

# Business Process Management in Small Business: A Case Study

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## 1 Introduction and Background

Business Process Management (BPM) is a management discipline concerned with lifting an organisation's performance through improvement, management and control of business processes (Jeston and Nelis 2006). It encapsulates methods, techniques and software involved throughout all stages of the process lifecycle including analysis, design, enactment and control (Ter Hofstede et al. 2003). BPM consistently rates highly on the management agendas of information professionals as a means of improving enterprise productivity (Gartner 2010). Some of the performance benefits typically targeted by BPM include greater flexibility, increased accuracy, faster execution, cost savings and reduced investment (Hammer 2010).

BPM has gained prevalence during the last decade. It evolved from a series of approaches to improving business performance including Total Quality Management, Business Process Reengineering and Six Sigma (Harmon 2010). The proliferation of Enterprise Resource Planning systems has been one major reason for BPM's increasing prominence (Al-Mudimigh 2007). While it has inherited many of the principles of the above predecessor approaches, BPM represents a more holistic discipline as opposed to a single structured methodology, toolset or software type (De Bruin and Rosemann 2005).

Although BPM is a broad discipline, there are a small number of concepts at its core. BPM recognises the capacity to separate the definition, design, analysis and refinement of processes from their execution. In this regard it is distinguished from

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minor, unconscious or undirected improvement of operational practices. BPM also takes an end-to-end view of processes across an organisation, in particular across functional boundaries. This differs from management approaches that are interested only in activities within functional silos (Hammer 2010).

There is an extensive body of research on BPM adoption, both of approaches and organisational conditions necessary for BPM success (see for example De Bruin and Rosemann 2005; Bucher and Winter 2010; Rummeler and Ramias 2010). Within established organisations, the adoption process typically starts with fostering a general awareness of BPM and conducting isolated improvement projects on a number of processes. Over time, assuming the outcomes of such projects are seen as beneficial, activities can be corralled into a formal program and supported with a more rounded focus on strategy, governance, methods, technology, people and culture (Rosemann and vom Brocke 2010).

While much of the available research provides good guidance to larger, established organisations, there is less commentary addressing the challenges of and approaches to adoption of BPM within Small Businesses in the early stages of their establishment. Small businesses often operate under considerable cost and time pressure, with constrained human resources and have limited access to skills (Fogarty and Armstrong 2009). These characteristics can negatively impact the adoption of BPM within Small Businesses. On the other hand, Small Businesses often have tight integration of activities, a strong work ethic and rapid decision-making; factors that can positively impact BPM adoption and effectiveness (Kirchmer 2011b). Recently, a number of authors attempted to address this topic with case studies conducted in a number of small and medium businesses (SMEs). Chong (2007) conducted an exploratory study on barriers to adopt BPM techniques within SMEs in the wine industry in Australia. Imanipour et al. (2012a, b) looked into inhibiting factors for BPM adoption within the Iranian E-Retail industry. While Bazhenova et al. (2012) explored the use of BPM and adaptive technologies in SMEs in emerging economies.

This chapter discusses a case study BPM initiative (the “BPM Initiative”) within an Australian Small Business. It considers the significance of the Small Business sector and the potential, through its application to the sector, for BPM to contribute to addressing widespread productivity issues. After outlining the background of the case organisation, the chapter details the BPM Initiative, its activities, findings and recommendations. Based on the case study experiences, a number of potential implications have been identified for the BPM discipline in approaching the Small Business sector.

## ***1.1 Small Business and Productivity***

Small Businesses account for a significant proportion of business activity in Australia. While there is no universally accepted definition, for statistical purposes the Australian Bureau of Statistics defines businesses with 0–19 employees as

Small Businesses (Australian Bureau of Statistics 2008). As at June 2010 there were more than 1.9 million Small Businesses in Australia, accounting for over 47 % of employment in major business sectors (Key Statistics Australian Small Business 2011).

Over the past decade, Australia has experienced a slump in productivity (Parham 2012). Productivity growth is critical in addressing major issues such as coping with an ageing population and meeting the fiscal challenges of the Global Financial Crisis (Banks 2011). Respected economists have noted that improvements in productivity depend on decisions taken and implemented within businesses (Eslake 2011). Arguably, BPM has a significant role to play in achieving productivity growth within businesses. With Small Businesses comprising a large proportion of Australian business, successful, widespread adoption of BPM within this sector could help achieve meaningful inroads into productivity improvement.

## 1.2 Research Approach

This case study was developed to explore the research question:

*Can mainstream BPM tools, techniques and technologies be successfully applied in a Small Business environment? What are the advantages of applying BPM in a Small Business?*

A case study approach has been adopted due to the method's effectiveness in examining application in real-world scenarios, particularly in emerging research domains (Yin 2003). From a practical perspective, it also provided an opportunity to contribute a further example of the application of BPM within a Small Business. Such examples are important if the discipline is to gain momentum within the Small Business sector. While it is recognised that observations from a single case study cannot accurately represent the diverse nature of small businesses and that the requirements and the findings cannot be generalised without conducting multiple case-studies (Yin 2003), it is hoped that insights gained from this case study may serve to stimulate further research into this important area.

The case study involved participation in a BPM Initiative to develop and test key elements of process infrastructure for a Small Business. The main tasks were:

1. Preparing a Process Governance Framework;
2. Preparing a Process Architecture;
3. Modelling the core service delivery processes;
4. Developing a pilot Process and Procedures Library; and
5. Developing a demonstration Resource Allocation System.

A detailed scoping exercise was conducted to gain an understanding of the case organisation's plans, strategy, method of client engagement and organisational structures.

The organisational stakeholders (“Stakeholders”) in the BPM Initiative were:

- *Management*—The owner and director of the organisation who currently holds executive management responsibility;
- *Staff*—Personnel involved in day-to-day service delivery processes; and
- *Consultants*—Specialist Management Accounting consultants currently providing domain expertise to the organisation.

Observations were made during participation in each of the tasks. Stakeholders were also consulted after each task to seek their feedback on the benefits and issues arising from the application of the approaches, techniques and technologies both within the case organisation and within Small Businesses generally.

