International Journal of Management Technology
Vol.5, No 3, pp. 43-61, September 2018
Published by European Centre for Research Training and Development UK (www.eajournals.org)

CRITICAL SUCCESS FACTORS ON BUSINESS PROCESS ORIENTATION

Dr. Murillo de Oliveira Dias
Rennes School of Business
Dr. Marcelo Almeida Magalhães
Universidade Federal Fluminense
Dr. Carlos Pereira Soares
Universidade Federal Fluminense
Dr. Andre Bittencourt Valle
Universidade Federal Fluminense

ABSTRACT: *This paper identified Critical Success Factors (CSF) and their respective Critical Practices (CP) for the development of Business Process Orientation in organizations, in Brazilian projects. The purpose is to analyze best practices in project management, like strategic alignment e information systems support, and evaluate which factors contribute to the development of efficient organizations, focused in process management. A review of BPO and respective CSF and CP was undertaken and key issues identified, and a field survey was conducted to obtain parameters to investigate BPO success and to propose priorities to their implementation projects. The results evidenced that the success of the BPO is probably not related to one good practice alone, but to several that combined create the conditions for business decisions to be made on entrepreneurial business processes.*
KEYWORDS: Business process Orientation, Process management, Maturity Model

INTRODUCTION

Bruin (Rosemann & de Bruin, 2005) recognised as a foundation for contemporary management approaches as it goes via the analysis of business processes to the roots of an organisation. This paper identified Critical Success Factors (CSF) and their respective Critical Practices (CP) for the development of Business Process Orientation in organizations, in Brazilian projects. Business process management has been the top business priority of chief information officers in every year between 2007 and 2010 (Gartner Group, 2010) and is listed as one of the top priorities in most surveys, e.g., chief information officers listed business process improvement & innovation as being of the utmost importance (Johnson, C. & Levien, S. , 2010).

As the business environment becomes more complex, more crucial decisions involving highly complicated and tricky problems are made (Vasconcelos & Ramirez, 2011). The systemic thinking offers an important alternative to the reductionist approach (Jackson, 2003) (Korn, 2011). BPM approach has systemic characteristics can be a practical solution for managing organizations systemically (Segatto, Pádua, & Martinelli, 2013). However, evidence suggestes that a large number

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

of failed projects and programs, several papers tried to identify critical success factors ('CSF') of BPM (Bandara, Gable, G., & Rosemann, M., 2005)

BPM concept is embedded in the context of Business Process Orientation (BPO) and organizations can apply it as a way to develop business-minded systemic thinking where the organization emphasizes processes at the expense of hierarchy, focusing on results and customer satisfaction (McCormack, K., 2007).Röglinger et al (Röglinger, Pöppelbuß, & Becker, 2012) affirm that maturity models are a prospering approach to improving a company's processes and business process management (BPM) capabilities e que the number of corresponding maturity models is so high that practitioners and scholars run the risk of losing track. For this reason, they developed a systematic review of maturity models in BPM. Maturity models typically include a sequence of levels (or stages) that form an anticipated, desired, or logical path from an initial state to maturity (Becker, Knackstedt, & Põppelbuß, 2009).

The concept of Business Process Orientation suggests that the companies may increase their overall performance by adopting a strategic view of their processes. According to Lockamy & McCormack (Lockamy III & McCormack, 2004), companies that strategically focus on their business processes reach greater levels of performance and have a better work environment based on high levels of cooperation and less conflict (Dias, M. & Davila, 2018; Dias, M., 2018; Dias, M., 2016).
These authors proposed the following maturity scale (a) ad hoc; (b) defined; (c) linked; (d) integrated; (e) extend.BPO is a way of thinking and working that emphasizes the integration of inputs into valuable outputs rather than focusing on hierarchical or functional effectiveness (McCormack & Johnson, 2001) (Aguilar-Save´ n, 2004)). Critical success factors are defined as those few key areas where things must go right for business to prosper (Rockart, 1979). Skrinjar *et al.* (Skrinjar & Trkman, 2013), have consolidated nine BPO project evaluation areas: (a) the strategic view, (b) process definition and documentation, (c) process measurement and management, (d) process organizational structure, (e) people management, (f) process organizational culture, (g) market orientation, (h) the supplier view, and (i) information systems support. Although this proposal is based on case study that was conducted at a medium-sized Slovenian bank, we consider that the business dimensions listed have applicability to BPO projects accompanied by us in companies from other sectors, according to Table 1, as follows

