Good research builds on that which was done before, and uses previous research to ground current research in theory and as a lens for interpreting results.  
(Jennex 2015, p. 140)

Introduction

The growth of the information systems (IS) field has created new knowledge at a rate outpacing our individual capacity for recall, sense-making, and use (Paré et al. 2016). The number of peer-reviewed journals currently publishing IS research and the number of IS-related academic conferences has been steadily on the rise. Most likely, the IS knowledge base will continue to expand in the coming years. While this must be interpreted as a clear sign of relevance and vitality, our domain’s expansion also translates into a body of knowledge that is increasingly fragmented (Paré et al. 2016).

Our current situation arises partly from historic trends in IS scholarship – as a relatively new discipline, we have tended to privilege development of new frameworks and models over confirmatory studies. A diversity of business and technology contexts results in a tendency to freely modify existing constructs and models (Tate et al. 2015), with the result that the extent to which even studies that purportedly use the same theory are actually commensurable is often unclear. However, we cannot continue to plead the newness of our discipline and the novelty of our phenomena indefinitely. After four decades of research, and thousands, even tens of thousands of research articles in some key areas of the discipline, it is reasonable to expect that by now we would be able to synthesize and accumulate that knowledge in a rigorous way (Templier and Paré 2015). Failure to do this has many risks, which have the potential to undermine our reputation and status as an academic discipline. Some of these risks include underuse of research evidence by IS researchers and practitioners, overuse of limited or inconclusive findings, and misuse and “cherry picking” of existing research by basing conclusions on a few studies at the expense of the larger body of research evidence. Put simply, much of the effort and expense that goes into the creation of individual knowledge artifacts is wasted if that knowledge cannot become part of a greater whole.

Fortunately, there has been a recent explosion of interest in editorials and regular articles investigating literature reviews as a research method in our field, IS. As we see it, the recent
literature on literature reviews can be divided into two main topics. First, efforts have been made at providing authors with advice on how to conduct literature reviews as well as how to assess or evaluate their quality. For example, Templier and Paré (2015) proposed a set of guidelines for evaluating the level of rigor of families of reviews. Others have proposed a standardized methodology for conducting literature reviews (Okoli 2015), developed a typology of review types to be considered relevant to the IS field (Paré et al. 2015), and contributed to a debate about the importance of systematicity in conducting reviews (Boell and Cecez-Kecmanovic 2015; Schultze 2015). Second, efforts have also aimed at developing a set of specific tools and methods for conducting high-quality literature reviews. For instance, Bandara et al. (2015) provided insights on how to use qualitative data analysis and tools for conducting literature reviews, Houy et al. (2015) adapted the stylized facts method from economics as a tool for summarizing when conducting reviews, and Wall et al. (2015) proposed critical discourse analysis as a literature review methodology.

Despite these recent, yet important contributions, we posit that one particular issue remains underlooked. Given the diversity of literature review genres and types, to our knowledge there exists no tool that helps IS scholars and graduate students decide which particular type of literature review to conduct in a given situation. Hence, the present chapter primarily aims to fill this important gap. Before moving to the next section, we would like to provide a definition of what we understand by literature review in this chapter. Our aim goal is to present a general definition that encompasses all types of reviews and that is aligned with existing definitions (e.g., Okoli 2015; Paré et al. 2015; Rowe 2014; Schryen 2015; Webster and Watson 2002). So, 

*a stand-alone literature review is a document which provides a synthesis of the body of knowledge on one or several specified domains, topics, theories or research methods.*

The remaining of this chapter is structured as follows. We first identify and illustrate various types of reviews that are considered to be most relevant to IS. Second, we propose and explain a decision tree (along with its dimensions) that aims to help prospective authors of reviews decide how to best position their contribution. Finally, we end this chapter with a brief discussion of the main contributions and limitations of our work.

**Main types of reviews relevant to the information systems field**

With the growing interest in literature reviews, there have been several papers that have developed typologies or taxonomies of the existing types of literature reviews (e.g., Paré and Kitsiou 2016; Paré et al. 2015; Schryen 2015). Building upon the work of these authors, we present 10 types of literature reviews that are considered to be most relevant to the IS community.

