

EXPLORING THE UPSIDE OF RISK IN PROJECT MANAGEMENT: A PHENOMENOLOGICAL INQUIRY

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Abstract: Risk management is used to identify, assess, and respond to uncertainties. In project management, risks can be categorized as either threats (negative events or conditions) or opportunities (positive). This exploratory qualitative study investigates on how practitioners use positive risks in project management practice and identifies areas for further research. Recommendations from this study include further exploration of: (a) opportunity management training (b) developing a catalog of opportunity examples, and (c) developing a template for the business case for opportunity management. Through risk management, the project manager can improve the likelihood of successfully meeting project objectives. Through a focus on both negative and positive risk, the project manager can offset negative results and possibly project objectives to delight the stakeholders. This research provides greater insight to improve the efficacy for current and future project, program, and portfolio managers.

Keywords: risk management; opportunity management; project management; positive risk

Introduction

The word *risk* is pervasive in the personal, environmental, societal, financial, and technical domains making it a semantically overloaded term. With multiple uses, meaning is conveyed through an understanding of the domain in which it operates. In everyday use, risk typically focuses on the negative impact on an individual, business, or society (Kaplan & Mikes, 2012). Sharma and Bachar (2016) added that organizations traditionally view risk management primarily as a defensive exercise—one which was meant primarily to minimize economic damages.

Risk management, as it applies to projects was first documented in the 1970s (Stepanyan, 2016). Two decades ago, Hillson (2004) acknowledged that the traditional practice of project risk is negative, characterizing risks as threats that come with adverse consequences on an organization's objectives.

Risk management can also focus on positive risk (or opportunity) management which is used to identifying potential benefits to the current project (such as in Atkinson, Crawford, & Ward, 2006; Becker & Smidt, 2015; Browning, 2019). At least in the project management literature, risk has evolved from one that focused on the likelihood of a negative outcome, to an

assessment of both negative and positive outcomes. Kendrick (2015) concluded that accepting opportunities is more complex for negative risks and therefore is not always practiced.

Risk is everywhere, but the extent to which project management opportunities (positive risk) are addressed relative to threats (negative risk) is unclear. The purpose of this exploratory qualitative study is to examine responses to open-ended questions from experienced project and risk managers and identify gaps. This will be used to establish a future research agenda in the opportunity management domain. Specifically, the research question is how do project practitioners use positive (opportunity) risk management? Supporting questions include:

- (a) Who defines opportunities?
- (b) What tools are used to identify opportunities?
- (c) When are opportunities identified in the project lifecycle and is it an iterative cycle?
- (d) How are opportunities funded?

This paper begins with a brief literature and review risk management practice standards. This is followed by a description of the methodology, findings, analysis of the results and discussion, limitations, and conclusions.

Literature Review

This literature review addresses three topics: inconsistent opportunity management terminology, the adequacy of opportunity-based literature relative to threats, and why opportunities are not identified more often.

Inconsistent Terminology

Often risk is view from a negative lens consistent with early project management literature (Adler, Pittz, & Meredith, 2016; Becker & Smidt, 2015; Browning, 2019; Dandage, Mantha, Rane & Bhoola, 2018; Farooq, Thaheem & Arshad, 2018; Loosemore, 2010). The alternative perspective examines risk for both negative and positive elements. Positive risk (or opportunity) management focuses on identifying potential benefits to the current project (Eskerod, Ang & Andersen, 2018; Farooq, Thaheem & Arshad, 2018; Haq, Gu, Liang & Abdullah, 2019; Hillson, 2016; Kendrick, 2015; Lechler, Edington & Gao, 2012; Perminova, Gustafsson & Wikström, 2008; Zaman, 2016).

Authors and practitioners have inconsistent terminology for the upside include either positive risk or opportunities. Authors (including Andersen & Vidar Hanstad, 2013; Browning, 2019; Eskerod, Ang & Andersen, 2018; Lechler, Edington & Gao, 2012; Loosemore, 2010; Sanchez & Robert, 2010) refers to positive risk as opportunity, but negative risk as simply risk without the terms positive and negative being introduced. Others (such as Browning, 2019; Eskerod, Ang & Andersen, 2018; Esteves & Barclay, 2011; Farooq, Thaheem & Arshad, 2018; Lechler, Edington & Gao, 2012; Wang, Wood, Abdul-Rahman & Lee, 2016) use the word positive or negative before the word risk to distinguish between the upside and downside.

One common element of the risk definition in the literature is that it includes some aspect of uncertainty (Bowman, 2016; Chapman & Ward, 2015; Cooper, 2016; Hillson, 2004; Lark, 2015; Zinn, 2017). Other project management definitions that include both positive and negative aspects are found in a number of standards (including but not limited to APM, 2017; ICE/IFA, 2014; IEC, 2013; IRM/ALARM/AIRMIC, 2002; ISO, 2009; OGC 2010; PMI, 2017).