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

Table 1 CSF and their critical practices for business process management

Critical Success Factors (CSF)	Code	Critical Practices (CPs)
Strategic Alignment	SA1	Top management is actively involved in process improvement efforts
	SA2	Business process goals are derived from and linked to the organization's strategy
	SA3	Business process improvement is frequently on the agenda of top management meetings
	SA4	Process changes are communicated to all employees
	SA5	Employees from different departments feel that the goals of their departments are aligned
Performance measurement	PM1	Performance results are used in setting improvement targets
	PM2	Performance indicators are communicated within the organization on a regular basis
Organizational changes	OC1	The organizational structure supports processes across departments
	OC2	Process owners are appointed
IS support	IS1	Information system development is based on business processes (not business functions)
	IS2	Information systems provide relevant management information on the performance of business processes
	IS3	Our organization uses a CRM system
	IS4	A business process management system/suite is used
	IS5	E-procurement, EDI, or another type of SCM is implemented to connect with suppliers
Employee training and empowerment	EE1	People are trained to operate new or changed processes prior to their implementation
	EE2	Employees view the business as a series of linked processes
	EE3	Process terms such as input, output, process, and process owners are used in conversations
	EE4	Policy and strategy are communicated and cascaded throughout the organization

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

The variable IS5 was designed for CPs evaluation in Banks but for the application to the service industry such as engineering projects and financial services, it should include EDI or another type of SCM with partners, distributors and clients.

METHODOLOGY

Eleven companies have been selected in the cities of Rio de Janeiro, São Paulo, Belo Horizonte and Brasília, three engineering companies, one industry and commerce, one insurer, one health plan company, one sugar and ethanol power plant, one commercial bank, one closed private pension entity, one public authority and one vocational education institution, demonstrating the applicability of the model in different business segments. The case study was conducted between Setember 2011 and March 2014 and implementations of organizational changes based on business processes were surveyed in a period from 2005 to 2013. The sample size limiter was the fact that they are companies in which the proposed concepts and practices in this work have been applied and accompanied by one of the authors and by the sensitivity of the evaluation of the aspects of the project that could not be adequately measured by a questionnaire applied to managers. Their answers would be affected not having been part of the projects, for lack of self-criticism or for the resistance in critically evaluating efforts that they participated. The case study method enables you to develop an understanding of risks and opportunities that can be generalized to the adoption of the model in other organizations, operating in the market of engineering or other business segments.

This research combined both a qualitative case study (to identify aspectos relacionados a projetos BPO) and a quantitative survey (to identify correlações entre os fatores avaliados e inferir sobre sua importância na realização do BPO).This research development establish a line of deductive reasoning that covers the identification of the problem, hypothesis development, the search for updated references on the subject and the proposition of pratical recomendations for managers involved in BPO projects.

This research can be classified- as the nature - as an applied research because it generates knowledge for practical application to specific problems solution. As to how to approach the problem, can be identified as a qualitative research, because considers the subjectivity that cannot be translated into numbers, and requires no methods and statistical techniques.As for goals, as an exploratory research to provide the formation of ideas for the understanding of the whole problem, in order to make it explicit and aid in hypotheses generation and variables identification included in the search.

As for the technical procedures, as a bibliographical research, experimental and documentary and as to the means, as a participant observation (Serva, 1995), which consists of: “Search situation where observer and observed are face to face, and where the data collection process occurs in the natural

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

environment of life itself observed, which are no longer seen as objects of research, but as subjects that interact at some studies project" (Serva, 1995, p.1).

In this work the following hypotheses are tested:
H1 – Critical Sucess Factors influenciam a maturidade em BPO nas empresas
H2 – Critical Practices influenciam a maturidade em BPO nas empresas

RESULTS AND DISCUSSION

This finding provided empirical evidence to support the widespread view that, while many will fight to get a seat at the decision table, not all will stay around to get things done.Size variables, systemic model scope, organization growth rate, management maturity degree, managers perception of the results observed and evidence of action plan alignment with the strategy were analyzed. Each Critical Practice (CP) was evaluated according to the Likert scale (on a seven-point Likert scale). In addition to the CPs, the following dimensions, as shown in Table 2, as follows:

Table 2 :List of variables used in the evaluation of the case studies acrescidas às da lista de de Critical Practices (CPs)

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

Variable	Description	Value
CompanySize	Company size	1 - Microenterprise, 2 - Small Business, 3 - Average, 4 - Large (BNDES Classification)
EmployeeAmount	Direct Employees Amount	Quantity of Employees
BPOMatAfterProj	BPO or Systemic Architecture Maturity Observed project	Degree after BPO
1 - Ad hoc - Unstructured practices, high cost of the chain, low customer satisfaction. 2 - defined - Practices documented, costs remain high, satisfaction improves but still low 3 - Linked - Application of SCM principles, reduction in costs, improvement in customer satisfaction. 4 - Intergrated - Strategic integration of the chain, drastic reduction of costs, satisfaction becomes competitive advantage 5 - Competition between chains, gains shared between partners.		
ShortTermResult, MediumTermResult LongTermResult	Short Term Results perceptionMedium Term Results perceptionLong Term Results perception	0 - No relevant results perceived by managers1 - With relevant results perceived by managers 2 - With essential results perceived by managers
CritProjectEvaluation	Critical Evaluation of BPM Project Results	0 - Irrelevant: with the BPM project seen as low or without impact on the organization after its 2 - Important: seen by managers as useful for the development of some aspect of the organization. 3 - Fundamental: essential for the future growth of the company.