First, *narrative reviews* describe what has been written on a given domain or topic (Hart 2003). These reviews are usually unsystematic in the sense that they do not follow a set of well-specified criteria or they do not report it, and as a result they suffer from subjectivity (Paré and Kitsiou 2016; Paré et al. 2015). Narrative reviews usually do not claim generalization of cumulative knowledge (Paré et al. 2015), and their general purpose is to provide a comprehensive background on a topic as well as some directions for future research (Paré and Kitsiou 2016). As an example of a narrative review, Vaast and Walsham (2013) reviewed a selected set of articles dealing with grounded theory and electronically mediated social contexts and they drew some recommendations for future research.

Second, *descriptive reviews*, also called quantitative systematic reviews (Pickering and Byrne 2014), aim to evaluate the extent to which prior research shows any trends or interpretable patterns about research outcomes, methods, or theories (Paré and Kitsiou 2016; Paré et al. 2015). In comparison to narrative reviews, the search and screening processes as
What literature review type should I conduct?

well as the data extraction and analysis methods of descriptive reviews are more structured
and transparent (Paré and Kitsiou 2016). In a descriptive review each article included in the
sample represents a unit of analysis (Paré et al. 2015). As an example, Paré et al. (2008)
reiterated the observations and suggestions made by Markus and Robey (1988) on the causal
structure of IT impact theories and carry out an analysis of empirical research published in
four major IS journals between 1991 and 2005.

Third, *scoping reviews* aim to provide an initial indication of the potential size and nature
of the available literature on a emergent topic (Paré et al. 2015, p. 187). In line with their
main objective, scoping reviews usually conclude with the presentation of a detailed research
agenda for future works along with potential implications for practice and research (Paré
and Kitsiou 2016). Unlike narrative and descriptive reviews, the whole point of scoping an
emergent topic is to be as comprehensive as possible, including gray literature (Arksey and
O’Malley 2005). The review process is systematic and transparent and the coding of articles is
usually performed by multiple raters (Paré et al. 2015). As an example of a scoping review in
our field, Smith et al. (2011) surveyed prior information privacy research, mapped the extant
literature in different ways, and drew several conclusions. In an appendix, they provided a
description of the approach they followed to identify a relevant set of articles.

Fourth, *critical reviews* usually look for inconsistencies, contradictions, and weaknesses
in prior research (Paré and Kitsiou 2016; Paré et al. 2015) through an approach called prob-
lematization (Alvesson and Sandberg 2011). Problematization goes beyond gap spotting by
“challenging assumptions of underlying existing literature” (Alvesson and Sandberg 2011,
pp. 251–252). Unlike other review types, critical reviews attempt to take a reflective account
of the research that has been done in a particular area of interest, and assess its credibility by
using appraisal instruments or other methods. An exemplar of this review type is the article
by Schryen (2013) on IS business value. In this review, the author provides a synthesis of the
extant literature and pinpoints a few critical problems including the heterogeneity in the rela-
tion between IS investments and productivity across companies and the mismeasurement of
key constructs.

Fifth, a *conceptual review* usually focuses on a single concept along with its basic elements
(Walker and Avant 2010). The main idea is to examine the structure and function of a given
concept in order to help in distinguishing it from other related concepts (Walker and Avant
2010). Conceptual reviews involve the identification of the ways in which a given concept
has been defined and the identification of its core attributes as well as its antecedents and
consequences (Walker and Avant 2010). For example, Alavi and Leidner (2001) reviewed the
related concepts of knowledge, knowledge management, and knowledge management systems
in order to shed light onto organizational knowledge management processes such as knowl-
dedge transfer across individuals and groups.

Sixth, the main purpose of *theory development reviews* (Webster and Watson 2002) is to
provide plausible explanations of a phenomenon (Paré et al. 2015) and build solid theories
(Schryen 2015). These reviews not only synthesize literature often bringing different streams
of research together but they go a step further in developing a theoretical framework or model
often in the form of research hypotheses or propositions (Paré et al. 2015). A good example
in our field is a review of the banner processing literature by Sun et al. (2013). The authors
review the literature on how people process advertising banners online and they develop both
a process model that explains the different transitions between banner processing modes and a
variance model that helps explain individuals’ attention to banners.

