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ENTERPRISE-LEVEL PACKAGED SOFTWARE ACQUISITION: A STRUCTURED LITERATURE REVIEW THROUGH THE LENS OF IT GOVERNANCE

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Complete Research

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Abstract

Enterprise-level packaged software is gaining in importance across organizations. Increasingly, organizations decide to purchase packaged software solutions. However, the acquisition of these software packages is carried out in risky and complex acquisition projects. Implementing the right governance structures and procedures can help to avoid errors and problems in this phase, which could severely impact implementation and usage of the procured systems in the future. The current body of knowledge on software acquisition governance is scarce, scattered, and in need of integration. Therefore, this study endeavors to perform a structured literature review which assesses the current state-of-the-art in software acquisition, focusing on IT governance-related aspects. Three main topics are identified and elaborated: the selection of software, the software acquisition process, and influencing factors. Based on these extant findings, this study integrates and synthesizes the separate research streams through the conceptual lens of IT governance. This literature review can help decision makers in organizations with optimizing their software procurement processes, governance, and behaviors and builds a foundation for further research on this increasingly relevant topic.

Keywords: Packaged software, Enterprise software, Software acquisition, IT governance, Software selection, Acquisition process, Structured literature review, Literature overview

1 Introduction

Packaged software has been gaining in importance for years. According to market research, packaged software spending by organizations will increase and hit more than 360 billion USD in 2013 (Melgarejo, 2012; Verville et al., 2005). Forrester reports that 63 % of organizations want to buy or use packaged software in the future (Roe, 2011; Verville et al., 2005; Verville et al., 2007). Concurrently, software-as-a-service (SaaS), which represents a subtype of packaged software, is on the rise (Katzmarzik, 2011; Melgarejo, 2012). Hence, sourcing arrangements for the acquisition of packaged software (Dibbern et al., 2004) become more relevant. Sourcing of enterprise-level packaged software, like enterprise resource planning (ERP) or customer relationship management (CRM) software, is carried out in complex and expensive acquisition projects that can consume a total budget of several million euros (Mabert et al., 2001) and make up a significant part of an organization's budget (Verville and Halingten, 2003).

In general, research on the acquisition of software has been limited (Esteves and Bohorquez, 2007; Howcroft and Light, 2010). This research adopts the conceptual understanding of Palanisamy et al. (2010, p. 613), who define software acquisition as "the execution of activities such as specification of

the need, selection of one or more suitable vendors for the software, negotiation, contracting, placing the order, and monitoring the actual delivery". These activities situated in the first phase of the software life cycle (Poon and Yu, 2010) severely influence later phases (Lin and Silva, 2005). Garg (2010) reports that 60-90 % of software implementation projects are classified as failures, for which choosing the wrong system during the acquisition is a major reason (Lall and Teyarachakul, 2006). Hence, IT governance for sourcing decisions is of high practical relevance (IT Governance Institute, 2011).

While a lot of research has focused on governance arrangements for IT outsourcing settings (e.g., Fischer et al., 2012; Leimeister, 2009; Vitharana and Dharwadkar, 2007), the governance of software acquisition has hardly been analyzed. Typically, IT governance is about decision rights and accountability between business and IT (Weil and Ross, 2004). However, software acquisition decisions often involve many more stakeholders, like procurement units, controllers, and consultants (Harnisch et al., 2013; Krouse, 1999; Poon and Yu, 2010; Verville and Halingten, 2003). As this variety of actors from different departments interacts, knowing and understanding specific software acquisition governance structures, procedures and relational mechanisms (Peterson, 2004; Van Grembergen et al., 2004) is crucial and has significant consequences (Palanisamy et al., 2010). Furthermore, in light of recent developments such as "stealth adoption" (Zainuddin, 2012), describing the acquisition of cloud software without relying on established IT governance structures, this area promises insightful and timely research avenues.

In order to enhance our understanding of this complex topic and to build a "foundation for advancing knowledge" (Webster and Watson, 2002) on the governance for enterprise-level packaged software procurement, this study endeavors to synthesize the current body of literature through the lens of IT governance. Since the literature appeared scattered across various aspects, a structured literature review applying the methodology proposed by vom Brocke et al. (2009) was conducted. More precisely, the conceptual structure (Webster and Watson, 2002) of this review relies on the IT governance framework by Weil and Ross (2004). In doing so, this paper aims to contribute in the following ways:

(1) An overview of existing work on software acquisition is presented which lays the foundation for future research and can be utilized by researchers and practitioners to access existing relevant findings.
(2) This review compiles a synthesis of results on software acquisition governance, software selection, and factors influencing software acquisition.
(3) Avenues for future research based on the findings from the examination of extant software acquisition governance literature are described.

The remainder of this paper is structured as follows: In the next section, the literature review process is described. Section 3 is concerned with the analysis and description of the identified relevant sources, before the synthesis of software acquisition governance is presented in section 4. In section 5, a research agenda that offers ideas for the advancement of research on this topic is discussed. Finally, this study concludes with section 6.

2 Literature Review Process

The structured literature review that is presented in this study is based on the approach that has been suggested by vom Brocke et al. (2009). Their framework is displayed in Figure 1. The research approach presented here follows the essential five phases.

