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What Every Business Student Needs to Know About IT

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“What Every Business Student Needs to Know About IT”

By

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An Honors Thesis in partial fulfillment of the requirements for the degree Bachelor of Science in Business Administration in Information Systems.

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ABSTRACT

This thesis focuses primarily on assessing whether or not the objectives of the Pre-business core and the Walton College of Business program regarding exposure to all eight majors and technology utilization are being met. Emphasis is being placed on knowledge of technology related tasks. It begins by stating the importance of information systems to businesses. The next portion focuses on analyzing if the WCOB objectives are being met. Finally, students’ inputs on Information Systems are examined.

There were three main hypotheses at the outset of the research. The first hypothesis was that the Walton College of Business pre-business core objective regarding exposure to all eight majors is not being met. Results could be used to enhance the learning within the pre-business core with respect to Information Systems. The second hypothesis was that the Walton College of Business program objective regarding technology utilization is not being met. This would help contribute to the understanding of whether or not students are being provided with the fundamental business knowledge regarding technology utilization that all business professionals should possess. The third hypothesis was that Walton College of Business undergraduates will see the need for an Intro to Information Systems class to be added to the pre-business core. This would show that students realize the importance of technology as an emerging field in the business world.

To test these hypotheses, surveys were administered to undergraduates in the Walton College of Business. These surveys included a questionnaire about influences in choosing a major, knowledge of technology related tasks, and an open response section for students to state how they feel about Information Systems becoming more prevalent in the business core.
INTRODUCTION

To be successful in today’s increasingly computerized world, it is crucial for Walton College of business graduates to be well versed in computer literacy. Computer literacy plays a major role in the hiring process of many graduates, is a crucial skill that students need to develop, and is a tool that all business graduates professionals should possess. An information system is defined as, “an integrated set of components for collecting, storing, and processing data and for delivering information, knowledge, and digital products”[9]. Business corporations rely on information systems to carry out and manage their operations, interact with their customers and suppliers, and compete in the marketplace.

In this thesis, the importance of Information Technology has been analyzed. It begins by relating to the Walton College of Business core objective regarding exposure to all eight majors not being met. The next portion focuses on examining whether or not the Walton College of Business program objective regarding technology utilization is being met. Finally, Walton College of Business undergraduates were analyzed to evaluate whether or not they would see the need for an Information Systems class in the pre-business core.

THE ROLE OF INFORMATION SYSTEMS AS A BUSINESS DISCIPLINE

One of the questions that is frequently raised during any serious discussion related to the identity of Information Systems (IS) education is the relationship between the business domain and Information Systems and the role of Information Systems as a business discipline [8]. Business schools identified the need to hire academic specialists who are able to integrate issues related to business and technology in their research and teaching. Particularly during the boom years of late 1980s and 1990s, student demand for courses in Information Systems was very high, which obviously raised the level of interest in the discipline among business schools[8]. The
events of early 2000s led to the rapid declines in enrollments that all business schools have experienced within their Information Systems departments[^8].

Not surprisingly, these declines have made some business schools question the value of Information Systems programs and departments, but the field is still predominantly associated with business schools. Information Systems is not only found in every facet of business today, but it makes graduates more marketable and the importance of understanding technology and its impact across the world cannot be emphasized enough. The core capabilities that the Information Systems discipline provides should be in the center of every business curriculum.

**WCOB PRE-BUSINESS CORE**

The pre-business core is supposed to introduce each of the eight majors offered within the Walton College of business and show students how they work together. The classes within the core will also aid undergraduate students in figuring out what areas interest them, so they will be better equipped to select a major[^6]. After reviewing the pre-business core, it seemed like Information Systems did not fall within any of the 14 classes that were offered. I hypothesized that the Walton College of Business core objective regarding exposure to all eight majors was not being met.

