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Marie-Lena Eckert
Technical University München

Andreas Freitag
Technical University München

Florian Matthes
Technical University München

Sascha Roth
Technical University München

Christopher Schilz
Technical University München

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Marie-Lena Eckert, Technical University Munich, Boltzmannstraße 3, 85748 Garching bei München, Germany, eckertma@in.tum.de

Andreas Freitag, Technical University Munich, Boltzmannstraße 3, 85748 Garching bei München, Germany, Andreas.Freitag@in.tum.de

Florian Matthes , Technical University Munich, Boltzmannstraße 3, 85748 Garching bei München, Germany, matthes@tum.de

Sascha Roth, Technical University Munich, Boltzmannstraße 3, 85748 Garching bei München, Germany, roth@tum.de

Christopher Schulz, Technical University Munich, Boltzmannstraße 3, 85748 Garching bei München, Germany, christopher.schulz@tum.de

Abstract

Mergers and Acquisitions (M&A) represent a powerful strategic instrument increasingly applied in today's business environment. Besides juridical, financial, and organizational challenges, it is crucial to rapidly integrate the existing application landscapes in order to capitalize the aspired synergies. Literature documents four commonly agreed strategies: 'best-of-breed', 'absorption', 'co-existence', and 'new-build'. However, no consolidated set of criteria exists to ease the selection of an integration strategy most suitable for the merger or the acquisition.

Based on the results of a literature study, this paper proposes four integration profiles enabling a structured decision support for selecting the appropriate application landscape strategy during M&A. Each profile comprises relevant driving factors and resulting consequences as selection criteria. The identified literature statements regarding the criteria are validated by means of 12 confirmatory interviews with M&A experts. Furthermore, collected findings from an additional exploratory interview part with the practitioners complement the devised strategy profiles.

Keywords: mergers & acquisitions, integration, application landscape, strategy, decision support, best-of-breed, new-build, co-existence, absorption

1 Motivation

Despite a fluctuant and uncertain financial market, analysts confirm the presence of M&A activities in the short- and mid-term future (Capital, 2011). Increasingly, the enterprise's management considers external growth as a valuable strategic means ensuring the continuity and prosperity of their business (Gerds & Schewe, 2011; Jansen, 2008). As a matter of fact, M&A require that the involved enterprises undergo a transformation process. While this holds true for their obvious assets (i.a., products, real estate, business processes, and organizational units) it also applies for the used information technology (IT) (Freitag et. al., 2011). As IT has become a major enabler in many industries, it increasingly influences the enterprise's success. In consequence, its transformation during M&A has to be regarded with high priority (Giacomazzi et al., 1997).

(Business) applications "as a software system which is part of an information system of an organization" and their relationships form the (business) application landscape of an enterprise (Engels et al., 2008; Wittenburg, 2007). During M&A, enterprises see themselves confronted with at least two appli-

cation landscapes which have to be integrated (Winter, 2009) in order to achieve desired goals (e.g., rendering new business services, realizing cost synergies). Among current literature, there is consensus with regards to four diametral strategies targeting at the integration of application landscapes (cf. (Fa et al., 2006; Keller, 2007; Buxmann & Miklitz, 2007), Figure 1):

- **Best-of-breed** requires that the best applications are selected from the entirety of all applications of both enterprises. The selected applications constitute the new application landscape. Occasionally, this approach is also called cherry-picking (Keller, 2007) or partial integration (Fa et al., 2006).

- **Absorption** implies that business applications of one merging partner are chosen as target application landscape for the merged company. Alternatively, the name steam-roller (Keller, 2007) or complete integration (Fa et al., 2006) is used.

- **Co-existence** refers to a strategy where both application landscapes are left independent and are operated in parallel. In part, interfaces between the two landscapes are created primarily intended for data transfer.

