Assessing Organization-System Fit in ERP Selection Procedures – A Literature Review

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Abstract. To remain competitive in a rapidly changing environment, SMEs rely on technologies that provide support for their business operations. Although an increasing number of SMEs use ERP systems, one of the major challenges is the selection of a software that fully meets their business needs. ERP systems generally come as standardized software packages, that fit generic rather than enterprise-specific requirements. Thus, mutual alignments to business and IT are inevitable when implementing a new system into an existing organizational structure. Consequently, ERP implementation projects face major risks, including users avoiding or misusing the system, or adopting it in a way that does not fully capture the project's expected benefits. However, the magnitude of organizational adaptations depends on the initial degree of organization-system fit. Thus, this contribution aims to examine current ERP selection methodologies by performing a literature review. Results reveal that most approaches exhibit two major weaknesses. First, instead of providing decision support, they focus on high-level recommendations, insufficiently addressing the degree of organization-system fit. Second, decision-making remains complex throughout the entire selection process, as methodologies do not provide mechanisms to establish an adequate preselection. Thus, the present paper introduces a innovative approach for selecting ERP software based on measures of business process similarity.

Keywords: Organization-system fit · Business process management · Business process similarity · Enterprise resource planning selection

1 Motivation

To remain competitive in a rapidly changing environment, effective methods for processing, storing and analyzing data are highly relevant for organizations today. Due to the integration of business processes and information, enterprise resource planning (ERP) systems enable enterprises to organize their resources more effectively [1, 2]. Although information systems positively affect the competitiveness of an enterprise, implementation projects often come with tremendous demands on time and financial resources. Limited resources, such as a tight time schedule or a lack of process knowledge and IT skills, as well as the highly differentiated market, can turn the selection of an adequate ERP system into a highly complex task [3]. Since ERP

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systems generally provide best practice operations for a certain industry, their implementation is frequently linked to the adjustment of organizational structures [4]. While business operations may increase in efficiency and effectiveness, the disruption of established workflows can result in users' resistance towards change, hampering the potential benefits of an ERP project [5]. If the organization is unable to align to the system's structure, efforts on customization and software re-configuration are inevitable. Thus, organizational resources are at stake and non-competitive operations are transferred into an individualized software. From a human-computer-perspective, a suitable, user-oriented, and carefully selected ERP system, can reduce the necessity for adjustments and increase the likelihood of an implementation project's success. While small and medium enterprises (SME) are still subject to activities of business process re-engineering (BPR), aiming to absorb the system's inherent best practices, efforts decrease with the degree of IT-business-conformance.

To address these challenges, the present paper examines current ERP selection approaches. Results reveal that most approaches suffer from two major weaknesses. First, instead of performing an initial examination of the degree of organization-system fit, most approaches only provide high-level recommendations. Second, decision-making remains complex throughout the entire selection process, since methodologies do not provide adequate mechanisms to reduce the highly diversified ERP market to a smaller number of relevant systems. We argue that pitfalls during ERP selection can be adequately addressed by utilizing methods of business process similarity. Our research can be summarized by the following research questions:

(1) How do methodologies for ERP selection address the degree of organization-system fit?
(2) Do methodologies for ERP selection offer mechanisms to narrow down the market for ERP systems?

This contribution is organized as follows: Sect. 2 describes the ERP selection process and introduces relevant dimensions of organization-system fit. In Sect. 3, the methodology underlying this research endeavor is presented and a theoretical framework to structure the results is introduced. Subsequently, identified methodologies are examined in Sect. 4, while Sect. 5 provides an innovative approach to address process fit during ERP selection. Concluding this contribution, Sect. 6 summarizes the main findings and gives an overview of limitations and future research potentials.

2 Theoretical Foundations

2.1 ERP Software Selection

As illustrated in Fig. 1, the process of ERP selection comprises four main stages: objective definition, requirements engineering, market analysis, and preselection as well as final decision-making.