The goal of the literature review is to obtain a broad understanding of the relevant aspects for software acquisition (SA) and to integrate and synthesize previous findings, focusing on IT governance-related themes. The aim is to identify the relevant concepts and to illustrate avenues for future research based on the state-of-the-art (Cooper, 1988). During the conceptualization phase of the review, an initial

explorative search using Google Scholar and the database "Business Source Premier" was conducted to conceptually understand the topic. Predominantly based on three seminal papers (Kauffman and Tsai, 2009; Palanisamy et al., 2010; Verville and Halingten, 2003), keywords for the systematic database search were defined which describe the topic comprehensively. After testing different search terms, the keywords displayed in Figure 2 were selected. Since all search terms that contained governance-specific keywords provided only few (and mostly irrelevant) results, a broad and all-embracing term was chosen. In order to integrate findings on software-as-a-service, care was taken to include the search term "software-as-a-service", its abbreviated form SaaS, and the term "cloud" separately within the search string.
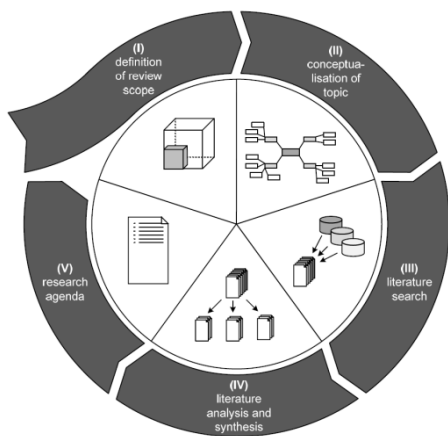

(title:(software OR "software-as-a-service" OR SaaS OR cloud) AND title:(acquisition OR procurement OR purchase)) OR

(abstract:(software OR "software-as-a-service" OR SaaS OR cloud) AND abstract:(acquisition OR procurement OR purchase))

Figure 1.   Framework for literature reviewing (vom Brocke et al,. 2009, p. 8)   *Figure 2.   Used search terms (AISeL syntax)*

These keywords were used to query four different databases: (1) AIS Electronic Library (AISeL); (2) SciVerse ScienceDirect; (3) Business Source Premier; (4) EconLit. The latter two databases were accessed via EbscoHost. Books, journal and conference papers were included according to Webster and Watson (2002). Hence, the search is not limited to specific journals because this review aims at gaining a broad overview of the relevant literature in the IS field which is not restricted to a certain set of top journals. However, all journals within the AIS basket of eight and the top 25 journals from the MIS journal ranking are included, ensuring the consideration of high-quality sources. The database search was conducted in June 2013. As a measure of quality, only peer-reviewed journal publications were considered for the review. Also, all papers that did not adhere to accepted and common scientific standards were removed from the final sample.

The search process yielded a total of 2,163 papers. A filtering process comprising several steps ensured constraining the set to relevant[1] papers only. First, the titles of the identified contributions were reviewed. Second, the author examined the abstracts and removed all papers from the sample that were not relevant for the research goals. After this step, 69 papers remained, which were read in detail. Of these papers, 27 could be removed due to missing fit to topic. Finally, forward and backward searches as proposed in Webster and Watson (2002) were conducted by utilizing Thomson Reuters's

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[1] The author considered all papers relevant that discuss issues around IS or software acquisition in organizational contexts. All sources describing other types of procurement supported by software or software adoption in end-user contexts (technology acceptance research) were excluded, which explains the small amount of remaining papers. Also, papers like Wu and Shen (2006) on user requirements determination were dropped after reading the abstracts and full texts, respectively, because they do not specifically concern SA.

Web of Knowledge and by reviewing the cited references of all relevant sources. The final sample includes 57 papers.

Step		Papers remaining
1)	Keyword search	2,163
2)	Title screening	184
3)	Abstract screening	69
4)	Full text screening	40
5)	Forward and backward searches	57

Outlet	Count
Information & Management	5
Communications of the ACM	3
European Journal of Information Systems	3
Information Systems Journal	3
European Conference on Information Systems	3
# Journal publications	47
# Conference publications	9
# Others	1
Total	**57**

Table 1.   Overview of structured search   *Table 2.   Distribution of articles*

An overview of the selection and filtering process is given in Table 1. Table 2 illustrates the distribution of the identified articles across prevalent publication outlets. As Figure 3 shows, the topic has received continuous interest since 1992 and is still a relevant and active topic in IS research.
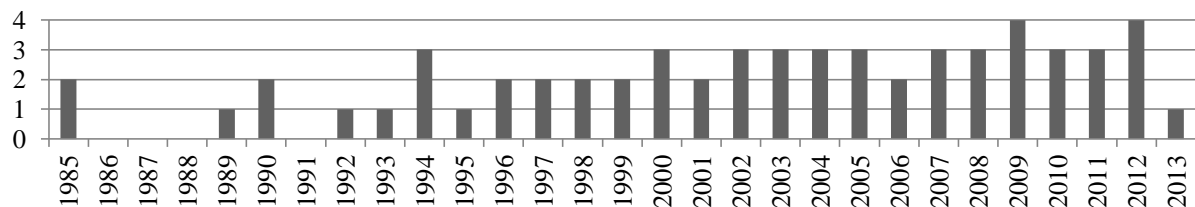

Figure 3.   Distribution of analyzed literature over time (# of papers per year on ordinate). Publications of 2013 include papers published online in the first half of the year.

