

Improving the Express Process Appraisal Method

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Abstract. In this paper we firstly describe the appraisal method that was developed by the Centre for Software Process Technologies (CSPT) to assess software processes within small to medium sized (SMEs) organisations that have little or no experience of software process improvement programmes. We then discuss our experience of developing and using our appraisal method within six SMEs organisations within Northern Ireland. Next we compare our assessment method with existing lightweight assessment methods that have also been used to assess software processes within SMEs software development organisations. We then describe new features that we are currently introducing to improve our software process appraisal method.

1 Introduction

The Centre for Software Process Technologies [1, 2] is a research and knowledge transfer group funded jointly by the University of Ulster and Invest Northern Ireland, a Northern Ireland governmental organisation responsible for the economic development of this geographical region. The CSPT is tasked with motivating and developing a culture of software process improvement within the Northern Ireland software industry.

Within the Northern Ireland software industry the majority of companies are SMEs organizations. The key characteristics of these SMEs organizations are that they have little or no experience of adopting Software Process Improvement (SPI) frameworks and assessment methods. The majority of these companies stated that they considered SPI frameworks and assessment to be too expensive, too time-consuming, too heavy-weight and really only applicable to larger organizations [3]. In an attempt to make SPI more attractive to these SMEs the CSPT decided to adopt the continuous representation of the Capability Maturity Model Integrated (CMMI^{®1}) [4] and to develop a more light-weight assessment model to assist with SPI within the Northern Ireland software industry. The continuous representation of the CMMI[®] provides a more attractive proposition for SMEs companies than the staged version of the model. Par-

¹ [®]CMMI is registered in the U.S. Patent and Trademark Office by Carnegie Mellon University.

ticularly as most of the software development SMEs organisations within Northern Ireland have no compelling reason to achieve any particular maturity level rating, but would rather see the benefits from a software process improvement programme in a more gradual, progressive manner. Such an approach also enables process areas to be selected for appraisal that are deemed to be more critical in terms of the company's business goals.

As part of the product suite for CMMI[®], the Software Engineering Institute has published the requirements for three categories of method which employ the CMMI[®] [5]. Methods developed to comply with these requirements are known as ARC (Appraisal Requirements for CMMI[®]) class-C, class-B and class-A. The Software Engineering Institute has developed its own class-A compliant method which is called SCAMPISM. The requirements of class-A methods tend to result in large methods which require a sizable effort from the appraised organisation both in terms of preparation for such an appraisal as well as considerable external effort from an appraisal team. This stems in part from the need to thoroughly investigate and support any evidence gathered during the appraisal. For much of the Northern Ireland software industry, class-A methods would not currently be appropriate because the scope of the appraisal would lead to increased and unsustainable costs. The CSPT approach is to build up awareness and understanding in the aims and objectives of software process improvement in a gradual manner by trying to keep the costs associated with such measures small to begin with, through an approach of limiting the scope of any appraisal. For this reason the CSPT has developed its own appraisal method which complies with the ARC 1.1 requirements for a class-C method. Our method is called Express Process Appraisal (EPA). As an ARC class-C method, the EPA method does not provide any form of rating.

In a pilot appraisal programme, the EPA method has been used to appraise six software development companies in Northern Ireland. The results of all six appraisals indicate that for most of the process areas, most appraised companies perform at either capability level 0 or 1. Details of the results of the six appraisals and the effectiveness of the performance of the EPA method are detailed in another publication [6]. The EPA method has been developed for assessing software processes with SMEs organisations however it could also be used for performing initial process assessments within larger organizations that have not previously embarked upon process assessments, as it will provide such companies with recommendations as to how they may improve their practices, as well as providing them with a starting point and a pathway to improvement.

The intention of this paper is to describe the method, our experiences using it, comparisons with other lightweight process appraisal methods, as well as our plans and efforts to improve the EPA method.

Section 2 describes the EPA method, while section 3 discusses our experiences with the method. Section 4 compares the EPA method against other lightweight process assessment methods. Section 5 focuses upon our current work to improve the EPA model and section 6 provides our concluding remarks.

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