## 2 The Case Organisation

The case organisation (“The Business”) was established to develop a suite of outsourced Management Accounting services designed to meet the needs of small and medium sized, professional services businesses. It is currently in pilot phase, testing its service model and developing underlying business processes and systems while providing a full suite of services to a number of pilot clients. The Business’ long-term viability and competitiveness will heavily rely on the efficient and effective delivery of business processes. Strategically, the adoption of Business Process Management is targeted to support:

- Consistent quality and timeliness of outputs versus competitors who fail to reliably meet standards and deadlines;
- Better labour management ensuring that tasks can be performed by the cheapest resource versus competitors who tend to utilise single, more highly qualified resources to complete entire processes; and
- The capacity to implement technologies (such as workflow systems, document management systems, scanning and business intelligence) the use of which is currently limited amongst competitors.

Importantly, the evolution of The Business’ structure and culture as a process-aware organisation is seen as a strategic imperative. There is minimal culture or practice currently embedded within the organisation, meaning there is more focus on establishing healthy attitudes and modes-of-operation rather than the need to change the status quo. Management wishes to ensure that The Business evolves with a strong focus on process in order to avoid the need to change dysfunctional systems and behaviours in the future.

### 3 Development of Process Infrastructure

The first author worked with Management to determine the activities that would be involved in the Initiative, as outlined in [Sect. 2](#) above. It was identified that The Business would require the documentation of processes for the following purposes:

- To support alignment of different Stakeholder perspectives of processes (e.g., management, staff and client understanding of how processes are undertaken);
- As a training guide and reference source for staff;
- To assist in process design and improvement efforts; and
- To help inform the development of information systems.

A Process Governance Framework and Process Architecture were needed to guide and control the development of processes and documentation (Braganza and Lambert 2000; Davis and Brabänder 2007). Core service delivery processes were modelled and documented and a Process and Procedures Library was developed as a means of deploying process documentation to business users. Finally, a demonstration resource allocation system was developed to showcase how technology could be employed to automate aspects of the core service delivery processes.

#### 3.1 Process Governance Framework

A Process Governance Framework provides a high-level layer of BPM definition and a frame of reference to guide activities and ensure consistency of approach (Kirchmer 2011a). A Process Governance Framework was developed that addressed the following:

- *Decision-making*—Key categories of process decisions were identified and responsibilities for each category were assigned to organisational roles.
- *Process Roles and Responsibilities*—Guidelines were developed to assist in determining who should be appointed as the Process Owner of each process. Responsibilities were also outlined for process approval, feedback and analysis support.
- *Process Standards*—Standards were detailed for process referencing, storage, modelling notation and tools.
- *Measurement and Compliance*—A set of performance measures and compliance activities were identified. Due to the relative infancy of The Business, these were focussed on near-term BPM activities.

The following **findings** were identified during preparation of the Process Governance Framework and subsequent Stakeholder consultations:

- *Perceptions of Relevance*—During scoping and early development, Stakeholders found it difficult to fully appreciate the relevance of a Process Governance

Framework. It was only after the application of the completed framework in the development of the process models and other process infrastructure that Stakeholders more fully appreciated the need for the framework.

- *Limited Availability of Practical Guidance and References*—The Initiative encountered a lack of readily available examples of Process Governance Frameworks. There was also limited practical guidance available on how to develop such a framework. This made the process far more time consuming than could be the case if best-practise guides, templates and examples were readily available.
- *Industry Standards*—Where industry standards were available, for example Business Process Model and Notation (BPMN), they enabled considerable rigour to be easily incorporated into the framework. There was also a wealth of tools and resources available in the public domain to assist with education and training of users.
- *Measurement and Compliance*—Developing measurement and compliance elements of the Process Governance Framework was made difficult by the infancy of BPM within the organisation. There was a risk that measures and controls would either yield meaningless results or consume considerable resources. The Stakeholders contemplated excluding measurement and compliance from the framework altogether, but settled on a set of measures which principally focused on establishment and adoption of BPM and fairly simple, review-based controls.

Based on the case study experiences and findings related to the Process Governance Framework, the following **observations** can be made:

- *Use of Industry Standards*—Industry BPM standards, such as BPMN, are likely to be readily applicable within many Small Business environments. Practitioners undertaking Small Businesses BPM initiatives should consider adopting industry standards to minimise the effort required in developing, communicating and using the process infrastructure.
- *Small Business, BPM Reference Base*—A reference base of Small Business BPM resources including practical guides and examples would assist Small Businesses to articulate BPM practice and benefits as well as enabling such businesses to more efficiently establish important BPM foundations. Such a resource would be most effective if it is broad-based (that is, not only focussed on notations and technical standards) and readily available at low or no cost.
- *BPM Measurement and Compliance*—When working with establishing businesses, BPM practitioners may prefer to focus measurement and compliance targets on process infrastructure development milestones rather than measures of adoption, utilisation and maturity, as may be the case in later stages of the business' lifecycle.

3.2 Process Architecture

A Process Architecture sets out at a high level how business processes are co-ordinated to support the achievement of organisational strategy and objectives. The structure and principles set out in the Process Architecture provides an overall roadmap for the development of business processes (Jeston and Nelis 2006).

A six-level Process Architecture was developed, as outlined in Fig. 1, and documented. Model numbering guidelines were developed in a cascading order for each level.

The Process Architecture involves a reasonably typical cascading hierarchy of process levels, with each lower level representing processes in greater detail. Three types of Process Variants (Reference, Industry and Client) are recognised for processes in levels 3–6.

The Level 1 Strategic Activities were developed using the Strategy, Operations and Support categories, as outlined in Fig. 2.