The process is initiated by the phase of objective definition. Based on the formation of an adequate ERP team, objectives are defined and categorized into fundamental and

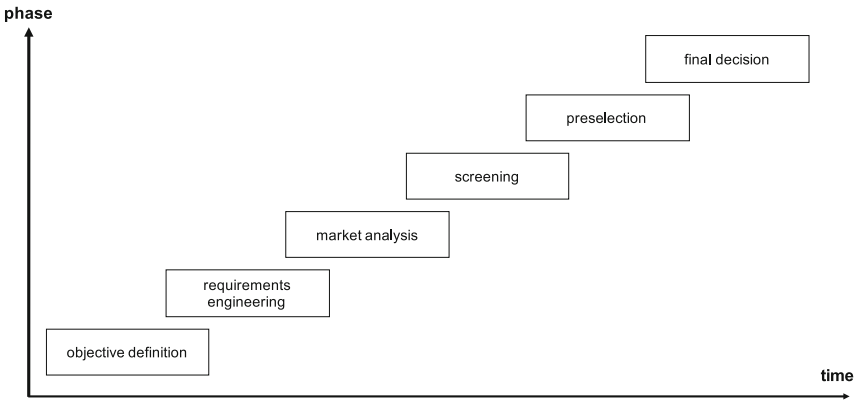

Fig. 1. Process model for ERP selection [6]

mean objectives in order to structure and prioritize corresponding evaluation criteria [6, 7]. Thus, the ERP team should define the project's scope, based on a company's policy, business attributes, the industrial environment, and overall strategic goals [8]. Furthermore, business processes should be analyzed based on customer interviews or company internal investigations. Thus, most relevant processes and organization-system interfaces are identified [9]. Subsequently, requirements engineering starts with the definition of organizational demands regarding technical, process, cultural, and functional needs. Aiming to reduce the likelihood of users' resistance in subsequent phases of an ERP project, requirements definition should take the current organizational structure into account. Thus, activities should be performed top-down as well as bottom-up. To avoid transferring non-competitive processes into a new ERP system, as-is business processes should be transformed into a to-be concept [10]. Based on organizational requirements, enterprises must acquire an adequate comprehension of available systems. Thus, information sources for ERP software, such as magazines, exhibitions, yearbooks, or the Internet, should be screened [7]. However, to gather in-depth information, requests for proposals, information, and cost estimates are sent to potential vendors [7]. Subsequently, the received information should be screened carefully to evaluate the degree, to which a system meets the predefined requirements. Narrowing down the number of potential systems continuously, a preselection of systems is established. Consequently, final decision-making is initiated, e.g., by using an analytical hierarchy process (AHP), evaluating each system regarding organizational objectives and requirements [11].

2.2 Perspectives on Organization-System Fit

Implementing and adopting new information technologies can transform people's work, organizational business processes, or an enterprises performance significantly [5]. Based on the centralization of organization-wide data, cross-functional integration, and the streamlining of processes, ERP systems generally come with potential benefits in

terms of an increasing efficiency, quality, and customer satisfaction [12]. Frequently offered as standardized software packages, ERP systems are designed to meet generic rather than specific organizational requirements, most likely resulting in an imperfect fit for any enterprise-specific implementation project. Referring to Markus, only 70% of an average organization's needs are addressed by an ERP system [5]. By contrast, Foster suggests that 80% of a software package should fit the intended structure of an organization before an implementation project is initiated [13].

According to Strong and Volkoff, potential sources of organization-enterprise system misfits can be divided into six categories, which are summarized in Table 1 [4].

Table 1. Types of organization-system misfits [4]

Misfit	Definition
Functionality	Occurs when executing business processes using an ERP system results in less efficiency and/or effectiveness compared to the situation before implementation
Data	Occurs when data stored in or needed by the ERP system result in poor quality in terms of inaccuracy, inconsistency, inaccessibility, lack of timeliness, or inappropriateness for users' contexts
Usability	Occurs when user interactions with the ERP system are obstructive and/or confusing
Role	Occurs when roles in the ERP system do not match the available skills; this creates imbalances in the workload or generates inconsistencies regarding responsibility and authority
Control	Occurs when control mechanisms in the ERP system are too strict and productivity is thereby reduced or minimized, so performance cannot be monitored appropriately
Culture	Occurs when operating the ERP system conflicts with organizational or national norms

In line with that, Markus refers to business processes, culture, and incentives as the most relevant types of organization-system misfits [5]. As each misfit can cause ERP implementation project failure, the present paper argues that an insufficient process fit hampers system adoption and facilitates the development of other misfits. Based on the re-engineering of business processes, workflows and operations can be subject to adaptations, resulting in user resistance and system avoidance. Thus, the probability of data misfits increases, since relevant data are not stored and processed appropriately when users work around the system. Process misfits negatively affect the perceived usability of an ERP system and produce conflicts to the existing organizational structure and corresponding roles. As users avoid the system's functionalities, control mechanisms are ineffective, providing only limited insights into organizational performance measures.

