>>> se-profession/steering:99

From: Mario Barbacci <mrb@hm.sei.cmu.edu>
To: 0442P%NAVPGS.BITNET@cmsa.Berkeley.EDU (Norm Schneidewind)
Date: Sun, 02 Jan 94 19:27:02 EST
Subject: First draft of article on steering committee

Norm,

I did not know if you had a particular style in mind. I did not change the recommendations ("we recommend...") and my suggestion would be to put the four recommendations in a side bar next to the rest of the text (background, approach, and the closing footnote/paragraph).

Mario

Background

On May 21, 1993, the IEEE Computer Society Board of Governors established a steering committee for evaluating, planning, and coordinating actions related to establishing software engineering as a profession. Pursuant to the motion of the BoG, President Aylor appointed Mario Barbacci as the chairman of the steering committee. Other members of the committee include James Aylor (ex-officio), Fletcher Buckley, Larry Druffel, Win Royce, Norm Schneidewind, and Stu Zweben.

The committee is currently defining a process and agenda for the working committees and task forces, to be appointed later. The initial recommendations were presented at the next meeting of the Board of Governors, on November 12, 1993.

Recommendation 1: Adopt Standard Definitions

We recommend the adoption of a standard set of definitions. IEEE Standard 610.12 is a good starting place. Other standard glossaries might be appropriate but in any event, these definitions should be carefully examined for appropriateness and scope. This task could be entrusted to the Standards Activities Board of the Computer Society and the appropriate Standards Subcommittee(s).

Recommendation 2: Define Required Body of Knowledge and Recommended Practices

We recommend the identification of a required body of knowledge and recommended practices (in electrical engineering, for example, electromagnetic theory is part of the body of knowledge while the National Electrical Safety Code is a recommended practice.) The required body of knowledge and recommended practices are not static because technology evolves and the professionals should keep up with the field. This activity should be entrusted to a task force of industry experts. Industry should lead the effort because employers

know what their software engineers do well, poorly, or indifferently.

Adoption of new practices often requires cultural changes and these processes take years to accomplish. Thus, the initial set of recommended practices ought to be modest and easily achievable. The development and maintenance of the set of recommended practices should be structured like a technical standard: adopted by consensus and subject to periodic revision.

We should not confuse organizational practices with individual practices. Organizational maturity is already the subject of a healthy activity by Software Engineering Process Groups (SEPGs) and Software Process Improvement Networks (SPINs). Industry is adopting standards to assess and improve organizational maturity (ISO 9000, SEI CMM) and we should capitalize on these developments but not confuse the issues.

Engaging the process improvement groups might be unconventional but they provide leverage. The SEPGs are almost exclusively attended by industry practitioners concerned with organization software engineering practices and will have something to contribute to the definition of recommended individual practices.

Recommendation 3: Define Ethical Standards

We recommend to study and customize, if necessary, existing codes already adopted by IEEE, ACM, registration boards, and other relevant organizations. It is not clear that we need something terribly different or specific to software on the grounds that the code of ethics of professionals building antennas, processors, or databases should be different. However, due perhaps to the rapid expansion of the field, software developers sometimes do things that might be considered unethical in other fields (e.g., indiscriminate copying of software in violation of copyrights or licenses.) This task should be charged to the Committee on Public Policy (COPP) of the Computer Society.

Recommendation 4: Define Educational Curricula

We recommend the definition of curricula for (a) undergraduate, (b) graduate (MS), and (c) continuing education (for retraining and migration). This should be charged to an academic task force drawn from educational boards within the SEI, ACM and IEEE Computer Society, and relevant affiliate societies.

There is a debate as to whether Software Engineering is a part of Computer Science or vice versa. We should not be distracted by this debate from the goal of meeting the needs of industry. The education needed by competent software engineers could be acquired in different ways. For example, we might identify the need for a foundation on statistics; at a given school, the courses could be offered by Computer Science, Software Engineering, or other departments. The objective is to seek agreement on the curricula that should be taught and not necessarily on which departments teach it.

Approach

To implement these recommendations the steering committee will establish and appoint working committees and task forces as necessary

to accomplish the steering committee's work. The goal of the steering committee is to pose the questions, and consider and document the issues involved relating to establishing software engineering as a profession. As a part of this, the steering committee will identify the bodies of experts who can contribute to this effort.

Our initial work will concentrate on definitions, education, and technical and ethical practices. The four recommendations listed above have implied dependencies and they should be implemented in the order suggested. In particular, it would be imprudent to develop a set of recommendations about curricula that turns out to be inconsistent with the required body of knowledge and recommended practices. The definition of the required body of knowledge and recommended practices should be driven by industry needs and should be developed first. We expect that the industry task force would include members from the academic community to provide an education/academic perspective to those discussions, but would not overemphasize the education area at the expense of the technical area. By the same token, the academic task force should include members from the industry community.

Licensing, certification, and other such regulatory instruments will be addressed next. This is a natural continuation to our first set of recommendations. Only after we identify the required body of knowledge and recommended practices expected of competent software engineers we could suggest mechanisms to assess their level of competence

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Another footnote: subsequent to this initial report, the steering committee begun the implementation of these recommendations by chartering an industry-led task force to define the body of knowledge and recommended practices of competent software engineers.

>>> se-profession/steering:104

From: Norm Schneidewind <0442P%NAVPGS.BITNET@cmsa.Berkeley.EDU>
Return-Path: @cmsa.Berkeley.EDU,@VM1.CC.NPS.NAVY.MIL:0442P@VM1.CC.NPS.NAVY.MIL
To: Mario Barbacci <mrb@SEI.CMU.EDU>
Date: Mon, 03 Jan 94 20:36:47 PST
Subject: Re: First draft of article on steering committee

Mario,
Thanks for the article. It looks fine. Just add at the end of the article where you can be reached (addr, phone, fax, email) concerning comments and questions. I am sure there will be some! You should also provide a title for the article. I will forward your article to Chuck Governale (c.governale@compmail.com) the staff editor at Computer who will be in touch with you. If you want, you can email the additional info to him. Again, thanks for taking the time to provide the article.
Happy New Year!
Norm