Is there a Dearth of Opportunity Literature Relative to Threat-Based?

Lehtiranta (2014) covered both threats (negative risks) and opportunities (positive risks) in a literature review and found only 15% of the articles held a primary risk view of opportunity, while the remaining held a primary risk view of threats. Examining the Department of Defense Risk, Issues, and Opportunity Management Guide for Defense Acquisition Programs (DOD, 2015) seems to support this finding. The DOD Guide does acknowledge that opportunity management is complementary to threat management – although disproportionately so. In the document, 49 percent are focused on threat and issue management, whereas only five percent are focused on opportunity management.

Searching the ProQuest Central Database yields a different conclusion regarding the balance. Three types of searches were conducted as shown on figure 1. This shows that opportunity management is written about more often (about 1.3x) that of threat management giving credence to increased interest in project management.

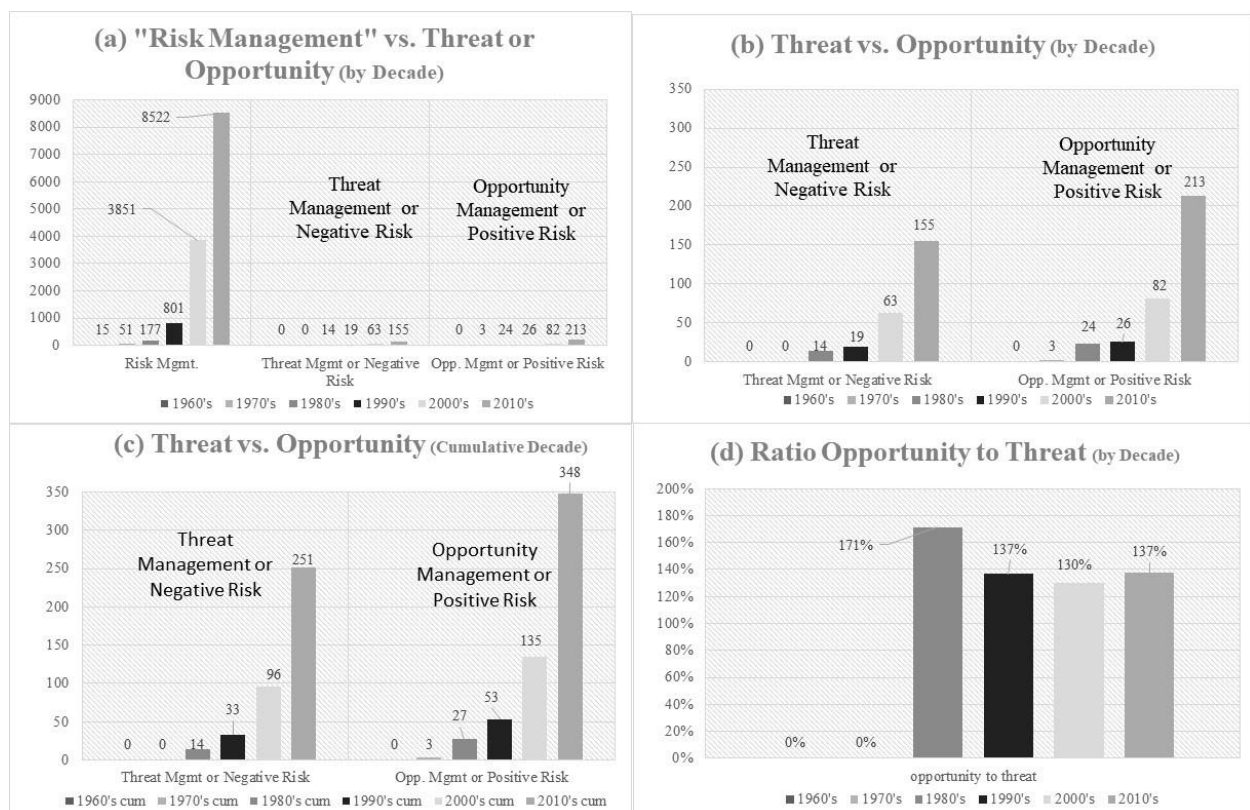


Figure 1. Risk Management Articles in ProQuest Central.

Even if the term opportunity is used to denote positive risk, there are different types discussed in the literature further leading to the confusion. Often, project opportunity centers on new business as a growth area to distinguish strategic from tactical opportunities (Cooper, 2016; Cooper, et al., 2014; Hillson, 2016). Taylor (2016) provides a simple way of looking at these as a spectrum in which strategic is most closely related to organizational risk and tactical is most closely related to operational or project risk. The strategic elements often emphasize business growth, while tactical project management focuses on meeting or exceeding the current project objectives. Similarly, authors (Benjamin, Dezfali, Everett, Politt, & Sen, 2014) advocate that

enterprise threat and opportunity management is the means by which organizations develop and implement their strategic goals.