- **New-build** denominates a strategy where the target application landscape is developed from scratch, i.e., without making use of the existing applications. Some authors refer to this strategy as greenfield (Buxmann & Miklitz, 2007).
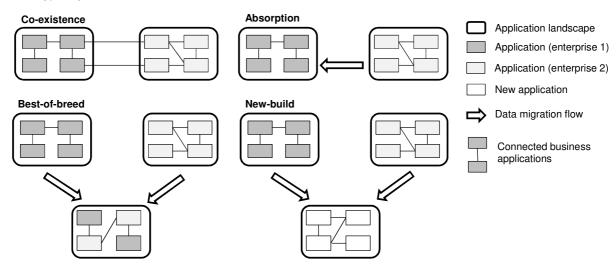

Figure 1.   *Application landscape integration strategies*

When it comes to selecting the most appropriate strategy, no consolidated overview with regards to the driving factors and resulting consequences exist so far in literature. Moreover, documented statements are not subject to a structured and industry-grounded evaluation process. Against this background, the research questions of our paper are as follows:

Q1: According to literature, what are common statements regarding the selection of a specific application landscape integration strategy?

Q2: What are suitable criteria to categorize identified statements?

Q3: To which extent are these statements confirmed by practitioners and are there additional aspects not yet touched by the examined sources?

To investigate on these questions, we employ a three-step approach comprising a literature analysis, structured interviews with M&A industry experts, as well as a detailed comparison of both findings.

The remainder of the paper is structured as follows: In Section 2 we explain our research approach by detailing on the literature analysis and expert interviews. Section 3 contains the consolidated results

per strategy as well as their comparison expressed by means of a profile and a textual description. Finally, Section 4 concludes our study by pointing out further areas of research.

2   Research approach

In the first step, we conducted a literature analysis covering current M&A literature to identify factors driving the choice of an application landscape integration strategy as well as the resulting consequences. Following the guidelines of Webster and Watson (2002), we developed a concept-oriented analysis structure which was continuously refined during the research process.

Between February, 28th and March, 25th 2011 we accessed several databases: ACM digital library, CiteSeerX, Google scholar, IEEE Xplore, ISI Web of Knowledge, Springerlink, as well as the electronic libraries of our university. We applied the key words 'merger', 'acquisition', 'IT integration', 'IT consolidation', 'IT strategies', 'application (landscape) consolidation', 'application (landscape) integration, 'absorption', 'best-of-breed', 'cherry-picking', 'new-build', 'greenfield', and 'co-existence' in different combinations. The search was performed with the English terms and their respective German translations. We identified 56 publications of which we deemed 32 as relevant since they (briefly) mentioned when and why to select a particular strategy as well as the associated consequences. Of this set, only 21 contained substantial statements with regards to the choice. Afterwards, all statements were consolidated in a bottom-up manner taking the aspect they are referring into account (e.g., M&A goal, target application landscape).

Secondly, we collected practical insights gained during present and past mergers by conducting twelve semi-structured interviews with experts from seven different companies located in Switzerland, Germany, and Austria. The interview partners came from the insurance, banking, automotive, and electronics industry, as well as from IT service providers for these sectors. All of them have been actively involved in M&A as a decision maker who is responsible for the development of the application landscape. Due to confidentiality reasons, we do not list the experts' and company names. The interviews, 60 minutes each, have been conducted between May, 12th and 25th 2011. Based on previously elaborated analysis structure, we developed a 5-page interview guideline (Kanwischer, 2005). While two of the interviews were performed personally on-site, ten were held by phone. Guideline as well as transcripts are not contained in our paper but are available on demand. The first part of our discussions aimed to validate the literature statements with the help of closed and confirmatory questions. Thereby, we insisted on answering the complete set of questions. In a second exploratory part, we asked the experts about further remarks originating from their personal experiences. Afterwards, the collected data was prepared, analyzed, and consolidated in adhering to the literature analysis structure developed before.

Based on this structure, we finally devised four distinct strategy profiles subdivided into driving factors and resulting consequences. Besides the identified criteria, the profile comprises the consolidated literature statements as well as the experts' opinions. Furthermore, it is complemented with additional findings brought up during the exploratory parts of our interviews.

