https://doi.org/10.48009/1_iis_2009_141-145

TEN SIMPLE MAXIMS FOR THE SYSTEMS ANALYST: BRINGING THE IT COMMUNTY INTO THE CLASSROOM

Roy A. Boggs, Florida Gulf Coast University, rboggs@fgcu.edu

ABSTRACT

One of the challenges when presenting a Systems Analysis and Design course is finding a way to bring feedback from the IT community into the classroom. In the following, ten (simple) maxims, which have been compiled from suggestions and concerns voiced by the local IT community, are presented. Each maxim is given with topics for class discussion and review. There are, of course, many other maxims possible. But because it can honestly be stated that these ten maxims come from the local user-community, they have a special relevance. At the same time, it is an interesting way to bring young analysts to look at and prepare for their craft.

Keywords: System Analyses and Design, IT Community, SDLC

INTRODUCTION

Once a year, at the end of the fall semester, the CIS Department hosts representatives of local area IT businesses and departments. These representatives are not only knowledgeable about the demands and challenges of the industry, but they also are the primary employers of present and future graduates. Fifty to sixty people attend morning and afternoon sessions to review the Department's academic goals, its curriculum, faculty research, student poster sessions, and measured outcomes from the previous academic year. The representatives, as stake holders, have a desire and interest in helping guide the direction of one of their primary sources for information, support, and prospective employees. Many consider it a professional obligation. In turn, the Department organizes the seminars as part of its 'continual improvement' processes, with an added opportunity to reinforce ties to the local user-community.

Over the least several years, a pattern of comments and inputs has emerged. In addition to the regularly occurring complaint that students cannot write well nor speak clearly, and a desire for super graduates who can do everything from coding assembler to managing projects, organizations continue to kook for students who understand their craft, who can work independently, and who can learn and grow with the organization. For those seeking system analysts, discussions quite often center on basic practices that students might be expected to understand and to have mastered. Most comments, when compiled, make simple sense. They are part of a system analysis course and can be found somewhere in most systems texts. They just sometimes get lost in the maze of the all-encompassing chapter by chapter march through the semester.

From notes collected over the last five years, it was decided to share reoccurring comments with systems students. Out of pedagogical considerations and in the hope that students would take notice and remember them, a set of ten maxims were organized into individual power point slides for class discussions. The maxims are primarily used during the semester, one at the end of lectures, or as part of reviews. They may also show up on examinations. Not only have the maxims proven a good pedagogical tool; the fact that the students know they represent direct input from industry representatives gives them special importance. The maxims are intended to be fun and spark class discussions. They are given here in the hope that someone might use or rewrite them for his or her own classes.

Background

The local area covers six counties, with a population of almost two million people. It includes a wide range of business and organizations from small hosting cites to large international software developers. IT departments also range from small city and county applications to large school districts, hospital campuses, colleges and universities. Interestingly, over two-thirds of those attending admit that their current SDLC is a mix of the 'waterfall' and the 'build and fix' methods. Nonetheless, they are at the same time looking for better ways to manage their projects and are looking for graduates with the necessary skills, especially with an understanding of more recent developments such as object oriented analysis. The CIS Department's challenge is to produce a graduate who can be successful as a systems analyst.

Students take Systems Analysis and Design as the center piece of their CIS major. They almost all have at least part-time employment, and look to become systems analysts if they are not already in such a position. They are in fact in demand. A job posting via Department email to all CIS majors will most likely not find anyone interested. Curiously, the numbers of CIS majors have dropped in spite of many attractive vacant positions. One IT shop supporting an Internet based video provider currently has five vacant positions, two of them for a Systems Analyst. But this should not be misleading. The IT community is not just looking; it is looking for a quality product.

Ten Simple Maxims for Systems Survival

As stated above, the maxims represent a summarized list of more common concepts of what one might expect a young systems analyst to know. They are not presented here in a particular order because the various discussions over the last five years have never been ranked by the participants in the annual seminars. They are presented in class on power point slides as topics for class discussions. Sometimes the topics overlap and discussions not completed during one class are taken up again later.

1- The USER is above everything, above everything in the world.