The following findings were identified from observations during preparation of the Process Architecture and subsequent Stakeholder consultations:

- *Limited Availability of Practical Guidance and References*—While examples of process architectures were more readily available than was the case for process

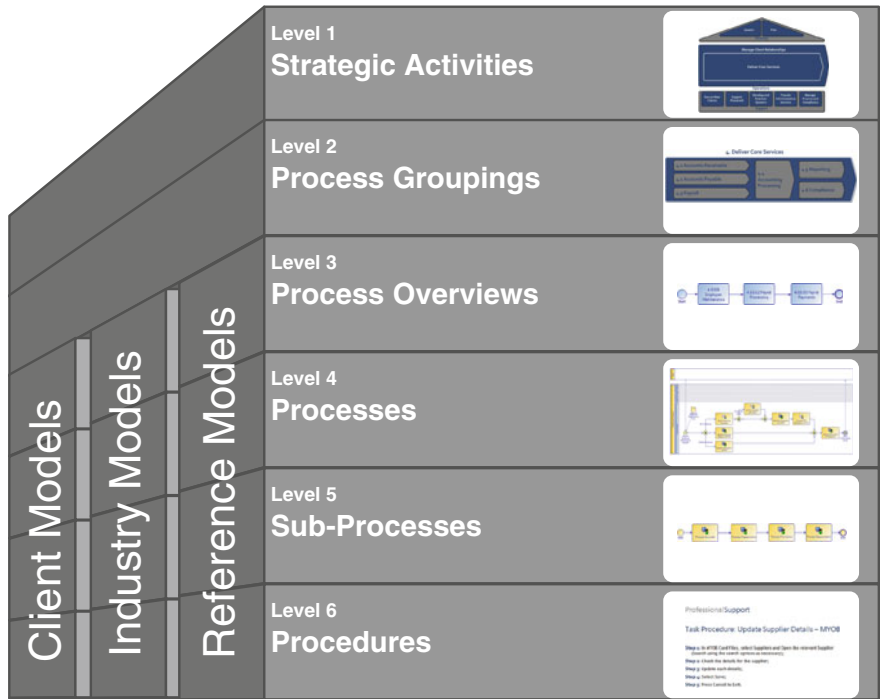
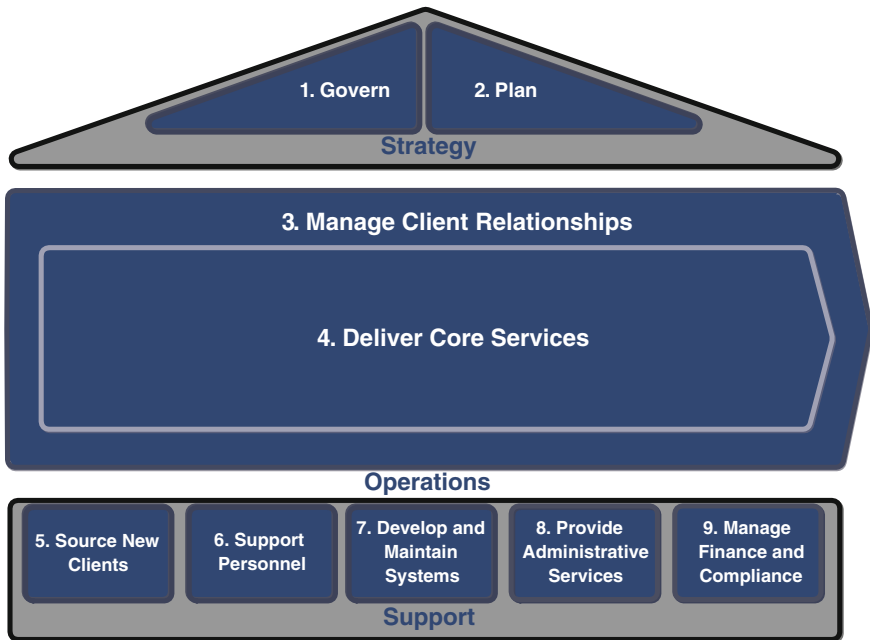


Fig. 1 Business process architecture



**Fig. 2** Level 1 strategic activities

governance frameworks, the initiative found that there was a lack of practical guidance on how to go about developing a Process Architecture, particularly with relevance to Small Businesses. Further best-practice guides and examples would have assisted.

- *Representing Complexity*—The Process Architecture needed to accommodate a series of complex process relationships including variants and different compositions of the same tasks. There were also a number of different user perspectives that needed to be considered including information systems development, service specification (for the purposes of client Service Level Agreements), operational delivery and strategic planning. There was a natural tendency for Stakeholders to perceive the Process Architecture as a simple cascading hierarchy with each lower level being a subset of its parent. Unfortunately, this led to confusion and the need to regularly reiterate to Stakeholders the purposes and structure of the architecture.

Based on the case study experiences and findings related to the Process Architecture, the following **observations** can be made:

- *Small Business, BPM Reference Base*—Again, a Small Business BPM reference base including practical guides on Process Architecture development would assist Small Business BPM initiatives.



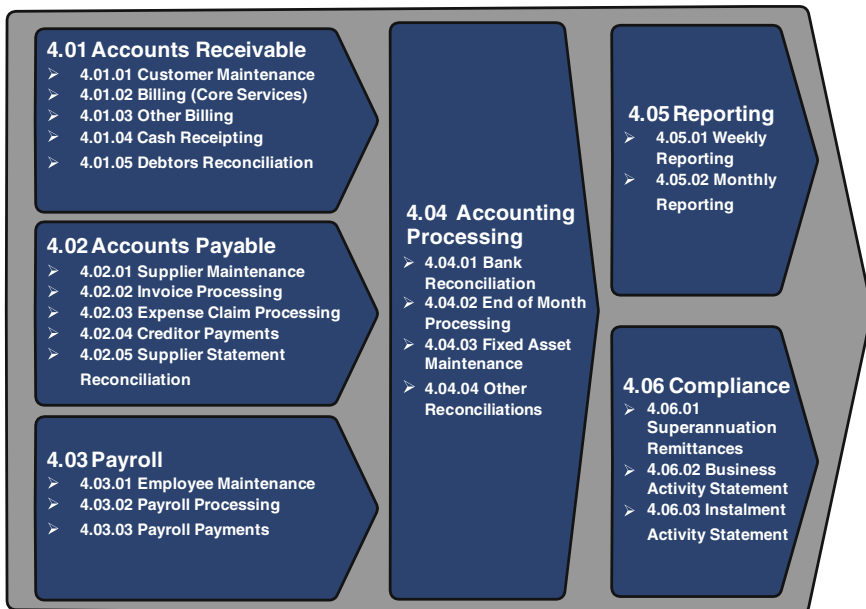
- *Stakeholder Perceptions*—When developing Process Architectures with “Business” stakeholders as well as “Technical” stakeholders, it may be beneficial for BPM practitioners to reinforce the degree of abstraction involved. This may help to reduce confusion that can arise from trying to rigidly represent and reconcile different perspectives of complex process relationships.