The next three types of review all aim at theory testing. First, a *meta-analysis* uses statisti-
cal techniques to summarize and synthesize prior empirical results on a given topic (King and
He 2005). Meta-analyses provide precise estimates of relations between variables because they adjust for sample size and reliability of measures (Lipsey and Wilson 2001). It is important, however, to note that meta-analyses are not recommended if there is too much heterogeneity in prior studies (Paré and Kitsiou 2016). In fact, some argue that the topics composing the IS field do not meet the methodological requirements of meta-analyses, nor can they provide adequate data due to heterogeneity reasons (Houy et al. 2015). Despite these claims, several meta-analyses have been published in IS research. For example, Ortiz de Guinea et al. (2012) conducted a meta-analysis of virtualness on team processes and outcomes. They found that moderators like analysis at the group or individual level, and the short or long time orientation of a team played a central role in some of the relations between virtualness and processes and outcomes.

But there are situations in which it is not appropriate to pool studies together using meta-analytic (statistical) methods simply because there is too much heterogeneity between the included studies or variation in measurement tools, comparisons, or outcomes of interest. In these situations, systematic reviews can use qualitative synthesis approaches or methods such as vote counting, content analysis, and thematic analysis, as an alternative approach to narratively synthesize the results of the studies included in the sample (Paré and Kitsiou 2016). This form of aggregative review is known as qualitative systematic review. An example of this type of review in our field is the article by Petter et al. (2008) which reviews 180 papers found in the academic literature for the period 1992–2007 dealing with some aspect of IS success. Using the six dimensions of the DeLone and McLean (1992) model – system quality, information quality, service quality, use, user satisfaction, and net benefits – 90 empirical studies were analyzed and the results summarized. A total of 15 pairwise associations between the success constructs were investigated. The final type of theory-testing review is called umbrella review (Thomson et al. 2010). In comparison with meta-analyses and qualitative systematic reviews who analyze research findings from primary studies, umbrella reviews aim at synthesizing the findings of prior systematic reviews (Thomson et al. 2010). This is why they are often referred to as tertiary types of evidence synthesis (Paré and Kitsiou 2016). As an example, Kitsiou et al. (2015) conducted a review of systematic reviews in order to test the magnitude of the effects of home telemonitoring interventions on patients with chronic heart failure.

As explained earlier, theory-testing reviews are concerned with relationships or causal associations. Such logic is most appropriate for fields like medicine and education, where findings of randomized controlled trials can be aggregated to see whether a new treatment or intervention does improve outcomes (Paré and Kitsiou 2016). However, many argue that it is not possible to establish such direct causal links between interventions and outcomes in fields such as management and IS, where for any intervention there is unlikely to be a consistent outcome (Oates 2011; Rousseau et al. 2008). In such fields, realist reviews can be of great value. Their main goal is to understand the mechanisms by which a particular outcome occurs (or not) in a particular context. So, instead of asking the question – what works? – which is usually associated with meta-analyses and qualitative systematic reviews, a realist review asks: what is it about this intervention that works, for whom, in what circumstances, in what respects, and why? An example of a realist review is the article by Otte-Trojel et al. (2014) that synthesized prior findings on patient web portals and their outcomes. In this review, the authors observed among others that when patient portals are part of integrated health networks they lead to more positive outcomes (Otte-Trojel et al. 2014).

Before we move to the next section, it is interesting to note that not all review types are prevalent in our domain. Indeed, a recent survey by Paré et al. (2015) showed that theoretical
What literature review type should I conduct?

Choosing the most appropriate review type

Choosing the most appropriate review type in a given situation is a strategic decision that depends on several factors. The decision tree we propose in Figure 5.1 builds upon a set of dimensions or characteristics that we borrowed from existing taxonomies (e.g., Cooper 1988; Rowe 2014). As mentioned earlier, to our knowledge this is the first attempt to develop such a decision tool.

