

UNVEILING THE DYNAMICS OF HYBRID AMBIDEXTERITY: A STUDY ON EVOLVING ORGANIZATIONAL ROLES FOR EMPLOYEES AND LEADERS IN PROCESS-DRIVEN ENTERPRISES

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Abstract. In response to the contemporary challenges in the economic environment, organizations are compelled to seek management concepts and methods that enable dynamic adaptation to factors generated in their surroundings. This pursuit has led to a quest for an integrative perspective on various management formulas within the systemic and structural dimensions of an organization. This article employs the principles of ambidexterity and Business Process Management (BPM). The study, conducted through a survey involving 332 large organizations in Poland (both ambidextrous organizations and those that have not implemented this concept), delves into the association between process-oriented employee and leadership roles concerning diverse approaches to achieving ambidexterity. The findings provide an overview of the surveyed large organizations, shedding light on the implemented roles of employees, leaders and process owners within the context of various ambidextrous strategies (structural, contextual, sequential, hybrid). All considered employee and leadership roles supported the ambidexterity strategy. The strength of the association was moderate at best.

Keywords: BPM, business process management, ambidexterity, ambidextrous organization, leadership, process-driven enterprises.

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Received: 18 April 2024; **Accepted:** 17 May 2024; **Published:** 11 June 2024.

1. Introduction

The hyper-turbulent business environment generates a state in which contemporary organizations must seek modern systemic management formulas, which are supported by appropriate leadership (Budiningsih & Soehari, 2022). This entails the necessity not only to address the challenges brought about by the development of technologies characteristic of Industry 4.0 and 5.0 but also to adopt a holistic view of management concepts and methods that enable dynamic responses to both external (environmental) and internal (organizational) factors. Currently, in management science, there is noticeable development of methods characterized primarily by two main characteristics: organizational flexibility and agility and the understanding of these two concepts is constantly evolving (Abdelilah *et al.*, 2018). Such outlined business landscape serves as a stimulus for researchers in search of methods that can increase the efficiency of core

Siciński, J., Sliż, P. & Jackowska, B. (2024). Unveiling the dynamics of hybrid ambidexterity: A study on evolving organizational roles for employees and leaders in process-driven enterprises. *Socium*, 1(2), 95-106 https://doi.org/10.62476/soc1.29.5

^{*}How to cite (APA):

business (exploitation) while also enabling its development in exploring new areas for generating added value (exploration). The aspect of efficiency is associated with the traditional (commodity) understanding of Business Process Management (BPM), which is currently evolving simultaneously in management and computer science domains. In the former, the literature outlines the development directions based on the concepts of ambidexterity and ambidextrous organizations, identified as ambidextrous BPM (ABPM). Ambidexterity is understood as the dynamically balance between exploration and exploitation activities (see: March, 1991). The commonly held belief is that the level of turbulence in the business environment is so strong that ambidexterity may constitute a significant factor in organizational survival by balancing its actions (Röglinger *et al.*, 2018). In this article, ABPM is understood as the organization's ability to balance exploitation and exploration through the categories of operational exploitative and exploratory processes (Helbin & Van Looy, 2021).

As a result, the research problem was formulated as the following question: What are the associations between roles of process performers, process owners and leaders, and the approach to achieving ambidexterity, utilizing the principles of ambidexterity and BPM Maturity? This shaped the objective of the study, which is to identify associations between roles of process performers, process owners and leaders and the approach to achieving ambidexterity, utilizing the principles of ambidexterity and BPM, through conducting a survey among 332 large enterprises (over 250 employees) in Poland. In pursuit of this objective, research methods such as literature review, survey research and statistical analysis were employed. The originality of this article lies in its holistic approach, intersecting across three dimensions: organizational roles characteristic for BPM and BPM maturity within the context of defined ambidexterity attainment strategies (contextual, structural, sequential and hybrid).

2. Organizational Roles in an Ambidextrous Organization

There is no one universal path to achieving ambidexterity in an organization. Depending on the initial state of the entity, such as the current level of process maturity or even the type of activities performed (production, trade or services), the optimally recommended strategies for converting the company to BPM Ambidexterity will vary. It is also crucial in the strategy selection to consider the desired final state of ambidexterity for the organization (some situations require a structural approach, while others involve contextual duality) (Binci *et al.*, 2019). Research consistently confirms that one of the crucial starting points for achieving ambidexterity is the opportunities provided by process management (BPM). Therefore, BPM can be seen as preparing the organizational space (including organizational culture) within a unit to achieve ambidexterity, thanks to the possibilities it offers for management (Moreno-Luzón *et al.*, 2013). Among these possibilities, one can include process modeling, optimization and directing the organization's structure towards a process-oriented form. The impact of these integral BPM components on areas related to ambidexterity is supported by research (Helbin & Van Looy, 2021).