### 3.3 Process Modelling

Process models were prepared for 22 processes which comprise core service delivery, using Business Process Model and Notation (BPMN) Version 2.0 (2011). Figure 3 lists the processes which were modelled under each core service delivery heading.

The modelling process involved documentation review, process observation, model drafting, Stakeholder review and revision. The following findings were identified during process modelling and subsequent Stakeholder consultations:

- *Modelling Tools and Standards*—Mainstream tools and standards were adopted in the modelling process. These were generally easy to use and readily applicable within the Small Business context.
- *Modelling Effort*—The modelling effort was significantly less difficult and resource-consuming than was anticipated. While process modelling within an



**Fig. 3** Processes by core service delivery area

organisation in its infancy has some challenges, the small number of Stakeholders and the absence of highly-embedded work practices, meant that the modelling process did not require as much consultation or dialog about change as can be the case in more developed organisations.

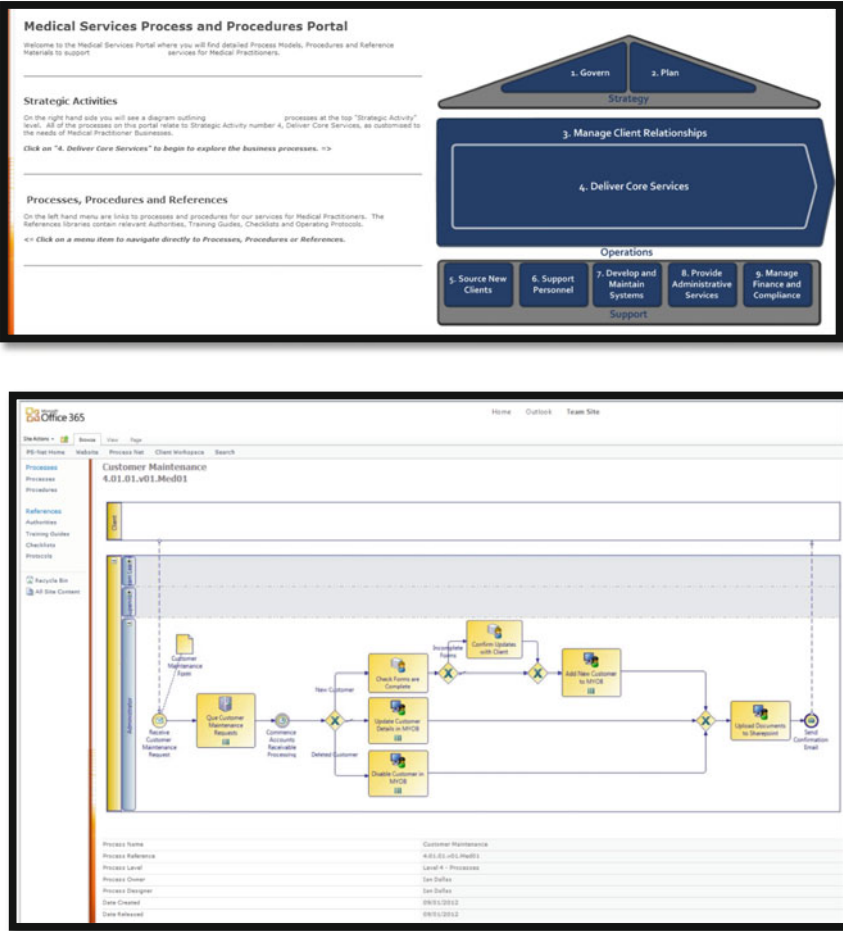
- *BPM Skills*—Another factor that influenced the modelling effort was the first author's combination of BPM, domain and organisational expertise. The process modelling could have taken much longer to complete if it demanded collaboration between separate BPM, domain and organisational professionals.
- *Elicitation Methodology*—It was found that preparing draft models which could be adjusted in consultation with Stakeholders resulted in a much more efficient process than attempting to develop models from scratch in a workshop context. The BPM practitioners' domain expertise and the small organisation size were important factors that enabled this methodology.

Based on the case study experiences and findings from process modelling, the following **observations** can be made:

- *Modelling Tools and Standards*—Practitioners undertaking process modelling in Small Businesses should consider adopting mainstream modelling tools. This will enable stakeholders to leverage the extensive base of supporting resources available, maximise modelling efficiency and ensure usability of process models.
- *Small Business BPM Methodologies*—Small Business BPM initiatives may benefit from adopting different methodologies to those typically used in larger businesses. Smaller size, simpler organisational structure and lower complexity may enable methodologies that are not feasible within larger businesses.
- *BPM Skills*—The breadth of BPM practitioners' expertise, particularly domain and organisational experience, will influence the efficiency with which they are able to conduct initiatives within Small Businesses. This will be an important, if not essential, influence on the feasibility of Small Business BPM initiatives.

### 3.4 Process and Procedures Library

Following the development of process models, Stakeholders identified the need to deploy these process assets to business users to support training and up-skilling of staff and as a reference source during service delivery. A proof-of-concept Process and Procedures Library was developed to provide an example of how such a reference source may operate. It was developed on the Microsoft Office 365 SharePoint platform which was adopted by The Business for other document and knowledge management functions. Example pages from the Library are shown in Fig. 4. The Library enables the entire Process Architecture to be navigated (via click-through) from Strategic Activities to detailed Processes and through to Procedures. Key data is maintained for each process such as the process name, reference, owner and designer.



**Fig. 4** Example pages—process and procedures library. Example screenshot showing strategic activities. Example screenshot showing a process model

The following **findings** were identified during the development of the Process and Procedures Library and subsequent Stakeholder consultations:

- **BPM Tools**—Deployment of the processes to business users to support training and as a reference source during service delivery was one of the key uses for the documented business processes. Stakeholders believed that this could be the case in many Small Businesses. Despite this the initiative was not able to identify any low or no-cost BPM software tool that enabled adequate deployment of process models and documentation to business users. Hence the Process and Procedures Library needed to be developed as a bespoke solution.
- **Development Skills**—A significant effort was required to develop the Process and Procedures Library. The skills were made available as part of the research

effort at no charge. Stakeholders noted that it was unlikely that the skillsets would have been available amongst typical Small Business information systems advisers. Even if such skills could be sourced, it is unlikely that The Business would have considered the cost of employing the skills as financially feasible.

