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**THE PROCESS-ORIENTED ORGANISATION: A HOLISTIC VIEW**

**DEVELOPING A FRAMEWORK FOR BUSINESS PROCESS ORIENTATION  
MATURITY**

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## **ABSTRACT**

Processes are the core of organisations. Business Process Management (BPM) argues organisations can gain competitive advantage by improving and innovating their processes through a holistic process-oriented view. An organisation can be more or less process-oriented depending on their experience in applying process thinking for better results. The aim of this paper is to define a framework for identifying characteristics of Business Process Orientation and to provide a valid tool for measuring the degree of Business Process Orientation (BPO) of an organisation based on empirical research in 30 international organisations. A holistic view on integrated process management and change is taken as a starting point.

**KEYWORDS:** Business Process Orientation, BPM Success Factors and Measures, BPM Maturity, BPM Governance

# 1 INTRODUCTION

Processes are at the centre of today's and tomorrow's competition. Organisations have come to the conclusion that efficiency as well as quality and service are to be available in processes. Due to this tendency Business Process Management (BPM) came to light as an attractive management solution for a variety of organisational problems. But what does it really mean to be process-oriented? As organisations accumulate efforts in process improvements they gain experience and develop a process-oriented view. So some organisations will be more mature in such a process view than others. How can an organisation identify whether it is process-oriented or not? Until today only a few models and frameworks exist to describe and measure

Business Process Orientation. This paper aims to develop a holistic framework for measuring the degree of BPO within an organisation, based on research. In the first section the relevance of Business Process Orientation (BPO) is highlighted. Subsequently a holistic view on BPO is elaborated. In the last section the construct is tested by empirical research, followed by conclusions and avenues for further research.

## 2. BUSINESS PROCESS ORIENTATION

### 2.1 Why Business Process Orientation (BPO)?

Cost reduction is commonly the primary concern for organisations willing to create a sustainable competitive advantage. Still a major attention for bottom line continues to exist but currently customer demands and environmental issues put growing pressure on this classic view on the organisational model [1]. Organisations have to face the fact of changing environments and process management has become an important way to handle this [2]. Therefore agility is a very important success factor for modern organisations. Having an overview of a process allows to easily modify it and proactively look for possible solutions for problems due to deficiencies in the process. So being process-oriented means a more pronounced view on processes but also greater agility for the organisation [3]. The challenge is now to have a flexible and efficient value chain at the same time [1]. Therein lays the relevance of being process-oriented for organisations.

Secondly the ultimate aim of a core business process is to deliver value to the customer. Managing these processes critically improves customer satisfaction whereas functional structures form barriers to customer satisfaction [4].

Thirdly more and more evidence is found showing the strategic value of processes. McCormack and Johnson [5] investigated on Business Process Orientation and found that companies with strong signs of BPO also performed better. The study shows that the development of BPO in an organisation will lead to positive outcomes, both from an internal perspective and a resultant perspective. Business Process Orientation has been shown to reduce inter-functional conflict and increase interdepartmental connectedness and integration, both of which impact long and short-term performance. Moreover the hypothesis stating there is a direct positive impact on self-evaluated business performance is validated in his study as well as the positive relationship of BPO to the long-term health of an organisation. Building BPO into an organisation appears to have significant positive impacts, so it is believed to be worth the investment [5]. The authors also explain that the e-society is a major driver for BPO. E-business and e-collaboration have provoked changes in the organisational landscape especially with regards to cross-organisational cooperation. There are fewer barriers to hamper potential competitors [5]. The study described in this paper has found inspiration in McCormack's research amongst others. Whereas most studies focused on the impact of Business Process Orientation on organisational performance, this paper aims at:

- elaborating the BPO concept by determining which characteristics and its underlying factors influence the process orientedness of an organisation
- validating a scale for assessing a company's process orientation maturity

## **2.2 BPO Principles**

Literature review learns there are several general definitions of BPO. The most extended version was delivered by McCormack and Johnson. "Business Process Orientation of an organisation is the level at which an organisation pays attention to its relevant (core) processes" (end-to-end view across the borders of departments, organisations, countries, etc.) [7] The definition implies that people in the organisation develop a process-driven mindset. According to these authors there are three dimensions to process orientation assessment: Process Management and Measurement, Process Jobs and Process View [5].

1. Process Management and Measurement (PM): There are measures in place that include process aspects such as output quality, cycle time, process cost and variability.
2. Process Jobs (PJ): Process related tasks and roles are defined. E.g. a product development process owner rather than a research manager.
3. Process view (PV): Thorough documentation and understanding from top to bottom and beginning to end of a process exists in the organisation.