The complementary dimensions were evaluated after performing a formal project supported in Business Process Orientation carried out in the organization, as a framework application of the systemic thinking in the scope of the organization under analysis. In all projects examined, there was a current processes mapping, critical analysis and the proposal of an action plan for implementation of improvements observed. All were performed within deadlines, costs and quality expected by projects' sponsors.

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

Table 3 Case evaluation based on defined variables.

Variable	Caso 1	Caso 2	Caso 3	Caso 4	Caso 5	Caso 6	Caso 7	Caso 8	Caso 9	Caso 10	Caso 11
CompanySize	2	4	3	3	4	4	3	4	4	4	3
EmployeeAmount	60	190	40	1.150	4.800	1.000	100	4.800	180	1.500	155
BPOMatAfterProj	2	3	3	2	3	2	1	3	2	1	1
ShortTermResult	1	0	1	1	1	0	0	0	0	0	1
MediumTermResult	1	0	1	1	0	0	0	0	0	0	1
LongTermResult	0	0	1	0	0	0	0	0	0	0	0
CritProjectEvaluation	2	1	3	2	1	1	1	1	1	0	1
SA1	5	4	5	4	4	5	2	4	2	1	4
SA2	4	4	4	2	3	3	1	5	2	1	3
SA3	3	3	6	3	4	4	2	4	3	2	4
SA4	2	2	4	2	3	4	1	4	2	1	5
SA5	2	3	5	1	2	4	1	5	2	1	4
PM1	1	3	5	1	3	5	1	6	2	1	2
PM2	2	4	5	1	3	4	1	5	3	1	4
OC1	4	2	5	3	2	4	1	6	1	1	7
OC2	2	2	4	1	2	5	1	4	3	1	5
IS1	3	3	3	3	3	4	1	4	1	1	3
IS2	5	2	2	1	3	4	1	5	2	2	4
IS3	1	4	1	1	4	5	1	6	4	1	3
IS4	3	1	2	1	3	3	1	6	1	1	2
IS5	2	3	3	2	4	6	1	6	2	1	3
EE1	3	4	3	2	4	4	2	6	2	2	3
EE2	2	3	5	2	3	4	1	3	2	1	2
EE3	2	2	4	1	4	5	1	6	3	1	3
EE4	3	3	5	2	4	5	1	6	3	3	6

Each CSF composed of CPs was tested for its reliability through Cronbach's Alpha, all of which were above 0.7, according to the Table 4, as follows:

Table 4 Cronbach´s Alpha of CSFs

Critical Success Factors (CSFs)	**Critical Practices (CPs) Codes**	**Alpha**
SA - Strategic Alignment	SA1, SA2, SA3, SA4, SA5	0.927
PM- Performance measurement	PM1, PM2	0.924
OC - Organizational changes	OC1, OC2	0.841
IS - IS support	IS1, IS2, IS3, IS4, IS5	0.905
EE - Employee training and empowerment	EE1, EE2, EE3, EE4	0.896

Given the size limitation of the sample (11), we considered only the strongest correlations and evaluated as moderate those found between 0.6 and 0.7. The result of the correlation analysis between the variables of different natures including the CSFs calculated by means of the CPs is presented in Table 5,as foloows:.

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

Table 5 Correlation matrix between the variables (including CSFs)

	CompanySize	*EmployeeAmou*	*BPOMatAfterPr*	*ShortTermResul*	*MediumTermRe*	*LongTermResult*	*CritProjectEvalu*
CompanySize	1,00						
EmployeeAmount	0,48	1,00					
BPOMatAfterProj	0,27	0,45	1,00				
ShortTermResult	-0,63	-0,02	0,13	1,00			
MediumTermResult	-0,81	-0,40	-0,09	0,83	1,00		
LongTermResult	-0,22	-0,22	0,36	0,35	0,42	1,00	
CritProjectEvaluation	-0,62	-0,28	0,42	0,64	0,73	0,73	1,00
SA Average	-0,06	0,19	0,60	0,35	0,34	0,48	0,51
PM1 Average	0,37	0,33	0,67	-0,10	-0,12	0,43	0,22
OC Average	-0,13	0,07	0,18	0,28	0,40	0,29	0,30
IS Average	0,30	0,59	0,51	-0,07	-0,17	-0,12	-0,04
EE Average	0,32	0,48	0,63	0,04	-0,06	0,30	0,17