3   Application landscape integration strategies

Before examining an application landscape integration strategy individually, we provide an overarching view on the four alternatives (cf. Table 1). Each strategy is characterized by the relative effort, time, budget, and risks. A specific cell of Table 1 is filled with the prevalent statement we found in literature. Due to ease of reading, we referenced by numbers in this and all following tables. Note, that the statements of one strategy have to be put in relationship to the other three strategies. Consequently, a "short" time for absorption does not imply that the absorption strategy is implemented within days.

Subsequently, a dedicated profile table summarizes our main findings regarding each of the four application landscape integration strategies. The two main criteria driving factors and resulting conse-

quences are subdivided into several sub-criteria which we identified and structured in a bottom-up manner according to our literature analysis results. A driving factor is a "push-reason", i.e., why to opt for the implementation of a certain integration strategy. The consequences are aspects the newly formed enterprise has to bear in mind when having implemented a strategy. In this vein, consequences can be considered as "pull-reasons". For each criterion we differentiate between the viewpoint of literature and practitioners.

Criterion	Best-of-breed	Absorption	Co-existence	New-build
Effort	High [9, 17, 25]	Limited [4, 20, 28]	Low [4]	High [17]
Time	Long [1, 4, 11, 17, 20, 23, 24]	Short [1, 4, 11, 17, 20, 23, 28, 30]	Short [4, 7, 11, 17]	Long [1, 4, 11, 17, 23, 24, 25]
Budget	High [4, 17, 20, 23, 24]	Small [4,11, 17, 20, 23]	Small [6, 7, 17]	High [1, 2, 4, 13, 17, 23, 24]
Risk	High [3, 4]	Low [3, 4, 17, 20, 23, 24, 28]	Low [20]	High [17, 23, 24] Limited [4]

Table 1.   Main characteristics of application landscape integration strategies

Regarding a specific sub-criterion, we added the reference of those sources which confirm a specific statement. Again, numbers are used for referencing. The interview results are listed in the column "Practitioners". Due to the qualitative nature of our study, we abstained from pointing out the exact numbers of experts who endorsed a certain literature statement. Instead we apply a scale of four different levels: "fully confirmed" meaning a broad majority of experts (above 80%) validated the criterion. Vice versa, "not confirmed" signifies that none (0%) of the interviewed persons approved the statement. Furthermore, "partly confirmed" refers to the situation where less than half of the experts (80% to 30%) agreed upon the criterion. "Rarely confirmed" means that only a very small minority (between 30% and 1%) of interviewees followed the opinion of the sources. Furthermore, "Not asked" means that we did not question the interviewees due to time reasons despite a literature statement. Lastly, "not questioned" signifies that no questions were posed since we did not find any literature statement specifying the criterion. In contrast, "not answered" refers to a question where the experts refused to share their opinion.

Complementing each table, we provide a short textual comparison of both perspectives while adding further facts. These statements either originate from the examined literature sources or were additionally mentioned by our interview partners.

3.1   Co-existence

Some sources consider *co-existence* as a temporary solution (Buxmann & Miklitz, 2007; Fa et al., 2006; Guggenberger, 2010; Peyret, 2010) which precedes an *absorption* or a *new-build* (Buxmann & Miklitz, 2007) strategy. As an advantage, no new application knowledge has to be developed, given that each former IT department already possesses the necessary first-hand experiences and skills (Buckl et al., 2009). Furthermore, this strategy would be the option of choice, if the participating enterprises require a high degree of autonomy, for example to preserve the positioning of an individual brand in the market. (Emerald Group, 2006).