Why Not Identify More Opportunities?

There are only spurious references to why threats are identified more frequently than opportunities. Even if managers are aware of risks, it can have negative psychological effects on the team including disappointment and unnecessary pressure so they are avoided (Anderson & Vidar Hanstad, 2013). Kendrick (2015) states that the process differences, particularly the approval process, result in fewer opportunities. Kendrick (2015) reasons that opportunities are often imbedded in the baseline of a project and therefore already part of the project scope.

A key element of not identifying and therefore, not documenting risks, is that an individual or organization both overstate the significance of threats and underplay potential opportunities (Hillson, 2004). Others (Andersen & Vidar Hanstad, 2013; Andersen, Samset & Welde, 2016) call this optimism bias resulting in an underestimation of risks. Farooq, Thaheem and Arshad (2018) conclude that opportunities are underestimated by 7.5% and threats overestimated by 8% because of optimism bias.

Methodology

Since risk meaning is conveyed through context understanding, the following definition is used throughout this research. “Risk is uncertainty that, if it occurs, will have a positive or negative affect on the achievement of objectives” (Hillson, 2016, p. 5). With inconsistent terminology describing positive or negative risks, the terms opportunity and positive risk will be used interchangeably to describe the upside of risk. Similarly, threat and negative risk will be used interchangeably to describe the downside of risk. Throughout this paper, the adjective positive or negative will precede the word risk each time it is used to improve clarity.

This exploratory research used qualitative inquiry to examine responses to open-ended questions from experienced project and risk managers and identify practitioner strengths and weaknesses. In the academic literature, there are few documented instances of applying qualitative inquiry approaches to risk management, with the exception of the case study (including most recently Alcaraz-Corona, Cantu-Mata, & Torres-Castillo, 2019; Biskupek, 2018; Dandage, et al., 2018; Doskočil & Lacko, 2018; Renault, Agumba, & Ansary, 2018). Creswell and Creswell (2018), describe the five approaches to qualitative inquiry as narrative research, grounded theory, ethnography, case study, and phenomenology. Using ProQuest Central, and searching for “risk management” in project management resulted in only three studies using grounded theory (Chen, Lin & Chaung, 2016; Nkukwana & Terblanche, 2017; Sandhu & Khan, 2017), and none for narrative research, or ethnography.

The remaining qualitative inquiry, phenomenology has been used in a wide variety of domains including educational research (Sloan & Bowe, 2014), organizational research (Cilliers, 2018) and consumer research for business (Alfakhri, Harness, Nicholson & Harness, 2018; Chen & Wang, 2017). However, in project management, phenomenology has been used only to a limited extent. There are recent studies dealing with project disruptions (Rolfe, Segal & Cicmil, 2017), working in virtual teams (Quisenberry, 2018), and several studies on information systems (for example Chan, Walker & Gleaves, 2015; Galehbakhtiari & Pouryasouri, 2015; Symeonides & Childs, 2015). As such, phenomenology is a methodological gap in risk management research. With the focus on the practiced experiences of the individuals, phenomenology an ideal approach

for understanding the state of the practice in risk and opportunity management (Butler-Kisber, 2018).

Respondents were solicited through a variety of social media and personal contact mechanisms. Postings were placed on risk, project, program, and business management LinkedIn groups with a brief description of the research and contact information. Seventy-six individuals responded with interest to this qualitative study, were screened, and 63 were selected for this study as qualified respondents. “Qualified” respondents are defined as those with a minimum of five years of risk, project, or program management experience.

A minimum experience level of five years was selected for several reasons. First, The Project Management Institute (2019a) requires three years or five years of project management experience, depending on the educational level of the applicant to take the Project Management Professional (PMP) exam. Similarly, the International Project Management Association Level B (IPMA-B) Senior Project Manager applicants must have 5 years of project management experience, obtained within the last 8 years (<https://www.ipma.world/individuals/certification/>). Even Gladwell’s (2008) 10,000-hour rule (approximately 4.8 years) and predecessor works (Ericsson, Krampe, & Tesch-Romer, 1996) discuss the role of deliberate practice (Wai & Rindermann, 2017) to achieve expertise.

The average amount of experience for the participants was 22.9 years (STDEV 6.7). All of the participants (100%) held a PMI PMP, IPMA-B or other industry or government certification in Project or Program Management. The population was evenly divided among government employees, government contractors, information systems professionals, professional service, and business service employees. The samples for this type of study can range from one individual (Wolcott, 2008) with no documented upper limit. However, others (including LeCompte & Schensul, 1999; Schensul, Schensul, & LeCompte, 1999) described selecting a sample that is, relevant to the specific questions, and includes domain experts such that depth is prioritized over breadth.