To begin testing this hypothesis, I wanted to see what influences a student when they choose a business major. In examining the influences, they are separated into two broad categories, internal and external influences, though there is some overlap. External influences consist of characteristics that are based on the major and protected career. These include such things as job characteristics (job availability and projected salary), prestige of employment in the field, and the degree of difficulty and workload of the major[^4]. Job availability refers to the difficulty or ease students will have in getting their first jobs upon graduation and the likely
availability of jobs throughout their careers. Salary is obviously an important factor because students want to make sure that they will be able to support themselves upon graduation. Some students choose majors that they perceive to be easier than alternate choices. Some of the external influences tend to be tangible, like financial rewards and work required, while others are less tangible, like prestige or status.

Internal influences, which can be shaped in part by external forces, tend to reflect attitudes, beliefs, abilities, and personality. Internal influences include interest in the field, one’s personal image, and the influence of others such as professors, family, and friends \[^4\]. Personal image could be significant for Information Systems majors, since the perception that technology majors are “nerds” may be discouraging to potential majors. Other people can also be influential in a student’s choice of major because they provide negative or positive opinions regarding the selection of a college major. They also serve as role models to students as examples of success or failure.

Within the questionnaire that was given to Walton College of Business undergraduate students, they were asked to rank items in order of influence in choosing their major. The top five influences in WCOB students in choosing a major are interest in the field, job availability, and professors, family, & friends, intention to work in major and projected salary. These results are displayed below in Figure 1.
It makes sense that interest in the field was the overwhelmingly top influence for undergraduates. Students typically choose majors that they find interesting. It was not surprising that job availability was the second ranked influence in selecting a major. The U.S. Bureau of Labor Statistics data show that unemployment rate of college graduates under the age of 25 was 6.4% in April, 2012 vs. 6.7% in April, 2011. While this information means that employers have increased their entry-level hiring of college graduates, it is common knowledge that America is still in an economic downturn. Due to this, many students entering college may be delighted to know that employment for Information Systems majors is expected to grow faster than the average for all occupations.

Information Systems is a growing field. According to Adams, “job openings in computer systems design and related services are on track to grow by nearly 40% as businesses become increasingly complex.” A true/false type question was generated to survey respondents to see if they knew that employment for Information Systems majors is expected to grow faster than the average for all occupations. The results, where
1 = True and 2 = False, can be seen below in Chart 1. I was not surprised that 87% of survey respondents knew that Information Systems majors have an extremely promising employment outlook.

![Chart 1](image1.png)

**Chart 1**

To further test this hypothesis, I chose to ask students to see if they agreed or disagreed with the statement, “I was exposed to all of the majors offered in the WCOB through the pre-business core”[2]. Chart 2 displays the findings from the survey.

![Chart 2](image2.png)

**Chart 2**

These results were extremely surprising. As mentioned in the abstract, surveys were only administered to undergraduates in the Walton College of Business. According to Chart 2, 67% of
students agreed that they had been exposed to all majors. This completely contradicted my hypothesis that students were not being exposed to all eight majors, which meant that my hypothesis was incorrect. The underlying assumption behind questioning if students believed they had been exposed to all majors was that if they had not, that would be the primary reason for lack of students in the Information Systems department. Due to the incorrect hypothesis, I have concluded that while students may be exposed to information systems within the pre-business core, it is still not as predominant as it should be. Also, students may mistake the Computer Competency requirement as a component of Information Systems, which it is not.

**WCOB PROGRAM OBJECTIVE: TECHNOLOGY UTILIZATION**

Regarding technology utilization, the Walton college program objective states that, “Upon completion of the Bachelor of Science in Business Administration or Bachelor of Science in International business, students will be able to effectively use and apply prevalent business-related technology while interpreting the various benefits, costs, and risks associated with its use” (Walton College). Since my first hypothesis stated that students were not being exposed to all majors within the pre-business core, it seemed logical to hypothesize that the Walton College of Business program objective regarding technology utilization is not being met as the second hypothesis.