For strong and moderate correlations, even those ordinal (ShortTermResult, MediumTermResult, LongTermResult) of this segment of study, we apply ANOVA and T-Student test for variables of the same nature to verify if the variances can be considered different from the statistical point of view. If P-Value> Error, F <F Crit and P> 5% we accept the null hypothesis that the variances are not different and therefore there was no relevant variation between the states of the variable. The only relevant correlation between these variables (ShortTermResult and MediumTermResult) can not be considered significant, as depicted in the following Table 6:

Table 6 ANOVA e T-Student

Independent Variable	**dependent Variable**	**Anova Valor P**	**Anova F**	**Anova F Crit**	**P(Uni-caldal)**	**P(BI-caldal)**
ShortTermResult	MediumTermResult	68,20%	0,17	4,35	0,34	0,68

For variables of different natures with correlation above 0.6, we applied the regression analysis to conclude whether or not there is correlation and how much of the behavior of the independent variable is explained by the dependent variable. To evaluate whether the independent variable is useful to predict maturity in BPO (dependent variable), F Sig should be less than or equal to 5%. As an

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

evaluation criterion if the dependent variable explains the variability of the independent variable, we consider R2> 0.6. Finally, we evaluate if the P-Value of the dependent variable is less than 5% to verify if it is significantly related to the independent variable. The only statistically valid correlation was between the size of the company and the perception of results of BPO projects in the medium term, as depicted in Table 7, as follows:

Table 7 – Significant Correlations

Independent Variable	Dependent Variable	Correlation	F	F SIG
CompanySize	MediumTermResult	-0,81	17,47	0
R-Square	66,00%	Valor P	95% below	95% above
Interseção	2,42308	0,10%	1,28866	3,5575
Angular coefficient	-0,59615	0,20%	-0,91878	-0,27353

The regression study pointed out significant correlation between several variables, which could be reevaluated in studies with a larger number of companies surveyed, as in Table 8, as follows:

Table 8 – Possibly significant correlations

Independent Variable	Dependent Variable	Correlation	F	F SIG
BPOMatAfterProj	PM Average	0.67	5,85	0,04
R-Square	44,67%	Valor P	95% below	95% above
Angular coefficient	1,322368421	2%	0,212651413	2,43208543
Independent Variable	Dependent Variable	Correlation	F	F SIG
BPOMatAfterProj	EE Average	0.63	7,27	0,02
R-Square	39,41%	Valor P	95% below	95% above
Angular coefficient	0,40893231	4%	0,026620251	0,791244369

To evaluate a possible combination of dependent variables to explain the behavior of the independent BPO Maturity variable, a Multiple Regression test was applied on the CSFs. Tested for all possible combinations, the most relevant result found is shown in table 8. Only the P-Value of the OC Average variable was slightly above the expected 5%, as depicted in Table 9, as follows:

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

Table 9 : Possibly significant correlations between BPO Maturity and CSFs

Independent Variable	Dependent Variable	F SIG
BPOMatAfterProj	PM Average, OC Average	1,74
R-Square	63,69%	Valor P
Interseção	1,382642969	0,60%
SA Average	0,564491787	0,60%
OC Average	-0,302744363	7,50%

The correlation matrix was generated for the variables including the CPs and all strong and moderate correlations were tested with the linear regression method already mentioned, as depicted in Table 10, as follows:

Table 10 – Correlations between business variables and CPs

	CompanySize	*EmployeeAmou*	*BPOMatAfterPr*	*ShortTermResul*	*MediumTermRe*	*LongTermResul*	*CritProjectEvalu*
SA1	-0,34	0,05	0,56	0,54	0,50	0,33	0,66
SA2	-0,06	0,28	0,60	0,21	0,21	0,28	0,42
SA3	-0,04	0,14	0,59	0,46	0,38	0,75	0,64
SA4	0,04	0,21	0,29	0,34	0,31	0,31	0,27
SA5	0,13	0,15	0,49	0,04	0,14	0,48	0,31
PM1	0,42	0,43	0,67	-0,17	-0,20	0,41	0,19
PM2	0,28	0,19	0,62	0,00	0,00	0,43	0,25
OC1	-0,30	0,10	0,16	0,42	0,56	0,27	0,37
OC2	0,13	0,01	0,18	0,04	0,14	0,27	0,15
IS1	-0,02	0,36	0,58	0,31	0,26	0,11	0,35
IS2	-0,11	0,34	0,18	0,12	0,10	-0,18	-0,04
IS3	0,69	0,54	0,46	-0,41	-0,55	-0,32	-0,37
IS4	0,10	0,69	0,46	0,01	-0,09	-0,04	0,04
IS5	0,42	0,56	0,56	-0,11	-0,23	0,00	0,00
EE1	0,36	0,66	0,66	-0,14	-0,27	-0,05	-0,06
EE2	0,15	0,12	0,74	0,20	0,13	0,67	0,56
EE3	0,38	0,54	0,57	-0,06	-0,19	0,21	0,10
EE4	0,21	0,35	0,32	0,16	0,13	0,26	0,06