M&A goals mentioned by literature as main influencing factors were only partly approved by our interview partners. For two of them, the strategy should be implemented if there are different local requirements, goals, and boundary conditions. Only three confirmed that *co-existence* aims to identify a final integration strategy, thus serves as a temporary solution. Additionally, one expert emphasized the preservation of the specific enterprise characteristics and customer focus. In contrast, the experts fully agreed upon all statements brought up by the sources with regards to the specific M&A type. Since studied literature did not contain further details regarding the as-is application landscape, we dropped this criterion during our interview series.

	Criterion	Literature	Practitioners
Driving factors	M&A goals	Capability- and knowledge transfer [9, 17], fulfilling legal regulations [25]	partly confirmed
		Distribution of risks [10, 17], diversification [17], temporary solution [4, 11, 17, 29]	rarely confirmed
	M&A type	Conglomerate M&A [20, 25]	fully confirmed
		High organizational autonomy and low strategic interdependencies [4, 6, 7, 9, 20]	fully confirmed
		Participating enterprises geographically distributed [20, 25, 29]	fully confirmed
	As-is application landscapes	*No specific statements found in literature*	not questioned
Consequences	Risks	*No specific statements found in literature*	not questioned
	Integration project	Integration predominantly on an infrastructure level [9, 11, 20]	fully confirmed
		Low complexity since only data transfer interfaces are created [20]	fully confirmed
	Employees	Creation of a complex non-transparent organization [4]	partly confirmed
	Target application landscape	High operating and maintenance costs [4, 11, 13, 20, 28]	fully confirmed
		No synergies except for future purchasing and development of IT [4, 7, 9, 12, 11, 17, 31]	partly confirmed

Table 2.   Strategy profile co-existence

As we did not find any specific risks in the sources, we questioned the experts for their general opinion. Except one person, the interviewees confirmed a low level of integration risk, hence a failure is considered rather unlikely. The one who did not approve mentioned that even interface development and usage often entails underestimated integration risks. According to our examined sources, the associated integration projects mainly cover infrastructure components (Dudas & Tobisson, 2007; Fa et al., 2006; Johnston & Yetton, 1996). Integration on an application level takes place only by means of low-complex data transfer interfaces (Johnston & Yetton, 1996). All experts confirmed these statements. Two of them brought up the issue of keeping distributed data synchronized and emphasized the sophisticated interfaces being necessary for a successful *co-existence* of both landscapes. Another two experts referred to the indispensable consolidation of cross-functional administrative applications (e.g., human resources). Only half of the partners thought that the survival of two application landscapes creates a complex and non-transparent organization (Buxmann & Miklitz, 2007). We did not ask for employee training expenses, since the only source we found regarding this topic mentions the non-existence of these costs (Chao & Lin, 2009). Furthermore, we identified a large degree of consensus regarding the expensive operating and maintenance costs. One expert argued that these costs are also depending on the number of transactions as well as the storage volume instead of the total number of applications. Another partner annotated the increased time-to-market and reduced competitiveness resulting from high complexity of interconnected application landscapes. Despite this fact, several experts saw additional potential for synergies besides purchasing and development.

3.2   Absorption

According to literature, the *absorption* strategy is applied when participating enterprises vary in size (Bachmann, 2008; Buxmann & Miklitz, 2007; Guggenberger, 2010; Peyret, 2010; Rentrop, 2004) or in case the two organizations possess different status and power (Bachmann, 2008; Buckl et al., 2009; Giessner et al., 2006; Keller, 2007).

The M&A goals we identified in literature were only rarely approved by the experts. Instead, they mentioned transparency as well as unification and standardization of processes and products. In line with examined sources, the majority of interviewees confirmed that *absorption* is chosen in the case of horizontal M&A, in particular acquisitions. Practitioners agreed with literature, that *absorption* is the

preferred option if M&A is used as a strategic instrument, hence occur frequently. According to literature, *absorption* is chosen if there is a significant quality gap between both existing application landscapes. At this point, the experts' opinion varied. While one group emphasized that quality does not matter, others expressed that application landscape quality is a driving factor for strategy selection. Furthermore, one expert emphasized that there is no "better" application landscape, a second one added to consider only a subset of important applications when making the choice.