All students should understand the fundamental principles of systems thinking and graduate with an understanding of the complexity and manageability of technological infrastructures and technology-induced change. The technological environment is a major determinant of economic success for many businesses. Businesses that fail to assess the opportunities presented by a changing technological environment in their market place can quickly lose market share and disappear. The production and distribution of information is now a
significant factor in the value created by many businesses. Due to this, students need to know about infrastructure investments because they lay the foundation of future value creation for businesses \[5\].

The findings in the first hypothesis showed that the majority of Walton College of Business undergraduate students believe that they have been exposed to all eight majors within the pre-business core, including Information Systems. It is important that students understand the difference between Information Systems as tools and the strategic role that they play in business organizations. To begin testing this hypothesis, respondents were asked to select the correct answer which tested their basic knowledge of information systems. The correct answer was, “Data leads to information, and information leads to knowledge” \[2\]. As seen below in Chart 3, 71% of respondents selected the correct answer. I was not surprised that many students selected the correct answer; however I had expected the percentage of students selecting the correct answer to be higher.

![Basic Knowledge of Information Systems](chart.png)

**Chart 3**

The next analysis to further test this hypothesis dealt with Walton College of Business undergraduates’ knowledge about business components relating to IT. Survey respondents were
asked to select whether or not they believed the following business components related to Information Technology. The twist with this question was that all of the business components mentioned in the survey related to IT. As seen in Figure 2, all of the business components excluding, Governance, Policies, and Standards, received a response rate of over 75% of students realizing that the business component related to Information Technology.

![Business Components](image)

Figure 2

The final analysis for this hypothesis was testing the undergraduates’ knowledge level on actual Information Systems tools. Information Systems touches every aspect of a business and is as necessary to every business whether the business is just a startup firm or a Fortune 500 multinational company. Information Systems will always be relevant as one determines what types of information systems can help their business gain a competitive advantage within their industry. It is vital for students to contain the knowledge level of competence or expert on actual
Information Systems tools upon graduation. Survey respondents were asked to select their knowledge level on actual information systems tools. The results can be seen below in Figure 3.

It is not surprising that the information system tool that respondents felt the most confident about was Information Systems Fundamentals and “Hands on” tools. Within the survey Microsoft Excel was listed as an example of a “Hands On” tool, which most respondents should be familiar with. As one further investigates the line graph, they will notice that most respondents were either just learning the tool (possessed limited knowledge) or had only heard of the actual Information Systems tools, but did not know how to do anything with them. It is useless for an organization to have these tools in place if employees do not know how to interact with them.

![Figure 3](image-url)
The analyses conducted for this hypothesis prove that the hypothesis regarding technology utilization as a Walton College of Business objective is correct. Based on my analyses, I have concluded that as far as extremely basic knowledge of Information Systems is concerned that the students here at the University of Arkansas know this information. However, I do not believe that technology utilization objective is being met since it states that upon graduation that students will be able to “effectively use and apply prevalent business related technology while interpreting the various benefits, costs, and risks associated with its use” [6]. Since the objective explicitly states that students should be able to use and apply technology, it is obvious that this objective is not being met since most survey respondents possessed limited knowledge regarding actual Information Systems tools. One respondent stated, “I am set to graduate in May and I still don’t feel like I know enough about excel, ERP, and other topics relating to IT. I think the pre-business core and the core for all business majors should implement more hands-on experiences with information systems” [2]. Many students echoed this response.