In summary, regardless of the expected form of ambidexterity an organization aims to achieve (contextual, structural, sequential or hybrid), a necessary element in initiating the transformation towards duality is the appropriate process maturity, which constitutes an essential factor in the cultural transformation required by ambidexterity. However, it is important to emphasize that achieving ambidexterity itself does not guarantee full

benefits. Attaining sustainable competitive advantages requires maintaining the ability to balance exploration and exploitation over an extended period. Therefore, an integral part of the strategy is making duality manageable in the long term, achieving and sustaining it, especially in the implementation of new technologies and innovations, known as Innovation Ambidexterity. Research confirms the existence of overarching determinants enabling the achievement and maintenance of ambidexterity, including process mechanisms, the organization's learning capability and leadership and management styles highlighted in this study (Saleh et al., 2023). These factors should also be taken into account when designing strategies to achieve ambidexterity. Balancing between exploitation and exploration requires the establishment of interconnected vessels and the reconfiguration of existing roles, as well as the appointment of new "actors" within the enterprise. This is an inevitable process, as individualities lead the organization towards ambidexterity (Tempelaar & Rosenkranz, 2017). A fundamental example is that the maturation of the organization in terms of processes (a stage usually preceding the attainment of duality) determines, for instance, the emergence of so-called "process owners" in the organization. At this point, it is important to emphasize that according to the assumptions of ABPM (Ambidextrous Business Process Management), it is crucial in the structural dimension to consider roles characteristic of BPM. This applies primarily to process owners and process managers. Significant from the perspective of BPM, but also for embracing exploratory activities within the organization, especially in a contextual approach, is the reconfiguration of desired employee and leader roles from the perspective of organizational goals and strategies. Regarding employees, the shift from merely executing processes to generating a state where the employee simultaneously performs actions within the process and possesses appropriate prerogatives to solve problems during process execution, as well as opportunities for process improvement, is essential. Conversely, for the role of a leader within this framework, the expectation primarily lies in moving away from the command and control formula to a leader who primarily adopts a team-oriented approach, seeking competencies and potentials among employees for process execution in accordance with expectations. Additionally, the leader will be responsible for knowledge diffusion within the organization. Undoubtedly, such approaches, particularly in the case of establishing the role of process owner, depart from the adopted organizational structure, thus allowing for a perspective on the organization that considers its horizontal (processes) and vertical (functions) dimensions (Sliż, 2021). Special importance is attributed to the role of leaders, namely leadership in alignment with the nature of a dual organization (Havermans et al., 2015). This is because the balancing process is not possible without active participation of leaders, who themselves must master the art of employing dynamic management tactics to unleash the simultaneous potential for creation and implementation within the company in order to achieve organizational ambidexterity (Bledow et al., 2011). The role of leaders and the mentioned management tactics, consistent with a dual approach, is also to inspire all employees to engage in multi-level learning. Thus, the adequate quality of knowledge transfer is possible and the learning process at all management levels (from operational to strategic) is crucial for moving towards organizational ambidexterity, as evidenced by practical research (Mengling et al., 2016). The ideal state supporting the efficiency of the entire organization is therefore the combination of ambidextrous leadership and the operational ambidexterity of the employees themselves, as confirmed by studies conducted in the healthcare sector (Slåtten et al., 2023). However, it should be emphasized that the reconfiguration of existing organizational roles and the scope of appointing new "actors" in the enterprise are strongly linked to the type of ambidexterity achieved by the company (contextual, structural, sequential or hybrid).

Considering the interplay between BPM maturity, ambidexterity strategies and organizational structures, the pivotal issue remains identification of the desired organizational roles (of employees and leaders) that may support both higher BPM maturity and association with the type of ambidexterity. This prompted the formulation of research question: Which organizational roles of employees and leaders, characteristic of BPM, are associated with the strategy of achieving ambidexterity?

3. Study design

3.1. Research sample

The study was conducted in Poland from 2022 to 2023 using the CAWI method. A non-random sampling technique was employed in the study, therefore no statistical inference methods were used in the analyses. Due to the identification of systemic and structural dependencies, the empirical data collected from large enterprises (over 250 employees) were subjected to statistical analysis. During the questionnaire collection stage, respondents declared the size of their organizations, as well as other basic characteristics: type of activity, geographic scope of operation and number of market segments (Table 1).

