Mamas, Don’t Let Your Babies Grow Up to Be Coders

Don’t let ‘em write programs and hack them too much,  
Make ‘em be doctors and lawyers and such...

Apologies to Willy Nelson and Waylon Jennings...

I was somewhat dismayed when I found out that a lot of the people whom I have known throughout my career have been discouraging their children from going into computer science and the software industry. The son of one of the best software architects there has ever been is studying to become an economist. One software executive has encouraged his son and daughter to go into biotech or any other industry other than software. Where many may not actively discourage, I am hard pressed to think of any who have encouraged their children into the direction that they went as those children are starting to enter university age.

David Patterson, President of the ACM (Association for Computing Machinery) and a professor at my alma mater UC Berkeley, has been pushing for changes to how computer science is taught as the trend away from computer sciences is becoming a threat to national growth. A recent contest publicized by the ACM had only one American university show up in the top ten (MIT) and there were no Western European universities to be seen anywhere. Patterson makes the argument that unless the curriculum of computer science is changed and made more enticing, there will be a critical shortage in the West and slowing of the economy as a whole. In content available only through the ACM, Patterson believes that the problem lies in the perception that computer science is merely about programming and who wants to be a nerdy programmer? (Er, hmm) It doesn’t help that salaries for computer science majors in the west has declined for new graduates.

To a certain extent, I am sure that this trend is in part a reaction to the excesses of the last decade. Salaries climbed faster and attracted more money than about any other sector. What was considered glamorous with the rise of the dot com, now seems very unglamorous with the appearance of social introversion and overly intensive intellectual activities. The ACM contest itself indicates part of the problem. In 25 years of working on enterprise systems, only the last couple of problems look familiar to the types of problems we have had to solve in even the DBMS realm.

As shortages of software specialists and architects makes itself felt more acutely, we will probably see a return of highly paid computer scientists living a jet-setting life style again. The big question though, is in which countries?

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- Carole McManus is my sister & community mgr Y1 360
The University of Twente is a Western European university, based in Enschede, The Netherlands.

You are right, there is a single Western European entry in the top ten. Further down I missed a Swedish university as well.

However, that doesn’t address the fact that the vast majority of winners were from the developing world. Motivation to succeed is high there and seems to be dissipating in the developed world.

With a Masters in Computer Science and Engineering, and having been unemployed 2.5 out of the last three years, let me say “H1-B anyone?” And you wonder why the fresh-out salaries are dropping? The “jet-setting” computer workers will not be in the US - they will jet into and out of the US.

There may be at least two reasons for poor US ICPC results.

First, 2006 ICPC questions were more focused on mathematical modeling than about computer programming. It is my impression that math courses are electives in the most CS undergraduate curriculum offered in US. In contrast, math (and applied math) is a central part of core curriculum in Russian universities.

Second, Russia has a long standing math and science (including informatics) tradition. Not only is the winning of the so-called Olympiads but the very participation in any level of Olympiad competition a matter of sustained prestige for the contestants.

There are summer camps and after-school clubs dedicated to specializing in advanced math, science and informatics. There are numerous schools with emphasis on math and science where being “the best” is a sought-after social status for teens, not a social stigma. Russian educational institutions do not grade on a curve or rely on multiple choice examination methodologies. This system, maintained by the Ministry of Education and backed by the Ministry of Defense under Soviet Union, is still in force today.

The ACM should make a resolute commitment to reform US science and math education with the objective of making math as, if not more prestigious than sports. The reform would do well to adapt salient elements of the Russian model. For example, the reform could focus on establishing frequent and academically rigorous math and science competitions for students at the school district, city, region, state and national levels wherein winners would receive recognition in the form of diplomas and prizes and national finalists full tuition at the college of their choice. Competitions should be publicized in the national media and award ceremonies televised to build broad public awareness. The reform could also sponsor free summer camps to coach K-12 students in quantitative problems solving, with admittance based on merit and subject to written examination. Books and teaching material should be commissioned by the ACM and made publicly accessible to all wishing to read them.

I do believe that only systematic and unremitting reform could reverse the sorry trend we have today.