Several sources mention a low risk for subsequent integration projects. Data migration and scalability were not deemed major issues by the experts. Instead, some interviewees spoke about problems in harmonizing business processes as well as compromises and trade-offs made during the strategy's implementation. These concessions dilute the pure nature of *absorption*, according to the persons we questioned. Furthermore, the possible loss of niche product support is often mentioned by literature (Buxmann & Miklitz, 2007; Brunetto, 2006; Guggenberger, 2010; Keller, 2004; Keller, 2007). However, this could only partly confirmed by the experts. One expert explained that niche products are instantaneously copied once they have been proven to be successful. From the employees' perspective, both literature as well as practitioners agreed upon the low acceptance rate by the staff whose landscape is absorbed. Noteworthy, one expert stated that the acceptance may be also contingent on the quality of the target landscape. A higher landscape quality, according to the expert, often leads to a higher chance of acceptance. Only a minority confirmed the high effort needed for training the IT staff since required skills and knowledge already exists within the enterprise. One interviewee added the issue of an identification, know-how, and experience loss due to decommissioning of one application landscape. In our analysis we often read that the selected application landscape is possibly not the optimum from a technical standpoint. Only less than 50% of the experts agreed with this statement as they deemed the support of business requirements more important. All interviewees rejected the fact that the new application landscape covers 70-80% of the necessary functionalities.

	Criterion	Literature	Practitioners
Driving factors	M&A goals	Economies of scale [11]	partly confirmed
		Rationalization [3, 11, 20, 29], cost savings [2, 3, 4, 11, 20, 23, 29, 32], eliminate competition [29]	rarely confirmed
		Sharing resources [9, 11]	not confirmed
	M&A type	Horizontal M&A [9, 17, 23, 26, 30, 31, 33]	fully confirmed
		Acquisition [2]	fully confirmed
		Low organizational autonomy and high strategic interdependencies [6, 9, 10, 26, 31]	fully confirmed
		Particularly suitable for a sequence of M&A cases [17, 29]	fully confirmed
	As-is application landscapes	Quality of landscapes has to be different [1, 11, 20, 25, 27]	partly confirmed
		Quality of landscapes is not considered since it is a pure management decision [13, 24]	partly confirmed
Consequences	Risks	Data migration issues [24]	not confirmed
		Limited scalability of selected landscape [11, 20, 28]	not confirmed
		Loss of application support for niche product(s) [3, 4, 17, 23, 24]	partly confirmed
	Integration project	Integration equally comprises business, application landscape, and infrastructure level [9, 11, 20, 26]	fully confirmed
		Basic understanding of former application landscapes required [2]	not answered
	Employees	Low acceptance absorbed organization [1, 3, 4, 11, 17, 23, 24]	fully confirmed
		High training effort required [4, 17]	rarely confirmed
	Target application landscape	Selected landscape possibly not the best from technical point of view [1, 4, 17, 11, 13]	partly confirmed
		Target landscape covers 70-80% of the desired functionalities [23]	not confirmed

Table 3.   Strategy profile absorption

Overall, *absorption* strategy has gained most attention in literature. Among the M&A experts it is seen as best practice approach, especially in the case of acquisitions. Thus, some the partners reported on the development of templates being used for the integration of an acquired application landscape.

3.3   Best-of-breed

The experts rarely agreed on the goals listed by literature. Instead, three of them mentioned that in particular during acquisitions the *best-of-breed* strategy is chosen in order to integrate advanced applications in the existing landscape. Furthermore, they added increased performance and innovation, employee motivation, as well as standardization of applications as desirable goals. According to literature, a *best-of-breed* strategy is particularly suitable for horizontal M&A (Dudas & Tobisson, 2007; Keller, 2004; Rouse et al., 2004). The development of a common target application landscape is used as an equality sign (Buckl et al., 2009) among both organizations participating in the merger. The interviewees emphasized that this strategy is only applicable for organizations with few lines of business. Furthermore, the experts agreed that a *best-of-breed* approach can be used for single M&A scenario but not for a series, since complexity rises dramatically in the target application landscape. Two interviewees said that organizational autonomy is not always low as the existing organization left be stable to a large degree. While literature provides a variety of statements regarding both as-is application landscapes, the experts only consider their compatibility important. Additionally, multiple interviewees pointed out that ideally both as-is landscapes refer to the same standards.