In another approach BPMGroup developed the 8 Omega framework as a tool to facilitate the implementation of Business Process Management linking 4 high level dimensions: Strategy, People, Process and Systems to 8 activities in the implementation process [6]. What does it mean to be more or less mature considering BPO? An organisation that has a high maturity is believed to have a more structured approach on Business Process Management. Both 'hard and soft' characteristics of Business Process Orientation are in place. Less mature organisations tend to approach Business Process Management more in an ad hoc way [7]. Finally, another maturity model was developed by Rosemann, de Bruin and Power. In this model 6 factors having an impact on the BPO maturity are defined: Strategic Alignment, Culture, People, Methods, Governance and IS/IT [8]. A rigorous methodology is applied in this work. The dimensions they used confirm the relevance of a holistic view, although they differ from the dimensions described in this paper.

### **2.3 Holistic View**

It is obvious that changing an organisation's more pervasive habits of functional management into BPO will demand knowledge and skills in several domains. A lot of management disciplines are involved in Business Process Management. This is often referred to as a holistic view on BPM. It embraces parts of Change management, IT management, Project management and deals with a lot of stakeholders such as suppliers, customers, employees and shareholders. According to Burlton the multidisciplinary character as described above is a strength rather than a weakness to BPM [2].

Applying BPO in your organisation requires a holistic approach to the implementation and application of Business Process Management [9]. Figure 1 gives an overview of what such a holistic view entails. The central aspect is a continuous improvement cycle or

methodology to analyse, redesign and measure processes in order to improve process performance. When applying this methodology, one has to be aware to broaden his view and take into account the company's environment, strategy, values & beliefs, information technology and finally the resistance to change from personnel working in the organisation.

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Insert Figure 1 about here

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The organisation's business processes need to support the overall strategy. In order to do so, introducing a "process" performance measurement system might be helpful (e.g. balanced scorecard, strategy map) in order to align the organisation's activities, and more specific the organisation's processes on the strategy. The most important driver is to make sure that people are being evaluated and rewarded based on 'Key Performance Indicators' (KPI) that contribute to the bottom-line strategy. Both internal efficiency and customer satisfaction must be reflected in the KPIs. Based on KPI measurements, management can find information to redesign and improve processes. Moreover there is not only the need to set up a strategic measuring system, but also a strategic control system that aligns departmental and personal objectives with the strategy on a continuous basis. It is clear that applying BPM has a considerable impact on the people in the organisation. Making a company process-oriented will not only influence logical relationships of the business processes, but on the long run employees also need to take responsibility for their process outcomes. New and different roles will therefore be assigned to the employees.

This shift in responsibilities also has its impact on the organisational structure. A process-oriented organisation tries to organise responsibilities as much as possible horizontally, in addition to the more traditional vertical, hierarchical structure. Task- or process responsibilities that originally belonged to different managers are now being rearranged in a new role or function (sometimes called process owner). Implementing a process-oriented organisational structure will have no effect if people's mentality does not change accordingly. A more process-centred mindset with people is reflected in the fact that they more often work together with people in other departments in a proactive way. Sharing information and learning more with cross-functional knowledge and teamwork are also characteristics of such a mindset. Evading behaviour with regard to task responsibilities and other dysfunctional habits (which are typical failures in functionally specialised organisations)

need to be avoided and make place for a culture of cooperation and strongly imposed customer orientation.

This can only be attained on condition that people are involved and trained in methods for business process improvement. Resistance to change from people is often found to be a barrier for a successful implementation. Therefore effective management of human resources is part of any process improvement initiative. Increasing involvement can only be achieved by communicating a mission and organisational strategy which is meaningful and inspiring, and also by setting up objectives which are not only clear, but also feasible. A management information system which can produce the relevant, actual and useful information, can improve the involvement of employees. Documenting and communicating the business processes is also a means for improving communication across the organisation. The biggest challenge however is to keep this information up-to-date and accessible for everyone who is involved. Strong internal communication on the methodology and achieved results is the key to overall success.

In summary business processes need to be continuously evaluated, improved and implemented in the organisational structure within a supportive framework of human resources and process-oriented information systems. Corporate strategy is the guideline in this model, inspiring a process-minded culture of continuous learning and improvement. The above described holistic view on Business Process Management already contains a lot of characteristics of a process-oriented organisation. In the following paragraphs a model for Business Process Orientation, by means of 8 dimensions and their respective characteristics, is developed and elaborated based on the above proposed holistic view.

