

VBP: An approach to modelling process variety and best practice

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Abstract

The concept of best practice is both attractive and highly problematic. Whilst organisations can learn from the practices of others there is also a danger that local variety may be squeezed out and that “one size fits all” solutions may stifle local context-specific innovations. This paper outlines an approach to modelling process specialisation hierarchies and best practice patterns with the Unified Modelling Language (UML). The process Variety and Best Practice approach, VBP, is applied to a recent e-government project that explored variety and best practice in citizens’ access portals for four UK local authorities.

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1. Introduction

The UK government has funded a number of Pathfinder projects in local authorities in order to explore the benefits of, and barriers to, local e-government implementation. One of these projects, BASE.gov, examined notions of best practice against the variety of processes evident in four, quite different, local authorities [7]. The BASE.gov project provides some insight into the tensions between simplistic notions of “best practice” and the need to recognise that local solutions may provide a better fit to local problems.

Traditional languages for describing business processes appear too rigid and formal to cater for the wide variety of ways of doing things found in local government in the UK and, unless “one size fits all” solutions can be imposed by fiat, a richer language is needed to underpin discussion on process variety and best practice. This paper presents a modelling approach for capturing and describing process

variety and best practice based on four emerging concepts and techniques found in the process modelling literature – specialisation, use cases, patterns and the Unified Modelling Language (UML). The approach builds upon earlier work, notably that of MIT and the Process Handbook [31]. The resulting process Variety and Best Practice (VBP) model was applied to data from the BASE.gov project and is presented as a potential solution for exploring local authority process variety. More broadly, it is hoped that the work will be of interest to the process modelling community, to those concerned with the development and implementation of best practice elements within enterprise information systems and to those involved in the standardisation and sharing of public services.

2. Challenging the “best practice” assumption of local e-government

The diversity of the local authority sector in the UK can be traced to variety in the regional demography of its citizens and the complex legacy of institutional and political arrangements within which public services are embedded [6]. Historically, UK local authorities have had significant autonomy to develop solutions to match

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politically interpreted local needs. The result is enormous variations in the technical, organisational and managerial ways that processes to provide public services are actually implemented.

The UK government's "Modernisation & Improvement" agenda aims to develop local authorities that are more dynamic, entrepreneurial, efficient, effective and in touch with their citizens [34]. According to Margetts [32], just as Max Weber's followers viewed bureaucracy as the basis of modernism in the first half of the 20th century, advocates of e-government have seen Information Technology (IT) as the basis of modernism in the second half and beyond. Total spend on UK e-government was £12.2 billion in 2003/4, rising to a forecast £17.9 billion in 2007/8 of which £2.9 billion of 2003/4 spend was by local authorities [21]. The motivation, according to the Office of the Deputy Prime Minister (ODPM) [35], is that local e-government should help to "transform the quality of local services making them more accessible, convenient, responsive and cost-effective".

An implicit assumption behind the e-government agenda is that generic, IT-enabled processes will somehow fit with, or overcome, local variety. There is evidence to support this assumption in the adoption of enterprise systems by industry. The SAP R/3 Reference Model [24] shows that processes grounded in information systems can be made generic and reused successfully by a wide variety of large and complex organisations. The challenge for local e-government is often therefore seen as one of scale and of central control vs. local autonomy. However, within enterprise systems, there remain concerns that the poor fit between the current generation of reusable systems, exemplified by Enterprise Resource Planning (ERP) packages such as SAP, and the needs of the client organisations has led to significant problems [2,4,13,41,45,47]. This has led to a debate over whether the packages truly embody "best practice" and therefore whether client organisations should modify or replace their current processes with those supported by the package [22,48].

It follows that simplistic approaches to dealing with process variety will not be sufficient for local e-government agendas. The BASE.gov project aimed to develop a better understanding of this variety by examining how four different UK authorities provide services to support citizens through two common "life events", those of moving house and of bereavement. The four authorities were Leeds City Council, West Sussex County Council, the London Borough of Lewisham and Knowsley Metropolitan Borough Council. All four are high-performing "Beacon" councils, and were nominally chosen because they exemplify "best practice" in many areas of local government and because they represent a variety of different types of authority. The BASE.gov project provides a rich data set of process variety for modelling purposes. For example, the project concluded that a "best practice" solution to providing information about a local school's culture and values is to provide links from the local authority portal to the

school's own website. However, this solution was found to be inappropriate for Knowsley where only around 5% of citizens had web access and only 8 out of 80 schools had websites at the time of the project in 2002. The notion of best practice clearly needs to be modified to fit the local context. Conceptual models and frameworks are needed if process variety is to be better understood. Similarly, to achieve a local fit, the understanding of best practice needs to be refined from "this *is always* best practice" to "for this type of process, under these circumstances, this *might be regarded as* best practice".

3. Modelling processes and "variety"

Processes constitute a key building block of organisations [12,19]. Within an organisation processes can be seen as emergent – they evolve and become formalised as individuals and groups find similar ways of dealing with similar situations. Our understanding of a business process is necessarily a generalisation about complex human activity. At its most general a process can be described simply by reference to a common goal or outcome while a more detailed description of the same process may include describing common tasks, a particular sequence, which resources are involved in which activities, etc. Taylor's [49] work on the "best method" for factory production processes using time and motion study established the modern notion that new processes can be designed and implemented as management artefacts. As artefacts, processes are typically viewed as having a number of attributes, including a set of activities, resources consumed by the activities and outputs produced by the activities. Lindsay et al. [30] offer a constructive debate on a range of definitions of a process and suggest that an output or goal-oriented view is preferable to defining processes in terms of their internal structure.

3.1. Process variety

Pentland [38,39] describes a work (business) process as a "generative structure". It is not fixed, but varies according to type of input, personnel involved in execution, etc. Pentland suggests that variety in business processes can be described in three dimensions – variety in the range of tasks performed (*task variety*), variety in the order that these tasks are performed in (*sequential variety*) and variety in the inputs and outputs of the process (*content variety*). In his study of work processes across four sub-units of a major US bank, he demonstrated that the sub-units which had high task variety also had low sequential variety while those with low task variety had high sequential variety. Pentland concludes that process variation is not in itself a problem, there may be many ways of achieving a desired outcome successfully and there may be genuine need to respond to local circumstances in different ways. Pentland's observations can be explained in terms of Beer's Viable Systems Model [5,46] which suggests that organisations

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