3 Research Design

To answer the predefined research questions, we aim to perform a structured literature review to analyze current methodologies for ERP selection in regards to recommendations for managing organization-system fit. Investigating existing methodologies for literature reviewing, we selected the framework by vom Brocke et al., who highlight the need for documenting the process of literature search and analysis [14]. Recently, literature reviews have been criticized because they lack validity and reliability. Thus, we aim to follow the proposed methodology rigorous and to provide a detailed description of the knowledge creation process. The framework comprises the five phases summarized in Fig. 2.

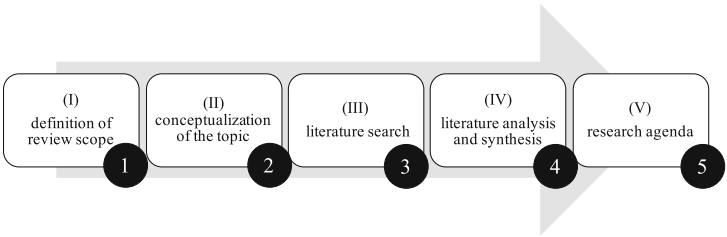

Fig. 2. Framework for literature reviewing [14]

According to vom Brocke et al., one of the major challenges when performing a literature review is to define an adequate reviewing scope [14]. Thus, we utilize the established taxonomy of Cooper (Fig. 3), who specifies the scope using the dimensions of 'focus', 'goal', 'organisation', 'perspective', 'audience' and 'coverage' [15].

As we aim to evaluate the consideration of organization-system fit in current ERP selection methodologies, this literature review focuses on research outcomes and real-world applications. Our goal is to integrate existing approaches to acquire a structured overview of procedures, selection criteria, and decision parameters. In line with that, the organization of our literature review is methodological. The reviewing process is performed from a neutral perspective and is addressed to researchers and practitioners, as findings are relevant for both audiences. However, we do not claim our

characteristics		categories			
(1)	focus	research outcomes	research methods	theories	applications
(2)	goal	integration	criticism	central issues	
(3)	organisation	historical	conceptual	methodological	
(4)	perspective	neutral representation		espousal of position	
(5)	audience	specialized scholars	general scholars	practitioners/politicians	general public
(6)	coverage	exhaustive	exhaustive and selective	representative	central/pivotal

Fig. 3. Definition of review scope [15]

sample to be exhaustive, but rather a representative selection of high-quality contributions.

In the second phase, a broad conception of what is known about the topic is required to construct a reviewing framework [16]. As suggested by Webster & Watson and Fettke, a literature review framework provides helpful guidance during the reviewing process [17, 18]. To expose and structure the identified methodologies, we integrate the frameworks of Markus and Strong & Volkoff, as introduced in Sect. 2 [4, 5]. The resulting framework of analysis is illustrated in Fig. 4.

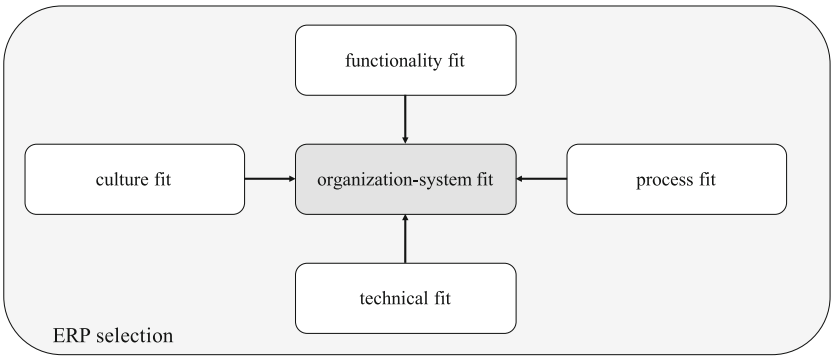

Fig. 4. Framework of analysis [4, 5]

Constructing the framework, we built upon the interpretation of Markus and Cooprider & Henderson, who explicitly distinguish between functionality fit and process fit [5, 19]. However, this appears to be reasonable, as functionality misfits are generally addressed by software customization, while process misfits result in necessary BPR activities. Additionally, potential misfits caused by inadequate incentives, poor usability, or role conflicts are summarized by 'culture fit'. Finally, 'technical fit' includes a system's capability to store and process data as well as characteristics, such as customizability and performance.