Table 1. Structure of the surveyed enterprises

Specification	N	%
Total	332	100.0
Type of activity:		
Services	156	47.0
Production	130	39.2
Trade	46	13.9
Scope of operation:		
Local	10	3.0
Regional	11	3.3
National	76	22.9
European	85	25.6
Global	150	45.2
Market segments:		
One	100	30.1
Many	232	69.9

Source: Own study

The presented results constitute a part of an ongoing project within the scope of proprietary research, focusing on the intersection of BPM, ambidexterity and ICT maturity.

3.2. Ambidexterity strategies assessment

For the identification of exploitation and exploration, an approach described in (Sliż et al., 2024) was utilized, enabling the examination of the implementation of exploitative and exploratory activities based on symptoms. Statements presented in Tables 2 and 3 were rated by respondents on a five-point scale (1—strongly disagree, 2—disagree, 3—hard to say, neither yes nor no, 4—agree, 5—strongly agree). Each response was assigned a score from 1 to 5 to assess whether a particular activity is implemented within the organization. It is pertinent to underscore that within the framework of the investigated Business Process Management (BPM) domain, the process dimension was leveraged for the identification of exploitation and/or exploration strategies.

Table 2. Evaluation of exploitation strategy implementation – exploitative factors

Exploitative factors

- ES1. BPM is geared toward short-term profit generation
- ES2. BPM is geared toward improvement of existing processes (e.g., increased productivity, efficiency, etc.)
- ES3. Processes are modeled for the long-term (a perspective of more than 1 year)
- ES4. The organization is seeking solutions and tools to increase process efficiency or effectiveness
- ES5. Actions are taken in the organization to increase the market share of the products and/or services hitherto developed
- ES6. Supplier selection is contingent on their impact on process effect (products/services) cost reduction
- ES7. Customer surveys aim at assessing the level of satisfaction with the products/services provided
- ES8. Measures are taken in the organization to reduce the cost of products/services while maintaining the same level of quality
- ES9. The organization employs material consumption analysis in order to explore for solutions reducing this consumption
- ES10. Process management is geared toward increasing the market share of the process outputs (products and/or services) hitherto generated
- ES11. Process management is geared toward improvement of processes related to the organization's genotype activities (core activity)

Source: (Sliż *et al.*, 2024)

During the analysis of the obtained empirical data, the results were compiled and separately assessed to determine whether the organization engages in exploitation and exploration. In this regard, the median measure was employed. If, for a given activity, the organization obtained a median score >= 4 for all questions, it was considered to implement that particular strategy, as more than half of the statements were affirmed. Subsequently, if the organization simultaneously pursued exploitation and exploration and additionally responded to questions regarding ambidexterity, such as the type of strategy enabling the balancing of these activities, it was classified as an ambidextrous organization.

Table 3. Evaluation of exploitation strategy implementation – explorative factors

Explorative factors

- ER1. BPM is geared toward generation of long-term profits
- ER2. BPM geared toward modeling new processes that enable generation of new products and/or services
- ER3. Processes are modeled dynamically in the organization, depending on changes in the organization or its environment
- ER4. Solutions and tools are explored in the organization to increase the flexibility of processes (ability to dynamically reconfigure processes)
- ER5. Efforts are being undertaken in the organization to generate new products and/or services
- ER6. Supplier selection in the organization is contingent on the potential to increase the innovativeness of the products and/or services offered or generate new products
- ER7. Customer surveys in the organization aim at identifying customer needs, in the context of new products and/or services generation
- ER8. Efforts are undertaken in the organization to implement ICT technologies, in order to reduce process execution parameters (e.g., cost, execution time, etc.)
- ER9. Material consumption analysis is employed in the organization to explore for technologies increasing the quality of the products and/or services offered
- ER10. Process management contributes to the search for areas generating new added value in the organization

Source: (Sliż *et al.*, 2024)

Subsequently, respondents were asked to assess the degree of exploitation and exploration balance based on statements, also evaluated on a Likert scale as before (5-point Likert scale) (Table 4).

Table 4. Evaluation of exploitation strategy implementation

Ambidexterity

A1. In the organization, activities related to product/service manufacturing and developmental (innovative) activities are segregated within the organizational structure (e.g., innovation activities are managed by a distinct department).

A2. In the organization, activities pertaining to product/service generated are concurrently conducted alongside developmental (research, innovative) activities.

