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A technique for revealing and agreeing an agenda for process improvement

M. Dooner[a,*], T. Ellis[b], K. Swift[a]

[a]School of Engineering, University of Hull, Kingston Upon Hull, East Yorkshire, Hull HU6 7RX, UK
[b]PA Management Consultants, Cambridge, UK

Abstract

Recent industrial trials with applying the technique 'pragmatic modelling' are producing positive results, according to the comments received from the companies taking part. Pragmatic modelling is a technique developed to examine the social interactions occurring in team-based product introduction. It is capable of capturing the subtleties of communication and can produce objective, impartial information which can go forward to an agenda for process improvement. The technique is empirically grounded and, unlike conventional modelling tools, is not biased due to preconceived notions or degraded because of the application of rigid modelling formalisms. It has been nicknamed 'truth modelling' by the industrial collaborators.

This paper describes the technique in terms of the modelling approach, how the technique is applied, and the value it brings to understand team-based activity. An extract from a case study is included to provide a flavour of the type of information the technique can reveal.
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1. Introduction

Before a business process can be improved, it is necessary to have a detailed and accurate picture of how the process is currently working, including its strengths and weaknesses. Most business processes rely on social interaction, which is an essential characteristic of teamworking, but conventional modelling techniques (e.g. IDEF) do not lend themselves to capture the 'soft' interactions and the nuances of discourse.

The technique referred to as pragmatic modelling has been designed to capture the subtleties of communication during team-based product introduction. It can produce 'grounded knowledge', i.e. the detail of what really goes on in the product introduction process. Applying the technique in team-based activity results in pragmatic models which contain and highlight particular issues of concern to the company involved in the study. The issues contained in the models can go forward to an agenda for process improvement cycle. Fig. 1 gives an overview of the technique in the context of a process improvement cycle.

During its development period, the technique has been applied to a number of organisations, both large and small, and has revealed important issues to the companies taking part. More recently, the technique has gone through a series of trials, aimed at validating the technique in an industrial context.

This paper provides the background on the development of the technique and its essential characteristics and includes extracts from a typical validation study carried out as part of a 1 year EPSRC technology transfer project, which is a pilot EPSRC innovation aimed at exploiting research activity and enhancing the training and industrial experience of the contract researcher.

2. Empirical process modelling

2.1. Modelling approach

Many leading manufacturers have, in recent times, undergone business process re-engineering aimed at a more streamlined product introduction process. BPR involves modelling how a process currently operates, and then redesigning that process in order to eliminate non-value added activity and improve process efficiency and product lead time. Modelling techniques that support BPR tend to be top down, rather abstract, and impose modelling structures that the data have to fit within.

In contrast, pragmatic modelling is an empirical approach to modelling that captures the true 'as is' situation. The

* Corresponding author. Fax: +44-1482-466-664.

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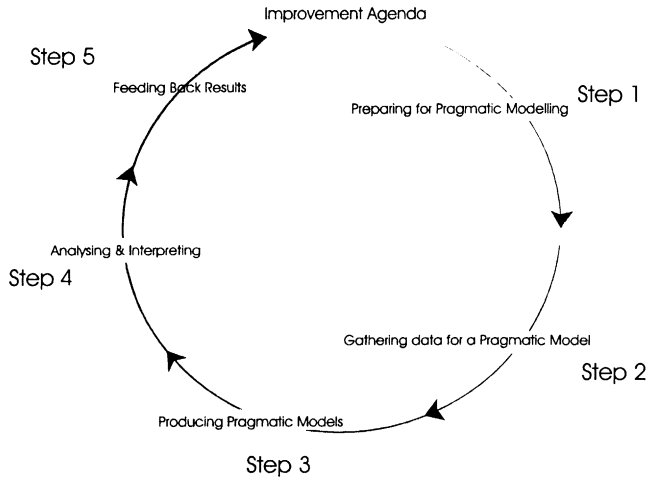

Fig. 1. Process improvement cycle.

technique has been nicknamed 'truth modelling' by the industrial collaborators. The aim of pragmatic modelling is to describe the situation as it happens rather than in some abstract and perhaps misleading form. The approach is consistent with ethnography which is a way of collecting rich and complex data that is not theory driven, i.e. the data set is allowed to 'speak for itself' [1].

A pragmatic model results from the textual analysis of a combination of transcribed meetings, interviews, corporate documents and field notes. This data set is analysed in order to construct a rich picture of the process leading to a deeper understanding of the contents and issues. In the analysis, statements on certain issues can be compared and contrasted in order to highlight the different viewpoints held by team members involved in a project.

Its value lies in the variety of different viewpoints held on an important issue by individual team members, represented in the form of textual blocks. Multiple viewpoints offer considerable insight into the complexity of project team-working and enable issues to be examined objectively and without bias.

2.2. Pragmatic modelling methodology and workbook

The technique is basically applied through a four stage methodology, summarised as follows:

Stage 1. Base data are collected in the form of observations, interviews, meetings and procedural information.
Stage 2. The data set is transcribed into a form that allows consistent analysis.
Stage 3. Analysis and linking of the transcribed data is used to highlight pragmatic issues, which are specific to a particular business.
Stage 4. Issues arising from the analysis are fed back to facilitate discussion, and to work towards collective agreement on future action.

A workbook is being developed as the principal mechanism for applying the technique, with the intention that companies themselves apply the technique to their own team-based activity, thereby supporting their internal improvement programmes.

The workbook consists of six sections which correspond to the five steps as shown in Fig. 1 plus an introduction. The sections are designed to be readable as standalone units so that users may dip into the workbook at the appropriate stage. In keeping with this approach, each section begins with a statement of objectives and ends with a wash-up session to ensure that the user has successfully achieved the objectives. In addition, each section in the workbook is supported by examples extracted from major case studies, and includes answers to a number of frequently asked questions and pre-printed forms to aid completion of the section.

2.3. Feedback sessions and agenda setting

Issues that emerge from a model will be meaningful to those involved, since the model is expressed in the language used by the team involved. A pragmatic model may contain direct quotes from individuals, solutions to problems used in one part of the company but not another, or a more common viewpoint held by many in the team.

Feeding back and debating the results of the exercise is an important step in the methodology. By establishing a forum for debating these viewpoints, an agenda for incremental improvement can result. At the very least, such a debate encourages people to appreciate each other's point of view. Knowing and accommodating others' points of view is key to successful project team working.

Setting an improvement agenda based on discussion and agreement and which contains the richness of opinion has advantages. Engineers feel that they are no longer the recipient of the latest management fad but can debate and set improvement goals through common agreement. The context and reasoning behind a particular improvement path is laid bare and exposes the knowledge and experience of those participating. The driving forces and barriers to process improvement can be made impartial and explicit.

3. Case study extract

3.1. Introduction

The technique has to date been applied in a number of manufacturing organisations, large and small [2,3]. With large companies, in particular the technique is perceived as having value being able to support a performance review following the implementation of a re-engineered business process. In the example outlined below, the study ran alongside a new process training programme carried out by an implementation team as a means of capturing the views and

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