In the third step, the process of literature search is specified [14]. Thus, selected databases and used keywords must be appropriately documented and steps to analyze and structure findings are described. Figure 5 provides an overview of databases and summarizes outcomes of each step of the searching procedure. The decision whether a retrieved article is analyzed in detail was made based on its title and abstract. If the title implicated that a contribution could be relevant within the scope of this review, the abstract was screened subsequently. Relevant contributions were then analyzed performing a keyword and full-text analysis and a final decision was made. To consider relevant papers not detected within the regular searching process, we performed a backward search and forward search.

Aiming to identify relevant contributions from high-quality IS conferences, such as ICIS, ECIS, or AMCIS, we initiated the literature search process by querying the digital libraries of AISel, ScienceDirect, and EBSCOhost. We initially focused on

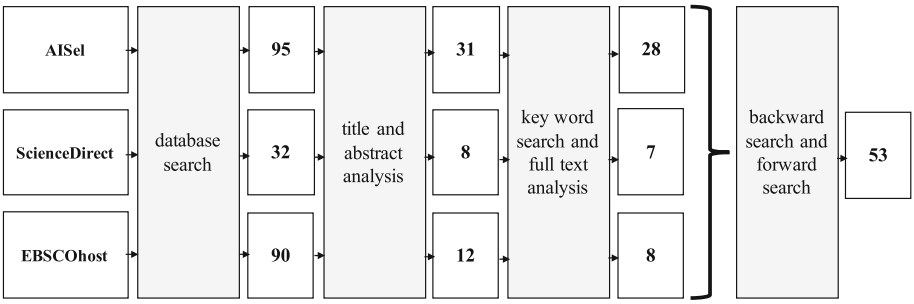

Fig. 5. Process of literature search

contributions listed in the categories 'A' and 'B' as ranked by VHB-Jourqual. However, as only a small number of contributions were identified, we expanded the scope of the literature search to the categories 'C' and 'D' as the research progressed. Table 2 summarizes the selected keywords.

Table 2. Keywords for literature search

	AISeL	EBSCOhost	ScienceDirect
Keywords	('ERP selection' OR 'ERP pre-implementation' OR 'ERP selection model´ OR 'ERP selection' AND 'organization-system fit)	AB ('ERP selection' OR 'ERP pre-implementation' OR 'ERP selection model' OR 'ERP selection' AND 'organization-system fit')	('ERP selection' OR 'ERP pre-implementation' OR 'ERP selection model' OR 'ERP selection' AND 'organization-system fit')

Keywords included the terms 'ERP selection', 'ERP pre-implementation', 'ERP selection methodology', and 'ERP implementation methodology'. Furthermore, the selection was completed by adding a combination of the terms 'ERP selection' and 'organization-system fit' to control for methodologies or theories, that especially address the fit between ERP systems and organizational structures. Finally, 53 articles broaching the topic of ERP selection were identified.

4 Literature Analysis

4.1 Meta-analysis

Subsequently, contributions identified within the literature search process are analyzed regarding their research design, ranking, and year of publication. Results are illustrated in Fig. 6.