### **3 RESEARCH DESIGN**

#### **3.1 Business Process Orientation as a Theoretical Construct**

Based on the holistic view a theoretical construct for Business Process Orientation was developed. Business Process Orientation (as measured by the respondent's perception) is represented by characteristics grouped in 8 dimensions. These dimensions are produced as a result of literature review, expert interviews, academic visions and case studies within several organisations. The more of these characteristics an organisation shows, the more it will be considered business process-oriented. It is then assumed that being more business process-

oriented has a positive effect on organisational performance. However this assumption is not examined in this paper. In the following sections the 8 dimensions will be defined. The following hypotheses were tested:

H1: The degree of customer-orientation is positively related to the degree of BPO.

H2: The degree of process view in an organisation is positively related to the degree of BPO.

H3: The degree of organisational integration characteristics is positively related to the degree of BPO.

H4: The degree of process performance characteristics in an organisation is positively related to the degree of BPO.

H5: The degree to which culture, values and beliefs are process-minded is positively related to the degree of BPO.

H6: The degree of people management characteristics in an organisation is positively related to the degree of BPO.

H7: The presence of process supportive information technology in an organisation is positively related to the degree of BPO.

H8: The degree to which an organisation is supplier-oriented is positively related to the degree of BPO.

## **3.2 Detailed overview and description of components**

### **3.2.1 Customer Orientation (CO)**

Customers are the reason of existence for every organisation and will serve as the foundation of BPO. Being process-oriented starts by looking further than the organisational boundaries. Knowing the customers is the starting point, because becoming process-oriented requires a company to adapt its (internal) processes to the different customers and their wishes [10], [11]. This dimension investigates the organisation's ability to understand and assess customer's requirements, and maintain customer relationships. A first discussion that arises is who to consider as a customer. The customer is an entity downstream of the process. Customers can be either internal or external, but eventually the value delivered to the external customer should be optimised [12].

Furthermore customers are valuable information sources for process improvement. An organisation should carefully identify its customers for each process [2, 10, 13, 14 and 15]. In addition Tonchia and Tramontano describe the ‘visibility of the final customer’ as the greatest achievement of process management. To their views anyone active in a process must be aware of the final aim of the specific process: customer satisfaction [15]. Customer requirements have a dynamic character. Therefore customer oriented organisations have the need for flexible processes, which can be adapted to changing customer expectations [12]. Understanding the customers’ expectations allows an organisation to proactively search for improvements in processes to stay ahead of competition. Moreover customer satisfaction has to be measured in a correct way on a regular basis. It can deliver crucial input for process improvements [10, 14]. BPO requires from an organisation to look further than the next department, since process orientation promotes a cross-departmental view on organisations. In many cases intermediate organisations are active in between the next department and the real end-consumer or customer. These can be subsidiaries; a sales office network or any other partner organisation. Considering the fact that these intermediate organisations are the first external customer in the value chain before the consumer, they are the target group looking at customer orientation [14].

### ***3.2.2 Process View (PV)***

Adapting the processes to the customer’s requirements and wishes requires that everyone in the organisation has a clear view and understanding of the company’s processes. This means any employee involved in the process is familiar with process specific terms and has at least notion of the concept ‘process orientation’. Good and thorough process documentation is the basis for process performance measurement, analysis and improvement. A process-oriented view requires the presence of sufficient process documentation, the use of this documentation and the company’s view and thinking about business processes and process management. McCormack argues that a process view facilitates innovative process improvement initiatives and the implementation of a process-oriented structure [16]. In their study McCormack and Johnson identified process view as a category to assess an organisation’s process orientation [5].

It is critical that processes are well identified, defined and mapped in order to select and improve the right process to improve customer value [20]. Therefore process modelling is an important step in the BPM cycle. Preferably processes are visualised in some sort of 'modelling language'. The visualisation of processes in itself can provide organisations with new insights in the complexity of their processes and it is often the first step in a BPM implementation [18].

### ***3.2.3 Organisational Structure (OS)***

In order to make process documentation, KPIs and people management useful organisations have to adapt their structure to this process view. Measuring process outcome is not sufficient if no one is held responsible for it. Cross-functional integration efforts need to be formalised in official functions. A vertically oriented company can take actions or initiatives to break through departmental boundaries to become more process-oriented. Typically multidisciplinary teams are assigned to integrate functional structures [16, 19]. Depending on the needs and complexity of the organisation an integration mechanism, such as multidisciplinary teams, can be arranged ad hoc or on a regular basis [20]. In practice very often a role is created to take up responsibility for the horizontal overview of a process. A role which is sometimes referred to as process owner. The process owner or equivalent needs to be given certain decision autonomy and responsibilities with regards to the process. The process owner is accountable and responsible for the outcome of the process, which has direct impact on the customer. The process owner role can be allocated to someone in the hierarchical structure, so it is not necessarily resulting in new managerial functions. Sometimes organisations decide to start up a centre of excellence regarding business processes. This centre is very often referred to as Business Process Office. The Business Process Office or equivalent has the specific skills and knowledge required to set up and manage business process improvement initiatives. This office is often centrally installed on a high level. The process-support organisation was researched and linked to the BPO maturity concept by Willems *et al.* [21].

