calls. Emails can cost \$7 to \$13, with that price affected in part by the fact that reps deal with emails serially rather than simultaneously. Live chats cost about \$2 per transaction. Part of the cost analysis considers the length of time it takes to resolve customer questions. Emails can take up to three days, while phone and chat questions are resolved immediately (Findlay, 2002).

Fourth, text chat is growing in consumer acceptance. Many shoppers use instant messaging

and text messaging for personal and professional communication. Live chat on retail Web sites is merely an extension. The instant results make it superior to going offline to call the customer service center or waiting for an email response to the customer's question. Sixty-three percent of U.S. online consumers reported that they had used live chat in 2005, an increase of 22 percent from 2001. In addition, 58 percent of those using live chat in 2005 said they were satisfied with the results, up 13 percent from 2001 (Internet retailer, 2006).

Retailers can improve the return on investment (ROI) of live chat by limiting its availability to certain situations, according to a new JupiterResearch report. One model, *reactive chat*, uses the feature only for complex issues and for troubleshooting. A second model, *proactive chat*, uses pop-up chat requests or chat buttons only at critical phases, such as after products have sat in shopping carts for a length of time. A third model, *automated chat*, uses live agents only to answer inquiries that automation cannot handle, reducing service costs by some 80 percent (Internet retailer, 2006).

### **Drawbacks of Live Chat for Online Retailers**

Andrews and Haworth (2002) observed that there is little empirical evidence demonstrating the value of live chat for eCommerce. They conducted a usability study of five eCommerce Web sites that offer live chat in order to evaluate customers' actual satisfaction level and purchase behavior. Their results confirm that a positive chat experience increases purchase rate. However, they identified both technical and sociability issues that are relevant to live chat's effectiveness.

Technical issues include consumer access to the chat function. That is, a shopper with a question who must search for the link/icon may become frustrated and abandon the Web site. In addition, shoppers expect to interact with an actual person during the chat and are disappointed with canned responses or inattentive interaction (Andrews & Haworth, 2002). The software can be complex, difficult to properly install and manage (Hodge, 2000).

It can be poorly designed (Puente, 2000) or unable to handle complex problems (Bannan, 2000).

Sociability issues are housed in the actual interactions between a shopper and a customer service representative. Andrews and Haworth (2002) identified five specific problems with sociability:

- Asking for personal information that shoppers did not consider relevant
- Missing privacy statements
- Referring shoppers to a Web page instead of answering the shopper's question directly
- Impersonal, generic, cryptic or canned responses
- Lack of politeness and etiquette, including typos, sentence fragments, using all capital letters, not saying "please" and "thank you"

### **Implications for Teaching Interpersonal Communication Skills**

From the retailers' perspective, live chat's efficiency is paramount. Service representatives must be able to handle multiple chats at one time. Call center representatives are trained for typing speed, grammar and spelling skills, and overall quality of written skills. Pre-formatted answers are often used to make the chat move faster.

From the shoppers' perspective, however, such efficiency factors may detract from the live chat experience. A poorly worded response negatively affects shoppers' opinions of the chat, even if the shopper receives the information they need (Andrews & Haworth, 2002). Shoppers want to connect with the service representative and have personal conversations, sometimes about irrelevant topics such as where the representative is located. Clearly, consumers expect live chat to mirror face-to-face communication as much as possible (Reynolds & Arnold, 2000). Personalized chats can be important determinants of perceived service quality, satisfaction, and purchase behavior.

In the classroom, business communication principles can be applied to live chat as an example of contemporary practice. Teachers can demonstrate the important role that verbal and visual cues play in customer service and buyer behavior. Live chat experiences clearly show how interpersonal communication leads to interpersonal relationships, which lead to trust,

which leads to purchase. For instance, when asked directly for their reasons for buying at a Web site after experiencing live chat, shoppers consistently stated five reasons for a positive buying intention:

1. overall positive experience with the Web site, including the chat
2. trust in the retailer
3. confidence in the products
4. price acceptability
5. low risk of purchase (Andrews & Haworth, 2002)

Trust, or reputation, is related to communication in concrete ways. When technical problems occur during eCommerce, trust may keep the customer pursuing a purchase rather than abandoning the effort. Conversely, poor technical performance or a poor live chat experience appears to drive away new online customers.