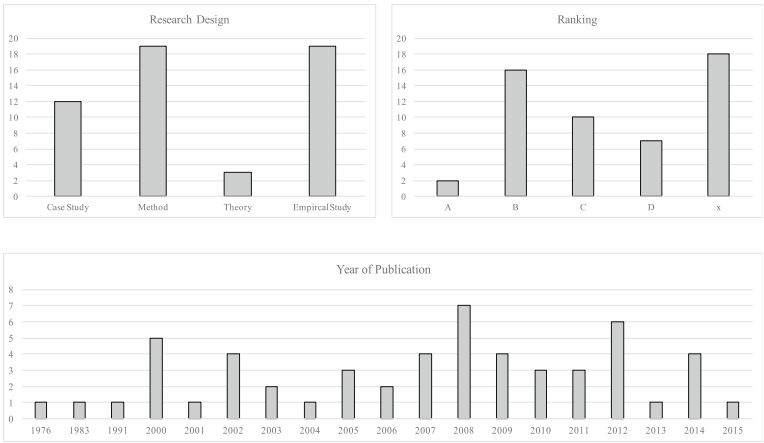

Fig. 6. Meta-analysis of identified contributions

With more than 50% of contributions ranked 'C' or higher, the sample can be regarded as high-qualitative. However, almost 35% of the identified articles are not ranked. Publication dates range from 1976 to 2015, with many articles published in the years of 2000, 2008, and 2009. However, as the number of publications decreased in recent years, a lack of up-to-date research can be observed. Applied research designs include case studies, methodological approaches, theory building, and empirical studies. However, each category exhibits differences regarding goals, scope, and results. While case studies and empirical studies are used to validate assumptions and theoretical implications, they do not provide guidance for the actual process of ERP selection. Thus, the present paper focuses exclusively on methodological and theoretical contributions.

4.2 Literature Analysis and Synthesis

Following the recommendations of Webster & Watson, identified articles are analyzed and categorized using the theoretical framework introduced in Sect. 3 [17]. Table 3 summarizes the consideration of organization-system fit in current ERP selection methodologies.

As many methodological contributions exhibit a similar research design, but differ in terms of goals and scope, we further distinguish between methods that exclusively focus on decision support and methodologies for ERP selection. However, as final decision-making is part of the overall process of ERP selection, corresponding methods are analyzed separately.

Decision-making in ERP selection projects. Decision-making methods are either particularly designed for ERP selection or have been adopted from the selection of information systems in general. They contain techniques and mechanisms to analyze, aggregate, and prioritize selection criteria.

Table 3. Organization-system Fit in ERP selection methodologies

	Functional fit	Process fit	Technical fit	Cultural fit
Adinnour-Helm et al. (2003)	×			×
Alpers et al. (2014)	×		×	
Alsulami et al. (2014)	×			×
Batenburg et al. (2008)			×	
Benlian and Hess (2010)				×
Bernroider and Koch (2000)	×	×	×	
Bernroider et al. (2009)	×		×	×
Birdoğan and Kemal (2005)	×		×	
Bolenta (2011)	×		×	
Brainin (2008)				×
Bueno and Salmeron 2008	×		×	
Buss (1986)	×		×	
Christofi et al. (2009)		×		
Chun-Chin et al. (2005)	×		×	
Cil et al. (2005)	×		×	
Deep et al. (2008)	×	×	×	×
Deltour (2012)			×	
Dey (2002)	×		×	
Everdingen et al. (2000)	×			
Gall et al. (2009)			×	
Ghapanchi et al. (2008)	×			×
Gronau (2001)	×		×	×
Gürbüz et al. (2012)	×		×	
Hakim and Hakim (2010)	×	×	×	×
Hallikainen et al. (2002)	×			
Han (2004)	×		×	×
Hustad and Olsen (2011)	×		×	
Johansson et al. (2013)	×		×	
Keil und Tiwana (2006)	×		×	×
Kilic et al. (2014)			×	×
Kilic et al. (2015)	×		×	×
Kumar et al. (2002)	×			×
Liang (2003)	×		×	
Liao et al. (2007)	×			
Livermoore and Ragowsky (2002)				×
Lucas and Moore (1976)	×		×	
Mitlöhner (2012)	×			
Ng (2006)	×		×	×
Percin (2008)	×		×	×
Pitic et al. (2014)	×			
Poon and Yu (2010)	×		×	×
Ram and Pattinson (2009)	×		×	
Ratkevičius et al. (2012)	×		×	×
Sammon and Adam (2007)		×	×	
Schniederjans and Wilson (1991)	×			
Seethamraju and Seethamraju	×			×
Stefanou (2000)	×	×	×	×
Stewart (2000)				×
Teltumble (2000)	×		×	×
Tsai et al. (2012)	×		×	×
Wei et al. (2005)	×		×	
Wu et al. (2007)	×		×	
Zach and Munkvold (2011)	×		×	
Total	**43**	**6**	**37**	**24**