A3. In the organization, activities related to product/service manufacturing are halted due to the implementation of developmental (research, innovative) activities.

Source: Own study based on the principles of ambidexterity and traditional BPM (O'Reilly, Tushman, 2013)

As a result, it was established that A1: structural ambidexterity, A2: contextual ambidexterity and A3: sequential ambidexterity. If the organization indicated responses of 4—agree or 5—strongly agree, it was assumed to implement such an ambidexterity strategy. Furthermore, if the organization selected 4 or 5 for more than one strategy, it was assumed to adopt a hybrid form (hybrid ambidexterity).

3.3. BPM roles supports ambidexterity

Table 5. Roles of employee and leadership

Dimension	Statment
	E1: All employees in the organization can submit process improvements
Employee	E2 : The sought-after employee role in the organization is to simultaneously perform tasks and stimulate (generate) process streamlining
	L1: The sought-after role of the manager/managers is geared in the organization toward responsibility for knowledge transfer between employee
Leadership	L2: The role of process owner is established within the organization.
	L3: The empowerment of the process manager (owner) is so entrenched within the organization that they can engage employees in processes without the consent of functional managers.

Source: Own study based on (Sliż, 2021; Sliż et al., 2024).

4. Results

In this section, the results of the conducted empirical study are presented, based on the described theoretical assumptions. Firstly, the diagnosis was made to determine whether the studied organizations meet the criteria of ambidexterity and which ambidexterity strategy they have adopted. Among the surveyed organizations, as many as 86% achieved ambidexterity, using various approaches: contextual, structural, sequence. A common phenomenon (78% of enterprises) was combining various forms of ambidexterity (hybrid) in one organization. **Figure 1** shows the frequency of using different ambidexterity strategies.

Contextual 21 Structural 49 76 8 9 Sequential 4 No ambidexterity 46

Figure 1. Ambidexterity approach in the surveyed organizations

Source: Own study

In the surveyed enterprises, there was a clear association between ambidexterity and the assessments of statements from **Table 2**, describing the roles of employee and leadership. The highest strength of the association was between the ambidexterity strategy (yes/no) and the L2 statement score (Cramer's V > 0.3 indicates a moderate association). On the other hand, the strength of the association between ambidexterity (yes/no) and the type of activity was the lowest – practically there was no association (**Table 6**).

Table 6. Cramer's V (a measure of association) for ambidexterity versus assessment of employee roles $(E1, E2^{(*)})$ and leadership roles $(L1, L2, L3^{(*)})$ and characteristics of enterprises

Specification	Ambidexterity (yes/no)	Ambidexterity approach
E1	0.221	0.179
E2	0.235	0.150
L1	0.274	0.175
L2	0.327	0.202
L3	0.144	0.186
Type of activity	0.043	0.140
Scope of operation	0.155	0.177
Market segments	0.136	0.177

^(*) Description of abbreviations see Table 2

Source: Own study

Table 7. Average assessment of employee roles (E1, $E2^{(*)}$) and leadership roles (L1, L2, L3^(*)) by the ambidexterity approach

Specification	E1	E2	L1	L2	L3
Total	4.10	4.22	4.26	3.87	3.27
No Ambidexterity	3.54	3.65	3.70	2.89	2.83
Ambidexterity	4.19	4.31	4.35	4.03	3.35
Amb. Contextual	4.19	4.35	4.32	4.04	3.31
Amb. Structural	4.31	4.32	4.35	4.03	3.43
Amb. Sequential	4.29	4.32	4.33	4.09	3.84
Amb. Hybrid	4.30	4.37	4.33	4.06	3.42
Amb. No Hybrid	3.89	4.14	4.39	3.93	3.12
Amb. Hybrid 2 Forms	4.26	4.40	4.35	4.05	3.16
Amb. Hybrid 3 Forms	4.36	4.33	4.30	4.08	3.89

^(*) Description of abbreviations see Table 2

Source: Own study

The implemented L3 and then L2 leadership roles were distinguished by low average assessments among the other roles (**Table 7**). Each of the statements describing employee and leadership roles received the lowest average assessment in the group of enterprises that did not use ambidexterity. The average assessments for these roles were similar in enterprises using different forms of ambidexterity, with the exception of the

L3 role, for which the average score was higher in the group of enterprises using sequential ambidexterity or three forms of ambidexterity simultaneously.