Questioning in qualitative research is varied and can be approached in many different ways (Corbin & Strauss, 2015; Miles, Huberman & Saldana, 2020; Shank, 2006). However, a common element is that questions are designed to solicit meaning and the mode of questions. For example, McCaslin and Scott (2003) advocate using a five-question protocol, but are silent on whether this is face-to-face or online. Kvale and Brinkmann (2015) imply face to face, but only as part of open-ended questioning such that each question evolves iteratively. As such, consistent with the cited sources, there is not a definitive answer on whether questioning must be face to face. In this research, phenomenology was applied to opportunity management by having respondents provide written responses to four open ended, essay-type questions related to the research topic. Each respondent was asked to write approximately 400 to 500 words per question to help the researcher understand the respondent thought process from the perspective of their practical experience. Written questions were electronically distributed to allow respondents adequate time to reflect on an appropriate answer. A copy of the questionnaire is shown in table 1.

Table 1

Research Questionnaire

Welcome to the Study on Positive Risk (Opportunity) Management
INSTRUCTIONS: (described below)
Q1. POSITIVE RISK EXAMPLES- Provide as many examples of positive risks that you have seen. Provide a clear explanation of each identified positive risk. If you have not seen any examples, or few examples of positive risks, what are the reasons?
Q2. POSITIVE RISK IDENTIFICATION- Describe how positive risks have been identified. Who identified these risks? What tools are used to identify risks?
Q3. POSITIVE RISK TIMING- Describe when positive risks are identified. Describe the extent to which positive risks were identified in a proactive, continuous manner throughout the project/program life cycle. Alternatively, was identification primarily limited to a particular phase of the project/program? Why?
Q4. POSITIVE RISK FUNDING- How were the positive risks (or opportunities) you identified funded, or were they <i>*not*</i> funded, particularly relative to the negative risks? How was contingency reserve, management reserve, or other funding sources used to handle positive risks? How do you address the situation where there are still positive risks you would like to fund, but there is no money?

Participant instructions including the following:

*In this study, the terms positive risk and opportunity are used interchangeably. There are no set or standard or expected answers. This is not a "check the box" or "select the best answer" exercise. The more you write, the more it will help the researchers understand your thought process as an experienced professional. We are looking for your experience-- including what has worked and what hasn't related to positive risk (or opportunity management) and why you perceive it that way. Please do NOT simply use information which your organization **tells** you is correct, or what a textbook **says**; I am looking for what you **perceive**. There are no right or wrong answers to these questions.*

Once the data was collected, responses were imported into NVivo-12® and iteratively coded and analyzed (Corbin & Strauss, 2015; Miles, Huberman & Saldana, 2020). All responses were *in vivo* since the respondents wrote the responses directly without researcher transcription. Categories were not determined *a priori* to avoid analyst bias and the categories were derived from the data. A single analyst initially coded the results. A second researcher, with project management expertise reviewed the results and provided only minor recommendations for change. These changes were integrated into the results.

Findings

The primary research question is how do project practitioners use positive (opportunity) risk management? A summary of the findings is shown in table 2 using the four supporting questions. Details are described in the paragraphs that follow.

Positive Risk Examples (Q1)

The purpose of Q1 was to look for examples of positive risks to determine if respondents truly understood the concepts and implementation of positive risk. In addition, Q1 was designed to see how respondents contrasted opportunities with threats. Only 38% of the participants were able to provide specific examples of positive project risk. The majority of the examples focused on being proactive early in the lifecycle looking at the upside of a situation. This may be best illustrated by the following:

For one specific bid (~\$27M Fixed Price) - the team had regular risk and opportunity meetings. Goals were set for the opportunities and tracked zealously. People were recognized for bringing forward new ideas to save money.

This example illustrates the use of a rigorous, continuous process with a tangible motivation method. This also illustrates the strategic vs. tactical focus described in the literature review. Some participants (17%) admitted they had never really seen a good example. An additional 25% were only able to identify a generic example and go no further. Participants implied that this is due to lack of training, or organizational cultures, which do not appreciate the value of opportunity management. A handful of respondents failed to identify any examples, but instead gave a textbook-like answer of why opportunities should be identified and managed. A common reason is to make adjustments to reprioritize project objectives.

Opportunities are often not emphasized until there is a [push] from leadership to earn more profit [or reducing costs], or [to] try and reduce the impact of cost and schedule overruns.... opportunities are necessary to either help create more management reserve or avoid the erosion of the management reserve.