**WCOB UNDERGRADUATES**

I believe Information Systems should be more prominent in the pre-business core because regardless of a student’s major, they are going to be expected to interface with technology to some degree in the business world. If accounting is required for an Information Systems major when there is little chance of the student using accounting knowledge, then it would only make sense that Information Systems classes are introduced in the pre-business core and expanded for the core that relates to all business majors. There is a good chance many graduates will need to possess knowledge about Information Systems, and it will give undecided majors an exposure to Information Systems that they may otherwise not get.
The final hypothesis was that my fellow Walton College of Business undergraduates will see the need for an Information Systems class in the pre-business core. To begin testing this hypothesis, undergraduates were asked questions regarding their attitudes about Information Systems being more prominent within the business core. Survey respondents were asked, “which classes were a good substitute and the reason why there is no need for Information Systems to be more prominent within the pre-business core”[2]. Of the classes that I listed, I expected that a majority of students would realize that none of the classes were a good substitute. As Figure 4 shows, 59% of the respondents did recognize that no class within the pre-business core was a good substitute.

![Good substitute class for IS in pre-business core](image)

**Figure 4**

The top two classes that were deemed a suitable substitute by other respondents were WCOB 1120 Computer Competency Requirement (26%) and WCOB 1033 Data Analysis & Interpretation (22%). It was definitely surprising that 26% believed that the Computer Competency Requirement was a good substitute. One respondent stated that Information Systems should be more prominent within the WCOB core because, “Quite frankly the current
level of training Walton students’ use in technology development and management is a joke. Having 4 tests as a freshman for computer competency does not prepare anyone for the level of technical know-how that is expected in today’s work force” [2]. Although, I do believe that this class should remain a part of the core, I don’t think that it is a good substitute, because an information systems class consists of much more than just Microsoft Word. In IS, students learn about how to use IT as a competitive advantage, ERP, business intelligence, etc.

The next analysis to further test this hypothesis was to see if students would be surprised about two different scenarios. Since the pre-business core is currently an integrated core, respondents were asked, “Would you be surprised if the Goods and Services class was changed to Goods, Services, and Information” [2]. As seen below in Chart 4, 72% of students would not be surprised to see this change, while the remaining 28% would be surprised.

![Chart 4](image)

The other scenario that students were asked about was if the pre-business core was redesigned to be principles based rather than integrated. Survey respondents were asked, “Would it surprise you to know that an Intro to Information Systems course is being added to the core in
place of another core course” [2]. As seen below in Chart 5, 68% of students would not be surprised if this happened, while the remaining 32% would be surprised.

![Chart 5](image)

The final analyses that were conducted to prove this hypothesis were to see if students agreed or disagreed with a few statements regarding the pre-business core. The statements they were asked included the following, “If I’d had more exposure to Information Technology, I would have a better understanding of the big picture of a corporation, Information systems influence organizational competitiveness, and every aspect of business is touched by IT so as students we should learn about it within the core” [2]. The results can be seen below in Figure 5. One respondent stated, “I am currently in the Intro to ISYS class right now and it has helped me in every class I am also currently taking because things seem to make more sense.” This is just more evidence that students are realizing that Information Systems touch all areas of the business and any business major should know what they are about and why they are important.
All analyses proved that the final hypothesis is correct, and that students do agree that Information Systems should be more prominent within the pre-business core. As seen in the Appendix, there is a proposed class to be added to the pre-business core. This class will give students a number of integrated examples. The objective of the class will be to, “present students with business and information systems framework that will allow them to envision how business decisions are enabled and empowered by information systems and technology.” [3].
CONCLUSIONS

In this thesis, the importance of Information Technology has been analyzed. The hypothesis relating to the Walton College of Business core objective regarding exposure to all eight majors not being met was proved false. A large majority of students did believe that they had been exposed to all eight majors.

The Walton College of Business program objective regarding technology utilization not being met was also examined. After analyzing the knowledge level of WCOB undergraduates from extremely basic to more advanced, it was concluded that this objective is not being met since students cannot effectively use and apply prevalent business-related technology. However, I believe with the addition of the proposed class to the pre-business core that this objective would be met.

Finally, Walton College of Business undergraduates were analyzed to evaluate whether or not they would see the need for an Information Systems class in the pre-business core. After students responding that no class within the pre-business core is a good substitute class and they would not be surprised if Information Systems became more prominent in the core, the hypothesis was proved to be true.