The assessments of employee and leadership role implementation were positively correlated with each other and with the BPM maturity level (**Table 8**). The level of BPM maturity was most correlated with the L2 assessment (Spearman's rho > 0.3 indicates a moderate rank correlation) and was practically not correlated with the E1 assessment. Moderate rank correlation was also found for the following pairs of employee and leadership role assessments: E1 and E2, E2 and L1, E2 and L2, L1 and L2.

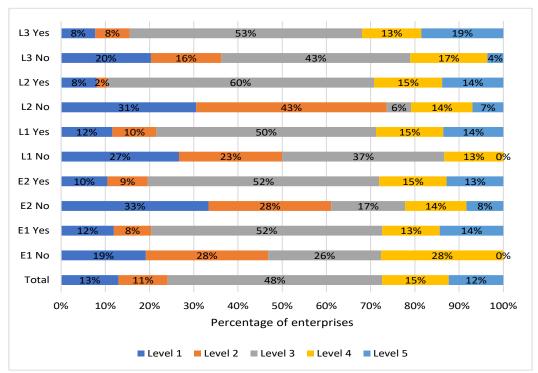
Table 8. Spearman's rho (a rank correlation coefficient) for the BPM maturity level and assessment of employee roles (E1, E2^(*)) and leadership roles (L1, L2, L3^(*))

Specification	BPM maturity	E1	E2	L1	L2	L3
BPM maturity	1.000	0.094	0.166	0.165	0.338	0.265
E 1	0.094	1.000	0.340	0.267	0.235	0.211
E2	0.166	0.340	1.000	0.322	0.362	0.197
L1	0.165	0.267	0.322	1.000	0.325	0.218
L2	0.338	0.235	0.362	0.325	1.000	0.257
L3	0.265	0.211	0.197	0.218	0.257	1.000

^(*) Description of abbreviations see Table 2

Source: Own study

Figure 2. BPM maturity level by roles of employee (E1, E2^(*)) and leadership (L1, L2, L3^(*))



^(*) Description of abbreviations see Table 2

Yes – answer "strongly agree" or "rather agree"

No – answer "strongly disagree" or "rather disagree"

Source: Own study

Figure 2 presents the differences in BPM maturity levels between enterprises in which there was agreement with the statements in **Table 4** and enterprises in which there was disagreement with these statements. For each of the statements in **Table 4**, describing the employee and leadership roles, the answers "strongly disagree" and "rather disagree" were combined into one negative answer "no" and the answers "strongly agree" and "rather agree" were combined into one positive answer "yes". The group of enterprises in which the statements were assessed positively ("yes"), had a much lower percentage of enterprises at 1st and 2nd levels of BPM maturity and a higher percentage at 5th maturity level (as a result, a higher percentage at the middle neutral 3rd level) compared to the group of enterprises in which these statements were assessed negatively ("no").

5. Conclusion

Research question 1: Which organizational roles of employees and leaders, characteristic of BPM, are associated with the strategy of achieving ambidexterity?

All considered employee and leadership roles supported the ambidexterity strategy. The highest strength of the association concerned the leadership L2 role (a moderate association). Simultaneously, the assessment of the L2 role implementation was lower than in the case of the E1, E2 and L1 roles. Employee and leadership role assessments were positively correlated with each other and with the BPM maturity level. The strength of the correlation was moderate at best. The level of BPM maturity was most correlated with the assessment of the L2 role implementation.

Study limitations

Like any study of this nature conducted using survey research methodology, this one also has its limitations, namely the non-random sample selection, which restricts the formulated conclusions only to the surveyed group of organizations. Furthermore, the study focused solely on large organizations, based on the criteria of the declared number of employees provided by the respondents. On the one hand, this illustrates the state of affairs in organizations where intra-organizational relationships enable the identification of the studied characteristics (related to BPM, BPM roles and ambidexterity strategies), but on the other hand, it contributes to a cognitive gap due to the lack of similar research in the SMEs sector (small and medium enterprises). Additionally, it is imperative to highlight that a limitation of the study is the exclusion of managerial ambidexterity due to the perceived challenges, according to the authors, associated with investigating this type of ambidexterity using qualitative research methods.

Future direction

The outlined research limitations serve as a basis for expanding future directions in this area, which involve examining and identifying the associations discussed in this article, also at the level of SMEs. Additionally, the authors plan to extend the study by investigating the association with the change represented by BPM Maturity, reflecting the degree of Business Process Management Organization implementation and exploring the association between BPM Maturity level and ambidextrous achievement, with particular emphasis on strategies for achieving it (contextual, structural, managerial, sequential, managerial and hybrid).

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