	Criterion	Literature	Practitioners
Driving factors	M&A goals	Acquisition of strategic skills [9 , 29, 31]	rarely confirmed
		Acquisition of value creation [3, 9, 12, 20, 25, 31]	rarely confirmed
	M&A type	Low organizational autonomy and high strategic interdependencies [6, 7, 9]	partly confirmed
		Equal enterprise size [1, 11, 13]	fully confirmed
		Enterprises possess same status and power [1, 2]	partly confirmed
	As-is application landscapes	Similar application landscape quality [1]	not answered
		Low complexity of application landscape [27, 13]	rarely confirmed
		Low physical/geographical distribution of the application landscapes [11, 27]	not answered
		Both application landscapes are compatible [6, 8, 11, 17, 20, 25, 27]	fully confirmed
		Few redundancies between business applications [27]	not asked
Consequences	Risks	Interface development problems [4, 8, 13, 29]	not asked
		Incompatible applications [8, 17, 27]	not asked
		Risk of poor maintenance performance [8, 17]	fully confirmed
	Integration project	Only partial integration on business process level [9, 11]	partly confirmed
		Only partial integration on application landscape level [9, 11]	rarely confirmed
		High complexity of integration due to parallel application adjustments and interface creations [9, 11, 17, 25, 29, 30]	fully confirmed
	Employees	High level of acceptance [1, 4, 17, 29]	rarely confirmed
		Competitive thinking effects [20]	rarely confirmed
		Problem of "beauty contest" [7, 10, 11, 20, 23, 24, 29]	fully confirmed
	Target application landscape	Resulting landscape consists of "best" applications [2, 4, 8, 11, 17, 20, 25]	partly confirmed
		High functional coverage [4]	partly confirmed
		Functional redundancies [8, 11]	partly confirmed

Table 4.   Strategy profile best-of-breed

Almost all interview partners agreed with the general high risk tying in with the implementation of *best-of-breed*. In particular the risk of poor maintenance performance (Dillow, 2003; Guggenberger, 2008) was fully confirmed by the partners. Regarding the consequences for the integration project, our literature analysis revealed that the enterprise is not fully functional during integration (Johnston & Yetton, 1996). Furthermore, a deep understanding of existing applications is required (Buckl et al., 2009) in order to be successful. In addition to the information depicted in Table 4, all experts clarified that for a *best-of-breed* approach skilled interface developers are a necessity. With regards to the employee perspective, we found positive and negative statements in literature. The experts fully confirmed the challenge of an extensive 'beauty contests' and emphasized, that staff acceptance is primarily contingent on managing the application selection process and good communication. One of the interviewees added that only little costs for training are generated. In literature, we found differing statements about the target application landscape. On the one hand, a high functional coverage is assumed as the best-fitting applications are exactly selected (Buxmann & Miklitz, 2007). On the other hand, the existing applications have not been developed for both organizations and therefore may not fulfill all functional requirements (Dillow et al., 2003; Fa et al., 2006). Furthermore, the combination of multiple applications from different organizations may result in functional redundancies (Dillow et al., 2003; Fa et al., 2006). These different opinions are equally reflected in the interviewee feedback. Moreover, the interviewees stressed the fact that the best applications are not necessarily the cheapest. In addition, heterogeneity of the best applications for business users has to be seen as a tradeoff paid by means of additional costs. As a result, the hosting and maintenance of target application landscape may turn out to be expensive once put in operation.

