Preface

Book Design Problem

We set out to design an introductory course governed by four themes:

1. Give students a good idea of what a career in MIS looks like by doing MIS.
2. Enhance the professionalism of deliverables by teaching design and usability concepts.
3. Promote creativity by assigning projects that demand it.
4. Teach students about cloud computing by having them do cloud computing.

Students in an introductory Management Information Systems (MIS) course often ask what a career in MIS looks like. Lacking a clear vision, they make their own assumptions. Often they assume the career involves programming with little human interaction. That MIS is a technical field could not be further from the truth. MIS job descriptions typically require candidates to be able to collaborate, communicate, analyze needs and gather requirements. They also list the need for excellent written and communication skills. In other words, MIS workers are constantly interacting with other people both inside and outside the organization. They are coming up with creative solutions to business problems.

This course is designed to help students get a feel for what a career in MIS would be like. Our students report that they learn more about information systems from their internships than from their IS courses. Consequently, we designed a course that looks very much like an internship—an introduction to the field followed by a substantial project.

Chapter 1 begins by introducing the information systems landscape. Here we discuss all the usual suspects: the information systems triangle, the systems development life cycle, transaction systems (ERP, SCM, CRM), collaboration systems, and business intelligence systems. Other aspects of the landscape such as usability, outsourcing, database concepts and so forth are introduced throughout chapter in Chapter 2 where they fit in naturally with the flow of the project.

Chapter 2 is the substantial project which runs over a number of chapters. Over the course of the semester, students plan, build, and develop a proposal for an iPhone

application. They develop a very realistic mockup. They also build a website to help market and support the app. Students are engaged because the project is fun and feels real. However, they are simultaneously learning business concepts and MIS skills. Prior to the existence of this course, we were only able to give such an interesting project at the senior level. Now, even as freshmen, students have a real experience of MIS in operation.

A by product of creating an engaging course is increased enrollment in the MIS major. Even students who have never heard of MIS become excited about the major and either switch majors or add it as a double major or minor.

Many other books have students study tools and then do a case. By contrast, most of this book is a case. Much like the real world, we introduce tools when needed, and only to the extent needed, to get at each part of the case.

Constraints

The design team embraced a number of constraints in creating the book. We acknowledged that this is a support course in terms of skills development for the other business disciplines—accounting, finance, management, and marketing. Students should walk away with skills that they can take into the other disciplines. The course requires mastery of a number of software skills—primarily from the Microsoft Office suite. These include skills in PowerPoint, Word, and Excel. We assumed no prior background knowledge on the part of the students. Our experience is that students entering college have exposure to software skills, but not a mastery of applying those skills to solve business problems.

A number of skills are also learned about cloud computing. These include Web site design and development (Google Sites, Google Gadgets, Google Docs), Color Management (Adobe Kuler Color), iPhone App mockups (MockApp), and online polls (PollEverywhere).

The book was designed for both in class and online delivery and for small and large section sizes. The non-traditional student population is a growing sector and many of those students choose to learn online.

Finally, the book needed to appeal to the business side of information systems. We accentuate the creative aspects of the field rather than casting MIS as an overly technical, nerdy, machine-oriented discipline.

Values, attitude, approach

We began with the assumption that MIS is an exciting discipline. Nonetheless we recognized the difficulty of conveying that excitement—especially in a skills book. However, difficult does not mean impossible—and we believe we have created an elegant solution. We hold that learning can be both challenging and fun. Research clearly shows that students want to be challenged in meaningful ways. Finally, we assumed that students recognize and want to emulate good graphic and information design. This is an image-conscious generation with a keen eye for what looks cool. Why not build a book that capitalizes on the eye for graphic design that students already bring to the table?

Book Design Influences

While our background is in MIS, we believe that one of the strengths of the book is its ability to look outside the field for inspiration. We were influenced by a number of writers in the development of the book.

Edward Tufte (**The Visual Display of Quantitative Information**) is perhaps the world's leading expert on the design and display of quantitative information. Tufte begins by insisting we focus first on the quality, relevance, and integrity of the content. He has an especially sensitive eye for the ethical dimension—telling the truth in an information display. Good content is followed by the creation of a good design to communicate that content.

Robin Williams (**The Non-Designers Design Book**) gives simple but effective design rules that can be applied to document design, presentation design, website design, even spreadsheet design. Following these rules students are able to create professional displays of information.

Students will use PowerPoint both in college and the workplace. Why not learn to use it effectively? Two writers were especially helpful in this regard. Both are pioneers in the effective construction of PowerPoint presentations. Garr Reynolds (**Presentation Zen**) promotes a heavy use of images in PowerPoint. Nancy Duarte (**Slide:ology**), provides a comprehensive list of design guidelines.

