Understanding the Word “Analysis” in the Context of Requirements Engineering

julio cesar sampaio do prado leite
PUC-Rio, Brasil
www.inf.puc-rio.br/~julio

I have been teaching, in reality, preaching, the importance of a clear understanding for the word “analysis”. It is my conclusion, after years of exposure to the term “system analysis”, that it has mislead lots of young people who wishes to understand the process of software construction, in special the initial steps of the process.

My main point is that you can only analyze something that you know. However, educators in the areas of information systems and software engineering always focused the “system analysis” as a modeling discipline, where specifications were written and formalization was sought at the very early stages of conceptions of a system. Based on this bias on modeling, analysis was a way of enforcing syntax rules of a given modeling language, which provide ways of applying verification protocols. As such, not enough emphasis was directed to the goal of really understanding the concepts involved and the needs of the clients.

During the beginning of the 90´s computer scientists established a community with the aim to better understand the complexity involved in the process of software definition. This community gave birth to the area of Requirements Engineering, and a strong effort, mainly due to Professor Joseph Goguen, was made to clear state that before modeling or analyzing it was necessary to elicit the information. Conclusion: you can not model without understanding what you will model. This is the major contribution of Requirements Engineering: making a clear distinction between the tangled tasks of eliciting, modeling and analyzing, which, of course, embody a natural feedback loop as to provide enhancements on the understanding of the needs and the subsequent model.

My thesis, which I am more and more convinced to be true, as I get more experiences from industry as well from academia, is that teaching “systems analysis”, or calling the discipline “systems analysis” hinders the important aspect of elicitation. Elicitation is the search for the knowledge that one needs as to be successful in producing a software artifact that meets the clients’ needs.

Teaching Requirements Engineering, with a clear distinction of methods, techniques and tools that can help elicitation, modeling and analysis is a major breakthrough in the search for better ways of producing software with more quality. It is also central that the knowledge of the several requirements engineering sub-areas will make it possible that the concept of requirements management, that is managing software production, be centered on a requirements baseline. The concept of a requirements baseline as a guide to the software process is an organized way of dealing with evolution [Leite 97].

References

[Leite 97] Proceedings of the Third International Symposium on RequirementsEngineering: IEEE Computer Society, pp. 44-53 (1997)
Enhancing a Requirements Baseline with Scenarios
Leite, J.C.S.P., Rossi, G., Maiorana, V., Balaguer, F., Kaplan, G., Hadad, G., Oliveros, A.