- *Maintenance*—As with development, an outstanding issue will be whether The Business will be able to access and afford the skills necessary to maintain the Process and Procedures Library on an ongoing basis.

Based on the case study experiences and findings from development of the Process and Procedures Library, the following **observations** can be made:

- *BPM Tools*—BPM tools need to better address efficient and easily maintained deployment of process assets to business users.
- *BPM Skills*—The cost and availability of BPM expertise will likely be a limiting factor in the adoption of BPM by Small Businesses. The BPM Profession needs to further consider the type of skills required and the best delivery models for the Small Business sector.

### 3.5 Resource Allocation

The Business' core service delivery involves a series of cyclical processes requiring co-ordination of human tasks, communications and data transmission. The majority of processes conform to a weekly or monthly cycle. Effective allocation and supervision of work is critical to achieving the level of management efficiency and leverage (maximum delegation to junior resources) required to create a clear competitive advantage over more traditional accounting and book-keeping businesses. Workflow management (Ouyang et al. 2010), in particular Resource Allocation, is therefore expected to be an important strategic component of The Business' process infrastructure, particularly as it grows in number of clients and number of personnel.

In order to provide Management with a clearer understanding of how a Resource Allocation system, as part of process automation efforts, may be implemented within The Business and its potential benefits, a demonstration pilot Resource Allocation system was developed. The YAWL workflow language and workflow system were used as the platform for development of the pilot (van der Aalst and Ter Hofstede 2005). Two YAWL workflows were developed to represent examples of workflow processes within The Business. Figure 5 outlines the organisational hierarchy based on the expected medium-term team structure and Table 1 lists the attributes which were assumed for the purpose of the demonstration.

A number of core delivery processes of the Businesses which were part of the Weekly Processing cycle was modelled as a YAWL workflow (see Fig. 6).

In addition to regular processing requirements, the Business also handles ad-hoc queries from the clients. It is a relatively simple process whereby a query is

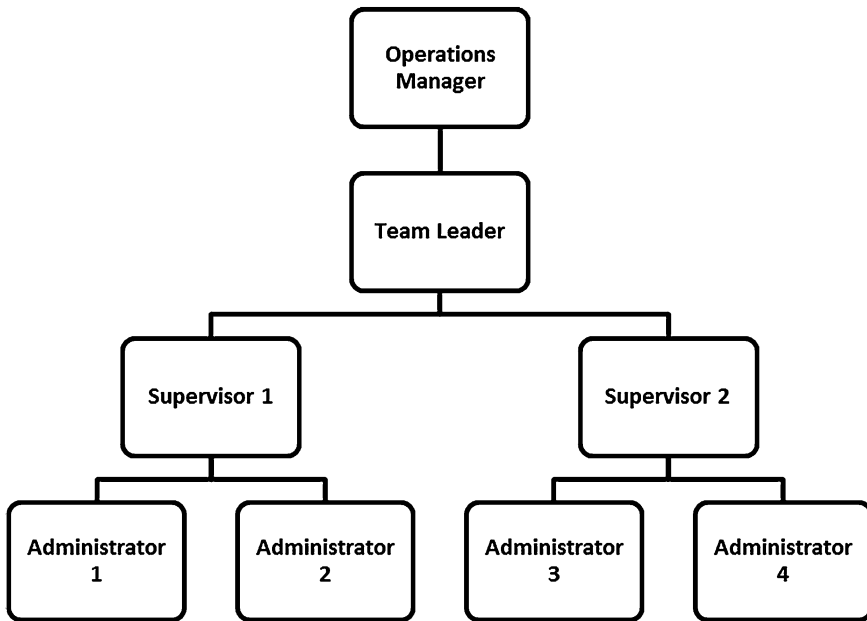


Fig. 5 Organisational hierarchy

received, investigated, reviewed if necessary and then a response is the output. The YAWL model for this query process is detailed in Fig. 7.

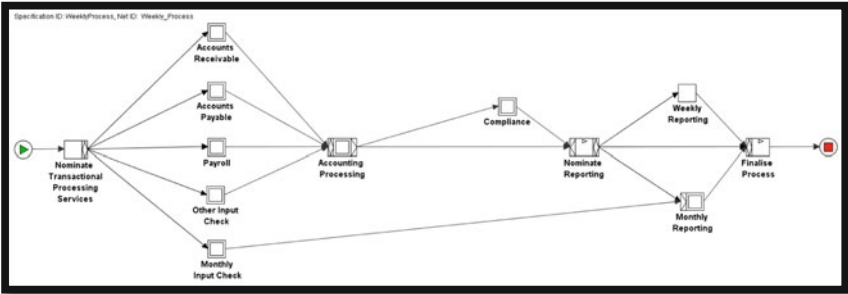
A series of ten demonstration cases were specified; six cases of weekly process and four cases of ad-hoc query process. To demonstrate the Resource Allocation system, the ten cases were executed concurrently to show how the system handles work allocation in real-time. Stakeholders were able to view participant work lists and see how tasks are allocated, completed and re-assigned. They could also see how data is captured and handled by the system including how it can control the flow and allocation of work.

The following **findings** were identified during the development of the Resource Allocation system and subsequent Stakeholder consultations:

- *Automation Benefits*—Stakeholder feedback strongly recognised the benefits of a Resource Allocation system to The Business. The benefits are expected to be similar in nature to those expected within a larger business including reduced labour costs, more consistent service delivery and better activity monitoring capabilities.
- *Workflow System*—The workflow system supported most of the resource allocation capabilities required by The Business. Further development work would be required to address user interface and data integration issues.
- *BPM Skills*—The availability of BPM expertise to support the development and maintenance of the Resource Allocation system was raised as a major consideration in its adoption within this Small Business environment.