### **Live Chat Case**

The following actual chat and telephone support transcripts dated August 12-19, 2006 are offered for study in business communication courses. Actual Web sites and hosting sites have been disguised. Characters' names have been changed. Discussion questions are designed to help students understand the importance of verbal and visual cues when interacting with online customers.

#### Scenario

Laura has just established an account with a website hosting company for her new website. In an attempt to set up a domain name, she has encountered difficulties. She decides to access customer support through the chat function.

#### Transcript of Online Live Chats and Telephone Call to Customer Service

##### **August 12 – Live Chat Session Initiating Tech Support Question:**

Laura: I opened a “lite” account just now. It would not let me set up a domain name. I want to use “www.laurasconfections.com”. How do I get the domain name and use it with the “lite” account I just set up?

**\*\*You are now speaking with Amit. \*\***

**Amit: Hello and welcome to Online Technical support. I am here to assist you with your issue.**

**Amit: Please to let me to know the username to check.**

Laura: The username is “laura01.”

*Time lapse: 11 minutes*

Laura: Still there?

**Amit: Yes, I am for checking your issue.**

**Amit: Please to allow me some time.**

**Amit: Sorry for to keep you wait.**

**Amit: This issue needs attention from our senior technicians. I will create a trouble ticket on behalf of you.**

**Amit: My senior technicians will look into this and get you with the details.**

**Amit: Is there anything else I can assist you with?**

Laura: How does the site manager work? When I finished setting up the “lite” account, I was pointed to a site called site manager, I guess where my account is managed. How do I get to it and manage my account?

*Time lapse: 12 minutes*

**Amit: You can login into your control panel through the following URL**

**<http://cp.relingo1423.com>**

**Amit: Also please refer the following tutorial for the site manager control panel**

**Amit:**

**<http://www.relingo1423.com/HSdocumentation/user/index.html>**

Laura: How will your senior technicians contact me?

*Time lapse: 5 minutes*

**Amit: They will get you back within few hours.**

Laura: HOW?

**Amit: I am sorry, they will get you back at your registered email address**

Laura: Is there a telephone number for tech support for relingo1423.com?

*Time lapse: 9 minutes*

**Amit: I have already escalated your issue to our senior technicians, they will get you back within few hours via email.**

Laura: Is there a telephone number for tech support for relingo1423.com?

*Time lapse: 5 minutes*

**Amit: Yes, you can contact them at 800-555-1000**

Laura: Thank you, I will wait for the email.

**Amit: You are welcome.**

**Amit: Thank you for using the online support. Our chat session will now be closed.**

*Time lapse: 3 days*

**August 15 – Telephone Call to Customer Service:**

After three unsuccessful attempts to penetrate the automated multi-level support menu, Laura became very frustrated. She finally found a combination of unlikely selections to be transferred to a support technician. After 9 minutes on hold:

Laura: I need technical assistance, please.

**Mary: Hello my name is Mary. Welcome to our technical support service. I am here to assist you with your issue. Can I please have your username, domain name and PIN?**

(Laura responds)

**Mary: Please let me to know how can I assist you?**

Laura: Yes- I have tried to use the online chat to resolve my inoperable domain name. I got one year of “web lite” hosting. During the setup, I tried to register a domain name and the registration failed. I went into my control panel to register a domain name.

Relingo1423.com charged me \$149 for ten years of registration but has not registered my domain name, www.laurasconfections.com. I have been charged, and I want it taken care of. I have waited three days for your senior technicians to communicate with me via email. I'm tired of waiting.

**Mary: Please hold for a few moments for to allow me to look into your issue.**

*Time lapse: 5 minutes*

**Mary: Please hold for a few more moments for to allow me to look into your issue.**

*Time lapse: 5 minutes*

**Mary: I have relayed your concerns to our senior technicians and they will contact you.**

Laura: Please don't tell me that someone will look into it and contact me. The chat support told me that before, and nobody ever contacted me, OR resolved the issue.

**Mary: Would you mind holding, please? I need to check something.**

Laura: OK

*Time lapse: 17 minutes*

**Mary: Please hold for a few moments, I am checking your issue.**

*Time lapse: 11 minutes*

**Mary: I have relayed your concerns to our Concern Department. They will contact you at your registered email address soon.**

Laura: Is there a supervisor I could talk to? You just keep putting me on hold and then saying the same thing as before. This is not helping. Please get me a supervisor.