3   Literature Analysis

Following the approach described in the last section, all papers were analyzed thoroughly in order to identify relevant and salient concepts within the literature. In an iterative process, the final categorization of sources according to type (research method), main topic, type of software in focus, use of theory, and field of publication emerged. A descriptive numerical overview is displayed in Figure 4. Most of the sources are of empirical nature. Case studies dominate, closely followed by surveys (using structured questionnaires). Eleven contributions are categorized as 'guidelines' because they neither contain empirical evidence – apart from the authors' own experiences – nor make use of analytical methodologies. Sources are described as analytic if they develop a theoretical or mathematical model based on previous publications. Also, the sample contains two literature-based analyzes of certain subtopics. All categories of papers are employed for the following synthesis as appropriate. About content, not one paper deals with IT or software acquisition governance explicitly. Instead, three main topics emerge from the literature: The most common one concerns software selection, including papers discussing in-depth analyzes on selection and evaluation criteria (20 papers). 17 papers focus on factors influencing the purchase of software. 15 papers develop or describe a process model for the software acquisition process. These issues and their relation to SA governance will be discussed in the next section.
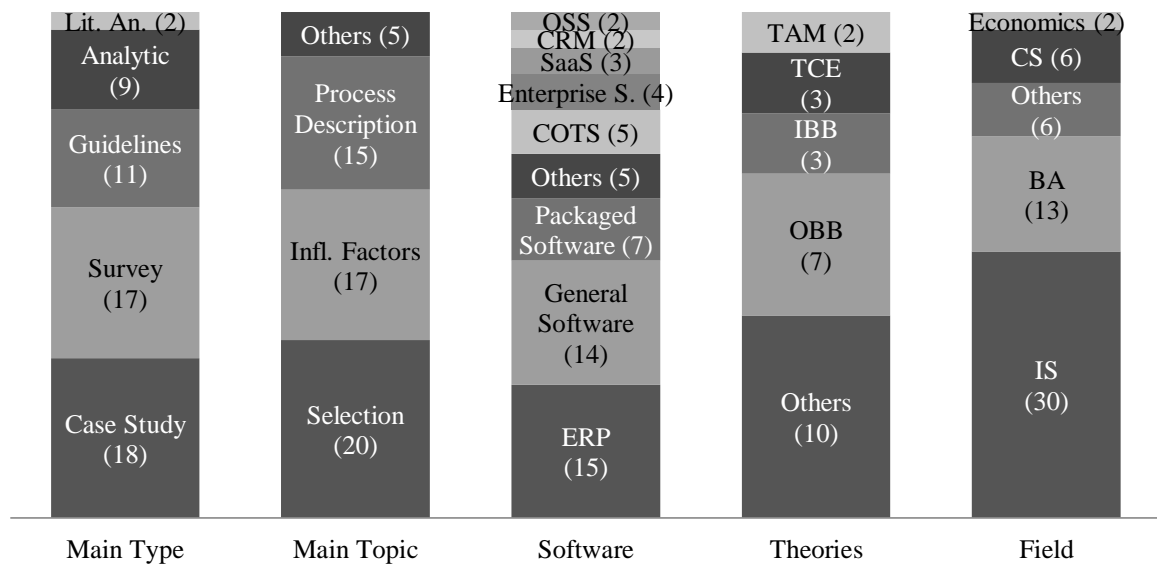
Figure 4.   *Descriptive characteristics of the analyzed literature. "Others" refers to concepts that only occurred once within the sample.*

With respect to the software in focus, most contributions consider a particular type of software and concentrate on certain aspects of the acquisition of this specific type of software. However, all software types fall into the broader category of packaged software.

Of the 57 identified contributions only 25 make use of existing theoretical backgrounds (some use more than one theory as a foundation for research). There is a wide range of 14 theories mentioned in different papers. Most often cited is the model of Organizational Buying Behavior (OBB) (Webster and Wind, 1972a; Webster and Wind, 1972b). IBB refers to Sheth's model of Industrial Buyer Behavior (Sheth, 1973), Transaction Cost Economics (TCE) (Williamson, 1979) occur three times and the technology acceptance model (TAM) (Davis et al., 1989) twice. In most cases, the contributions were published in the context of Information Systems, 13 contributions stem from different areas of business administration research (three of those from marketing-related journals), six were published in computer science and two in economics journals.