This focus on opportunities only when required was evident in response as to why participants did not often identify positive risks. Almost 94% of the respondents answered this part of the question. A common thread in the responses is that teams are simply too busy with day-to-day activities or opportunities are already included in the proposal so there are not any others:

[The] team is now spending all of their effort just staying afloat and moving forward and does not have the time to stop and look for new opportunities.

Table 2
Summary of Findings

Question	Findings
Positive Risk Examples (Q1)	a. Only 38% identified specific examples of specific positive risk b. Most examples were strategic, rather than tactical c. 17% admitted to never having seen a good opportunity example d. 25% were only able to identify a generic (non-specific) opportunity example e. Lack of opportunities because lack of training, f. Lack of opportunities because culture that does not appreciate value of positive risks g. Lack of opportunities because negative perceptions of the value of positive risks h. Too busy with day to day activities i. Focus on opportunities often not emphasized until leadership needs recovery
Positive Risk Identification Process (Q2)	j. Many individuals are used to identify positive risk- not different from negative risk identification k. 28% tools/techniques for identification similar to composite list l. 2 tools/techniques not on composite list (Lean/Six Sigma and taxonomies)
Opportunity Identity Timeline (Q3)	m. Often only identified during the capture phase or proposal phase n. Often ad-hoc or non-continuous
Positive Risk Funding (Q4)	o. 50% discussed how opportunities are *not* funded, instead of how they *are* funded. p. Imprecise distinctions between contingency reserve and management reserve q. 25% stated often only funded on a case by case basis r. Opportunities and threats not funded in a consistent manner

Others commented that daily problems or a lack of resources in this constrained environment prevented their ability to focus on opportunities. Other reasons included a lack of understanding of what a positive risk is, and negative perceptions of the value of positive risks, and lack of focus on opportunities by the leadership team senior to the respondents.

Positive Risk Identification (Q2)

The purpose of this question was twofold surrounding positive risk identification: who is involved, and what tools are used? Respondents listed a variety of individuals who are involved in identifying opportunities. Stakeholders are frequently discussed in the literature with respect to opportunity management (Eslerod, Ang & Andersen, 2018; Loosemore, 2010), but the types of stakeholders discussed is narrow (Al Nahyan, Hawas, Raza & Aljassmi, 2018; Andersen & Vidar Hanstad, 2013; Holm, Ritchie, Snyman & Sunderland, 2013; Lechler, Edington & Gao, 2012; Padalkar & Gopinath, 2016). In this research, participants identified several stakeholders. In descending order of frequency, they include subject matter experts (e.g., lean experts), regular business rhythm participants, risk and opportunity (ROM) participants and the people closest to the process. Respondents commented on the type of experts and distinguished between in-house experts, such as lean and subject matter experts, and external experts, including consultants. Key explanations include:

...like other Fortune 10 companies we rely on expert advice to get us heading in the right direction when evaluating opportunities.

and

The Lean [Subject Matter Expert] ensured that experts from the program, as well as recognized technical experts were included in the team, as well as cross-functional members. Historically this team was primarily engineering personnel only but evolving slowly to a cross-functional approach now allows for different perspectives.

One respondent identified an aggressive method for identifying opportunities. This use of mandatory opportunity goals by an organization could be an intriguing future study.

We made [identifying opportunities] ... part of the organizations' required commitments for the year... When I required this, it interestingly was met every year! The managers took the time to meet with their teams and seek out opportunities. That led me to believe that people will move forward to what is measured... If we also hold organizations to deliver opportunities, my experiences have been that they will also deliver that requirement.

The last part of this question focuses on formalized tools or techniques used to identify opportunities. Tools identified by respondents in the study are summarized in table 3, along with a comparison of other risk management tools discussed in various PMI practice documents (PMI, 2009, 2017, 2019b). The last column on the table shows the tools, which are most suited for risk identification (PMI, 2019b). Out of the 28 identification tools, respondents only named eight from this list (brainstorming, checklists, Delphi technique, document review, historical/post project/lessons learned, interviewing, status meeting, and SWOT analysis) plus two (lean/six sigma processes and taxonomies) which were not part of the original list in table 3.

Positive Risk Timing (Q3)

Most of the respondents addressed this timing question as part of Q2. The near universal response was that opportunities are identified during the proposal phase of the project.

Additionally, the respondents commented that while opportunities are identified early, the process generally did not continue beyond early parts of the lifecycle. Key responses included:

...most of the opportunities get put into the baseline bid itself" [and are not managed separately]Then the opportunity side of the equation gets lost and [negative] risks become the focus.

and

Opportunities must be built into the program [at the beginning] to gain customer support.

and

Our weaknesses are identified addressed and rectified, mitigated, or compensated for [during the life of the project]. Strengths [opportunities] are identified, documented, and emphasized in the proposal.