Students realize that ISYS is a growing field with great job opportunities and are ready for a class to be implemented within the pre-business core. It would be irresponsible for a business school to graduate anyone without the fundamental preparation that an Information Systems class would give the student. Furthermore, all businesses are starting to utilize their technology to help enhance their business processes and all business students should have some knowledge of how an Information System works.
References:


2. Cronan, T.P. and Kizer,K., What Every Business Student Needs to Know Survey #1, April 2012.


Appendix:

Table 1: Key information systems concepts that every business student needs to know.

<table>
<thead>
<tr>
<th>Key Information Systems Concepts</th>
<th>Learning Objectives (Examples).</th>
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<tr>
<td><strong>Business school graduates should be able to:</strong></td>
<td></td>
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</table>

| What are information systems? | Explain the nature and interaction of technology, people, and organizational components |
|                              | Distinguish between data, information and knowledge |
|                              | View the organization as an information processing system designed to manage environmental uncertainty |
|                              | Introduce elements of systems thinking - boundary, environment, scope, hierarchical decomposition, decoupling, etc |

| How do information systems influence organizational competitiveness? | Discuss the use of IS for automation, integration, organizational learning, reengineering, and strategy |
|                                                                   | Understand the need to align IT investments with strategic plans |
|                                                                   | Understand how IT can be used to achieve and sustain competitive advantage |
|                                                                   | Discuss how IS can both constrain and enable organizations. |

| Why have databases become so important to modern organizations? | Understand the nature, importance of, and uses for an integrated database |
|                                                               | Understand the concept of, and means to ensure, data integrity |
|                                                               | Describe database management systems and how they work |
|                                                               | Explain the value of data warehousing and data mining concepts |

| Why are technology infrastructures so important to modern organizations? | Explain the nature of, and organizational dependence on, technology and business platforms |
|                                                                         | Explain concepts of interoperability and scalability as well as the role of standards |
|                                                                         | Compare open versus proprietary architectures |
|                                                                         | Understand the problems in justifying investments in infrastructure |
|                                                                         | Recognize total cost of ownership for technology investments, e.g., desk top computing |

| What is the role of the Internet and networking technology in modern organizations? | Discuss networking concepts, components, capabilities, and trends |
|                                                                                     | Distinguish among internets, intranets, extranets |
|                                                                                     | Describe the evolution of e-business and how e-business is transforming organizations and markets |
|                                                                                     | Explain organizational implications of the pervasiveness of the Internet |
|                                                                                     | Describe the development and impact of wireless networks and ubiquitous computing |

| What are the unique economics of information and information systems? | Understand the economic characteristics of the information economy |
|                                                                      | Understand the cost structure of information systems and technology |
|                                                                      | Describe unique features of information economics – network effects, versioning and pricing of information products, lock-in, positive feedback, tipping points, and so on |

| How do information systems enable organizational processes? | Explain the importance of enterprise-wide business processes and associated IS roles |
|                                                           | Explain the importance of extra-enterprise processes, e.g., supply chains |
| How do organizations develop, acquire and implement information systems? | - Understand how to manage complex, technology-based projects  
- Understand the difficulties in designing and building IS well as the strength and weaknesses of alternative development processes  
- Understand the trade-offs involved in developing software in-house, using a domestic or offshore provider, and buying off-the-shelf packages  
- Understand how to formulate and assess a Request-for-Proposal  
- Understand the difficulties in implementing IS and in leveraging the full potential of installed IS |
|---|---|
| What is the nature of IS management? | - Discuss the evolving and current roles of enterprise IS management  
- Explain the operating, managerial and strategic processes associated with IS management  
- Discuss advantages/disadvantages of alternative governance structures for IS management  
- Discuss IT sourcing and contractual and relationship management with third-party service providers  
- Consider the unique problems of managing IT in globally dispersed organizations |
| What ethical, criminal and security issues do organizations face when using information systems? | - Describe the ethical concerns associated with information privacy, accuracy, intellectual property, and accessibility  
- Introduce the nature (and increased potential of) computer crime  
- Explain what is meant by computer security and describe methods for providing computer security  
- Consider cross-border implications regarding privacy of data and integrity of Internet |
Prerequisite: WCOB 1120