4 Literature Synthesis

In this section, the integration and synthesis of the identified literature through the theoretical lens of IT governance takes place. For this paper, SA governance is defined as consisting of leadership, organizational structures, and processes that help to align organizational IT and strategy (Prasad et al., 2010). To assess the state-of-the-art of software acquisition governance a two-step approach was chosen. First, all software acquisition process descriptions within the sample were synthesized and categorized according to the five types of IT decisions identified by Weil and Ross (2004), which are:

- **IT principles decisions**: High-level statements about the usage of IT
- **IT architecture decisions**: Organizing logic and technical choices for achieving standardization and integration
- **IT infrastructure decisions**: Provision of the enterprise's IT capability
- **Business application needs**: Specifying the business need
- **IT investment and prioritization decisions**: Decisions about how much and where to invest

The existing process descriptions comprise between three (Geisler and Hoang, 1992) and 15 separate activities (Uzoka et al., 2008) on more or less abstract levels, being named heterogeneously. In order

to integrate previous findings, the described process steps were assigned to a joint process model for SA depicted in Figure 5. In doing so, all steps that are commonly described in the literature were included. In the process, steps that are referred to simultaneously in most of the cases were merged. A detailed list of all process descriptions and their activities is included in the Appendix for further reference (Table 4). Since the available process descriptions differ greatly in their depth of description, the final list was created in an iterative and inductive process while reading and analyzing the articles in the sample. The most prominent names and descriptions were chosen for display in this study.
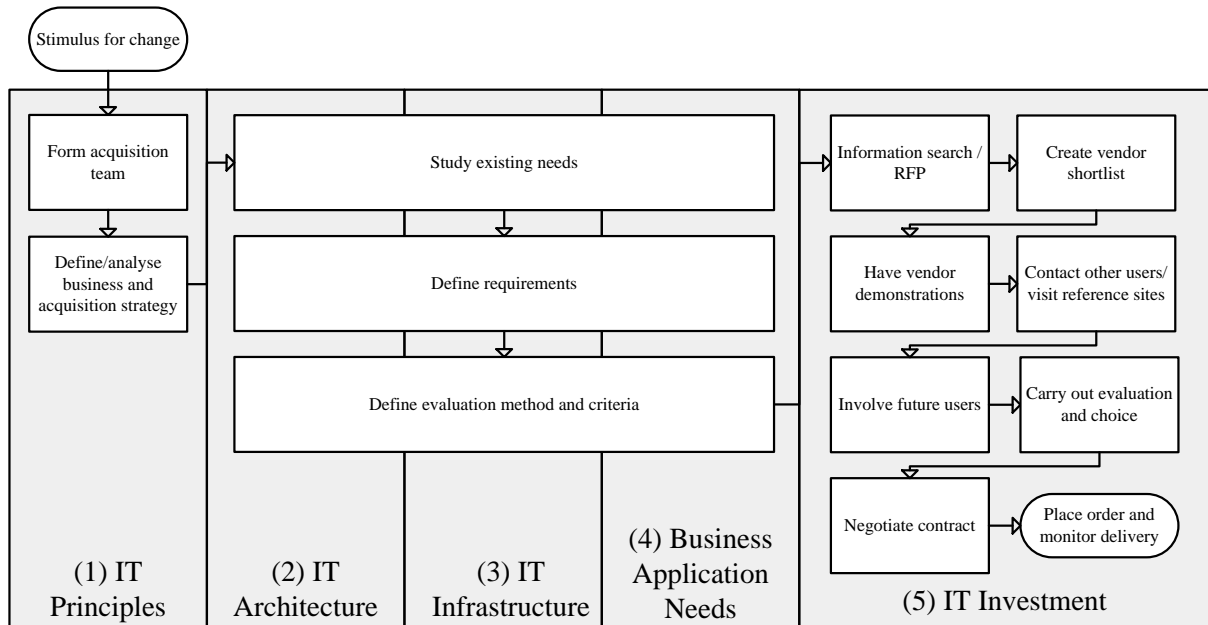

Figure 5.   Generalized software acquisition process model and governance decision types

Second, the presence of decision (or leadership) archetypes for each stage was analyzed, resulting in the aggregated governance arrangement matrix (Weil and Ross, 2004) for SA decisions depicted as Table 3. Hardly any of the papers explicitly mentioned governance arrangements, which is why – although the results described in the following stem from the careful reading and extraction of relevant information from all papers – they are still prone to a certain amount of subjective interpretation by the author.

Decision Archetype	IT Principles	IT Archi-tecture	IT Infra-structure Strategies	Business Application Needs	IT Investment	Sum
Business Monarchy	1	6	4	7	10	28
IT Monarchy	2	1	2	4	5	14
Feudal	1	0	0	0	0	1
Federal	2	0	0	1	1	4
Duopoly	2	3	3	7	14	29
Anarchy	0	0	0	0	0	0
Don't Know / unclear	4	1	1	3	2	11
Sum	12	11	10	22	32	

Table 3.   Occurrence of IT governance modes in SA literature following Weil and Ross (2004)

The rows of Table 3 display the IT governance archetypes based on Weil and Ross (2004). If business or IT monarchies are present, executives from business and IT, respectively, make IT decisions

affecting the entire enterprise. In feudal settings unit managers 'rule' their unit. The federal decision-making archetype describes the participation of unit and central decision-making authorities. Duopoly refers to joint decision making of business and IT executives. Anarchy was not discussed in any of the articles within the sample. Finally, the "don't know" category is used, whenever governance-related aspects were mentioned but decision-settings were not clearly described.