Table 3
Risk Tool Comparison

Tool or Technique Name	This Study	PMI (2017)	PMI (2009)	PMI (2019)	Identification tool (PMI,2019)
Affinity analysis/ diagram (or KJ method)				X	
Analytic Hierarchy Process (AHP)			X	X	
Assessment of other risk parameters		X		X	
Assumptions and Constraints Analysis		X	X	X	C
Brainstorming	X	X	X	X	C
Cause and Effect (Ishikawa) Diagrams			X	X	C
Checklists	X	X	X	X	C
Contingency Planning			X	X	
Contingency Reserve Estimation & Strategies		X	X	X	
Data Analytics				X	S
Decision Tree Analysis		X	X	X	
Delphi Technique	X		X	X	C
Document Review (or Analysis)	X	X	X	X	C
Estimating Techniques (applied to prob. & impacts)			X	X	
Expected Monetary Value (EMV)		X	X	X	
Expert Judgment		X		X	C
Facilitation		X		X	C
FMEA/ FMECA/ Fault Tree Analysis			X	X	C
Force Field Analysis			X	X	C
Historical information /Post project reviews/ Lessons learned	X		X	X	C
Influence Diagrams			X	X	C
Interviewing	X	X	X	X	C
Lean/ Six Sigma processes	X				
Monte Carlo Simulation		X	X	X	
Multicriterion Selection Techniques		X	X	X	
Nominal Group Technique			X	X	S
PERT Analysis (Program or Project Evaluation and Review Technique)		X		X	
Probability and Impact Matrix & assessment		X	X	X	
Prompt lists (PEST, PESTLE, PESTLIED, SPECTRUM, TECOP)		X	X	X	C
Questionnaire			X	X	C
Reserve Analysis		X	X	X	
Residual impact analysis				X	C
Risk Audit		X	X	X	S
Risk Breakdown Structure (RBS)			X	X	C
Risk data quality assessment		X		X	
Risk Reassessment			X	X	
Root Cause Analysis		X	X	X	C
Scenario analysis			X	X	C
Sensitivity analysis		X	X	X	
Simulation		X		X	S
Status Meetings	X	X	X	X	S
SWOT Analysis	X	X	X	X	C
System Dynamics (Type of Influence Diagram)			X	X	C
Taxonomies	X				
Trend Analysis			X	X	S
Variance Analysis			X	X	S

NOTE: * “C” is a core tool/technique and “S” is supportive

Positive Risk Funding (Q4)

The purpose of Q4 is to understand how positive risks are funded and the extent to which funding is comparable to negative risk handling. Over 88% of the respondents answered this question, but about half of those who responded commented on how opportunities are *not* funded, instead of how they *are* funded. About half the respondents commented that opportunities are generally not funded at all. In fact, the perception is the opportunities were not integrated in the management of the program. Only a single respondent provided a concrete example of an opportunity that was funded, but the entire purpose of the program was dedicated to improvements.

For example,

Positive risks... were [often] met with no funding. Negative risks are usually funded and at 90+%.

and

[We] fund areas ... that are weak [negative risks] ...but seldom do we ... seek ... opportunities [and] their daily expenditures.

and

I have not seen funding set aside as reserve or anything else for positive risks. Period.

About a quarter of the respondents commented that opportunities are only funded on a case-by-case basis and only after an extensive business case analysis. This demonstrates a reactive (as opposed to proactive) funding stance for opportunities.

[T]he attitude is if [an opportunity] comes, we will deal with that good news then.

and

Opportunities [and funding] aren't typically identified until objectives aren't being met [and we scramble to recover].

Respondent feedback shows imprecise understanding between contingency reserve and management reserve. While 17% of the respondents mentioned management reserve or other funding sources, respondents also stated that it was built into the financials and not accounted for separately. Only three respondents identified how much of the entire budget (approximately 10%) is put in management reserve. Other sources of funding beyond contingency or management reserve included overhead funds, research and development funds, supplier funds, unrealized profit or returns, and customer funded or customer cost sharing. As indicated by this study, opportunities and threat funding are not managed in the same way. The following statement summarizes the sentiments of many of the participants:

[O]bligating funds to prevent a downside always wins. Only when the upside begins to break the 75% likely threshold do I see attention being paid to it. If I want a positive risk to be funded, I treat it like a separate opportunity and tee it up ...when it becomes more likely.

Discussion and Recommendations

This section ties the findings to specific recommendations to make opportunity management more effective for project and program and portfolio managers. There are three primary recommendations that result from this study as summarized in table 4.

