

## The Sorcerer's Apprentices

I have travelled extensively in Europe teaching engineers for the last 10 years or so. This gives lots of time for thinking about the state of IT and how budding engineers should be trained. One flawed industrial practice I see repeatedly was first described by the estimable Fred Brooks in his eponymous "Mythical Man Month" more than 30 years ago and that is the practice of promoting engineers into management as soon as they become reasonably competent at engineering. As far as I can remember, it has been woven into the fabric of society that management should pay well and engineering should not so its not unreasonable for engineers to switch to management tracks when they can. Unfortunately, there is one thing which is absolutely essential for building good IT systems and that is individual engineering excellence. You can have your ISO 9001 and your CMMi and all the other fancy IT process bureaucracies but if the engineers aren't very experienced, the product will be poor: consistently poor it is true, but still poor. Experience is one of the main reasons why Linux is so good. As IT systems become more complex and failures ever more expensive, it is time to rethink this and allow people to climb all the way up the salary ladder whilst enhancing their engineering status and experience.

At the same time, the notion of having apprentices to such engineers also makes real sense in IT. Because IT has evolved as a fashion industry rather than an engineering industry, it remains very difficult to learn how to build successful systems by reading books or doing degrees in computing. You have to get out there and work with somebody who knows how to do it and learn from them. Historically, this was a very successful way of imparting the essential blend of empirical as well as theoretical knowledge necessary in rapidly evolving subjects. IT is one of them. Sometimes, the apprentices surpass their masters. There is a wonderful example of this in Verrochio's 1475 painting 'Baptism of Christ' which is in the Uffizi in Florence. He got his apprentices to do the two angels. I've seen this painting several times and the angels stand out like searchlights across the room and it is said that Verrochio looked at them and never painted again. The apprentices' names: Leonardo da Vinci and Sandro Botticelli. We could do with a few apprentices like this in IT.

Speaking of which, the interface of the month is due to BMW. I don't quite know how to admit this but in spite of a good working knowledge of German, I have just driven 350 km in Germany before I was able to figure out how to switch the radio off. Even then I did it by choosing an option which connected it to a 'non-existent external sound source' using a miniature joystick. Well of course - the concept of an off switch does not appear to have occurred to the designers. Maybe ageism is the appropriate strategy for IT systems employment after all. I am only trained to understand logical things such as non-linear differential equations. When faced with the kind of bollocks which the IT industry regularly pushes onto its hapless users, I am clearly out of my depth.

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