**Mary: Hold for a moment, please.**

*Time lapse: 19 minutes*

**Mary: I have spoken to our supervisors and they have escalated your concerns to our Concerns Department. Is there anything else I can assist you with?**

Laura: Forget it. I'll try the chat support again.

**Mary: The Concerns Department will take care of your issue and get back to you via email. The ticket # for your issue is TQM-764239. Goodbye.**

*Time lapse: 3 days*

**August 18 – Live Chat Session Initiating Tech Support Question:**

Laura: I need technical assistance, please.

**\*\* You are now speaking with Amit. \*\***

**Amit: Hello and welcome to Online Technical support. I am here to assist you with your issue**

**Amit: Please let me to know how can I assist you?**

Laura: Hello. I chatted with you several days ago about my inoperable domain name. I got one year of "web lite" hosting. I tried to register a domain name during the opening of the account and it failed. I went into my control panel to register a domain name. Relingo1423.com took my \$149 for ten years of registration but has not registered my domain name, www.laurasconfections.com.

**Amit: Please to allow me moments to look into your issue.**

Laura: Please don't tell me that someone will look into it and contact me. You told me that before, and nobody ever contacted me, OR resolved the issue. I also tried the phone support, and they were even less helpful and wasted even more of my time.

**Amit: Would you mind holding for a moment, please? I need to look into this a little further.**

Laura: OK

*Time lapse: 14 minutes*

Laura: Still there?

**Amit: Yes, I am checking your issue.**

*Time lapse: 11 minutes*

**Amit: Thank you for your patience and cooperation.**

**Amit: We have checked and it says it could not charge.**

**Amit: Does it charged to your credit card?**

**Amit: Do you have details about the charge?**

Laura: I have a receipt via email that \$149 was charged to my credit card. The domain, however, has not been registered. I want it registered, especially since I have already been charged for ten years of domain registration.

Laura: Here is the email transcript. (email receipt hidden)

**Amit: Thank you for the details**

*Time lapse: 19 minutes*

**Amit: laura01, we will verify the charges details from the Billing Department and then we'll be happy to submit her 10 year registration right away.**

Laura: Will internet users then be directed to my "web lite" website?

Laura: When they go to www.laurasconfections.com?

**Amit: The concern department will take care of your issue and get back to you via email.**

**Amit: The ticket # for your issue is QIS-787745**

Laura: Nobody ever got back to me via email the last time you said they would.

*Time lapse: 10 minutes*

**Amit: laura01, I have discuss your issue with our senior technicians and we have already escalated your issue to the Billing Department for verification purpose.**

Laura: How long does verification take?

*Time lapse: 7 minutes*

**Amit: Once the charge verified from billing then we'll be happy to submit her 10 year registration**

**Amit: I am sorry and do apologize but right now I do not have the ETA for this issue.**

**Amit: Is there anything else I can assist you with?**

Laura: I just want what I have been charged for to be carried out by relingo1423.com.

**Amit: Yes, I understand your concerns about this issue. I will try my best to help you resolve it.**

Laura: Thank you. I will wait until tomorrow to pursue this further, if necessary.

**Amit: Yes, our concern department will get back to you as quick as possible.**

**Amit: Is there anything else I can assist you with?**

Laura: One more question- I have created a file in my "web lite" named "index.html" is this the page that will open when people go to www.laurasconfections.com?

*Time lapse: 6 minutes*



**Amit: Yes, the “index.html” is the default page, so when people visit your site they will get the index.html as your default page.**

Laura: I hope we will be up and running tonight. Do you think that is possible?

*Time lapse: 4 minutes*

**Amit: I am sorry and do apologize but right now I do not have any ETA for this but our techs will resolve your issue and get back to you with the details as quick as possible.**

Laura: Thank you.

**Amit: You are welcome.**

**Amit: Thank you for using the online support. Our chat session will now be closed.**

**Amit: Good Bye.**

*Time lapse: 2 days*

**August 20 - Today:**

Two days have now passed and no email communication has come from relingo1423.com except for another "statement" that the account has no balance, and therefore nothing further had been charged to Laura's credit card.

#### Case Questions about the Company's Customer Support System

1. What is the function of the Online Technical Support Chat feature?
2. What is the function of the telephone support/help line?
3. What is the function of the Concerns Department?
4. How do these three support features interact?
5. When does a query become “escalated to High Priority”? How does a Trouble Ticket help solve a technical problem?
6. How does the Billing Department interact with the Online Tech Support Chat feature?
7. As a business communication consultant, what would you recommend to this website hosting company to improve its customer service system?