First, develop training specifically focused on the process and importance of opportunity management. Hillson (2004) stated that training can increase awareness can benefit proactive management and opportunities. While many risk-training opportunities exist through universities, consulting firms, professional development firms, and corporations, few, if any,

focus on opportunity management in detail. The participants in this study all have had some formalized means of risk management training, but not on opportunities. It is recommended that this training task include a comprehensive view of open source risk and opportunity training. Categories of risk (such as Carr, Konda, Monarch, Ulrich & Walker, 1993; Pritchard, 2015) can be used to group risks and opportunities into groups as a framework for the training.

Table 4

Summary of Recommendations and Mapping to Findings

Recommendation	Mapping to Finding(s)
1-Develop opportunity focused training	e. Lack of opportunities because lack of training,
	h. Too busy with day to day activities
	k. 28% tools/techniques for identification similar to composite list
	l. 2 tools/techniques not on composite list (Lean/Six Sigma and taxonomies)
	n. Often ad-hoc or non-continuous
	p. Imprecise distinctions between contingency reserve and management reserve
	r. Opportunities and threats not funded in a consistent manner
2-Develop a catalog of examples good opportunity statements.	b. Most examples were strategic, rather than tactical
	c. 17% admitted to never having seen a good opportunity example
	d. 25% were only able to identify a generic (non-specific) opportunity example
3-Develop a template- a business case for positive risk management.	f. Lack of opportunities because culture that does not appreciate value of positive risks
	g. Lack of opportunities because negative perceptions of the value of positive risks
	i. Focus on opportunities often not emphasized until leadership needs recovery
	m. Often only identified during the capture phase or proposal phase

Training should also focus on what type of opportunities should be documented. For example, Bourne and Weaver (2016) recommend only documenting risks that will have a significant effect on the achievement of project objectives, and excluding risks of minimal value. Hillson (2004, p. 75) provides one of the better examples of a metalanguage which should be part of the training as well. Simply:

IF < relax or remove constraint>, THEN create/exploit <opportunity> RESULTING in <benefit>

Training should also include an emphasis on tools and techniques that are particularly useful for opportunity management (as opposed to threat management). An initial list of identification tools was discussed in table 3. However, before specific training is conducted, additional research should be conducted on applicability of the other tools. Part of the training should focus on the types of opportunities and what is most appropriate for a project vs. a program vs. portfolio. Often, project opportunity centers on new business growth and implementation of strategic goals area (Benjamin, Dezfuli, Everett, Politt, & Sen, 2014; Cooper, 2016; Cooper, et al., 2014; Hillson, 2016; Taylor, 2016).

The second recommendation is to develop a catalog of examples of opportunity statements. This could be used to supplement training, or as additional reference material for the practitioner. One aspect of the catalog could capitalize on the existing opportunity management strategies for resolution (see table 5). This compares the response strategy terminology for some

of the key recommendations and standards. Section (a) of the table shows the common strategies of negative risks while section (b) shows the common strategies of positive risks.

Table 5
Risk Response Strategy Comparison
(a) Negative Risk (Threat)

Source	Strategy a	Strategy b	Strategy c	Strategy d	Strategy e
Kendrick (2015)	Avoid	Transfer	Mitigate	n/a	n/a
PMI (2017)				Accept	Escalate
APM (2017)			Reduce		n/a
DOD Guide (2015)			Control		

(b) Positive Risk (Opportunity)

Source	Strategy a	Strategy b	Strategy c	Strategy d	Strategy e
Kendrick (2015)	n/a	n/a	n/a	n/a	n/a
APM (2017)	Exploit	Share	Enhance	Reject	
PMI (2017)				Accept	Escalate
DOD Guide (2015)	Re-evaluate	n/a	Pursue	n/a	Reject

Kendrick (2015) provides good discussion of scope, resource, and schedule opportunities with a reasonable starting list of each. During the identification phase, Lechler, Edington, and Gao (2012) describe categories of opportunities as technology implementation, project business, and future projects. This is similar to the taxonomies tool mentioned by several respondents. This might be useful as a framework for developing a catalog of opportunity statement examples. Using a simple opportunity definition with examples could move the state of the practice forward to practitioners.

The third recommendation is to develop a template on the business case for positive risk (opportunity) management. A template would be used to assist practitioners in demonstrating the value of opportunity management to the management of the organization. Bekefi, Epstein, and Yuthas (2008) assert that when companies successfully exploit, protect opportunities and drive innovation while at the same time manage risk, they move to seeing risk as a value enhancement device, which could become a competitive advantage. Another approach for the template development is to examine it from an innovation and survival perspective. Zaman (2016, p. 109) provides an excellent description on the success of innovative companies such that they view risk via an opportunity lens, rather than just internal control and compliance.

