ACM's Position on the Licensing of Software Engineers

By John White and Barbara Simons

From 1993 through June 2000 ACM worked with the IEEE Computer Society on projects to examine and guide the evolution of software engineering as a profession. This work was originally carried out under the Joint IEEE-CS and ACM Steering Committee for the Establishment of Software Engineering as a Profession. In 1998 the joint committee was superceded by the Software Engineering Coordinating Committee (SWECC) established by IEEE-CS and ACM to act as a "permanent entity to foster the evolution of software engineering as a professional computing discipline." Under these efforts projects were launched to identify a software engineering body of knowledge (SWEBOK); develop curriculum recommendations for software engineering; and define a code of professional ethics and standards of professional conduct.

At the time SWECC was being established, the ACM and IEEE-CS received a request from the Texas Professional Engineers Licensing Board for help in defining performance criteria for software engineering licensing exams to be administered in Texas. As a result of this request, the question of licensing software engineers became more of an issue both for SWECC and for ACM. In March 1999 an ACM Advisory Panel on Professional Licensing in Software Engineering was established to make recommendations to ACM Council on the issue. After reviewing and discussing the advisory panel's report (www.acm.org/serving/se_policy/report.html), ACM Council passed the following motion in May 1999:

"ACM is opposed to the licensing of software engineers at this time because ACM believes it is premature and would not be effective at addressing the problems of software quality and reliability.

"ACM is, however, committed to solving the software quality problem by promoting research and development, by developing a core body of knowledge for software engineering, and by identifying standards of practice."

Over the next 12 months work continued on the SWEBOK project and other SWECC activities. In addition, ACM Council established two additional task forces: one to evaluate the SWEBOK effort; and the other to determine ways in which ACM and the profession might improve the robustness and quality of safety-critical software and evaluate licensing activities in this context.

After reviewing the reports of these two task forces, there was growing concern by ACM Council that supporting the request of the Texas Professional Engineers Licensing Board was becoming more the primary focus of SWECC's efforts. As a result, ACM Council passed the following motion in June 2000:

"Society is becoming increasingly dependent on computers and software, which creates tremendous challenges and responsibilities for computing professionals. ACM Council believes that confronting these challenges will require creative and collaborative efforts by industry, universities, professional societies, and government. ACM Council strongly supports the idea of the ACM and the IEEE Computing Society working together on these challenges, including joint initiatives to promote the emergence of information technology professions.

"However, ACM Council believes that the current efforts of the Software Engineering Coordinating Committee (SWECC) toward licensing is misguided as they assume that software engineering is a profession appropriate for licensing under the rubric of the Professional Engineers Licensing structure and requirements. Moreover, ACM Council feels that further efforts in this direction will detract from our ability to take other more practical and productive initiatives needed to meet our common goals.

"Accordingly, Council directs that ACM withdraw from SWECC."

Understanding the ACM Position

Why did ACM withdraw from SWECC? ACM Council felt the activities of SWECC had become too closely associated with promoting the licensing of software engineers as Professional Engineers (PEs).

Is ACM against licensing software engineers? Yes. For legal reasons, the only way to be a licensed software engineer is to become a PE. As described in the Safety-Critical report (see www.acm.org/serving/se_policy/safety_critical.pdf), several topics on which all prospective PEs are tested, such as fluid mechanics and thermodynamics, are beyond the scope of software engineering. Mastering these topics could detract from the study of more relevant areas.

In addition, a software engineering license would be interpreted as an authoritative statement that the licensed engineer is capable of producing software systems of consistent reliability, dependability, and usability. The ACM Council concluded that our state of knowledge and practice is too immature to give such assurances.

Is ACM against software engineering being viewed as a profession? No. ACM believes it is important to foster the emergence of a true IT profession, not just software engineering. A field does not need licensing to be a profession.

Does ACM see a difference between licensing and certification? Yes. Certification is a statement by a recognized authority that a person is competent in an area. Licensing, by contrast, is regulated in the U.S. by legislation at the state level. With few exceptions, a PE in a profession for which licensing is required must be licensed in every state in which he or she practices.

Will ACM continue its efforts to improve the quality of software? Absolutely. ACM believes the problem of reliable and dependable software, especially in critical applications, is the most important problem facing the IT profession. C

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