Attention to Process and People are Key to Technology Adoption

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It is the position of this author that attention to both process and people is a key to rapidly adopting new technology essential to improving software quality, reducing costs, and shortening cycle time.

In order to succeed, corporations are realizing the importance of meeting these challenges:

- The tension between discipline/bureaucracy and creativity/chaos must be creatively managed.
- "Agility" is necessary to rapidly responding to change and opportunities.
- "Adeptness" is necessary to successfully and rapidly adapt and adopt new ideas and technologies.
- Process, people, and technology are all important (and interrelated); not just one or two of these.
- To be competitive, there is a growing need to address the "ilities" of software: usability, dependability, reliability; a focus on elimination of "defects" is not enough.
- Integrated product lines with rich variation in features across a product family are key to establishing strong presence in particular markets.
- Markets are increasingly global, and so must software development be.
- Involvement in international standards is important to establishing mutually beneficial standards; and to protect a proven investment/business advantage.

Many organizations are trying to address the above challenges through introduction of new technologies (e.g. object-oriented design methodologies, CASE tools, 4GLs, Internet/WWW, etc.), but often, they neglect equal attention to process and people issues. Effective adoption of a new technology requires managing its adoption as a process:

- Estimating what the impact of the new technology will be (so that you can assess and communicate anticipated benefits and costs); this in turn requires knowing something about the capability of your work force and development processes.
- Identifying what changes to the development process or the new technology are needed to make effective use of the new technology (e.g. which tasks, procedures, metrics, and training need to change or be added), and
- Motivating its pilot use and later its adoption (people have to change the way they work to accommodate a new technology, they have to take the time to learn about it, they have to sincerely try it, and provide a balanced report of its impact).

Without such attention to people and process, a technology adoption effort can fail through no fault of the technology.

A motivation behind SEI's introduction of the CMM for Software and the People CMM was to help organizations improve their process and work force capability. The author predicts we will find that process and work force capability improvements are important "accelerators" to rapid and effective adoption of new technologies.

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