**Table 1** Organisational model attributes

Organisational attribute	YAWL category	Description	Options
Delivery unit	Role	A particular service unit under a supervisor	Team blue Team red
Position	Position	The position within the organisational hierarchy	Operations manager Team leader Supervisor Administrator
Service line	Role	Indicates competence to perform services for the given service line	Legal Medical
Competency	Capability	Indicates competence to undertake service	Accounts receivable Accounts payable Payroll Accounting Management reporting Compliance Analysis Consulting
Client	Role	Indicates familiarity/assignment to client	Clients A–F



**Fig. 6** A YAWL workflow model of (weekly) processing activities

Based on the case study experiences and findings from development of the resource allocation system, the following **observations** can be made:

- *Workflow Systems*—While capable and flexible workflow systems are available at low or no cost, the expense of adapting these tools for use may make their adoption prohibitive for Small Businesses. Further development of these products into packages incorporating more capable, user-friendly interfaces, would improve the feasibility of adopting such systems within Small Businesses.

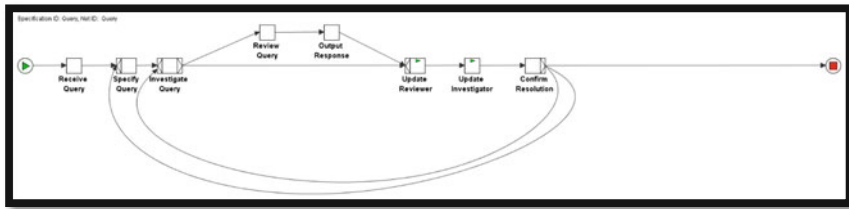


Fig. 7 A YAWL workflow modelling depicting handling of ad-hoc queries

- *BPM Skills*—The BPM profession will need to consider how to make workflow skills more available and affordable if process automation is to be brought within the reach of Small Businesses.

## 4 Key Observations

### 4.1 BPM Benefits

The case study has demonstrated that there is considerable scope for The Business to leverage benefits through BPM. The process models and documentation on the Process and Procedures Library have proved to be useful training and reference tools, improving the efficiency of client service implementation and ongoing delivery. They have also assisted in gaining a consistent, shared understanding of how work is undertaken and provided a means of capturing procedural information that would otherwise be retained by individuals as tacit knowledge.

Demonstrating the capabilities of the Resource Allocation system has raised awareness of the potential for such systems within The Business. Stakeholders have indicated that prior to the demonstration, would have likely resorted to manual checklists, task lists or spread sheet-based allocation schedules. The Business will proceed with further development and a live pilot of the system. Consideration is also being given to how the workflow system can be leveraged to support other capabilities including automation of manual tasks, status/progress reporting to clients, workforce decentralisation and improvements to worker interfaces (such as process context awareness).

BPM awareness is actively shaping Management's medium and long-term plans. For example, Management are using processes documentation to develop a Service Level Agreement with performance measures for each core service area. This could lead to The Business becoming one of the first in its market to offer service level guarantees; a significant strategic differentiator. Management is also

using this newfound understanding of the business processes to identify critical communication points. This enables them with protocols and technologies that will allow services to be delivered over large geographical distances. This will support a better offering to more isolated, regional markets which often have had trouble accessing quality service providers.

Many of the potential benefits are similar in nature to those that would be targeted in larger, more mature businesses. Interestingly, while the quantum of operational benefits may be smaller than in higher-volume businesses, substantial strategic benefits have been identified that are arguably easier to leverage due to The Business' agility and flat decision-making structure.

## ***4.2 Efficiency***

The efficiency of BPM was a significant focus for Management who were concerned about the potential financial cost and drain on resources. As with many Small Businesses, particularly in the establishment phase, there was a host of competing priorities for a constrained investment pool. The Initiative tasks could be divided into two categories: those that Stakeholders perceived as "value-adding"; and those that were perceived as "non-value-adding".

Perceived non-value-adding tasks such as the development of the Process Governance Framework and Process Architecture, consumed a significant amount of time. Unfortunately, there were few templates or best-practice examples available in the public domain to assist with these tasks. If these materials were readily available, the efficiency of perceived non-value-adding tasks could have been vastly improved.

Process modelling was perceived as value-adding because the outputs were practical, tangible and able to be immediately put to use by Stakeholders. Interestingly, the modelling effort did not take as long as expected. This was attributed to the flat decision-making structure, the combined BPM and domain expertise available and the elicitation methodology adopted. The Process and Procedures Library and Resource Allocation tasks, which were also perceived as value-adding, could have been made more efficient if tools and systems were better tailored to the needs of business users in a Small Business environment.

Overall, with better templates and best-practices, particularly those that might enable perceived non-value-adding tasks to be completed more quickly, and some further tailoring of tools towards Small Business users, Stakeholders felt that the exercise could have been readily conducted within The Business' normal investment limitations.



### ***4.3 Compatibility of BPM Tools and Standards***

Where they were available, mainstream BPM tools, standards and systems were adopted. These included BPMN, process modelling tools and workflow systems. In general these were found to be as useful in the Small Business environment as would be expected in a larger business environment. The availability of BPM standards and tools on a low or no-cost basis made it particularly easy to adopt mainstream methods, as opposed to developing approaches and tools from the ground up. This is potentially more important in a Small Business context than in larger businesses that may be better able to invest in development of tools and standards.

The process modelling tools that were investigated and ultimately adopted were found to be capable model design tools, but lacked the ability to deploy process models to business users in a user-friendly and controlled format. No doubt, enterprise-level systems are available with better business user interfaces, but many Small Businesses would have trouble justifying an investment in such a system, particularly in the early stages of BPM maturity.

The workflow system (YAWL) was found to have functionality and pattern support that was more than adequate for the near-term needs of The Business. It has been developed as a highly customisable platform which provides significant flexibility to organisations to adapt it to their particular needs. Despite its capabilities, some of the interfaces would need to be enriched for adoption by The Business in a live environment. A more “packaged” version with improved interfaces may be more attractive to Small Businesses as it would reduce or eliminate customisation effort, even if this came at the expense of flexibility.

### ***4.4 Resources and Skills***

It was noted that, without the close involvement of the authors, The Business would have had difficulty accessing appropriately skilled BPM resources. Management indicated that the skills would not have been available in-house and would have been difficult to source amongst consultants typically servicing the sector.

Accessing skills to maintain the process infrastructure (both content and technical structure) may also prove difficult. It is anticipated that a standardised and documented maintenance regime together with appropriate training of in-house personnel could address many of these concerns.

## **4.5 Culture**

The Initiative did not specifically address the cultural enablers or barriers to BPM. However, it should be noted that Stakeholders generally exhibited a very positive and proactive attitude to BPM and process improvement. Within The Business, innovation through BPM is seen as an imperative and is driving a commitment to explore the area.