Organizing framework for the Book

Our organizing framework for the book revolves around the importance of design. We want students to be creative, design like professionals, and take pride in their

work. We challenge students to produce deliverables that are professional in both content and style.

Problems must be thoroughly analyzed before a proper solution is designed. Information is a core asset, not only in information systems, but to most organizations. It is safe to say that most students will regularly be creating information displays as part of their jobs following graduation. Why not get a competitive advantage by learning how to create them in a professional and effective fashion? We include sections on graphic design—a subject that students find to be very interesting and marketable.

The importance of design lead us to adopt the Systems Development Life Cycle for the assignments. In this way, students are asked to be intentional about their design choices, relating them back to the requirements that they uncovered earlier in the project.

Book Guiding Principles

We developed a number of guiding principles in the creation of the book. We began with creative, right brain problems. The business curriculum is so heavily focused on analysis that there is little room for creative expression. We have students design and draw with the software to remedy this problem. For example, students design an iPhone App in PowerPoint and simulate its operation with hyperlinks.

We want to support and model critical thinking. There are many definitions of critical thinking and we do not claim to have the most comprehensive one. However, we believe that the explanatory framework offered by Richard Paul is especially powerful. Paul encourages faculty to communicate concepts in four forms—definitions, rephrasing, written examples and illustrations. The hope is that one or more of the forms will stick and mutually reinforce each other in the student's mind. Students frequently comment that they see the value in what they are learning and are able to apply it not only in their other classes, but also in real life.

Finally, we think that the book should support multiple learning styles. We use Neil Fleming's taxonomy of learning styles: Visual, Auditory, Read/write, and Kinesthetic (VARK). Different students learn differently; this book contains something for everyone.

Architecture of the Book

We align the architecture of the book with our guiding principles. For example, all the book's concepts and software skills are presented in a critical thinking format. Each concept is defined, rephrased "in other words," bolstered by an example, and then illustrated. For software skills we repeat the same pattern in a different format. We construct a captioned screen shot. The caption contains the first three forms—definition, rephrasing, and written example. The screenshot contains the illustration. A great deal of work went into the digital manipulation of the screenshots to support our pedagogy. The actions are expressed with a near wordless lexicon. Symbols in the lexicon have an Anime or Comic Book feel in order to create a counterpoint and stand out from the screen shot. And frankly the Anime feel is just fun. To accommodate online learners the skills are also modeled through video lectures.

Problems in the book progress from challenging students to imitate best practice to creative application of the concepts. So many times we have seen assignments where students are asked to do either too little and thus the students get little value or the students are challenged but not given the proper ramp up. Our leveled approach is a good meeting in the middle—challenge with support.

Since we set the bar so high for the professional quality of deliverables, we had to provide a way for students to meet that standard. What we developed is a progressively challenging pedagogy. By accomplishing the Level 1 and 2 hurdles, students prepare themselves for a comprehensive Level 3 project.

Introduction: Each chapter begins with an introduction to outline the chapter. The introduction also sells the practical value of the chapter to the student's future career. Selling the chapter achieves buy in and creates motivation to succeed. Establishing the practical value of the chapter also lets students know that we care about their future.

Following the introduction, we present the theory behind the chapter. The theory is carefully introduced to scaffold on prior knowledge while extending that knowledge much further. We cover best practice in industry and illustrate it using good and bad examples.

L1, L2, L3 Creative Application: The Level 1 and Level 2 assignments incorporate analysis and requirements stages. The Level 3 assignments focus on design. Students must analyze the problem, gather requirements, design a solution, and

develop the solution. Students are encouraged to exercise creativity both in their deliverable and in their written support for the deliverable.

Diagrams: We show abbreviated techniques to accomplish each of the tasks required in the assignment. Furthermore, the techniques are shown in no particular order. Students need to discover what they need to accomplish and then look up the techniques that will help to get them there. Over the years, we have learned that students can learn a technique very quickly, but this is not what they truly need to understand. They need to know when to apply the technique, and this pedagogy focuses on developing that intuition.

Sometimes, we show before and after examples of the required deliverable. Students are challenged to transform the before into the after using the techniques. We expressly avoid the step by step exercises found in many other texts. Our experience is that students will focus on keystrokes rather than concepts when presented with step by step instructions.

Our model is closer to just in time learning found in many MBA programs. It is also a model for life-long learning, rather than learning specific software tools.

Conclusion

We have learned a lot over five years developing this book, and continue to learn every day as we move forward. We would like to thank our students who have helped guide us with their feedback. We will continue to make improvements to a project that will never be entirely finished. However, this much we know—enrollment has dramatically increased in our department (400%).