In the following, these results are described in detail. Whereas IT principles and IT investment decisions are discussed separately in sections 4.1 and 4.3, respectively, the discussion of findings on IT architecture decisions, IT infrastructure decisions, and business application needs proceeds jointly in section 4.2. These decision types overlap, since they occur during common process activities (cf. Figure 5). More information on the incidence of certain arrangements can be extracted from Table 5 in the appendix.

4.1 IT principles decisions

In general, the software acquisition process starts with a stimulus for change (McQueen and Teh, 2000). The first process step is the formation of the acquisition team. Poon and Yu (2010) claim picking the right people for the team is important. There should be people with business and technical skills as well as senior executives in the team in order to be successful (Wei et al., 2005). Next, business, IS, and software purchase strategies should be considered to align the project with business strategies and objectives (Sasserath, 1990; Stefanou, 2001). As an example, taking into account whether centralized or decentralized governance modes are in place is crucial (Taylor and Tucker, 1989). In the analyzed studies, IT principles decisions were made in different modes – ranging from business and IT monarchies (e.g., Kauffman and Tsai (2009) report on IT managers move toward a unified procurement strategy) to participative group decision making including IT, business managers, procurement, and end-users (Le-Nguyen et al., 2007).

4.2 Needs, requirements, and selection criteria

After studying the existing needs (Chau, 1995), requirements should be defined. The result of this process step is a consensus on a "functional future state" of the software (Deep et al., 2008). The next activities in a linear process model would be to set up evaluation and selection criteria (McQueen and Teh, 2000), along with a suitable selection method (Brereton, 2004). However, several authors (e.g., Verville and Halingten, 2003) point out that the acquisition process is iterative and many activities can, will and should be carried out concurrently.[2] These three activities fall into three types of decision categories, which cannot be separated easily (see Figure 5). Needs, requirements, and selection criteria are built upon each other (Kusumo et al., 2011). While business application needs are mentioned most often (see Table 3), IT architecture and IT infrastructure architecture decisions are also involved.

IT architecture decisions need to be made when the acquisition team decides upon needs, requirements and selection criteria for architectural and integration aspects. The integration with existing infrastructure has to be ensured (Gustin and Daugherty, 1997) and the number and heterogeneity of systems or vendors taken into account (Kauffman and Tsai, 2009). Although expected otherwise, the findings suggest that organizations mostly rely on business decision makers or participative strategies ("duopoly") in these decision situations (Deep et al., 2008). Verville and Halingten (2003) report that users, IT, and procurement experts are involved throughout the whole process. In a similar fashion, **IT infrastructure decisions** are part of eliciting needs, requirements, and selection criteria. Considering the capabilities of the existing IT infrastructure (Poon and Yu,

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[2] Iterative paths are not displayed for better readability as they could be drawn between too many – almost all – activities (see, for example, Verville and Halingten (2003)).

2010) or platform and database decisions (Verville and Halingten, 2003) occur often. Again, these decisions are triggered in varying arrangements – by business (Wei et al., 2005), IT (Uzoka, 2009), or jointly (Poon and Yu, 2010). Finally, in the context of software acquisition, **business application needs** describe the necessity to define functional or business requirements. Given the categorization of software selection criteria by Jadhav and Sonar (2009), in this review's understanding all but technical criteria relate to business application needs. Their taxonomy contains the following seven categories.

1. Functional criteria relate to the functional characteristics of software. This category comprises factors specific to a certain type of software (e.g., criteria concerning accounting software (Adhikari et al., 2004)) and generic characteristics like adaptability.
2. Software quality criteria are criteria about personalizability, portability, maintainability, usability, reliability, and efficiency.
3. Vendor criteria relate to characteristics of a software vendor (like – for example – reputation and service (Wei et al., 2005)).
4. Cost and benefit criteria contain all criteria related to costs, direct and indirect benefits of the software.
5. Criteria related to hardware and software include technical criteria (storage, memory, etc.).
6. Criteria related to opinions include opinions offered by various stakeholders.
7. Output criteria deal with the abilities of software to report, export, and print data.

These criteria are mostly determined by business or in group-settings, but sometimes also by the IT department (Bernroider and Koch, 2001; Stefanou, 2001). In order to consolidate selection criteria and to be able to make a selection, methods for the evaluation and selection of software are necessary. Wei et al. (2005) propose the usage of Analytical Hierarchy Process (AHP) for evaluation. Also, a total cost of ownership based approach is suggested by Bibi et al. (2012) for the evaluation of software-as-a-service. Different roles and responsibilities have been shown to lead to different emphasis on certain selection criteria. Benlian and Hess (2011) conclude that IS managers put most emphasis on software quality criteria in open source software selection. Chau (1994) shows that owners' and managers' weights of selection criteria differ in that managers tend to consider non-technical features more deeply for the selection of packaged software (cf. also Chau, 1995). Adhikari et al. (2004) find that security and support are most important when selecting software; Keil and Tiwana (2006) point out that functionality and reliability are most relevant.