The Director, who has considerable experience in consulting to Small Businesses, indicated that it was his belief that in many Small Businesses the cultural setting could create resistance to BPM and to change more generally. Although the issue was not fully explored, the cultural setting was almost certainly a critical precondition to the mandate for, and ultimately the achievements of, the Initiative within The Business.

## **5 Implications**

The case study points to a range of potential implications for the BPM discipline. An overarching question is whether there is a need for a more defined stream of BPM research and practice focussing specifically on Small Business. This stream would potentially be less concerned with ground-breaking discoveries, instead focusing on how to distil the large body of existing BPM knowledge into a set of tools, techniques, best-practices, software and approaches which are more practical and relevant to Small Businesses.

Some key implications identified from the case study are outlined below. These could be focus areas for a more defined Small Business BPM stream.

### **5.1 BPM Awareness Within Small Businesses**

With BPM traditionally being perceived as the domain of larger businesses, Small Businesses could benefit from a greater awareness of the possible application and benefits of BPM within the sector (Imanipour et al. [2012a, b](#)). Further examples and case studies would assist practitioners working with Small Businesses to articulate the processes and likely benefits of BPM. Creating greater awareness of key Small Business BPM barriers and enablers may help organisations to identify whether they are appropriate candidates for BPM adoption. It may also be beneficial to identify the characteristics of Small Businesses that may indicate a strategic disposition to BPM; for example a desire to pursue rapid growth and commercialisation.

Consideration may also be given to whether BPM maturity models and implementation roadmaps need to be tailored or simplified for Small Businesses.

In particular, what BPM initiatives should developing businesses be targeting at different stages in their lifecycle. For example, does it make sense to set the process landscape and begin capturing process models early in a business' development; when is a good time to tackle process automation?

## ***5.2 BPM Approach in Small Businesses***

Traditionally, many BPM efforts have been initiated as part of information systems projects where there is a well-trodden regime typically involving a number of BPM participants including vendors, implementation consultants and change managers (Al-Mudimigh 2007). In more recent times attention has turned to how BPM capabilities can be established and managed independently from information systems projects (Rosemann 2010). The experiences of this case study indicate that for some, potentially many, Small Businesses neither approach will work. In light of resource and investment constraints that many Small Businesses face, engaging teams of external consultants or building dedicated in-house capabilities will not be feasible.

There is scope to further investigate the adaptation of delivery models to achieve the maximum BPM impact for Small Businesses. This includes consideration of resourcing models and decision-making processes for BPM projects that take advantage of organisational agility and flatter management structures. Techniques, toolsets (further discussed in Sect. 0 below) and expertise (further discussed in Sect. 0 below) will likely require some shaping alongside new delivery models.

## ***5.3 BPM Tools and Techniques for Small Businesses***

The Initiative found that many mainstream BPM tools and techniques could be applied in a Small Business environment. However, there is a need to better adapt some tools and to provide a more complete resource set to make the adoption and ongoing management of BPM by the sector as efficient and cost-effective as possible. Some key considerations in this process are:

- Enabling streamlined adoption through practical guides and templates (for example of Process Architectures and Process Governance Frameworks), even if these came at the expense of exhaustiveness;
- Ensuring tools are developed with sufficient focus on potential deployment to business users as opposed to process analysts and software developers;
- Providing low-cost, business-ready systems even if they are less flexible or customisable than existing products;
- Supporting low-cost, self-managed BPM maintenance regimes, both for systems and content.

## **5.4 BPM Practitioners**

The pursuit of more efficient BPM approaches and the adaptation of BPM delivery models, tools and technologies will potentially create demand for a different profile of Small Business BPM practitioner compared with their larger business counterparts. As well as possessing a good knowledge of Small Business BPM benefits, delivery models, tools and techniques, the often resource-constrained environment is likely to require practitioners to have a greater breadth of experience. This may include industry/domain and software expertise as practitioners may not be afforded the luxury of engaging supplementary domain or vendor expertise.

These demands may mean that Small Business BPM practitioners should consider different career pathways to other BPM practitioners. For example, Small Business BPM practitioners may be better grown from experienced workers, managers or consultants within Small Business domains who have undertaken supplementary BPM training, as opposed to “born and bred” BPM practitioners.

## **6 Conclusions**

This chapter presented a case study of the development of process infrastructure within an establishing Small Business. The case study has shown that mainstream BPM tools and techniques can be applied in a Small Business environment to yield benefits similar in nature to those that would be targeted in larger businesses. Limited availability of a comprehensive reference source of Small Business BPM tools, templates, examples and expertise was a major issue encountered during the initiative. The environment presented constraints on financial and human resources, but the flat organisational and decision-making structure, limited number of stakeholders and the proactive culture enabled many tasks to progress more rapidly than anticipated.

A number of potential implications have been identified for further consideration by the BPM discipline including whether there is a need for a more defined Small Business BPM stream. Such a stream could better focus on raising BPM awareness in the sector and tailoring standards, tools, techniques and templates to enable more efficient application of BPM within Small Businesses. It was also identified that further consideration needs to be given to the development of Small Business specific implementation and delivery methodologies as well as supporting practitioner skillsets in order for the discipline to better meet the demands of the sector.

The case study presented here has a number of limitations. It has involved observations made within a single business services organisation based in Australia. The organisation is in a very specific stage in its business lifecycle; establishment. The study has not explored whether the observations and findings

would be equally applicable to organisations of different sizes or those operating in different industries, cultures or jurisdictions. Nor has it investigated whether the experiences would have been different within businesses that are in a more developed stage of their life-cycle. It should also be mentioned that the case organisation possessed a distinct culture which, if not present in other organisations, could lead to different experiences and outcomes in relation to BPM initiatives. It is therefore difficult to discern the degree to which the observations can be generalised to the wider Small Business sector.