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

The regression study did not show evidence of significant correlations among several variables, which may also be reevaluated in studies with a larger number of companies surveyed, as depicted in Table 11, as follows:

Table 11: Correlations between business variables and CP

Independent Variable	Dependent Variable	Correlation	F	F SIG
BPOMatAfterProj	SA2	0.60	11,47	0,01
R-Square	56,03%	Valor P	95% below	95% above
Angular coefficient	1,171052632	1%	0,388869414	1,953235849
Independent Variable	Dependent Variable	Correlation	F	F SIG
BPOMatAfterProj	EE1	0.66	6,8	0,03
R-Square	43,03%	Valor P	95% below	95% above
Angular coefficient	0,436046512	3%	0,057722637	0,814370387
Independent Variable	Dependent Variable	Correlation	F	F SIG
BPOMatAfterProj	EE2	0.74	11,45	0,01
R-Square	54,61%	Valor P	95% below	95% above
Angular coefficient	1,078947368	1%	0,337268124	1,820626613
Independent Variable	Dependent Variable	Correlation	F	F SIG
BPOMatAfterProj	PM1	0.67	7,27	0,02
R-Square	44,68%	Valor P	95% below	95% above
Angular coefficient	0,300531915	2%	0,048393858	0,552669972
Independent Variable	Dependent Variable	Correlation	F	F SIG
BPOMatAfterProj	PM2	0.62	5,66	0,04
R-Square	38,60%	Valor P	95% below	95% above
Angular coefficient	0,333333333	4%	0,016301446	0,650365221
Independent Variable	Dependent Variable	Correlation	F	F SIG
CompanySize	IS3	0.69	8,02	0,02
R-Square	47,12%	Valor P	95% below	95% above
Angular coefficient	0,25	2%	0,050278494	0,449721506
Independent Variable	Dependent Variable	Correlation	F	F SIG
EmployeeAmount	IS4	0.69	8,39	0,02
R-Square	48,24%	Valor P	95% below	95% above
Angular coefficient	820,7307692	2%	179,6564072	1461,805131
Independent Variable	Dependent Variable	Correlation	F	F SIG
EmployeeAmount	EE1	0.66	6,83	0,03
R-Square	43,13%	Valor P	95% below	95% above
Angular coefficient	954,127907	3%	127,9449977	1780,310816
Independent Variable	Dependent Variable	Correlation	F	F SIG
LongTermResult	EE2	0.67	7,36	0,02
R-Square	45,00%	Valor P	95% below	95% above
Angular coefficient	0,166666667	2%	0,027727287	0,305606047
Independent Variable	Dependent Variable	Correlation	F	F SIG
LongTermResult	SA3	0.75	11,455	0,008
R-Square	56%	Valor P	95% below	95% above
Angular coefficient	2,8	1%	0,928491192	4,671508808
Independent Variable	Dependent Variable	Correlation	F	F SIG
CritProjectEvaluation	SA1	0.66	7,03	0,03
R-Square	43,86%	Valor P	95% below	95% above
Angular coefficient	0,382352941	3%	0,056152666	0,708553217

The Multiple Linear Regression test was applied on the CPs to find an equation that explains the behavior of the independent BPO Maturity variable. Having tested all possible combinations, the most relevant result found is shown in Table 12, as follows:

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

Table 12 : Multiple Linear Regression Model found between BPO Maturity and CPs with statistical validity

Independent Variable	Dependent Variable	F SIG
BPOMatAfterProj	IS2, SA2, SA3, SA5, PM	0,0000747

R-Quadrado	63,69%	Valor P
Interseção	0,32854908	3,30%
SA2	0,64352155	0,00%
SA3	0,251188484	0,40%
SA5	-0,925919862	0,00%
PM1	0,348468311	0,00%
PM2	0,361226321	0,40%
IS2	-0,172542385	0,30%

CONCLUSION

The model proposed by Skrinjar et al. (Skrinjar & Trkman, 2013) showed to be consistent in the formation of CPs by CSF, and was demonstrated in the application of Kronbach's Alpha on the data obtained. With the sample available, it was not possible to reject the null hypothesis that the isolated CSFs do not influence the BPO Maturity of the companies. However, some correlations are potentially relevant, such as Performance measurement and Employee training and empowerment being positively related to BPO Maturity. In the multiple regression study, the null hypothesis was almost rejected by the identification that combined Strategic Alignment and Organizational Changes actions could influence BPO Maturity. Thus, it is recommended to evaluate these possibilities in future research.