Relevant approaches range from scoring and ranking methods, to mathematical optimization and multi-criteria decision-making models [20]. While multi-criteria scoring techniques have been introduced by Lucas and Moore, ranking-based selection methods were first mentioned by Buss [21, 22]. Although approaches of this kind are easy to use and understand, they lack an adequate consideration of decision makers' opinions and preferences [20]. Defining the selection-decision as a mathematical optimization problem, Schniederjans and Wilson designed a method that integrates goal programming into the AHP procedure to reduce the task of ERP selection to a multi-alternative resource allocation problem [23]. AHP describes a technique for organizing and analyzing complex decisions, by decomposing a decision problem into a hierarchy of sub-problems that can be analyzed independently. It is designed to support group decision making and helps to understand a decision problem to identify its most suitable solution. Multiple AHP-based methods have been introduced, varying in terms of decision scope, underlying mechanisms, and computation techniques [24]. Exemplary, Wei et al. (2005) define a comprehensive AHP-based decision-making framework, that focuses on comparing an enterprise's overall goals and strategies to objectives linked to an ERP implementation project [11]. Thus, the decision problem is decomposed into several smaller problems that are analyzed independently by a standardized evaluation process. Furthermore, Percin extends traditional approaches by introducing a mechanism for decision-making based on an analytical network process (ANP) [20]. Thus, goals, decision criteria, and alternatives are structured as a network, allowing to perform feedback loops and to integrate a bottom-up perspective [20].

Functional Fit. Numerous contributions refer to an ERP system's functionalities as one of the most important criteria for system selection [25–28]. Gronau suggests that functional requirements of an organization should be carefully documented and weighted by their relative importance. In general, criteria to assess functionality fit include an ERP system's functional range, conformance with existing business needs, cross-module integration, compatibility to other system as well as its adaptability, and modularity [29, 30]. Wei et al. further add security features and functional performance to the catalogue of potential selection criteria [11].

In order to acquire relevant information, Verville & Hallingten emphasize the importance of external and internal information sources [7]. Aiming to avoid overlooking feasible systems, different sources, such as the Internet, professional magazines, or vendor exhibitions, should be screened carefully. Cil et al. further introduce a web-based framework that supports the assessment of organization-system functionality fit [31]. The framework contains two main components. First, mechanisms for group decision making allow different stakeholders to participate in the process of requirements engineering and objective definition. Second, criteria-based techniques are applied to narrow down the ERP market to a smaller number of adequate systems. To support the selection decision, Han distinguishes three levels of functionality [32]. On the first level, basic functionalities account for essential features, such as supporting and executing business routines. Level 2 comprises desired functions that facilitate increases in business process productivity and efficiency. Consequently, the third level includes additional functionalities, enabling BPR to absorb the system's best practices. Utilizing this classification, potential systems can be evaluated and prioritized to generate a short

list of vendors that is analyzed in more detail subsequently. To evaluate the predefined selection criteria from different perspectives, Baki and Cakar further suggest to form a cross-functional ERP team [29]. According to Hecht, functionality should not carry more than one-third of the weight in overall decision-making [33]. By contrast, Wei et al. use a relative weighting factor of 0.45 to integrate an ERP systems functional characteristics into AHP procedures [11]. Although several concepts provide criteria and support for assessing the functional fit of an ERP system, most approaches lack a definition of mechanisms to match business needs and system functionalities.

Process Fit. To analyze the measure of process fit, Markus emphasizes that differences in business processes and work routines can result in users' resistance and avoidance of the system [5]. In line with that, Stefanou defines discrepancies in business processes as one of the most important organizational constraints in ERP projects [8]. According to Motwani et al., mutual alignments of business and IT are necessary to enhance organizational performance, quality, costs, flexibility, and responsiveness [34]. Furthermore, process fit has been defined as one of the most relevant critical success factors in numerous contributions [35–38].