The heart of BPM governance is how the company organises its managers to assure that its processes meet its expectations. An organisation that relies entirely on a traditional departmental organisation chart cannot support a process-centric organisational view. There is a natural tension between a departmental approach to structuring an organisation and a

process focused approach. A process-oriented organisation is an organisation in which the organisational structure (the organisation chart) is adapted to its processes. This does not mean that a company should be structured completely horizontally, since this would be in conflict with the driving principle of specialisation, which has to be considered as well [16]. Most organisations that are process focused are applying some kind of matrix management model, combining horizontal with vertical, with varying success. Some managers continue to be responsible for departmental or functional groups, like sales, marketing, manufacturing, and new product development however, other managers are responsible for value chains or large scale processes, which creates inevitably confusion and tensions. The perfect balance is yet to be found [10]. How the process and the departmental managers relate to one another varies from one company to another. In some companies specific individuals occupy multiple managerial roles. Thus, one individual might be both the manager of manufacturing and the manager of the end-to-end process.

Also a process-oriented organisation has the need to establish hierarchical structures and process architectures. High level processes are the responsibility of a high level (executive) process owner. A high-level process is then divided into major business processes. These business processes are divided into sub-processes, that all need to be managed by a hierarchical infrastructure of process managers.

### ***3.2.4 Process Performance (PP)***

Describing the processes is a large step in becoming process-oriented. However business process improvement requires that the processes are continuously measured and analysed, i.e. defining and implementing performance measures and KPIs that allow executives to monitor processes. One has to be aware that KPIs do not necessarily support the processes, because they are mostly derived from the company's strategy and translated into "departmental" objectives with related KPIs. Such measures usually focus on financial performance or sales volumes, which are typically departmental measures. These are useful measures but they have little information to offer regarding processes. A horizontal process-oriented view on the company also requires related KPIs that also measure cross-departmental process inputs, outputs and outcomes, the so-called process performance measures. Outcome indicators indicate whether the customer is satisfied and profit has been generated whereas output indicators measure the output as it is (e.g. X units per hour) [12].

In order to be able to make sound analysis and take the right process improvement initiatives, a company needs to have a good idea about the performance of its end-to-end business processes. Identifying the right KPIs, measuring them on a regular basis and analysing the data in a correct way forms a basis for taking the right decisions and knowing where the problems in the processes occur. Performance measurement involves defining the concept, selecting components and deciding on how to measure them. Process performance measurement can be a vital tool for strategy execution by signalling what is really important, providing ways to measure what is important, fixing accountability for behaviour and results, and helping to improve performance [22].

### ***3.2.5 Culture, Values and beliefs (CVB)***

The lack of a change supportive culture is often blamed when process improvement actions fail [12]. There is a strong link between work culture and organisational performance [23]. Therefore process orientation has to be part of the organisational culture. Aspects of process orientation, like customer orientation should be reflected in the beliefs, values, and principles that the organisation has publicly committed to. In this section, the mindset for process management and processes in general is assessed. This relates to teamwork, innovative culture, awareness of mission and values of your company, etc. [10].

An important aspect of process orientation with cultural implications is inspiring leadership and executive support. It is the top management's responsibility to direct the organisation towards process orientation. Stimulating interdepartmental and proactive behaviour is key to introducing process orientation [12, 14].

### ***3.2.6 People Management (PM)***

People are a company's most important asset. Human capital is a basis for improvement and innovation in processes. Marr *et al.* define: "Human Capital contains knowledge assets provided by employees in forms of skills, competence, commitment, motivation and loyalty as well as in form of advice or tips." [24] Balzarova *et al.* [25] identified 'Training and Learning by doing' and 'Managing resistance to change' as key success factors of implementing process-based management. These are clearly characteristics of people management. In terms of people the big challenge for both line managers and senior managers is to know how changes to a process affect employees. Process orientation implies

the development of new skills for the employees. In a process-oriented organisation, people will be identified, evaluated and rewarded based on their competences in understanding and improving processes. Therefore it is required that people are trained and informed to improve processes and to think in terms of processes. Also the ability and willingness to be team players and contributors is very important. People need to have clear goals and incentives to reach these goals [24].