The abundance of statements we found in literature was reflected in a huge number of heated discussions we conducted when confronting the practitioners with the *best-of-breed* strategy. While one group emphasized the disadvantages like the high complexity, high project risk, necessary interface skills, and poor maintenance performance, a second group pointed out the benefits an implementation of this strategy would bring along. Several experts suggested to carry out a *best-of-breed* on a more coarse-granular (i.e., cluster) level in order to avoid complexity. One partner admitted that his enterprise shifted to absorption after being stuck in the *best-of-breed* application selection paralysis. In all, the partners advised to implement the strategy with care. Very often, it suffices to keep alive only those applications of the abandoned landscape which have no counterpart in the target.

3.4 New-build

	Criterion	Literature	Practitioners
Driving factors	M&A goals	Fostering innovation [29]	fully confirmed
		Acquisition of new capabilities [29]	rarely confirmed
	M&A type	Merger [2]	fully confirmed
		Low organizational autonomy and high strategic interdependencies [7]	fully confirmed
	As-is application landscapes	Similar quality of application landscape [1]	fully confirmed
		Both application landscapes are outdated [4, 17, 23, 24]	fully confirmed
		Poor functionality coverage [4, 11]	fully confirmed
		Poor scalability, maintainability, and expandability [4]	fully confirmed
Consequences	Risks	Enterprise seizes opportunity to realize all desired functionalities [24]	partly confirmed
	Integration project	Integration comprises process, application, and infrastructure level [11]	fully confirmed
		High complexity large-scale development project [11, 13, 25]	fully confirmed
	Employees	Good acceptance regarding the common target landscape [4, 17]	partly confirmed
		Poor acceptance regarding necessary personal changes [11]	partly confirmed
		Very high training effort [4]	partly confirmed
	Target application landscape	Usage of modern technology [4, 17]	rarely confirmed
		Development of the best solution for newly formed enterprise [1, 2, 4, 17]	partly confirmed

Table 5. Strategy profile new-build

In contrast to above discussed strategies, there are fewer sources which detail on the option of *new-build*. However, literature recommends applying this strategy when participating enterprises are equal in size (Bachmann, 2008) or in the event the two organizations possess same status and power (Bachmann, 2008; Buckl et al., 2009). As one benefit, no mutual understanding of the former applications is required (Fa et al., 2006).

Fostering innovation of existing capabilities has been fully confirmed by the experts, whereas the acquisition thereof was rarely confirmed. In addition, two of them pointed out cost reductions, process optimization, and a perfectly technology-fitted application landscape as further goals. Lastly, one interviewee mentioned that solid business process support prevails over technology and landscape value. As for the M&A type, almost all experts added a horizontal M&A being the best-fit for a *new-build* strategy since otherwise the implementation costs would be too high. Nevertheless, they fully agreed with the literature which proposes a merger (Buckl et al., 2009) coupled with a strong push towards a low organizational autonomy and high strategic interdependencies (Chao & Lin, 2009). Regarding the criterion as-is application landscapes, all literature statements were broadly accepted by our interview partners.

Experts only partly confirmed the objection raised by one source stating the overwhelming number of required functionalities (Keller, 2007). However, almost all interviewees consider the overall risk as being very high. One interviewee disagreed with this statement by pointing out that the two historically grown application landscapes still represent a stable and proven fall-back solution. According to literature, the *new-build* of an application landscape leads to a high number of large-scale development projects (Freitag et al., 2010b; Fa et al., 2006; Lusti & Wirz, 2004) reshaping the business process, application, and infrastructure level (Fa et al., 2006). While approving both statements, one expert emphasized the double migration as well as the external workforce which possibly has to be employed to be able to cope with the high workload. Turning to the employees' acceptance of the target landscape, literature distinguishes between the ends (landscape) and means (process of change). While there is a good acceptance regarding the common landscape (Buxmann & Miklitz, 2007; Guggenberger, 2010), the necessary personal changes may pose problems (Fa et al., 2006). Furthermore, one source mentions the high training effort required (Buxmann & Miklitz, 2007). Each single statement was partly confirmed by our interviewed partners. Indeed, force of habit, personal reluctance, as well as resistance to change all lead to a poor acceptance of the change process, according to half of the questioned experts. One interview partner added that the employees' appreciation mainly depends on the quality of training and communication. Another expert confessed that it is difficult to let go all the investments which have been put in the old landscapes.