The first dimension of our decision tree corresponds to the overarching goal of the review with respect to theory. According to Rowe (2014), there are four possibilities: describing (atheoretically), understanding, explaining, and theory testing. First, describing means to summarize prior research in categories or to classify what is known about a particular topic (Rowe 2014). As shown in Figure 5.1, three types of review fall under this category, namely, narrative, descriptive, and scoping reviews. The second possibility refers to providing an understanding of a “new phenomenon or problem through related concept(s) that have been proposed in former research” (Rowe 2014, p. 244). The idea is to synthesize prior research and develop an overall understanding of a given topic or phenomenon. A related goal of understanding is to identify key results, issues, and ways to solve such issues (Rowe 2014). There are two particular types of review that belong to this category, namely, critical and conceptual reviews. The third goal with respect to theory is called explaining. Reviews whose main objective is to provide a novel explanation often produce new theories, models, or frameworks. Hence, theoretical and realist reviews belong to this category. The fourth goal with respect to theory is theory testing. Aggregative reviews, which can take the form of meta-analyses, qualitative systematic reviews, or umbrella reviews, focus on synthesizing quantitatively or qualitatively prior empirical findings pertaining to a given theory, model, or hypothesis.

The second dimension refers to the twin concepts of systematicity and transparency. On the one hand, systematicity is an important part of trustworthiness of a review that strongly relates to its internal validity or credibility (Paré et al. 2016). With the exception of narrative reviews, the other review types described earlier show a high level of systematicity, in that they employ structured methods to search, screen, and evaluate relevant literature. It is important to note, however, that although reviews may be conducted in a systematic manner, many do not report on such methods. In other words, they do not show a high level of transparency (Paré et al. 2016). Transparency is paramount for the reliability (in the positivist tradition) or consistency (in the interpretivist tradition) of stand-alone reviews (Paré et al. 2016). It is recognized that umbrella reviews, meta-analyses, and qualitative systematic reviews are the most systematic and transparent forms of reviews (King and He 2005; Okoli 2015; Paré and Kitsiou 2016).

The third dimension is called focus. It refers to the main or primary lens of the literature review (e.g., Cooper 1988). Narrative and scoping reviews usually focus on a particular topic, whereas descriptive reviews focus on a topic, a research method, or even a given field. As an example, Dubé and Paré (2003) provided a descriptive review of the extent to which positivist IS case studies published between 1990 and 1999 were rigorously conducted. Critical reviews, for their part, focus on the underlying assumptions of a given literature whereas conceptual reviews are concept centric and thus, they focus on the synthesis and development of concepts. Theoretical reviews center on elements of theories such as hypotheses or propositions whereas

and narrative reviews are the most frequently published forms of reviews while realist and umbrella reviews are yet to be found in our top-tier outlets.
Figure 5.1  Decision tree
the focal point of realist reviews are complex interventions such as the deployment of enterprise systems like enterprise resource planning (ERP) and customer relationship management (CRM) systems in organizations. Finally, umbrella, meta-analytic, and qualitative systematic reviews focus on research outcomes.

The fourth dimension is called coverage, that is, how review authors “search the literature and how they make decisions about” the suitability of the material (Cooper 1988). While systematicity has to do with the existence of appropriate and well-defined methods to search the literature, evaluate, and extract data from the input materials, coverage deals with the exhaustivity of the literature search and the presentation of materials. According to Cooper (1988) and Paré et al. (2015), there are five coverage strategies. First, exhaustive coverage involves the inclusion of all relevant literature (or most of it). This type of coverage is a fundamental characteristic of all forms of aggregative reviews, that is, meta-analyses, qualitative systematic reviews, and umbrella reviews. The second type of coverage “bases conclusions on entire literatures, but only a selected sample of works is actually described” in the review (Cooper 1988, p. 111). Cooper (1988) calls this strategy exhaustive coverage with selective citation. Reviews that aim at explaining (i.e., theoretical and realist reviews), as well as conceptual and scoping reviews, often use this particular form of coverage. Third, representative coverage refers to the presentation of “works that are representative of many other works in a field” (Cooper 1988, p. 111). Several descriptive reviews in our field have surveyed the materials published in a sample of journals, often associated with the “basket of eight” (e.g., Paré et al. 2008). Fourth, central or pivotal coverage is when a review concentrates on works that have had a pivotal role in a given topic or domain (Cooper 1988). Theoretical reviews occasionally use this form of coverage (e.g., Briggs et al. 2008; Greenaway and Chan 2005). Last, selective coverage is when the authors of a review survey only the evidence that is readily available to them (Paré et al. 2015). Narrative reviews are often criticized because the authors selectively ignore or limit the attention paid to certain studies in order to make a point. In this rather unsystematic approach, the selection of information from primary articles is highly subjective, lacks explicit criteria for inclusion, and can lead to biased interpretations or inferences (Paré and Kitsiou 2016).