**COURSE DESCRIPTION** - This business core course presents the fundamentals of business information systems (IS) topics essential to today’s business graduate. A number of integrated examples across “applied” areas of business will be utilized. Applied areas of business will be used to provide the context for the IS topics, business applications, and management challenges. This course surveys essential information systems and technology fundamentals that are common to most enterprises. The course addresses information systems components and follows up by showing how managerial information and other essential functional information is generated, derived, and presented through the company’s information processing and decision support systems. Business Information Systems is the “life blood” of business; those systems that enable the business to function effectively and efficiently as a unit. The broad objective of this course is to present you with a business and information systems framework that will allow you to envision how business decisions are enabled and empowered by information systems and technology.

**INFORMATION SYSTEMS KNOWLEDGE FOR TODAY’S BUSINESS MAJOR TOPICS (TENTATIVE)**

- **IS Fundamentals and “Hands On” Tools**
  - i. IT Fundamentals
  - ii. Excel for Decision Making
  - iii. Databases
  - iv. Website Basics
- **Competitive Advantage/Leveraging IT/CRM**
  - i. IS, Data, and Competitive Advantage
  - ii. Customer Relationship Management
- **Today’s Business Applications**
  - i. ERP
  - ii. Management Support
  - iii. E-Commerce (B-2-B, B-2-C, B-2-E,…)
  - iv. Mobile Computing
  - v. Business Intelligence
  - vi. Data Warehouse
- **Management Challenges**
  - i. Security, Piracy, and Privacy
  - ii. Systems Development Life Cycle and Data Mgmt
  - iii. Globalization & IT
  - iv. Value Chain Management
  - v. Innovations
  - vi. IT Infrastructure & Internet
  - vii. Leveraging Social Networks/Social Media
  - viii. Project Management
  - ix. Knowledge Management
Some Student Responses about Why Information Systems should be more Prominent in the core

- Information Systems is a growing field, especially in the business world. I don't feel like most of the students in the WCOB know enough about technology whenever they graduate, unless they are an IT major.

- It should be prominent because technology is moving into every industry and career today. Accounting, marketing, sales, finance all use some sort of technology to enable them to complete their daily tasks and a better understanding of the systems they use early will be vital in the upcoming years. With the massive rollout of ERP systems nationwide in the corporate world, it is becoming imperative for students to at least have an understanding of technology to be successful in their job. A course like Intro to Information systems will help students get a basic understanding of the tools they will use in their daily work lives more so than any financial resources, markets and consumers, or goods and services course will. But in my opinion, ERP fundamentals should also become a core class within the next 10 years, since the major companies people will work for will require the use of some sort of ERP solution, and SAP is a great resource that the Walton school has.

- Since freshman and sophomores are required to take the pre-business core that includes a broad range of basic business functions, I don't see why Information Systems has not already been added.

- It should become more prominent in the pre-business core because it is becoming a prominent aspect of businesses themselves.

- ISYS should play a larger role in our education because it is a main component of businesses.

- The core is designed to give an overview of what you can expect to encounter in a corporation and have some basic working knowledge of it all. Information Systems is becoming a much larger part of business, and it isn't expected to go away or minimize. Students need to be prepared for this and know about the role it plays in business.

- IS is becoming increasingly important in the business world. Walton College graduates will be severely under-prepared for many jobs if they graduate without at least a basic understanding of Information Systems. The Accounting technology class that I am taking right now has a lot to do with Information Systems and is one of the most relevant classes I have taken in my two years here as far as being applicable to a business career.