This is perhaps the most important maxim. One IT representative stated that he had hired four recent college graduates and two of them were not permitted to speak with his clients. These two did not have a promising future with the company. For discussion it is suggested that in the very beginning of history there were clients/users, data, and business processes. There still are. There were also software (written and oral directives), hardware (abacus) and networks (runners). There still are. What then might be different today? Can it be that in the business worlds between then and now, the client/user has remained and remains primary?

Students are asked: If one completes the best system in the world, and no one uses it, what has been accomplished? Conversely, if one works with and serves the needs of the user, can even a limited system prove a valued addition? And, what does this 'works with' and 'serves the needs of' mean? Is it perhaps the most important aspect of system analysis? Must systems analyst like people and be able to work with them? Is this an option? Why are today's businesses and organizations more client-oriented than ever?

2- The Systems Development Life Cycle (SDLC) can be broken into four basic steps plus one: 4D^{s} (+1)

Discover, **D**esign, **D**evelop and **D**eliver (+ **D**ispose)

One needs an understanding of one's craft in order to be productive. This is very true for the systems analyst; and many employers complain that new hires need constant supervision in order to complete projects. For some graduates, this has been a needless dead end. Systems courses are the center pieces of the CIS curriculum; and as such, one makes sure that concepts and principles are mastered, especially the SDLC.

A SDLC model is a road map to completing a successful project. Students are expected to know and understand one SDLC. But which one? There are over twenty popular linear SDLC models alone, and one cannot learn everyone. Realistically, this is not possible. But, one can learn and understand the basic process. All systems text books present at least one SDLC. Some do this in detail, some through the ordering of its chapters, and some only in passing. No two text books are exactly alike, and no two SDLCs break the $4D^s$ down into the same steps. Some have few steps, and some have many. For example, some concentrate more on **D**iscover and less on **D**esign. Some include system operation and maintenance in **D**eliver; some only cover the various change-over processes. Students are told to learn one SDLC well and it will not be difficult to understand another. They are then shown several different SDLCs (for example, an extended linear model, a spiral win-win model, and the Weit(v) -model) and asked to compare them and to apply the $4D^s$. Where might there be management controls? How is the user involved? Why $4D^s$ (+1)? What might **D**ispose mean? What might a 'green' SDLC look like?

Also, most employers will have a preferred SDLC mode; and some even expect every new employee to be conversant with theirs. What does one do when confronted with a new SDLC (or a new language) at work? What does one do if one learns a linear model well, and the employer uses an object oriented model? Might one be expected to find an introduction to a new SDLC and spend a weekend working through it? If a university class is only an introduction to something, how much is left up to the student, before and after graduation? If employers want students who are prepared, what does this mean for the student? How does one stay prepared in today's IT world?

3- State the problem clearly!

In the introduction above, it is said that there is a steady litany from the user community concerning the inability of students to write and to communicate well. For the CIS faculty this is often perplexing. Students enroll in a systems course after several years of general education courses, where one would assume writing and communicating are sufficiently addressed. Nonetheless, it is suggested that if one cannot state the problem clearly in a simple paragraph, so that anyone who reads the paragraph will understand what one wishes them to know, then he or she does not understand the problem clearly enough. Or, even if he or she has a solid understanding of the problem and cannot state it clearly, he or she will never become a successful analyst.

Here is something students can be asked to think about. While it may not be impossible to learn to write the next American novel, can one learn with practice to write a proposal or prepare a presentation, without notes and without reading from Power Point slides? Does practice really make perfect? If one writes an email, does it go away? Do presentations present more than the material? Do they present the strident to their colleagues and supervisors? Why is it important to be careful, and precise? Might it be prudent to ask a colleague to read a paragraph before it is finalized?

4- The process is simple: 3-1=2

An interesting comment after all these years is that many systems analysts still bring in projects with budget or time overruns. This is interesting because systems texts do address this problem. Often in some detail; and students have solid accounting and finance courses. So, let's make the system analysis process as simple as possible.

After a few comments about people who refuse to use maps until they are hopelessly lost, students are given the following outline: know where you have to go, know where you are, and know how to get there from here. It is like planning for a trip. 1 is where you are, 2 is the trip, and 3 is the destination. But one must first know the destination (3 = requirements analysis) before one starts out from one's current location (1 = process and data flows), and one has to get there (2 = the scope of the project). Or: $3 - 1 = 2$.