It was also not possible to reject the null hypothesis that isolated CPs decisively influence the degree of BPO Maturity of organizations. Some variables have proved to be more significant for the development of BPO Maturity and that future research is also recommended with attention to the following CPs:

SA2 Business process goals are derived from and linked to the organization's strategy
EE1 People are trained to operate new or changed processes prior to their implementation
EE2 Employees view the business as a series of linked processes
PM1 Performance results are used in setting improvement targets
PM2 Performance indicators are communicated within the organization on a regular basis

The most relevant result of this study was the identification of the effort to simultaneously carry out the derivation of business processes from the current strategy (SA2), the insertion of process

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

improvement actions in the top management's agenda (SA3), alignment of interdepartmental goals (SA5), the use of the results of performance indicators in goal setting (PM1) and the frequent performance of the communication of performance indicators (PM2) and the investment in the construction of information systems that present the performance of the processes (IS2) are decisive in obtaining greater maturity in BPO in an organization, therefore, we can reject the null hypothesis Q2. Of these, SA2, PM1 and PM2 had already been evaluated as potential CPs for BPO Maturity.

Other results presented interesting insights for conducting BPO in a company. It is suggested that the smaller the company the smaller the identification of results of BPO projects in the medium term, perhaps because the BPO effort can be diluted in a broad set of actions carried out in its departments. There are indications that the larger the company, the greater the use of systems such as CRM (Customer Relationship Management), CP considered in the formation of CSF IS Support. It may also be possible for the number of employees in a company to influence the use of Business Process Management Suite (BPMS) systems and the degree of employee training in implementing changes to processes.

Results related to BPO projects perceived by managers over the long term may possibly contribute to the process culture in the organization, where employees develop the organization's vision as a set of interrelated activities, and the willingness of senior management to discuss and support process improvement efforts at their management meetings. Apparently the success of a formal BPO project is important so that top management is actively involved in process improvement efforts.

REFERENCES

Abdolvand, N., Albadvi, A., & Ferdowsi, Z. (2008). Assessing readiness for business process reengineering. *Business Process Management Journal*, pp. 14(4), 497–511.

ABPMP. (2009). Business Process Management BPM Common Body of Knowledge (BPM CBOK) Version 2.0, 2nd release. Chicago, Il., USA.

Ackoff, R. L. (1970). *A concept of corporate planning.* New York: John.

Aguilar-Save´ n, R. S. (2004). Business process modelling: review and framework. *International Journal of Production Economics 90 (2)*, pp. 129–149.

Ansoff, H. I. (1991). The Design School: Reconsidering the Basic Premises of Strategic Management. *Strategic Management Journal*, 12 (6): 449–61.

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

Ariyachandra, T. R., & Frolick, M. N. (2008). Critical success factors in business performance management—Striving for success. *Information Systems Management*, 25(2), 113–120.

Armstrong, J. S. (1989). The value of formal planning for strategic decisions: Review of empirical research. *Strategic Management Journal*, 3 (3): 197–211.

Bandara, W., Gable, G., & Rosemann, M. (2005). Factors and measures of business process modelling: Model building through amultiple case study. *European Journal of Information Systems*, 14(4), 347–360.

Bandara, W., Indulska, M., Chong, S., & Sadiq, S. (2007). Major issues in business process management: An expert perspective. *BPTrends (October)*, 1–8.

Barton, J., Emery, M., Flood, R.L., Selsky, J., & Wolstenholme, E. (2004). A maturing of systems thinking? Evidence from three perspectives. *Systemic Practice and Action Research*, Vol. 17 No. 1, pp. 3-36.

Batista, L., Smart, A., & Maull, R. (2008). The systemic perspective of service processes: underlying theory, architecture and approach. *Production Planning & Control*, Vol. 19 No. 5, pp. 535-544.

Becker, J., Knackstedt, R., & Põppelbuß, D.-W. I. (2009). Developing maturity models for IT management. *Business & Information Systems Engineering, V.1*(n.3), p. 213-222.

Becker, J., Niehaves, B., Po¨ppelbuß, J., & Simons, A. (2010). Maturity Models in IS Research. *European Conference on Information Systems.* Pretoria.

BPM&O. (2010/2011). Status Quo Prozessmanagement. Cologne.

Brocke, J.V, & Sinnl, T. (2011). Culture in business process management: a literature review. *Business Process Management Journal*, pp. Vol. 17 No. 2, pp. 357-377.

Brocke, J.V., & Rosemann, M. (2010). The six core elements of business process management. In *Handbook on Business Process Management, Vol. 1* (p. 111). New York, NY: Springer.

Brynjolfsson, E. (2010). The four ways IT is revolutionizing innovation. *MIT Sloan Management Review*, 51(3), 51–56.

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

Bucher, T., & Winter, R. (2010). Taxonomy of business process management approaches. In *Handbook on Business Process Management* (Vol. Vol. 2). New York, NY: Springer.

Cadez, S., & Guilding, C. (2008). An exploratory investigation of an integrated contingency model of strategic management accounting. *Accounting, Organizations and Society 33(7–8),* 836–863.