4.3   IT investment and prioritization decisions

While the earlier activities are about requirements and selection criteria for functional, architectural and infrastructural decisions, the next tasks during software acquisition are basically concerned with IT investment decisions. Based on the defined requirements, possible software solutions are investigated in order to come to a final acquisition (and, thus, investment) decision. In detail, the following steps are deemed necessary. The first activity within this phase "information search/ RFP" contains all tasks related to obtaining information about possible software products. Here, two general approaches emerge from the literature. First, an active search for possible solutions and vendors can be conducted (e.g., Keil and Tiwana, 2006; Schrödl, 2012). Second, the defined requirements can be written down formally in a request for proposals (RFP) in order to elicit offers by vendors (Goldsmith, 1994; IEEE, 1998). Following this step, the creation of a vendor shortlist describes the selection of a few suitable vendors and solutions based on the obtained information. The remaining candidates are then considered for detailed evaluation (Jadhav and Sonar, 2011). Deep et al. (2008) highlight the necessity of vendor demonstrations and reference site visits or contacting existing users of the software. They also stress the importance of involving future users in a step before the final evaluation. After the final choice of the software, a contract needs to be negotiated, taking into account business (Krouse, 1999) and legal (Brennan, 2003) aspects. However, some proposed processes (e.g., Sasserath, 1990) suggest negotiating with more than one supplier before making the final choice. The

software acquisition process terminates with the placing of the order and monitoring of delivery (Palanisamy et al., 2010).

The IT governance arrangements for IT investment decisions during SA are diverse. Business monarchies and duopolies dominate, but IT monarchies have also been mentioned. There are two studies examining decision modes explicitly. Bernroider and Koch (2001) analyze ERP selection in 138 organizations and find that in 17.6 % of organizations decisions are made by business managers and in 10.9 % of organizations by IT managers. Most common are participative decision-making styles (35.3 % of organizations) and mixtures between the three pure modes (36.1 %). Geisler and Hoang (1992) study the distribution of decision rights between business and IT and come to the conclusion that mostly business managers have the final say (72 %).

In most studies within the sample, project teams play an important role for IT investment decisions as they carry out the whole process. These project teams can be comprised of IT experts/managers, business experts/managers, procurement experts, consultants, end-users, controllers, and project managers. However, the basic setting almost always involves at least IT and business representatives. Following Poon and Yu (2010), a distinction between group-agreement and group-consultative styles can be made within groups. Either, groups need to come to an agreement jointly or the group members merely act as consultants and the group leader makes his/her decision independently. Similar modes seem to exist for IT investment decisions in general. The duopoly approach implies that groups, comprising IT and business, make the investment and selection decisions on their own (Krouse, 1999; Pollock and Williams, 2007). For IT or business monarchy approaches, managers or steering committees make their decisions after hearing out the SA project team's recommendation, but they do not need to follow them (Howcroft and Light, 2006).

4.4   Influences on key SA decisions

The broad topic of influencing factors was identified as one of the key topics around which SA literature resolves. Usually, these influences are not categorized and often discussed rather casually. The theory employed most prominently is OBB (McQueen and Teh, 2000; Verville and Halingten, 2003). OBB comprises a set of generic influences on a buying situation which consists of four major categories: (1) Environmental influences, (2) organizational influences, (3) interpersonal influences, and (4) individual factors (Webster and Wind, 1972a; Webster and Wind, 1972b). From an IT (or SA) governance point of view these factors are not to be confused with contingency factors that influence IT governance arrangements (Brown and Grant, 2005). In the following, the influences are categorized by key SA decisions they affect.

There is only one factor influencing **IT principle decisions**, which concerns the selection of SA team members. This selection needs to be done carefully. All team members need to have the appropriate skills necessary for the completion of specific activities or responsibilities (Verville et al., 2005). For **IT architecture and infrastructure decisions**, technological influences are recognized as affecting cost-benefit drivers which in turn influence final decisions (Nelson et al., 1996). Also, specific technological requirements may result in the decision to purchase packaged software (Nelson et al., 1996).

As regards **business applications needs**, a more diverse discussion is present in the literature. Organizational culture has been found to be important in that it determines the degree of user involvement for specifying functionality requirements (Verville and Halingten, 2002). If requirements are uncertain, different procurement strategies may be suitable (Saarinen and Vepsalainen, 1994). Moreover, the nature of the industry and firm size may affect the usefulness of certain features and, thus, selection criteria (Uzoka et al., 2008). Also, political, social, and economic influences are mentioned. In the case described by Howcroft and Light (2002) these influences overpower the project team's efforts and the final acquisition decision is not based on their judgment. For **IT investment and prioritization decisions** a strong cost justification is necessary. The business case must be

presented in order to allocate resources to the project (Kunda and Brooks, 2000). However, the amount of resources allocated or the expenditure level is dependent upon the organization's structure and size (McQueen and Teh, 2000). Firm size may also limit supplier choices as suppliers do not offer their solutions for all firm sizes (Verville and Halingten, 2002). Another aspect to consider is vendor selection strategy. Single vendor solutions possess the advantage of being able to build a stable long-term relationship with the vendor on the one hand, while going along with a substantial amount of risk on the other hand (Palanisamy et al., 2010). Finally, decision makers' experience and computer literacy were deemed important. In both cases, the relevance of selection criteria changes (Chau, 1994).