### ***3.2.7 Information Technology (IT)***

IT forms a core component of the performance improvement programs of companies. Most processes are enabled by a combination of IT, information and organisational/ human resource change. IT is both an enabler and implementer of process change. Attaran [26] considers IT and process management as natural partners. In this dimension it is investigated whether your company has IT systems in place that function as an enabler of your business processes and whether they give the right support for process improvement initiatives. IT systems should be flexible to facilitate process improvements. A process-oriented IT system supports information exchange across departments [9, 10].

More and more IT software vendors provide BPM tools. These tools form a platform for several applications. The integration of applications is very important for process-oriented organisations since the diversity of applications could hamper the integration efforts between departments. Some BPM suites provide a modelling and simulation function which is helpful in the process mapping phase. Other tasks for IT are setting and controlling strategic KPIs. Therefore IT will be even more indispensable in a process-centric organisation. In the end business process management is ultimately a matter of human resources where IT can play an important facilitating role.

### ***3.2.8 Supplier Perspective (SP)***

Although there is more pressure on suppliers to anticipate needs, respond to them, and perform better than in the past, there are also pressures on customers to treat their suppliers consistently well and to cooperate in order to smoothen the processes. In this section, orientation towards the suppliers of your organisation is assessed.

Processes clearly extend the organisational borders in today's economy. As technology evolves, boundaries fade and suppliers become partners. Sharing information and knowledge with suppliers is a characteristic of process orientation [15]. Partnerships are arising everywhere on the global business community. The fast deployment of the internet has induced e-business and e-collaboration. Online platforms are shared with suppliers in order to manage processes in a much more efficient and faster way. Consider organisations as part of a larger system. This 'system view' delivers insight in the interactions with both customers and suppliers and other involved stakeholders. Lee et al. argue that process models should encompass these interactions within the value chain. Also information sharing with suppliers is considered important for effective process management [27]. The 'Extended Enterprise' concept is one example of dissolving organisational borders. It says that organisations are not limited to their employees and managers but that they include partners, customers, suppliers and other potential stakeholders. The supplier is often neglected, although good relations with suppliers add value to the processes. Streamlining a process includes good supplier management as they deliver crucial resources or inputs for processes [14].

## **4 VALIDATION OF THE BPO CONSTRUCT**

### **4.1 Data Collection and Cleaning**

Data were gathered in two consecutive rounds respectively in June 2006 and between October and December 2006. Participating companies were selected on an ad hoc basis. The sample consists of a balanced set of both small and large companies. Organisations from different sectors were asked to participate. As a result a set of 30 companies was developed. The respondents for each company had to be management level and from different departmental backgrounds. The survey ended up with a total of 725 unfiltered responses. The first step was to clean the gathered data in order to prepare them for analysis. After elimination 595 valid individual results were left for statistical analysis.

### **4.2 Scale Development**

The authors developed a questionnaire assessing the indicators of process orientation based on the 8 dimensions in the proposed holistic BPO model. The items were created as a result of profound literature research, the authors' experience and information obtained from interviews with experts and practitioners. In total the questionnaire consisted of 72 questions.

This number also includes additional questions to measure the participant's perception of the level of process orientation in his/her organisation and to assess the impact of BPM projects in the present and the future. Ultimately, specifications on the characteristics of the participant's organisation and function were asked. All questions assessing the level of BPO were measured using a 7 point Likert-scale (1 being "strongly disagree", 4 being "Neither agree nor disagree", 7 being "strongly agree"). The perception of the BPO level was measured using a 10 point scale.

### **4.3 Statistical Data Analysis**

#### ***Reliability analysis and Correlation analysis***

The reliability of each dimension was statistically tested using Cronbach's alpha<sup>1</sup>. Alpha showed values higher than 0,7 on all dimensions which means all dimensions have consistent items.

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Insert Table I about here

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Alpha increases to 0,829 for the OS dimension when item OS8 is removed. This means that question OS8 varies differently from the other questions in the organisational structure dimension. Therefore this item does not fit in the OS dimension. OS8 refers to business process outsourcing. All items/questions within each dimension should be correlated in order to have a consistent set of questions in the dimensions. Analysis of the inter-item correlations revealed low correlation between OS8 and the other OS items. Apart from OS all dimensions showed strong inter-item correlations.