While efforts on BPR are traditionally performed during the phase of ERP implementation, Christofi et al. suggest to identify, explore, and improve deficient business processes as a preparatory step before the ERP project is initiated [39]. Thus, potential BPR efforts are reduced and the likelihood of a successful system adoption increases. Although process fit is essential for ERP implementation projects to succeed, existent methodologies do not provide techniques or measures to assess the initial process fit.

Technical Fit. To analyze an ERP system's technical fit, methodologies suggest to investigate system characteristics, such as customizability, integration capacity and its migration ability. Wei et al. further mention adequate technical support as a relevant criterion for assessing technical fit [11]. According to Gall et al., customizability includes all activities that align the system to specific business needs [40]. Potential criteria to evaluate customizability include a clear distinction between different tiers, functionalities to store modifications centrally, and potential impacts on the installation of service packs and new product releases. Furthermore, systems should provide an integrated development environment, predefined interfaces, tools to administer databases, and possibilities to access external data structures [40]. Evaluating integration capacities, a system should be able to integrate an organization's existing software systems. Thus, adequate functionalities to ensure external connectivity must be provided. Corresponding selection criteria cover the availability of application programming interfaces, data integration capabilities supported by the database system, and the range of supported file formats for data exchange. Additionally, systems should provide features to map data and fields dynamically and to monitor the amount of exchanged data [40]. Finally, migration ability describes the necessary time and efforts to migrate the new ERP system from a previous system. Evaluation criteria include the existence of data migration and application tools as well as tools to migrate predefined modifications [40]. Referring to Gronau, technical criteria should be documented and

evaluated [6]. Applying the decision framework of Wei et al., technical fit accounts for 65% of ERP vendor characteristics [11]. Gürbüz et al. integrate technical aspects as a major software related selection criterion [41]. In line with that, Kilic et al. define technical criteria as one of the three most important factors that influence the decision-making process [30].

Although methodologies provide a variety of evaluation criteria, only little support is provided for the acquisition of relevant information and for the evaluation of ERP features and organizational needs.

Cultural Fit. To investigate the degree of cultural fit, an ERP system's usability, conformance of required and available skills, and inherent control mechanisms are evaluated. Furthermore, cultural fit includes conflicts with organizational or cultural norms. Usability is defined as the simplicity of training and use [11]. Thus, the system should allow to be used intuitively and without the need for acquiring additional knowledge [26]. Referring to Ratkevičius, IT skills of future users should be considered when selecting an ERP system [42]. Hence, user interfaces of potential ERP systems should be examined by users from different departments. To address cultural conflicts, Brainin offers an overview of cultural differences between countries and their relation to different stages of technology implementation [42]. Thus, guidelines are developed, that define mechanisms to support the implementation of information technology in cross-country-scenarios. Nevertheless, valuable implications can be drawn on achieving cultural fit within an enterprise-specific implementation project. However, identified contributions neither provide detailed evaluation criteria nor an adequate support for decision-making during ERP selection.

5 Assessing Process Fit in ERP Implementation Projects

As revealed by the literature review, most contributions on ERP selection only provide limited support when evaluating organization-system fit. However, misfits can produce users' resistance towards the system and cause ERP projects failure. On the one hand, efforts on BPR are considered as one of the most important critical success factors for ERP implementation projects. However, methodologies for ERP selection do not account for the initial degree of process fit. On the other hand, the highly diversified market for ERP systems turns ERP selection into a highly complex task. Although a few methodologies suggest to determine a preselection of most suitable ERP systems, little guidance in efficiently narrowing down the market is provided. Thus, the present paper introduces an innovative approach for addressing process fit as an extension of traditional ERP selection methodologies. Based on the measure of feature-based similarity, organizational structures are automatically evaluated towards ERP reference processes stored in a process repository. Figure 7 illustrates the suggested process of ERP selection.

The proposed methodology exhibits two major advantages. First, an initial assessment of process fit allows to minimize subsequent BPR efforts. Thus, selected systems comply with the intended to-be process structure, positively influencing the likelihood of system adoption and usage. Second, as measures of business process

similarity can be computed automatically, they enable enterprises to examine available system faster and more accurately. Sorting each system by its similarity score, an initial ranking can be established. Thus, the ERP market is narrowed down to a small number of suitable systems and more detailed, but time-consuming investigations, such as on-site system presentations, can be performed.