The last group of influences which is subsumed here deals with (critical) success factors for SA projects. Management support (Kunda and Brooks, 2000; Palanisamy et al., 2010), rigorous and well-structured SA processes (Verville et al., 2005), understanding user requirements (Howcroft and Light, 2010), soliciting user buy-in (Verville et al., 2005) via user-participation (Chau, 1994), coping with resistance (Kunda and Brooks, 2000) and leadership styles (Verville et al., 2005) seem to be critical. While success factors are mentioned and deemed important, actual outcome variables, which supposedly constitute the basis for defining success factors, are scarcely measured or reported. The IS success model by DeLone and McLean (2003) has been applied a few times to measure the effectiveness of ERP selection projects (Bernroider, 2008; Tsai et al., 2012; Uzoka et al., 2008), perceptual self-reported success is used in one other study (Saarinen and Vepsalainen, 1994), and Shin and Lee (1996) evaluate system quality as a dependent variable.

5   Research Agenda

Within this section, opportunities for future research to enhance our current knowledge and understanding of software acquisition are presented. Previously, contingency and influencing factors were discussed. Some of the influencing factors within the literature could also be regarded through the contingency lens (Brown and Grant, 2005). However, there are no empirically or analytically comparable results as to which governance arrangements work well under which circumstances. Throughout the analyzed articles, (almost) all types of arrangements for all decision types are in place. Although duopolies and business monarchies are predominant, no clear picture emerges across phases. Therefore, research in this area seems to be promising.

Regarding the scarcity of studying SA outcomes, many researchers have called for defining measures of SA outcomes first. While most publications propose to focus on "success" (Le-Nguyen et al., 2007; Poon and Yu, 2010; Uzoka et al., 2008), the operationalization of successful procurement projects poses difficulties for researchers. Shin and Lee (1996) mention satisfaction and operational effectiveness as possible dependent variables, Stefanou (2001) suggests concentrating on operational and strategic performance, and Bibi et al. (2012) recommend return on investment as a measure. Another way to obtain new findings on the contingencies of good or bad outcomes might be to analyze failed software acquisition projects (Baki and Çakar, 2005; Uzoka et al., 2008; Verville and Halingten, 2003; Verville et al., 2007). By learning about causes of failures and comparing failed projects to those considered successful, differences in structures, processes, or relational capabilities (Peterson, 2004) could emerge. Overall, analyzing outcome metrics and causes of them, while difficult to achieve, might turn out to be fruitful.

A lot of work has been done regarding different kinds of packaged software (ERP, CRM, etc.), but new developments like cloud computing and software-as-a-service or issues around virtualization have been hardly discussed. Although this study includes papers about the acquisition of software-as-a-service explicitly, only three papers that touch upon this topic were found. None of these papers focusses on SaaS acquisition governance. Yet, given the increasing relevance of cloud computing, there seems to be a promising opportunity for further research. Initial findings on SaaS adoption or

SaaS application governance (Györy et al., 2012; Winkler et al., 2011; Winkler and Benlian, 2012; Zainuddin, 2012), point to potential changes that seem to be related to SA governance.

Also, as this review focuses on governance decision types and arrangements, relational mechanisms pose another interesting research opportunity. Based on the structures that are elicited in this study, questions arise about formal or informal mechanisms that support these structures. It might be fruitful to analyze the relations of the main stakeholders from business, IT, and procurement (and other relevant units) and their involvement during software acquisition activities in order to understand decision making processes more deeply (Harnisch et al., 2013; Poon and Yu, 2010). Finally, another potentially insightful idea is to compare the findings on SA governance presented in this study to "typical" outsourcing or IT governance arrangements (Yajiong et al., 2008) for projects with similar impact and relevance for an organization's internal IT.

6 Conclusion

This literature review contributes to the existing fields of research both on software acquisition and IT governance in the following ways. To the best of my knowledge, this publication is the first to summarize the literature about software acquisition and to integrate the knowledge on this topic through the lens of IT governance. This review describes the relation of SA processes, software selection and influencing factors to IT governance and paints a holistic picture of existing work in this research stream. By synthesizing the scattered literature, an initial framework is described, which – accompanied by the presented research agenda – offers a careful, systematic, and holistic integration of earlier findings. Researchers can now build on the foundation and extend our knowledge and understanding of software acquisition governance. Additionally, this paper allows to access literature on certain more detailed aspects in a convenient way using the tables in the appendix.

Concerning contributions to practice, knowing and understanding SA processes and key governance decisions for the acquisition of enterprise software can help practitioners to avoid common mistakes. The synthesized SA governance process framework can be utilized as a benchmark to compare, check, and extend organizational structures, processes, guidelines, and behaviors.

Of course, this study is limited in some ways. The employed methodology for literature reviewing was structured to a high degree and conforms to the best practices in the field of IS literature reviews (vom Brocke et al., 2009; Webster and Watson, 2002). Still, the focus of the search had to be limited. Hence, there might be some studies missing in the review. Moreover, the literature review was conducted by the single author of this paper. While the results were discussed with fellow researchers and practitioners in several meetings and iteratively adapted to minimize subjective biases, certain subjectivity, especially regarding the assessment of relevance, the clustering, and synthesis cannot be neglected. Lastly, the choice of the framework by Weil and Ross (2004) for structuring this review induces limitations to the breadth of results. Other theoretical viewpoints might yield different, also insightful findings.