#### Case Questions about the Chat

1. To what extent does Laura feel that Amit is personally attending to her needs? How do you know?
2. Which of Amit's responses appear canned, irrelevant, and automatic rather than personal?
3. Find examples of typos, grammatical errors, and word choice errors in Amit's responses. What are the potential effects of these on customer satisfaction? On Laura's comprehension of Amit's messages? On the overall effectiveness of the chat?
4. Rate the effectiveness of Amit's politeness, especially his/her use of “please” and “thank you” in messages.
5. As a business communication consultant, what would you recommend to this website hosting company to improve the live chat feature?

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## **Exploring Web-Based Disaster Planning Resources For Micro And Home-Based Businesses**

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### **Abstract**

Many Web sites are available to help micro-based and home-based businesses plan for disaster. The current study explores the content of ten Web sites that provide simple disaster planning guidance. Planning activities are extracted from each Web site. Activities common to all or most guides are identified. The adequacy of the guides as disaster planning tools is considered.

### **Introduction**

Continuity of operations after a disaster is critical in order for a small business to survive. While customers may be initially sympathetic to the plight of a company in recovery, they will not wait long before taking their business elsewhere. About 60% of small companies that are forced to close following a hurricane or other emergency never reopen.

Micro-based businesses, those with five or fewer employees, are particularly vulnerable to disaster. Many of these very small businesses operate from an owner's home. By nature, they do not plan, keep poor records, and purchase inadequate insurance coverage. When disaster strikes, the resources needed to continue operations are often completely lost.

Many Web sites are available to help micro-based and home-based businesses plan for disaster. Some resources are comprehensive in nature and go beyond the needs of a very small enterprise. However, there are also many simple disaster planning checklists that smaller organizations with limited time and personnel can use.

The current exploratory study performs a content analysis of ten Web sites that provide simple disaster planning guidance. Planning activities are extracted from each Web site. Activities common to all or most guides are identified. The adequacy of the guides as disaster planning tools is considered. The current study provides a better understanding of

the availability and suitability of Web-based resources for disaster planning.

### **Small Businesses and Disaster Planning**

According to the Small Business Act, a small business is one "that is independently owned and operated and which is not dominant in its field of operation [17]." The definition varies from industry to industry to reflect industry differences accurately. The SBA's table of size standards lists sizes ranging from 100 to 1500 employees. Small businesses represent 99.7 percent of employers [4].

The SBA's definition of small business is very broad; about 99% of businesses operating in the U.S. are small by its definition [4]. One subset of small business is micro-business. Micro-businesses include companies with five or fewer employees [20]. Many of these businesses are home-based meaning that the primary office is the owner's home. According to Entrepreneur.com, two out of three businesses "begin in a spare bedroom, garage, basement or sometimes even a bathroom [9]."

A study by The Small Business Technology Institute found that 40% of small businesses in the U.S. use local network and mobile computing tools. But, small businesses are still mostly unsophisticated users of technology. They tend to use their "data infrastructures for basic purposes, such as file and print sharing or shared access to the Internet." The small business market for IT products is growing extremely fast, and small businesses must learn to protect their resources.

While disasters affect all businesses, not all businesses are equally prepared to respond. Small businesses do not have the financial resources to cope with disruptions for any length of time [10]. Many of the technologies available in the marketplace to assist with recovery and resource protection are costly and only within the budgets of large businesses [3]. For many

small business owners, the plan for disaster recovery is eight simple words: “It never is going to happen to me [5].”

Micro-based and home-based businesses face even greater “size” challenges than larger small businesses in preparing for disasters. The smallest companies suffer from mistakes of poor record keeping, excessive debt, and failure to plan [6]. Additionally, many micro and home-based businesses do their own taxes [14]. Home-based businesses in particular are inadequately insured [11].

Continuity of operations after a disaster is critical in order for a small business to survive. While customers may be initially sympathetic to the plight of a company in recovery, they will not wait long before taking their business elsewhere. About 60% of small companies that are forced to close following a hurricane or other emergency never reopen [19].

