Establishing a Business Process Management System in a Telecoms Company

A. Abughoush, I. Beeson, S. Green, T. Hill, and J. Nwakacha

overview

- introduction
  - complex new products at Gamma Telecom
  - BPMS/SOA could provide a unifying development platform
  - KTP project set up between Gamma and UWE
  - main aim to develop a *meta-process* for redesigning business processes
- knowledge creation: building the meta-process
- elements of the meta-process
  - envisioning
  - design
  - implementation
  - incorporation
- knowledge dissemination: embedding the meta-process

KTP partners and associates

- Gamma Telecom (Newbury)
  - a UK provider of voice services and voice applications
  - switching around 8 billion minutes per annum and supplying services via its resellers to about 100,000 UK businesses and 400,000 residential customers
  - providing connections via Internet a major growth area
- University of the West of England
  - two academics from Bristol Institute of Technology (part of the Faculty of Environment and Technology)
- two associates
  - business analyst (focus on process modelling)
  - technical analyst (focus on process implementation)
  - the business analyst preceded the technical analyst

process management and modelling

- need for business process management
  - pace and complexity of business change
  - promise of gains through automation
  - availability of services on the Internet
- business process management systems (BPMS) can provide
  - workflow management and automation
  - process design tools and notations
  - a coherent process architecture (a clear map of what different processes do and how they interact)
  - a service-oriented architecture (SOA)
  - executable process designs

knowledge creation: building the meta-process

- Gamma management
  - provided knowledge of Gamma processes and products
  - had already identified BPMS as a way forward, and had installed Intalio and ServiceMix
  - supported and promoted associates' work with BPMS
- academics
  - recommended modelling approaches (eg RAD), tools, literature, courses
  - suggested 'straw man' meta-process (*identify / capture / model / analyse / improve / automate*)
- associates
  - modelled and reported on Gamma processes
  - developed meta-process iteratively and reflectively (eg via blog)

the meta-process

- what do we mean by the ‘meta-process’?
  - a regular method that we were trying to establish, for redesigning business processes at Gamma and implementing them within the BPMS/SOA framework
  - it would be established *iteratively*, as it was applied to successive projects and refined
  - it would have a *cumulative* effect, as knowledge of process development spreads and deepens
- it has four broad phases (as originally conceived):
  1. envisioning
  2. design
  3. implementation (later included testing)
  4. testing (later replaced by incorporation)

envisioning phase

- steps in the envisioning phase

1. identify a process for BPM implementation and meet project stakeholders
2. perform stakeholder analysis
3. understand the initial process; identify process limitations and areas for improvement
4. apply Havey's 'acid test' for BPM implementation: is it a long running process, idle most of the time, in need of 'orchestration' ?
5. create a business modelling document
6. analyse the development effort: identify changes and additions that need to be applied to the existing systems to prepare it for automation

design phase

- steps in the design phase
  1. model the process in BPMN - to show how the proposed process is triggered and invokes different system services
  2. validate the design with stakeholders – modify as necessary
  3. define process XML schemas - agree on input and output messages between new process and existing systems, and handle faults and errors
  4. create a design document - to include the BPMN diagram, a description of the process lifecycle, and the XML schemas

BPMN: Business Process Modelling Notation

XML: Extensible Markup Language

implementation phase

- steps in the implementation phase
  1. implement a demonstration process
     i. define WSDL (Web Service Definition Language) files for the processes in the diagram
     ii. use dummy web services to return predefined responses
  2. prepare and execute test cases - run possible input XML requests and run them against the test interface
  3. create the real web services
     i. develop the real web services using Java, and deploy them
     ii. replace the dummy services with the real web services

incorporation phase

- this final phase aims to consolidate knowledge gained from successive process conversions into a maturing practice of business process management at the company
- some aspects of incorporation to date have included:
  1. refining the envisioning, design and implementation phases to reflect the experience and learning from the latest project
  2. refining and extending the set of 'essential business entities' that characterise the work of the company (at Gamma: customer, switch, order, number, trouble ticket, payment…)
  3. identifying and implementing entity-centric services to handle these critical entities, so increasing the level of automation
  4. building a process repository of reusable entity-centric services
  5. disseminating the knowledge gained through the organisation

embedding the meta-process in the organisation

- how can the meta-process be spread beyond this KTP project?
  - Gamma provides a favourable environment for BPMS development, but is not strategically committed to BPMS
  - for specific applications, faster development processes are available
  - existing working practices may be hard to shift
- efforts to disseminate knowledge of and encourage interest in the KTP project have included:
  1. setting up a company wiki about it
  2. maintaining a KTP blog
  3. holding lunchtime seminars to explain the project
  4. taking part in technology workshops on BPMS, JMS, Java, and SQL

conclusion

- the KTP project at Gamma has involved a productive exchange of knowledge between managers, associates and academics
- a succession of development projects has demonstrated the viability of a BPMS/SOA approach at Gamma
- a meta-process that gives a regular method for carrying out these development projects has been created and refined from experience
- the meta-process is being disseminated but will need further management commitment to become fully established
- the approach ought to be transferable to other companies