Success Stories of FMs

The typical success story describes a FM person convincing a project to apply some particular FM.

The deal is that the FM person joins the team and either does or leads the formalization effort.

Success Stories, Cont'd

The reported experience shows the FM person slowly learning the domain from the experts by asking lots of questions and making lots of mistakes.

The end result is that the application of the FM found many significant problems earlier and the whole development was cheaper, faster, etc. than expected.

Failure Stories of FMs

I have not seen any.

Mathematicians as Ignoramuses

Martin Feather of JPL on Importance of Ignorance Paper:

I have often wondered about the success stories of applications of formal methods. Should these successes be attributed to the formal methods themselves, or rather to the intelligence and capabilities of the proponents of those methods?

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Mathematicians, Cont'd

Typically, proponents of any not-yet-popularised approach must be skilled practitioners and evangelists to [bring the approach] to our attention. Formal methods proponents seem to have the additional characteristic of being particularly adept at getting to the heart of any problem, abstracting from extraneous details, carefully organizing their whole approach to problem solving, etc.

Mathematicians, Cont'd

Surely, the involvement of such people would be beneficial to almost any project, whether or not they applied "formal methods." Daniel Berry's contribution to the February 1995 Controversy Corner, "The Importance of Ignorance in Requirements Engineering," provides further explanation as to why this might be so.

Mathematicians, Cont'd

In that column, Berry expounded upon the beneficial effects of involving a "smart ignoramus" in the process of requirements engineering. Berry argued that the "ignoramus" aspect (ignorance of the problem domain) was advantageous because it tended to lead to the elicitation of tacit assumptions.

Mathematicians, Cont'd

He also recommended that "smart" comprise (at least) "information hiding, and strong typing ... attuned to spotting inconsistencies ... a good memory ... a good sense of language...," so as to be able to effectively conduct the requirements process.

Mathematicians, Cont'd

Formal methods people are usually mathematically inclined. They have, presumably, spent a good deal of time studying mathematics. This ensures they meet both of Berry's criteria. Mastery of a non-trivial amount of mathematics ensures their capacity and willingness to deal with abstractions, reason in a rigorous manner, etc., in other words to meet many of the characteristics of Berry's "smartness" criterium.

Mathematicians, Cont'd

Further, during the time they spent studying mathematics, they were avoiding learning about non-mathematics problem domains, hence they are likely to also belong in Berry's "ignoramus" category. Thus a background in formal methods serves as a strong filter, letting through only those who would be an asset to requirements engineering.

Real Value of FMs

Perhaps the real value of FMs is that they attract really good people, the FMers, who is good at dealing with abstractions, who is good at modeling, etc., the smart ignoramus, into working on the development of your CBS.

Managers know that the success of a CBS development project depends more on personnel issues than on technological issues.