Micro-based and home-based businesses face a serious dilemma. Being prepared for disaster is essential, yet very small businesses are often inadequate planners. Their lack of sound recordkeeping practices makes recovery of lost data and information difficult to impossible. Insufficient insurance means funds may not be available to replace damaged equipment such as computer hardware.

Recent catastrophes such as hurricane Katrina have elevated concern and focused attention on preparedness. Government agencies, nonprofit associations, and other organizations concerned with emergency response have alerted businesses to the need for disaster planning. Free source materials are readily available on the Internet to assist in developing a plan. Many of these sites contain thorough planning materials. For example, the Open for Business Toolkit from the Institute for Business & Home Safety (<http://www.ibhs.org/>) is well-organized and complete. The 47-page guide contains many useful forms for capturing business data about employees, vendors, key contacts, critical business functions, and vital records to name a few. The Department of Homeland Security (<http://ready.gov>) Web site provides information on risk assessment, continuity planning, emergency planning, emergency supplies, and more.

While all businesses should have a disaster or continuity plan in place, the needs of micro-based and home-based businesses are less complex than larger small businesses. Rather than relying on comprehensive planning guides involving many pages of forms and information, a firm of one to five employees might easily manage with a simple one-page checklist. Many of these are also readily available on the Internet.

### **Research Questions and Methodology**

What information sources are available on the Web to support disaster planning by micro-based or home-businesses? The purpose of this study was to explore Web sites with disaster planning guidelines to answer the following questions:

1. What types of Web sites provide guidance on disaster planning?
2. How do the resources compare in terms of content covered? To what degree do the resources provide direction relating to the protection of data?
3. How complete are the Web sites in providing disaster planning advice?

The authors conducted Google searches using “small business,” “micro-based business,” and “home-based business” in combination with “disaster plan.” The various searches yielded thousands of hits. Because this was an exploratory study, the authors chose ten URLs representing several different types of Web sites for this exploratory analysis.

### **Data Analysis and Findings Sources of Planning Guidance.**

Disaster planning advice can be found at a number of different types of Web sites. Table 1 lists the ten Web sites used for the analysis. Each site is categorized in terms of its general content. Four of the Web sites were primarily informational and two were on-line magazines. The remaining four represented commerce, business, affiliate, and blog sites.

The content of each Web site was examined to develop a master list of disaster planning activities. The activities were then ordered in terms of how frequently they were mentioned across the sites examined. The resulting list is shown in Table 2.

The last row of Table 2 provides a summary count of the number of activities listed for each Web source. The three sources identifying the largest number of activities were HomeBusinessMagazine.com, MyHurricaneCenter.com, and the SBA.gov. The two sites with the least amount of detail were Allbusiness.com and Forbes.com followed by Microsoft.com and the Rocky Mountain Information Insurance Association.

### Content Comparison of Guides

While the sites identified above do provide good suggestions for the micro- or home-based business person, no site provided an in-depth explanation of all the issues to address. As noted in Table 2, the single common recommendation of all ten sites was that of making sure data is backed up. Each website typically recognized that data is the lifeblood of the business. One of the ten sites did not specifically mention the need to store the backup data offsite. Only three sites suggested online automated backups to remote locations via the Internet. Only one site specifically mentioned the use of offsite storage for vital records 50 miles away from the business site. Only four sites mentioned the point of purchasing backup power sources as part of the pre-disaster planning. Although a large percentage of business records are electronic today, only some of the sites reminded business owners to look beyond the electronic records to other vital records available in paper format only. Only two sites discussed the need to provide backups of data such as company statistics, names of attorneys, banks, accountants, insurance, etc. Only three mentioned the use of digital photography and the accompanying ability to store digital photos of assets for possible insurance claims at a later date.

Eight of the ten websites recommended that owners prepare a specific disaster and recovery plan. The muextension.missouri.edu site noted that a carefully thought-out plan for a home or micro-based business might only be one page, but it should be done. Information from the myhurricanecenter.com site provided some of the lengthier coverage of what needs to be addressed to have an effective plan to facilitate business continuity following a disaster. While

protection of data was once again a common theme in the plan components, only four of the ten sites mentioned identifying alternate facilities, computer hardware, equipment, and supplies beforehand as part of the disaster and recovery plan. Only two specifically referenced voice mail and/or alternative phones.

Finally, in relation to business continuity planning, only two sites of the ten suggested reviewing and/or testing the disaster plan at least once a year. As technology continues to evolve, information technology may be able to play an even bigger part in future disaster and continuity plans, and owners of even the smallest businesses should review the plan for potential IT improvements on a timely basis.