Further, the business case could be enhanced with an expanded exploration of contingency reserve, management reserve and net (or balanced or shared) risks. The concepts of developing a net factored risk is similar to a formalized risk assessment where the probability of occurrence times the impact of each risk is calculated and summed to developed an overall risk exposure (such as Bowman, 2016; Hillson, 2004). Offsetting risks with opportunities can be used to balance risks with opportunities (similar to Benjamin, Dezfuli, Everett, Politt, & Sen, 2014). The goal is to achieve a balance between minimizing the potential loss or threat, while maximizing the chance of potential gain (opportunity). Browning (2014, 2019) described the probabilistically

weighted average of potential outcomes for both positive and negative risks, resulting in a net value. This may be helpful as part of this business case explanation. Contingency or reserve receives fair treatment from Farooq, Thaheem, and Arshad (2018) by showing the importance of improving contingency reserve precision using quantitative means. This could serve as a starting point for future research. The only other reference of note is Di Muro and Turner (2018) who provides an excellent discussion on types of contingencies and how opportunity contingencies are different from threat contingencies. However, the method of defining these is unclear.

Conclusions

The purpose of this exploratory qualitative study was to investigate on how practitioners use positive risks in management practice and identify areas for further research in the opportunity management domain. This was achieved by using phenomenology to examine responses to open-ended questions from experienced project and risk managers and identify practitioner strengths and weaknesses. After asking participants to identify examples of positive risk statements, the study covered who, what tools, when, and how positive risks are treated. In short, only 38% were able to identify a specific example and 17% admitted to never having seen a good example in practice. While a number of tools and techniques are available to practitioners, only 28% tools/techniques relative to composite list in table 3. However, tools/techniques listed not on composite list (Lean/Six Sigma and taxonomies) should be examined for further applicability. Opportunities were only identified during the early parts of the project and were most often ad-hoc. Regarding funding, most participants stated that opportunities are not funded to the same extent, nor using the same mechanism as for threats making acting on an opportunity a relatively rare occurrence. Some recent authors (for example Becker & Smidt, 2015; Cuppen, Bosch-Rekveltdt, Pikaar & Mehos, 2016) assert that the opportunity identification phase generally lacks rigor. While that assertion cannot be positively affirmed, this study shows few examples of effective opportunity management practice.

Three primary recommendations resulted from the findings. First, expand training specifically focused on the process and importance of opportunity management and include practical case studies. Second, develop a catalog of examples good opportunity statements to aid practitioners. Third, develop a template for a business case for positive risk management. Study recommendations are shown in table 6.

While this study advances the practice of opportunity management, there are some limitations. First, this was an exploratory study. Next steps include quantitative studies based on the results of this research and comprehensive literature review on opportunity management. A number of prior literature reviews on project management have been conducted but either did not take into account current literature, lacked a focus on risk management, lacked a focus on opportunity management, or only provided a rudimentary topical analysis. The most notable literature review is Lehtiranta (2014) which covered both threats (negative risks) and opportunities (positive risks) but the focus was on risk management roles and responsibilities and only through 2012. A more current literature review would serve not only to baseline the current understanding of the opportunity management literature, but also as a framework for future research.

The next limitation is the mechanism for soliciting participants. In this study, respondents were solicited through a variety of social media and personal contact mechanisms. While the number of qualified respondents results in actionable information for a qualitative study, this

mechanism is insufficient for a multi-faceted quantitative study. In future studies, surveys will be distributed via Pollfish (or similar paid service) to a targeted population of experienced project and program managers. At a minimum, the survey will focus the results on opportunity identification tools and techniques, in addition to the three recommendations herein.

Table 6

Study Recommendations Strategy Steps

Recommendation	Strategy
1-Develop opportunity focused training	* Review open source risk training with particular emphasis on opportunities
	* Describe what and how to document using a metalanguage
	* Incorporate case studies
	* Describe specific opportunity identification tools/ techniques
	* Describe spectrum of opportunities for project, program and portfolio [strategic vs. tactical]
2-Develop a catalog of examples good opportunity statements.	* Capitalize on opportunity response strategies as a framework (exploit, share, enhance, accept, escalate)
	* Capitalize on Kendrick (2015) list of scope, resource, and schedule examples
3-Develop a template- a business case for positive risk management.	* Provide rationale for opportunity focus (including driving innovation, competitive advantage, and business survival)
	* Describe the value proposition for using financial reserves (contingency and management)
	* Advocate a balanced risk portfolio offsetting threats with opportunities

While there is a well-documented academic and standards-based framework of opportunity management, as evidenced by this study, is less refined and mature than threat management practices. Through a focus on both negative and positive risk, the project manager can offset negative results and possibly project objectives to delight the stakeholders. Without effective risk management, success of the project may rely on good planning or luck. This research provided greater insight into opportunity management practice. It is a necessary step to improve the efficacy for current and future project, program, and portfolio managers.

Conflict of Interest

On behalf of the authors, the corresponding author states that there is no conflict of interest.

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