The fifth dimension refers to the data source or the types of papers (input) that feed the literature review. Conceptual papers refer to theoretical works whereas empirical works refer to papers that have some primary/secondary and qualitative/quantitative data. Most literature reviews, such as narrative, scoping, critical, conceptual, and theoretical reviews are very inclusive and will consider both conceptual and empirical papers. Descriptive reviews can include both or either conceptual and/or empirical papers. Umbrella reviews include only review articles as they are overviews of reviews. Lastly, meta-analyses and qualitative systematic reviews are restricted to empirical works because their primary goal is to test theory.

The sixth and final dimension refers to data analysis, that is, how the extant literature is being reviewed and analyzed. In descriptive and meta-analysis reviews, for instance, quantitative techniques are employed such as frequency analysis and meta-analytic statistical analyses. Many types of reviews, such as narrative, scoping, critical, conceptual, theoretical, realist, and qualitative systematic use qualitative data analysis techniques such as narrative summary, content or thematic analysis, or other interpretive methods such as grounded theory. Finally, umbrella reviews can employ either qualitative methods or quantitative ones.

To summarize, the purpose of the decision tree presented in Figure 5.1 is to help prospective authors of review articles make the appropriate decision with regard to the type of review to conduct. According to Gregor (2006), classifications attempt to analyze the “what” instead of forecasting predictions or explaining causality. To some, this type of classification is the
most basic type of theory (Fawcett and Downs 1986), which is a prerequisite to good scientific method by providing the uniformities and differences of the different review types covered in this chapter (Gregor 2006). It is thus important to note that the decision tree proposed here shows the similarities and differences across review types and as such, each path of the decision tree is characterized by a high level of internal coherence.

Concluding remarks

In our viewpoint, literature reviews are critical for the development and evolution of any discipline, and the IS field is no exception. With this in mind, our main objectives in this chapter are threefold. First, our intention is to help prospective authors of review articles to better understand the main similarities and differences among the most relevant review types to the IS community. Second, the decision tree proposed here can contribute further in helping IS scholars and graduate students choose the type of review that best suits their goals. Third, our decision tree can also help reviewers and editors in the assessment of submitted review articles. According to Jennex (2015) there are several factors that lower the quality of a review article: (a) when the review contains materials from some relevant journals but not others, (b) when the search criteria is weak, (c) when the search criteria is artificial, (d) when the author does not go to the original source, and (e) when the author does not understand the source. Such factors point to two important dimensions covered in our decision tree, namely, systematicity and coverage. Several authors have highlighted the importance of these two criteria when evaluating the quality of a review article (Paré et al. 2016). These dimensions shall guide reviewers and editors in terms of what to expect and what to look for when they are faced with a particular review article. On the one hand, our decision tree indicates that not all reviews must conduct an exhaustive coverage strategy to be considered of high quality. On the other hand, consistent with Paré et al. (2016), our decision tree shows that systematicity (and transparency) shall be considered an important trait of virtually all review types.

Although our decision tree covers a wide variety of review types, we do not pretend that it is exhaustive. Indeed, we recognize that there are other types of reviews such as meta-synthesis (Hoon 2013) and meta-ethnography (Lee et al. 2015) that could contribute to building a cumulative tradition in our field. Future extensions of our work shall consider these review types. Importantly, although we believe most literature reviews would fit well in one of the 10 paths included in our decision tree, we must acknowledge that some reviews share characteristics of two or more review types. These are called hybrid reviews (Paré et al. 2015) or mixed-methods reviews (Schryen 2013). For instance, Joseph et al. (2007) performed three distinct yet complementary types of reviews in order to investigate the factors influencing turnover of IS professionals. As another example, Chiasson et al. (2008) conducted a narrative review followed by a descriptive review in order to evaluate action research in the IS discipline.

To conclude, we hope our classification of review types along with the decision tree will help members of the IS community better understand and appreciate the wide diversity of review types available to them and, most importantly, select the one that best corresponds to their particular situation.

Notes

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What literature review type should I conduct?

References