### Completeness of Content

The simplicity of the disaster checklists has its limitations in usefulness. While the ten websites reviewed provided helpful information, a business owner accessing only one or two of the sites would not identify all the necessary components that can save the necessary records, provide for continuity, and shorten the time a business is not operating after a disaster.

The disaster checklists can provide good background information on disaster planning for someone interested in learning about the topic. In combination with each other, they provide a good picture of what a micro-based or home-based business should do to prepare for disaster. However, none of them are really adequate as a source of guidance for disaster planning.

### **Conclusions and Future Directions**

The current study provides a better understanding of the availability and suitability of Web-based resources for disaster planning. A content analysis was performed for ten Web sites that provide simple disaster planning guidance. Preparation activities were extracted from each Web site. Activities common to all or most guides are identified.

Taken together, the disaster guides provided helpful information on activities to undertake as part of the disaster planning process. None of the guides individually provided a complete picture of what steps to take. As background reading, the Web sites

contained useful information. As a planning tool, their usability was limited.

The current study was a first step in understanding the activities involved in micro-based and home-based disaster planning. As a next step, the authors will use the information on what small businesses should do to learn more about what they actually do to prepare for disasters.

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Table 1. Sites Used for Content Analysis

Web Site	Type of Site	Page Title
HomeBusinessMag.com [12]	News/magazine	How to Prepare for a Natural Disaster
Allbusiness.com [1]	Commerce	Implementing a Disaster Recovery Plan
Microsoft.com [21]	Business	Disaster Proof Your Business
Ebusinessmoms.com [8]	Blog	Five Top Tips for Disaster Planning For Your Family and Your Business
ArriveNet.com [2]	Affiliate	Having a Disaster Recovery Plan is Vital for Your Home-Based Business
Myhurricanecenter.com [13]	Information	Business Continuity and Disaster Recovery - The Business Continuity and Disaster Recovery Plan
Rocky Mountain Insurance Association [15]	Information	Do you have a disaster plan to protect your business and employees?
Forbes.com [19]	News/magazine	Staying One Step in Front
Small Business Association [16]	Information	Disaster Planning and Recovery: Expecting the Unexpected
University of Missouri Extension Office [7]	Information	Home Business Disaster Planning

Table 2. Disaster Planning Guide Content Analysis

Disaster Planning Content	homebusinessmag	allbusiness	Microsoft	Five top tips	arrivenet	myhurricanecenter	rmia	Forbes	Sba.gov	muextension
Back up data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Keep offsite copy of data (only 3 sites mentioned storing data through online service, encrypted to a secure server)	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Prepare a disaster preparation and recovery plan	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Purchase/Review insurance coverage	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Provide for backup power (backup battery)	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>			
Find alternate facilities, hardware, other equipment, and supplies beforehand						<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Let others know your disaster strategy—employees/customers/clients			<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>
Purchase business interruption insurance (disrupted due to disaster)	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
Take digital photos of difficult to value assets—preserve photos online	<input checked="" type="checkbox"/>				<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>
Safeguard your customer list (contact info.) for contact about your status, new location, etc.	<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>						<input checked="" type="checkbox"/>
Write down company stats, subcontractors, attorneys, accountants, web info and hosting, insurance, financial institutions, etc. (make sure someone has a copy)					<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>			
Communicate/share copies of your disaster plan				<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>				
Inventory valuables – prepare serial number lists and descriptions – keep offsite					<input checked="" type="checkbox"/>					
Categorize documents and files into 3 categories: vital, important, useful									<input checked="" type="checkbox"/>	
If business has voice mail, select a remote number on which to record messages employees can reach						<input checked="" type="checkbox"/>				
Review disaster plan at least once a year and update	<input checked="" type="checkbox"/>									
Actually test disaster plan at least once a year						<input checked="" type="checkbox"/>				
Make certain everyone knows locations and numbers of alternative phones									<input checked="" type="checkbox"/>	
<b>After disaster strikes</b>										
Contact help organizations EARLY for help	<input checked="" type="checkbox"/>					<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>	
Keep customers updated on a frequent basis	<input checked="" type="checkbox"/>								<input checked="" type="checkbox"/>	
	11	3	5	7	6	11	5	4	10	8