The approach builds upon the fact, that ERP systems are based on continuously improved process models that hold the best practice for a class of business processes for a certain industrial sector. For example, the SAP reference model comprises over 600 business process models providing a process structure for SAP R/3. Given a repository of different ERP reference processes, enterprise specific business process models can be used as query objects, aiming to identify similar process models. While various approaches to measure business process similarity exist, most techniques require an exact matching and compare process models pairwise. Thus, underlying formalisms are hard to understand and computation time is high. By contrast, feature-based similarity is designed to query large repositories of business processes by analyzing process features instead of full-scale process models. Following Yan et al., features are defined as simple but representative abstractions of process models [43]. As illustrated in Fig. 7, the proposed procedure comprises four sequentially ordered steps. First, adequate features are defined that represent the processes to be compared. Based on those features, the similarity of a query process model and a collection of ERP-specific reference process models are evaluated within the second step. Third, relevant systems are identified according to their feature similarity score. In the fourth step, identified systems are ranked to provide enterprises with a convenient decision support for ERP selection.

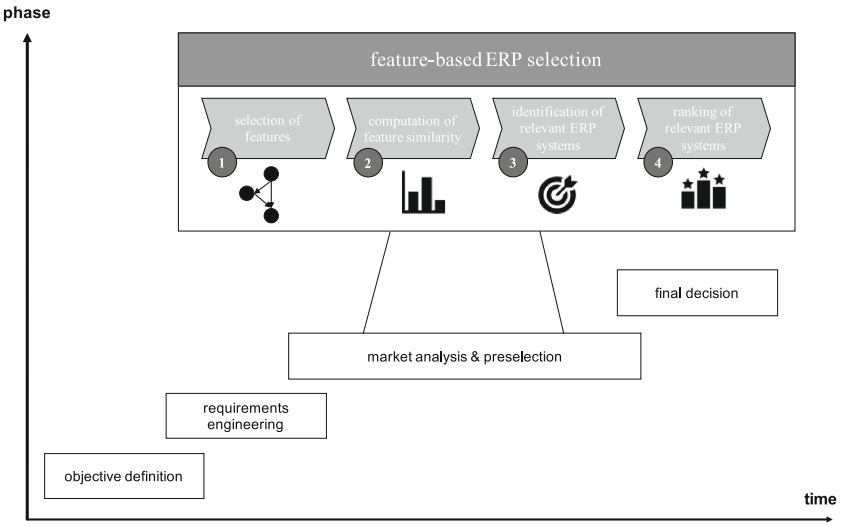

Fig. 7. Methodology for feature-based ERP selection

6 Conclusion

As ERP systems provide an automated support for an enterprise's business operations, their implementation and usage is highly important to remain competitive in a rapidly changing environment. However, many ERP projects fail due to users' resistance towards the system. In fact, adoption and usage of ERP systems significantly depend on the degree of organization-system fit. While adjustments during the implementation phase are costly, time-consuming, and complex, the present paper argues that potential misfits can be addressed within the process of ERP selection. Performing a structured literature review, current methodologies are evaluated in terms of their consideration of organization-system fit. Results reveal that most approaches focus on the assessment of functional and technical fit, while misfits in the dimension of culture and processes are neglected. However, changes in business processes and work routines can trigger users to the avoid the system.

Thus, this contribution introduces an innovative approach for ERP selection that allows to initially assess process fit by utilizing measures of business process similarity. Consequently, enterprises are enabled to analyze process fit before the implementation process is initiated and the large ERP market is narrowed down to a smaller number of relevant systems, increasing the efficiency of selection methodologies.

However, approaches of this kind have a variety of well-known limitations. First, this literature review is based on a representative selection of relevant contributions regarding the examined topic. Thus, articles could have been overlooked and relevant implications were not integrated into this analysis. However, we believe that the identified contributions, the detailed documentation of the literature search procedure, the proposed categorization as well as the suggested selection approach offer valuable insights that can help to improve the addressed field of research. Furthermore, we did not control for other types of misfits, that were identified to be underrepresented in current selection methodologies. More detailed research must be done to account for the degree of functional, technical, and cultural fit during ERP selection. Furthermore, applicability and impacts of the suggested procedure should be evaluated experimentally in future studies.

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