

The Computing Profession

I contend that we do a disservice to ourselves and to others when we posit the existence of a computing profession. Neville Holmes' retrospective look at *The Profession* column in *Computer* (July 2010) and the letters which that column elicited (*Computer*, August 2010) encourage me to write this response.

Holmes began by pointing back to his original column published ten years ago (*Computer* July 2000). In that column he effectively asserts that all occupational groups must be either a craft, trade, or profession. The existence of a computing profession flows naturally from such an exclusive three-way breakdown of occupational groups. Holmes concern in that original column was that those of us in the computing profession should pay proper attention to: a) the profession itself, b) legal and regulatory constraints on the profession, and c) the profession's effect on the wider community.

Ten years later, Holmes is concerned that "the computing profession faces the problem that it's becoming increasingly irrelevant." His solution seems to be to focus the computing profession on those who help others do "grand and organizational things with grand computers and networks." This might almost be construed as proposing that the computing profession should be a branch of an organizational design profession. The letters in response (*Computer* October 2010) argued strongly for different views of the computing profession.

I find it useful to go back to the definition of a profession. There is a substantial literature around that question of what is, or should be, a profession. The modern history of answers to that question can start in 1915 with Abraham Flexner's "Is Social Work a Profession?" (reprinted in *Research on Social Work Practice*, March 2001). Flexner concluded that social work isn't a profession, but those doing social work should be animated by a professional spirit. In the years since Flexner's article, there have been numerous attempts to capture the essence of a profession using sociological, economic, legal, and ethical perspectives.

In my view, a profession must be a social group, albeit of a special type, but recognized both by those inside the profession and those outside the profession. Recognized membership in the profession should be a strong testament to the professional standing of its members. On neither count does a computing profession win acceptance as a profession. Narrowing the focus to an IT profession that would cover just the business oriented computing professionals helps, but it too fails these tests of a profession.

Why is this important? Where there to be a computing or an IT profession, the profession would look after questions about proper preparation for work in the profession, for a code of ethics and standard of practice for professional work, and for the continuing development required to maintain standing in the profession. The path to establishing and maintaining professional standing would be (relatively) clear. Absent such a profession, the professional much look after his or her own preparation, practices, and continuing development.

I have already argued for trustworthiness as an essential professional characteristic ("Professional Essence", *IT Professional*, May/June 2009). Absent a profession, the professional

must look to her or his own standing as a trustworthy provider of professional services. Societies for computing professionals such as IEEE's Computer Society or Canada's Canadian Information Processing Society can help the computing professional identify appropriate preparation, practices and continuing development, but it is the professional's responsibility to establish his or her trustworthiness.

One of the difficulties facing a possible computing profession is the diversity of professionals that are employed in computing. I have no difficulty with the assertion that professionals should be responsible for writing, testing, verifying, and maintaining the code used to control a nuclear power plant. Or that professionals should be responsible for establishing and maintaining our telecommunications networks. Or that professionals should be responsible for selecting, configuring, installing, and maintaining the services provided by a suite of Enterprise Resource Management (ERP) modules. And I find it acceptable that professionals should be responsible for the user interaction architecture deployed in support of important web sites. Where I have difficulty is with an assertion that the preparation, practices, or self-development of these professionals is similar enough that they ought to be in a single profession.

The comparison between medicine and computing is interesting and informative. The practice of medicine can be described as requiring a combination of theoretical and practical knowledge. The theoretical knowledge is universal, atemporal, and conclusions drawn from such knowledge are necessarily true. The Greek ideal derived from geometry and its proofs fully applies. Practical knowledge, however, depends on the time and place of application. And practical knowledge does not allow any necessary conclusions to be drawn, rather it supports presumptive conclusions that are normally subject to future revision. *The Abuse of Casuistry* (Johnson and Toulmin, University of California Press, 1988), provides a full elaboration of this distinction.

In computing we have a small body of relevant theoretical knowledge. Mostly, we depend on practical knowledge for our professional practice. Yes, we have a large number of Best Practices, but they are mostly codifications of practical knowledge. They apply in specific and particular circumstances. Virtually none of them are universal, atemporal, or support drawing necessary conclusions (actions that are always required). In computing, we're stuck with professional practices that depend on a combination of modest amounts of theoretical knowledge and significant amounts of practical knowledge. And even the relative mix changes with different domains of application.

In medicine, the primary domain of application is the individual human being. There are medical concerns for groups of individuals, but most medical practice focus on the individual. A considerable amount of practical knowledge in medicine can be applied widely to most individuals - a similar presentation of symptoms can lead to the presumption of a similar response. In computing, it isn't very useful to view the computer as the primary domain of application. The delivered value of computing comes from the enablement or support of other processes. The domain of application should, properly, focus on those other processes. The IT Governance Institute's *Val IT* (version 2, 2008) makes this point forcefully.

Societies such as IEEE's Computer Society should welcome a wide variety of computer professionals as members. Those professional members should properly look to the Computer

Society for such things as a Code of Ethics, relevant theoretical knowledge, and appropriate practical knowledge. The Computer Society should be one of the primary resources on which its professional members draw. But the computing professional would be ill advised to look to the Computer Society or any other body of professionals to define a meaningful common body of theoretical and practical knowledge mastery of which should be prerequisite for practice as a computing professional. Our field, our occupational group, is too diverse for a meaningful common body of theory and practice.

Ten years ago, it was reasonable to think in terms of an emergent computing profession. Today, it makes more sense to focus on the computing professionals who may all belong to a body of computing professionals, but who do not all belong to something that warrants being called the computing profession. That profession never went beyond the emergent stage. But we do have a large and growing number of computing professionals. They need a professional home, and should profit from a regular column devoted to *The Professionals*.

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