#### ***Factor analysis***

Having defined the 8 dimensions of the BPO model factor analysis was executed to test the relevance of the dimensions proposed and possibly detect other underlying factors with a significant influence on organisational BPO maturity. The aim is to develop the model and questionnaire into a complete and trustworthy process orientation assessment tool. The

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<sup>1</sup> Cronbach's alpha: "Alpha is defined as the proportion of a scale's total variance that is attributable to a common source, presumably the true score of a latent variable underlying the items." [28] Preferably alpha should be higher than 0,7. Alpha is a value between 0 and 1.

use of factor analysis on this survey needs to be explored by executing the ‘Bartlett test of sphericity’ and the ‘Kaiser-Meyer-Olkin measure of sampling adequacy’<sup>2</sup>. The KMO-index is higher than 0,7 for all dimensions. It is decided that it is appropriate to apply factor analysis. The method for factor analysis chosen was the Principal component method. The resulting factor loading matrix was Varimax (Variance of square loadings Maximalised) rotated. The criterion to decide on the number of factors was eigenvalue > 1,000. SPSS analysis led to 14 significant factors to be explained. These 14 factors cumulatively explained 59,607 % of total variance. The latent variable or underlying construct of the survey is the perceived BPO score, measured in question 14 of the questionnaire. The 8 dimensions and their respective subsets of questions are the variables presumably influencing the BPO score.

### ***Regression analysis***

Predicting power of the questionnaire is revealed by Linear Regression analysis. The hypothesis to be tested here is whether one of the coefficients is zero. The b-coefficients represent the influence each dimension has on the model. Significance has to be below the 0,05 level. General perception, scored by each participant, was taken as dependent variable. The average scores on the 8 dimensions of the model were inserted as independent variables. The model can be formulated as follows:

$$\text{Employee General Perception of BPO} = b_0 + b_1\text{AVG(CO)} + b_2\text{AVG(PV)} + b_3\text{AVG(OS)} + b_4\text{AVG(PP)} + b_5\text{AVG(CVB)} + b_6\text{AVG(PM)} + b_7\text{AVG(IT)} + b_8\text{AVG(SP)} + \varepsilon$$

( $\varepsilon$  represents the residual )

As a result of the ANOVA (Analysis of Variance) test, the hypothesis can be rejected with a significance level of 0,000 . So at least one of the coefficients is different from zero. Therefore analysis by dimension is executed. It is observed in Table II that the CO dimension has a significance level slightly higher than 0,05. This means that the CO dimension has low, insignificant predicting power for the model. The CVB dimension also has a significance level higher than 0,05. Again this means this dimension has insignificant predicting power concerning the dependent variable.

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<sup>2</sup> The significance of the Bartlett test needs to be less than 0,05 in order to reject the hypothesis, which means factor analysis can be executed. The KMO measure is a value between 0 and 1 and needs to be higher than 0,5 and preferably higher than 0,7.

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Insert Table II about here

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R Square is calculated as 0.557 which means the model as a whole has a predicting power of 55,7% as shown in Table III. In other words a total of 55,7% of the variation in the dependent variable General BPO perception is explained by the variation in the independent variables of the model. Adjusted R Square, which includes a correction of R Square for the number of independent variables, still shows 55% predicting power. Thus hypotheses 2,3,4,6,7 and 8 are supported by the regression analysis. There is no statistical support for hypotheses 1 and 5.

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Insert Table II about here

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## **5 CONCLUSIONS AND AVENUES FOR FUTURE RESEARCH**

In the attempt to construct a model for Business Process Orientation a few interesting conclusions came to light. Statistical analysis validated the predicting power of the PV, OS, PP, PM, IT and SP dimensions that were believed to define the indicators of Business Process Orientation. Therefore this research contributes to a better understanding of the different aspects involved in being process-oriented. BPO requires a broader perspective than quality or IT for instance. Being process-oriented is in other words a matter of mastering a whole range of techniques and principles in order to improve business processes and organisational performance. It is the authors' believe that an integrated effort to improve these domains leads to increased BPO in an organisation.

Correlation analysis and Cronbach's alpha showed that all dimensions have internal consistency. There is no statistical evidence for the influence of the CO and CVB dimensions. Several explanations are possible. Therefore it is suggested to revise and restructure both dimensions and proceed to a new data collection round. It is important to keep in mind that this study has a static character and does not exclude the influence of dynamic factors nor the influence of personal opinions.

It is suggested that process outsourcing could be treated as a dimension apart from the OS dimension or excluded from the survey. Factor analysis revealed 14 factors significantly influencing the degree of BPO. To a certain extent these factors overlap with the dimensions defined in this paper. The presence of some other factors can be explained. An important observation is that factor analysis revealed the distinction between a customer complaints factor, a customer satisfaction and requirements factor, and a factor probing for process-related communication with the customer. In future research the presumed positive relation between BPO and organisational performance has to be tested in order to complete the model. Another topic for future research based on the survey could be a study on the influence of company-specific characteristics such as size and sector on the degree of BPO.