What exactly is meant by a project's scope? What might it mean to put a box around the project's scope? Why must each step be approved in writing?

What is a change order! What leads to overruns and failure? Can one prevent all overruns? What does one do when an unforeseen problem suddenly pops up?

5- Seek Solutions which meet ALL the Requirements at the Least Cost without Sacrificing Quality

This maxim usually leads to a lot of discussion. It is the destination – the requirements of the project, but it is also posed in response to comments that students often believe that just because they have completed an analysis, it is satisfactory. Criticism, even when constructive, often is not well received. As an indirect approach to such comments, this maxim is designed to make students think about things like completeness, accuracy and quality. Students are asked leading questions. Can there be multiple solutions? Why is ALL capitalized? Where can requirements be found? Are some requirements more important than others? What is a mission critical requirement? What are 'opportunity costs'? What is meant by quality in systems analysis? What might happen if quality is sacrificed? How careful must one be in completing an analysis? These, and other questions, create opportunities for the instructor to lead students to think about the course and what they are learning.

6- Understand all the facts of the current system's operation, its interrelationships with other systems, and its limitations.

This maxim follows maxim number five. It addresses the current location, or if one will: data flow vs. process flow. Students are asked about the correspondence between process and data flow diagrams. How close is the correspondence? If the process flow is changed, will the data flow be changed? And conversely, if the data flow is changed, how will the process flow be changed? Will it invariably be changed? Is it important to understand how businesses and organizations function (accounting, marketing, HR, etc.)? How does one discover a business process flow? Are data flow diagrams really necessary?

7- Know what it will take to get from the current system to the new.

Employers want students who can help bring in successful projects on time on within the budget. This is the journey; and it is the project. How and why do projects fail? What is the scope of the project? Why must it be in writing and be approved in writing? What happens if someone wants something outside of the project's scope? What is a change order? Why do analysts use project management tools which can change time frames and budget constraints when the scope is changed? Must this be in writing and be signed off? What might happen if it is not? The topics here are endless, and often an article reviewing a failed project can be used as an introduction.

8- A decision not to get forward with a project is also the result of solid analysis.

This maxim attempts to get students to think about and understand their craft. If at the end of the Discover/analysis stage, management decides not to go forward with a project, has the analysis been successful? What is the job of the analyst? Why does an analyst present material so others can reach a suitable decision? Can a negative decision, be positive? Can an analyst fall in love with a project to the point that he or she wants to do it, even if it were better not done. To whom is the analyst responsible?

9- Success is measured in the values system of the principle user, not the analyst.

This maxim follows maxim number eight. How many levels of users might there be? Who then is this 'principle' user? Can there be a difference between users for whom a new project is designed and the person who in the end approves and signs off on the project? Why is this difference important? How does this compare with maxim number one? And, what can happen if the analyst provides exactly what the principle user wants, and the daily users are

unhappy? Conversely, what happens if the daily users get their 'Christmas tree with all the bells and whistles' and the principle user is unhappy? How can this situation be avoided? What might one do if it can't be entirely avoided? Should this be considered in the discovery phase?

10- Know how (your) success will be determined.

This follows maxim number nine. Employers often complain that new graduates are surprised at the level and frequency of their evaluations. Make no mistake about it; employers evaluate their employees at regular intervals; and students are generally aware of this. But what they often do not understand is that not only is the project evaluated, but also the project team and the analyst. Thus, it makes for an interesting class discussion on how an analyst might look at assignments, personal performance and career goals. One can ask why an analyst might keep a personal project portfolio with an entry for each project worked on or completed and a paragraph describing the parameters, successes and value of the project for the organization. What does it mean to set goals, and should they be ideal or realizable within a given time frame? When does one start, and plan, for the next evaluation? What does it mean to be a successful analyst?

In Conclusion

Here are then the ten maxims which are designed to bring the user-community into the classroom. There are, of course, many other maxims possible. But because it can honestly be stated that these ten maxims come from the local user-community, they have a special relevance. At the same time, it is fun way to bring young analysts to look at and prepare for their craft. They also make good group topics and presentations. In the end they do have pedagogical value and help increase student interest in, and appreciation for the craft he or she is learning.