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## References

- Al-Mudimigh, A. S. (2007). The role and impact of business process management in enterprise systems implementation. *Business Process Management Journal*, 13(6), 866–874.
- Australian Bureau of Statistics, (2008). Australian small business operators: Findings from the 2005 and 2006 characteristics of small business surveys, volume cat no 8127.0, Canberra: Australian Bureau of Statistics.
- Banks, G. (2011). *Successful reform: Past lessons, future challenges*. Paper presented at the productivity commission, Sydney. 8 December 2010.
- Bazhenova, E., Taratukhin, V., & Becker, J. (2012). *Towards on business process management on small-to medium enterprises in the emerging economies*. 7th International Forum on Strategic Strategic Technology (IFOST), pp 1–5.
- Braganza, A., & Lambert, R. (2000). Strategic integration: Developing a process–governance framework. *Knowledge and Process Management*, 7(3), 177–186.
- Bucher, T., & Winter, R. (2010). Taxonomy of business process management approaches. In J. vom Brocke & M. Rosemann (Eds.), *Handbook on business process management 2. International handbooks on information systems* (pp. 93–114). Berlin Heidelberg: Springer, doi:10.1007/978-3-642-01982-1\_5.
- Business Process Model and Notation (BPMN) Version 2.0. (2011). The object management group. <http://www.omg.org/spec/BPMN/2.0>. Accessed 29 July 2012.
- Chong, S. (2007). Business process management for SMEs: An exploratory study of implementation factors for the Australian wine industry. *Journal of Information Systems and Small Business*, 1(1–2), 41–58.
- Davis, R., & Brabänder, E. (2007). *Business process architecture with ARIS Design Platform*. London: Springer. doi:10.1007/978-1-84628-613-1\_4.
- De Bruin, T., & Rosemann, M. (2005). *Towards a business process management maturity model*. Paper presented at the ECIS 2005 Proceedings of the 13th European Conference on Information Systems, CD Rom.
- Eslake, S. (2011). *Productivity: The lost decade*. Paper presented at the Annual Policy Conference of the Reserve Bank of Australia, Sydney, 15 August 2011.
- Gartner (2010) Leading in times of transition: The 2010 CIO Agenda.
- Gerard Fogarty, & Douglas Bruce Armstrong (2009). Modelling the interactions among factors that influence successful computerisation of small business. *Australasian Journal of Information Systems* 15(2)

- Hammer, M. (2010). What is business process management? In J. vom Brocke & M. Rosemann (Eds.), *Handbook on business process management 1. International handbooks on information systems* (pp. 3–16). Berlin Heidelberg: Springer. doi:[10.1007/978-3-642-00416-2\\_1](https://doi.org/10.1007/978-3-642-00416-2_1).
- Harmon, P. (2010). The scope and evolution of business process management. In J. vom Brocke & M. Rosemann (Eds.), *Handbook on business process management 1. International handbooks on information systems* (pp. 37–81). Berlin Heidelberg: Springer. doi:[10.1007/978-3-642-00416-2\\_3](https://doi.org/10.1007/978-3-642-00416-2_3).
- Imanipour, N., Talebi, K., & Rezazadeh, S. (2012a). Business process management (BPM) implementation and adoption in SMEs: Inhibiting factors for Iranian e-retail industry. *Journal of Knowledge and Process Management, Forthcoming*.
- Imanipour, N., Talebi, K., Rezazadeh, S. (2012b). Obstacles in business process management (BPM) implementation and adoption in SMEs. Available at SSRN: <http://ssrn.com/abstract=1990609>. Accessed 29 July 2012.
- Jeston, J., & Nelis, J. (2006). *Business process management*. Oxford: Butterworth-Heinemann.
- Key Statistics Australian Small Business (2011). Department of innovation, industry, science and research, Canberra.
- Kirchmer, M. (2011a). Business process Governance for MPE. In M. Kirchmer (Ed.) *High performance through process excellence* (pp. 69–85). Berlin Heidelberg: Springer, doi:[10.1007/978-3-642-21165-2\\_5](https://doi.org/10.1007/978-3-642-21165-2_5).
- Kirchmer, M. (2011b). Small and medium enterprises also benefit from MPE. In M. Kirchmer (Ed.) *High performance through process excellence* (pp. 147–157). Berlin Heidelberg: Springer, doi:[10.1007/978-3-642-21165-2\\_10](https://doi.org/10.1007/978-3-642-21165-2_10).
- Ouyang, C., Adams, M., Wynn, M., & ter Hofstede, AHM. (2010). Workflow management: An overview. In J. vom Brocke & M. Rosemann (Eds.), *The international handbook on business process management*. Berlin: Springer.
- Parham, D. (2012). *Australia's productivity growth slump: Signs of crisis, adjustment or both? Visiting research paper*. Canberra: Productivity Commission.
- Rosemann, M. (2010). The service portfolio of a BPM center of excellence. In J. vom Brocke & M. Rosemann (Eds.), *Handbook on business process management 2. International handbooks on information systems* (pp. 267–284). Berlin Heidelberg: Springer, doi:[10.1007/978-3-642-01982-1\\_13](https://doi.org/10.1007/978-3-642-01982-1_13).
- Rosemann, M., & vom Brocke, J. (2010). The six core elements of business process management. In J. vom Brocke & M. Rosemann (Eds.), *Handbook on Business Process Management 1. International Handbooks on Information Systems* (pp. 107–122). Berlin Heidelberg: Springer, doi:[10.1007/978-3-642-00416-2\\_5](https://doi.org/10.1007/978-3-642-00416-2_5).
- Rummler, G. A., Ramias, A. J. (2010). A framework for defining and designing the structure of work. In J. vom Brocke, M. Rosemann (Eds.), *Handbook on business process management 1. International handbooks on information systems* (pp. 83–106). Berlin Heidelberg: Springer, doi:[10.1007/978-3-642-00416-2\\_4](https://doi.org/10.1007/978-3-642-00416-2_4).
- ter Hofstede, A., van der Aalst, W., & Weske, M. (2003). Business process management: A survey. In M. Weske (Ed.), *Business process management*, volume 2678 (pp. 1019–1019). Lecture Notes in Computer Science. Berlin Heidelberg: Springer, doi:[10.1007/3-540-44895-0\\_1](https://doi.org/10.1007/3-540-44895-0_1).
- van der Aalst, W. M. P., & ter Hofstede, A. H. M. (2005). YAWL: Yet another workflow language. *Information Systems*, 30(4), 245–275.
- Yin, R. K. (2003). *Case study research: Design and methods* (3rd ed.). London: Sage Publications.

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