Dias, M., (2016). Factors Influencing the Success of Business Negotiations in the Brazilian Culture (Doctoral Thesis). ESC Rennes School of Business, France.

Dias, M. & Davila Jr., (2018) E. Overcoming Succession Conflicts in a Limestone Family Business In Brazil. In: International Journal of Business and Management Review Vol.6, No.7, pp.58-73, August 2018,

Dias, M. (2018). O agente público e a confiança circunstancial: validação do modelo de escala. International Contemporary Management Review, v. 1, n. 2, 31 jul. 2018

D., N. (2008). Lean, six sigma and lean sigma: Fads or real process improvement. *Business Process Management Journal, 14(3),* 269–287.

de Bruin, T., Rosemann, M., Freeze, R., & Kulkarni, U. (2005). Understanding the main phases of developing a maturity assessment model. *paper presented at Australasian Conference on Information Systems (ACIS).* Sydney.

Gartner Group. (2010). Leading in times of transition: The 2010 CIO Agenda.

Greenley, G. E. (1986). Does Strategic Planning Improve Company Performance? *Long Range Planning 19*, 101-104.

Harmon, P. (2007). *Business Process Change: A Guide for Business Managers and BPM and Six Sigma Professionals 2nd ed.* Amsterdam: Elsevier/Morgan Kaufman.

Hung, R. Y. (2006). Business process management as competitive advantage: A review and empirical study. *Total Quality Management & Business Excellence*, pp. 17(1), 21–40.

Jackson, M. (2003). *Systems Thinking – Creative Holism for Managers.* Chichester: Wiley.

Jeston, J., & Nelis, J. (2006). *Business Process Management: Practical Guidelines to Successful Implementations.* Oxford: Elsevier.

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

Johnson, C., & Levien, S. . (2010). Numbers you need: Top Tech Priorities; IT departments are focused on cloud computing, business intelligence and business process management. *CIO*, 23(9).

Kanellis, P., Lycett, M., & Paul, R. (1999). Evaluating business information systems fit:From concept to practical application. *European Journal of Information Systems*, 8(1), 65–76.

Karim, J., Somers, T., & Bhattacherjee, A. (2007). The impact of ERP implementation on business process outcomes: A factor-based study. *Journal of Management Information Systems*, pp. 24(1), 101–134.

Kolish, R. (1996). Efficient priority rules for the resource-constrained project scheduling problem. *Journal of Operations Management*, 179-192.

Korn, J. (2011). From the systemic view to systems science. *Kybernetes*, Vol. 40 Nos 1/2,.

Kuznets, S. (1965). *Economic Growth and Structure.* London: Heinemann Educational Books.

Lee, R., & Dale, B. (1998). Business process management: A review and evaluation. *Business Process Management Journal*, pp. 4(3), 214–225.

Lockamy III, A., & McCormack, K. (2004). The development of a supply chain management process maturity model using the concepts of business process orientation. *Supply Chain Management: An International Journal Vol. 9 No. 4*, 272-8.

Macintosh, R., & Maclean, D. (1999). Conditioned emergence: A dissipative structures approach to transformation. *Strategic Management Journal*, pp. 20(4), 297–316.

Magalhães, M. A. (2013). Tese: Modelo de Gestão Estratégica Integrada aplicado a Empresas de Engenharia. *Modelo de Gestão Estratégica Integrada aplicado a Empresas de Engenharia*. Niterói, Rio de Janeiro, Brazil.

Maslow, A. (1954). *Motivation and Personality.* New York, NY: Harper.

McCormack, K. (2007). *Business process maturity: Theory and application.* Charleston: BookSurge Publishing.

McCormack, K. P., & Johnson, W. C. (2001). *Business process orientation: Gaining the e-business competitive advantage.* Florida: CRC Press LLC.

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

McCormack, K., Willems, J., Van den Bergh, J., Deschoolmeester, D., Willaert, P., & Indihar , M. S. (2009). A global investigation of key turning points in business process maturity. *Business Process Management Journal*, pp. 15(5), 792–815.

Mefford, R. N. (2009). Increasing productivity in global firms: The CEO challenge. *Journal of International Management*, 15(3), 262–272.

Melão, N., & Pidd, M. (2000). A conceptual framework for understanding business processes and business process modelling. *Information Systems Journal*, pp. 10(2), 105–129.

Mendling, J. (2009). *Business process management metrics for process models.* Berlin, Heidelberg: Springer.

Menon, A., S. G. Bharadwaj, P. T. Adidam, & S. W. Edison. (1999). Antecedents and consequences of marketing strategy making. *Journal of Marketing 63 (April)*, 18–40.

Miller, S., Wilson, D., & Hickson, D. (2004). Beyond planning: strategies for successfully implementing strategic decisions. *Long Range Planning 37(3)*, 201e218.