The acquisition of software by organizations will continue to be a highly relevant topic. Fueled by the increasing adoption of software-as-a-service, the number, diversity, and types of software acquisitions will become more complex. As the acquisition of software takes place at the intersection between software vendors and purchasing firms, work on this topic allows deriving recommendations for both vendors and consumers of software. Therefore, research on enterprise-level software acquisition can be of high practical, as well as theoretical relevance. I encourage researchers to further explore the topic and help to answer the identified open questions.

Appendix

Source \ Step	Team form.	Analyze strat.	Study needs	Define req.	Define eval.	Info. search	Short-list	Demon-stration	Refer-ence sites	Involve users	Eval. & choice	Nego-tiate	Order & delivery	Count
(Brennan, 2003)						x	x				x	x		4
(Brereton, 2004)					x						x			2
(Chau, 1995)			x					x	x	x				4
(Deep et al., 2008)	x			x	x	x	x	x	x	x	x	x		10
(Geisler and Hoang, 1992)							x				x	x		3
(Goldsmith, 1994)				x		x	x				x			4
(Griese and Kurpicz, 1985)						x	x				x			3
(Howcroft and Light, 2002)			x					x	x	x				4
(Howcroft and Light, 2006)			x								x	x		3
(IEEE, 1998)				x		x	x				x		x	5
(Jadhav and Sonar, 2009)			x				x				x	x		4
(Jadhav and Sonar, 2011)				x	x^2	x	x				x			4
(Keil and Tiwana, 2006)			x				x				x			3
(Krouse, 1999)	x^1		x				x				x	x		4
(Kusumo et al., 2011)		x		x		x	x				x			5
(Le-Nguyen et al., 2007)		x			x									2
(McQueen and Teh, 2000)				x	x		x				x			4
(Palanisamy et al., 2010)				x		x	x					x	x	5
(Poon and Yu, 2010)	x			x	x						x			4
(Sasserath, 1990)		x		x			x				x	x		5
(Schrödl, 2012)				x		x	x				x		x	5
(Stefanou, 2001)		x		x		x	x				x			5
(Uzoka et al., 2008)	x	x		x	x	x	x	x			x	x		9
(Verville and Halingten, 2002)*	x	x		x	x	x	x				x	x		8
(Wei et al., 2005)	x			x^3	x^4	x	x				x			4
Count	6	6	6	14	9	15	17	4	3	3	21	10	3	

1: after market analysis   2: after shortlisting   3: after information search   4: after the definition of requirements
*: Three more papers by the same authors are not displayed in this table as they are based on the same empirical data
(Verville et al., 2005; Verville and Halingten, 2003; Verville et al., 2007).

Table 4.   *Occurrence of process activities within the relevant literature. Activities are mentioned in linear order, exceptions are marked.*

Decision type & mode / Source	IT Principles	IT Architecture	IT Infrastructure Strategies	Business Application Needs	IT Investment	Business Monarchy	IT Monarchy	Feudal	Federal	Duopoly	Anarchy	Don't Know
(Adhikari et al., 2004)				x		x						
(Baki and Çakar, 2005)					x		x					
(Benlian and Hess, 2011)					x		x					
(Bernroider and Koch, 2001)		x	x	x	x	x	x			x		x
(Chau, 1994)		x	x	x	x	x						
(Chau, 1995)				x	x	x						
(Deep et al., 2008)		x	x	x	x	x			x			
(Geisler and Hoang, 1992)	x			x	x	x	x			x	x	
(Gustin and Daugherty, 1997)		x			x	x						
(Howcroft and Light, 2002)*				x	x	x						
(Kauffman and Tsai, 2009)	x	x	x	x			x					
(Keil and Tiwana, 2006)				x	x	x						
(Krouse, 1999)				x	x					x		
(Kusumo et al., 2011)		x		x								x
(Le-Nguyen et al., 2007)	x				x					x		
(Maiden and Ncube, 1997)					x					x		
(McQueen and Teh, 2000)	x		x	x	x	x				x		
(Palanisamy et al., 2010)	x				x		x			x		
(Pollock and Williams, 2007)					x					x		
(Poon and Yu, 2010)			x	x	x					x		
(Rosenthal and Salzman, 1990)					x	x						
(Sasserath, 1990)	x			x	x	x				x		
(Stefanou, 2001)	x	x		x	x							x
(Taylor and Tucker, 1989)	x								x			
(Tsai et al., 2012)		x			x	x						
(Uzoka et al., 2008)				x	x					x		
(Uzoka, 2009)			x	x	x		x					
(Verville and Halingten, 2002)		x		x	x	x				x		
(Verville and Halingten, 2003)		x	x	x	x	x				x		
(Verville et al., 2007)				x						x		
(Wei et al., 2005)	x		x	x	x	x				x		
Count	9	9	9	20	25	15	7	1	2	14	0	3

*: Two more papers (Howcroft and Light, 2006; Howcroft and Light, 2010) are not displayed here as they are based on the same data and a similar description.

Table 5.   Overview of governance arrangement in the literature

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