

ULRR

Finding out what really happened after SPI assistance in Ireland

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Research Area	GSD
Project Title	Global Software Development for Small to Medium Sized Enterprises

Background:

- 1994-1999, the European Commission sponsored programmes to help European companies become more competitive, some specifically aimed at software process improvement (SPI).
- Standards and models used: ISO 9001 : 1994, CMM, and ISO/IEC TR 15504 (SPICE); Good Practice
- Training only, mentoring only or mentoring and training
- The researcher was involved with all of these programmes as developer, mentor and/or trainer

Research goals

Do participating companies show a long-term benefit and 'culture of improvement'?

Is there a difference in long-term success rate between organisations using one particular standard/model?

Is there a difference in long-term results that can be traced to format of the programmes?

Research Methodology:

- Develop MMAI (Multi-Model Assessment Instrument) to gain understanding about a company and how it manages its software development and maintenance
- Identify those companies which are still involved in software development
 - 80 companies → 23 in software business → 11 interviews
- Carry out Interviews:
 - Interview guide to gain description of the company, its past culture for improvement, current software environment and plans for the future in SPI
 - MMAI used to get more detailed information on the status of a company's basic software processes in customer-supplier relationships, software engineering, management, support and organisation.
- Analyse data
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Data collection, analysis and conclusions:

- Profiles of organisations showed a majority are niche software producers with sizes from 4 to greater than 100 employees; many companies have gone through dramatic changes in a turbulent business environment
- The majority could show improvements directly related from SPI assistance programmes, even when the interviewee was not with the company at the time
- The majority of the improvements made in the past are a part of the current software environment
- All companies have plans for improvement in the future
- Conclusions:**
 - A culture of improvement does exist in all but one company, at least partially attributable to the SPI assistance.
 - ISO 9001 is still in use and certified in 4 of the companies, with one discarding it only when they surpassed it in maturity, and these companies show the most systematic improvements; from this one might conclude the use of a standard and certification to it are of value, but we do not know for which of several possible reasons
 - Companies that had training only are less likely to show specific improvements so mentoring as part of the assistance has demonstrated value

Contributions:

- A model (MMAI) was developed which can be used for assessment of diverse software communities
- Relative effectiveness was demonstrated for different types of assistance
- The possible benefits of standard certification were identified
- Research and publications of another researcher were at least partially attributable to this research
- Publications from this research

Associated activities of researcher:

- Creation of a software development guide for small companies
- Membership of group developing international software standard for small companies

Future areas being explored

- Development of a web-based tool for assessment, prioritisation and improvement, particularly for small companies
- Research and tool prototyping for other graduate students