The literature's statement of *new-build* leading to a cutting-edge and (in a technical sense) most appropriate target application landscape was only partly agreed to by the interviewees. Instead, they replied that a 'good' application landscape needs time to grow and warned against overloading the new landscape.

There was only one single case of *new-build* among the twelve interview partners we asked. According to the experts, the strategy is selected in the last resort, i.e., if current applications support functions which are no longer required or if the enterprise is going to act in a small niche where rather specific applications are the norm. Considered as unrealistic, rare, and tedious by several interviewees, one expert recommended applying a *new-build* only in case the strategy is preceded by absorption. In doing so, cost savings can be realized at an early stage in the merger or the acquisition.

3.5　Cross-strategy findings

When it comes to the combination of at least two landscape integration strategies, (Guggenberger 2008) emphasizes the application of *absorption* and partial *best-of-breed* in practice. Each time there is a gap (i.e., missing function) or an old poorly-performing system in the absorbing application landscape, its substitution is taken from the absorbed counterpart. The combined usage of *absorption* and *best-of-breed* was broadly confirmed by the experts. Referred to as 'best-mix', the interview partners

preferred this concatenation to the also mentioned *absorption* and selective *new-build* as well as *co-existence* and step-wise *new-build*. While in former case, gaps in the absorbing landscape are closed via the development of new applications, latter case signifies the situation where the landscapes are connected and incrementally integrated by means of new applications.

During the exploratory part of our interviews, the experts also shared their experiences with regards to taking and implementing the decision for a specific application landscape integration strategy. They reported that driving factors and consequences have to be transparent for decision makers, which is not always the case. Thereby, our interviewees especially stressed the importance of long term consequences for the selection of an appropriate strategy. Furthermore, they emphasized the need for a stringent implementation procedure to enforce the decision straightforward.

4 Conclusion

In a global and competitive business environment M&A represent a powerful strategic instrument increasingly applied by today's enterprises. Besides juridical, financial, and organizational topics it is crucial to rapidly integrate the existing application landscapes in order to capitalize the aspired synergies. However, while literature often points out the four diametral landscape integration strategies *co-existence*, *absorption*, *best-of-breed*, and *new-build,* no consolidated overview exist so far. Based on a literature study comprising 21 sources and a series of 12 expert interviews we devised four consolidated profiles aiming to support the decision for an application landscape integration strategy. In consequence, the selection is substantiated by providing a structured view on the driving factors and the resulting consequences characterizing each strategy.

To strengthen our empirical basis, further work should involve a higher number of interview partners. Since we mainly questioned interviewees with an IT background, continuative studies have to focus on additional perspectives, e.g., application users, infrastructure experts, enterprise management, IT-security. Moreover, the 60min discussions should be extended in favor of the exploratory part helping to unfold insights which are not put focus on by literature.

An increased level of detail should be taken into consideration when revisiting literature during future work. For instance, studies regarding the selection of single applications in the case of *best-of-breed* would refine the results we gained on application landscape level. Besides enlarging the number of sources, future literature studies could also narrow down their focus on a specific criterion, e.g., employees, integration project, risk. Again, resulting findings should be reassessed with practitioners.

A key task of future work is also the extension and evaluation of the literature-based analysis structure we outlined in this paper. Resulting decision support framework represents an artifact which is applied when preparing and comprehending the decision for or against an application landscape integration strategy. Moreover, by analyzing previous landscape integration decisions the specific characteristics of factors and consequences could be confirmed on a quantitative scale. Finally, the setup and usage of the artifact could be embedded in the M&A process.

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