This study shows that BPO as a concept should be considered from a holistic, multidisciplinary perspective. The degree to which an organisation is process-oriented is influenced by aspects of several domains described in this paper. The practical value of this research lays in its relevance for organisations wanting to assess their process-orientedness. Furthermore the framework helps to understand the dynamics of process improvement. The proposed holistic approach has proven to be valuable and allows for identifying domains on which to focus when prioritising BPM initiatives.

## REFERENCES

1. Buciuman-Coman, V., Sahlean, A. G. (2005), "The dynamically stable enterprise: engineered for change", BPMGroup, *In search of BPM Excellence: Straight from the thought leaders*, Meghan-Kiffer Press, Tampa USA
2. Burlton, R. T. (2001), *Business Process Management: Profiting from process*, SAMS, Indianapolis USA
3. Smith, H. and Fingar, P. (2003), *Business Process Management: The third wave*, Meghan-Kiffer Press, Tampa USA
4. Zairi, M. (1997), "Business Process Management: a boundaryless approach to modern competitiveness", *Business Process Management Journal*, Vol. 3 No. 1, pp. 64-80., University Press
5. McCormack, K. P., Johnson, W. C. (2001), *Business Process Orientation: Gaining the e-business competitive advantage*, CRC Press, Boca Raton USA
6. Towers, S., Lyneham-Brown, D., Schurter, T., McGregor, M. (2005), "8 Omega", BPMGroup, *In search of BPM Excellence: Straight from the thought leaders*, Meghan-Kiffer Press, Tampa USA
7. Harmon, P. (2004), "Evaluating an Organization's Business Process Maturity", *Business Process Trends*, March 2004, Vol. 2, No. 3, pp. 1-11. (online available on: <http://www.caciasl.com/pdf/BPtrendLevelEval1to5.pdf>)
8. Rosemann, M., de Bruin, T., Power B. (2006), "BPM Maturity", Jeston, J. and Nelis, J., *Business Process Management: Practical Guidelines for Successful Implementations*, Elsevier, Oxford UK
9. Hung, R.Y. (2006), "Business Process Management as Competitive Advantage: a review and empirical study", *Total Quality Management*, Vol. 17 No. 1 January, pp. 21-40
10. Davenport, T. H. (1993), *Process Innovation: Reengineering Work Through Information Technology*. Ernst & Young, Harvard Business School Press

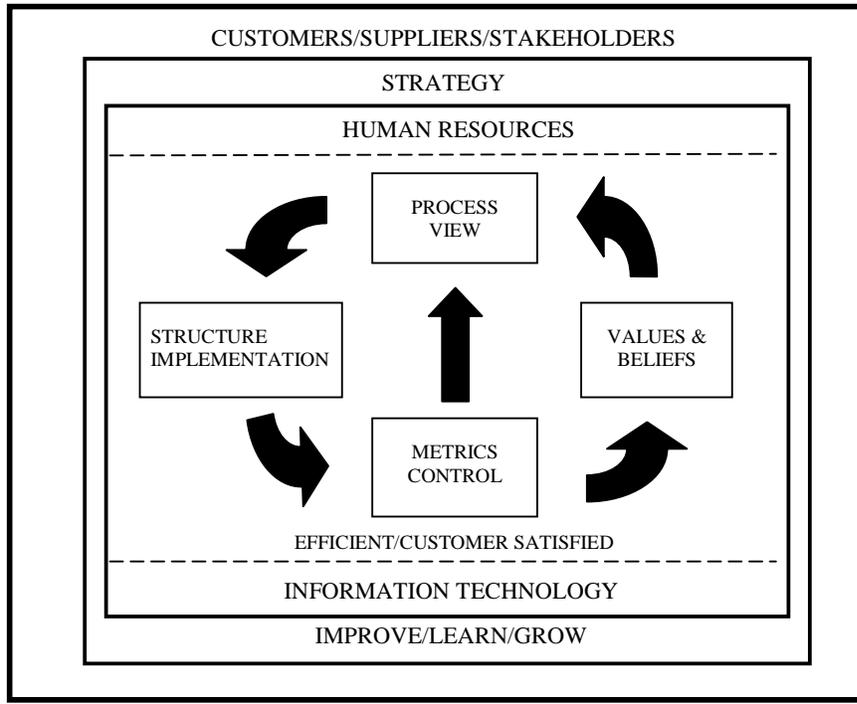
11. Harmon, P. (2003), *Business process change: a manager's guide to improving, redesigning and automating processes*, Morgan Kaufmann, San Francisco
12. Tenner, A.R., DeToro, I.J. (2000), *Process Redesign: the implementation guide for managers*, Prentice Hall, New Jersey
13. Hammer, M. (1996), *Beyond Reengineering: How the Process-Centered Organization is Changing Our Lives*, HarperBusiness, New York
14. Harrington, H. J. (1991), *Business Process Improvement: the breakthrough strategy for total quality, productivity and competitiveness*, McGraw-Hill, USA
15. Tonchia, S., Tramontano, A. (2004), *Process Management for the extended enterprise: Organisational and ICT Networks*, Springer, Berlin
16. McCormack, K.P., Johnson, W.C., Walker, W.T. (2003), *Supply Chain networks and business process orientation*, CRC Press, Boca Raton USA
17. Rummler, G., A., Ramias, A., J., Rummler, R., A. (2006), Potential Pitfalls on the Road to a Process Managed Organization (PMO), *Business Process Trends*, December 2006, Volume 2, No. 3
18. DeToro, I. and McCabe, T. (1997), "How to stay flexible and elude fads", *Quality Progress*, Vol. 30 No. 3, pp. 55-60.
19. Byrne, J.A. (1993), The horizontal corporation, December 1993, *Business Week* p.76-81
20. Galbraith, J. R. (1995), *Designing Organizations, an executive briefing on strategy, structure, and process*, Jossey-Bass Publishers
21. Willems, J., Willaert, P., Deschoolmeester, D. (2007), "Setting up a business process-support organisation: the role of a business process office", *Information Resources Management Association, International Conference 2007*, forthcoming
22. Willaert P. Willems J. Deschoolmeester D. Viaene S. (2006), Process Performance Measurement: Identifying KPI's that link process performance to company strategy.