Mingers, J., & White, L. (2010). A review of the recent contribution of systems thinking to operational research and management science. *European Journal of Operational Research, Vol. 207 No. 3*, 1147-1161.

Naslund, D. (2008). Lean, six sigma and lean sigma: Fads or real process improvement methods? *Business Process Management Journal l, 14(3)*, 269–287.

Nolan, R. (1973). Managing the computer resource: a stage hypothesis. *Communications of the ACM*, Vol. 16 No. 7, pp. 399-405.

Nolan, R. (1979). Managing the crisis in data processing. *Harvard Business Review*, Vol. 57.

Nutt, P. C. (1999). Surprising but true: half the decisions in organizations fail. *Academy of Management Executive*, 13(4), 75e90.

O'Regan,, N., & Ghobadian, A. (2002). Formal strategic planning: the key to effective business. *Business Process Management Journal*, Vol. 8 No. 5, pp. 416-29.

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

Pidd, M., & Melao, N. (2000). conceptual framework for understanding. *Information Systems Journal 10*, 105–129.

Prananto, A, Mckay, J, & Marshall, P. (2003). A study of the progression of e-business maturity in Australian SMEs: some evidence of the applicability of the stages of growth for e-business model. *paper presented at Pasific Asia Conference on Information Systems (PACIS)*. Adelaide, Australia.

Project Management Institute . (2013). *Project Management Body of Knowledge* (5th Edition ed.).

Ranganathan, C., & Dhaliwal, J. (2001). A survey of business process reengineering practices in Singapore. *Information and Management*, pp. 39(2), 125–134.

Rhee, M., & Mehra, S. (2006). Aligning operations, marketing, and competitive strategies to enhance performance: An empirical test in the retail banking industry. *Omega, 34(5)*, 505–515.

Rhee, S.-H., Cho, N. W., & Bae, H. (2010, Setembro). Increasing the efficiency of business processes using a theory of constraints. *Information Systems Frontiers*, pp. 443 - 455.

Rockart, J. F. (1979). Critical success factors. *Harvard Business Review 57.2* , p. 81-91.

Rogers, P. R., Miller, A., & Judge, W. Q. (1999). Using information-processing theory to understand planning/performance relationships in the context of strategy. *Strategic Management Journal, 20(6)*, 567–577.

Röglinger, M., Pöppelbuß, J., & Becker, J. (2012). Maturity models in business process management. *Business Process Management Journal, Vol. 18 No. 2,*, 328-346.

Rohloff, M. (2009). Case study and maturity model for business process management implementation. *Business Process Management - Volume 5701*, 128-142.

Rosemann, M., & de Bruin, T. (2005). Application of a Holistic Model for Determining BPM Maturity. *BPTrends*, 1021.

Scott, J.E. (2007). Mobility, business process management, software sourcing, and maturity model trends: propositions for the IS organization of the future. *Information Systems Management*, Vol. 24 No. 2, pp. 139-45.

ISSN 2055-0847(Print), ISSN 2055-0855(Online)

Segatto, M., Pádua, S. D., & Martinelli, D. P. (2013). Business process management: a systemic approach? *BPMJ - Business Process Management Journal*, 1.

Serva, M. (1995). Observação participante e pesquisa em administração: uma postura antropológica. . *Revista de Administração de Empresas*, 64-79.

Skarzauskiene, A. (2010). Managing complexity: systems thinking as a catalyst of the organization performance. *Measuring Business Excellence*, pp. Vol. 14 No. 4, pp. 49-64.

Skrinjar, R., & Trkman, P. (2013). Increasing process orientation with business process management: Critical practices. *International Journal of Information Management 33*, 48– 60.

Tavares, L. V. (1990). A multi-stage non-deterministic model for project scheduling under resources constraints. *European Journal of Operational Research*, 92-101.

Trkman, P. (2010). The critical success factors of business process management. *International Journal of Information Management*, pp. 30(2), 125–134.

Vasconcelos, F., & Ramirez, R. (2011). Complexity in business environments. *Journal of Business Research*, pp. Vol. 64, pp. 236-241.

Vergidis, K., Tiwari, A., & Majeed, B. (2008). Business process analysis and optimization: Beyond reengineering. *IEEE Transactions on Systems, Man, and Cybernetics*, pp. Part C: Applications and Reviews, 38(1), 69-82.

Weber, C., Curtis, B., & Gardiner, T. (2008, June). Business Process Maturity Model (BPMM).

Zairi, M. (1997). Business process management: a boundaryless approach to modern competitiveness. *Business Process Management Journal Vol. 3 No. 1*, 64-80.

Zhang, Q., & Cao, M. (2002). Business process reengineering for flexibility and innovation in manufacturing. *Industrial Management and Data Systems, 102(3)*, 146–152.

ISSN 2055-0847(Print), ISSN 2055-0855(Online)