Paper presented at the International Resources Management Association (IRMA) Conference 2006 held in Washington D.C., May 21-24

23. Kotter, J.P., Heskett, J.L. (2003) *Corporate culture and performance*, The Free Press, New York
24. Marr, B., Schiuma, G. (2003), Business performance measurement - past, present and future, *Management Decision*, 2003, Vol. 41 Issue 8, p680-687
25. Balzarova, M.A., Bamber C.J., McCambridge, S. and Sharp, J.M. (2004), "Key success factors in implementation of process-based management: A UK housing association experience", *Business Process Management Journal*, Vol. 10 No. 4, pp. 387-399
26. Attaran, M. (2003), "Information technology and business-process redesign", *Business Process Management Journal*, Vol. 9 No. 4, pp. 440-458
27. Lee, S.M., Olson, D.L., Trimi, S. and Rosacker, K.M. (2005), "An integrated method to evaluate business process alternatives", *Business Process Management Journal*, Vol. 11 No. 2, pp. 198-212
28. DeVellis, R. F. (1991), *Scale Development: theory and applications*, Sage Publications, Newbury Park USA

**FIGURE 1**

**A holistic view on BPM**



**TABLE I**

**Reliability analysis for the BPO model dimensions**

|     | Cronbach's alpha | N  |
|-----|------------------|----|
| CO  | 0,769            | 10 |
| PV  | 0,837            | 9  |
| OS  | 0,806            | 8  |
| PP  | 0,899            | 11 |
| CVB | 0,815            | 10 |
| PM  | 0,812            | 7  |
| IT  | 0,811            | 6  |
| SP  | 0,891            | 7  |

**TABLE II****Regression analysis, SPSS Output**

|              | Unstandardized Coefficients |            | Standardized Coefficients | T          | Sig.  |
|--------------|-----------------------------|------------|---------------------------|------------|-------|
|              | B                           | Std. Error | Beta                      |            |       |
| 1 (Constant) | -1,350                      | 0,352      |                           | -<br>3,840 | 0,000 |
| AverageCO    | 0,108                       | 0,077      | 0,050                     | 1,405      | 0,161 |
| AveragePV    | 0,288                       | 0,071      | 0,166                     | 4,086      | 0,000 |
| AverageOS    | 0,191                       | 0,071      | 0,108                     | 2,679      | 0,008 |
| AveragePP    | 0,367                       | 0,072      | 0,225                     | 5,079      | 0,000 |
| AverageCVB   | 0,143                       | 0,079      | 0,062                     | 1,814      | 0,070 |
| AveragePM    | 0,160                       | 0,066      | 0,092                     | 2,427      | 0,016 |
| AverageIT    | 0,296                       | 0,056      | 0,183                     | 5,282      | 0,000 |
| AverageSP    | 0,154                       | 0,060      | 0,088                     | 2,556      | 0,011 |

a Dependent Variable: General Perception

**TABLE III:**

**SPSS Output Linear Regression Analysis**

| Model | R        | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|----------|----------|-------------------|----------------------------|
| 1     | 0,746(a) | 0,557    | 0,551             | 1,184                      |

a Predictors: (Constant), AverageSP, AveragePV, AverageCVB, AverageIT, AverageCO, AveragePM, AverageOS, AveragePP