ANSWERS TO THE
QUESTIONS IN THE
COURSE GUIDE

Risk Assessment and Treatment

ARM 55

1st Edition

2015-2016

CONTENTS

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Title</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Risk Assessment and Treatment</td>
<td>7</td>
</tr>
<tr>
<td>2</td>
<td>Root Cause Analysis</td>
<td>23</td>
</tr>
<tr>
<td>3</td>
<td>Business Continuity Management</td>
<td>35</td>
</tr>
<tr>
<td>4</td>
<td>Physical Property Risk</td>
<td>49</td>
</tr>
<tr>
<td>5</td>
<td>Intellectual Property and Reputation Risk</td>
<td>81</td>
</tr>
<tr>
<td>6</td>
<td>Legal and Regulatory Risk</td>
<td>98</td>
</tr>
<tr>
<td>7</td>
<td>Management Liability</td>
<td>121</td>
</tr>
<tr>
<td>8</td>
<td>Human Resource Risk</td>
<td>131</td>
</tr>
<tr>
<td>9</td>
<td>Environmental Risk</td>
<td>150</td>
</tr>
<tr>
<td>10</td>
<td>Crime and Cyber Risk</td>
<td>173</td>
</tr>
<tr>
<td>11</td>
<td>Fleet Risk</td>
<td>193</td>
</tr>
</tbody>
</table>

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1-800-795-5347
1-800-859-5347 FAX
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www.keirsucces.com

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Assignment 1

Introduction to Risk Assessment and Treatment

Educational Objective 1

Every organization faces uncertainties which can affect its ability to meet its objectives. The concept of risk assessment involves the identification of these uncertainties (risk identification) and the analysis of these risks (risk analysis).

Risks are generally identified and assessed in four categories. They are not all applicable to every organization, and in some cases there is overlap.

Hazard risk: These chances for loss arise from exposures of property, liability, or personnel loss exposures – property risk, legal risk, personnel risk, and consequential loss risk.

Operational risk: These types of loss arise from the categories of people, processes, systems, or controls, and include people risk, IT risk, management oversight, and business processes.

These first two types involve only pure risk – occurrences here can only bring loss to the organization. The second two enter the world of speculative risk – where either loss or profit can be had.

Financial Risk: these arise from the effect of market forces on financial assets or liabilities, and include credit risk, market risk, price risk, and liquidity risk.

Strategic Risk: this comes from the trends in the economy and society in general, and includes the economic and political environments, demographics, and competition.

The two steps of the assessment process involve:

Risk Identification: as exhaustive as possible a review of all facets of the external and internal environments affecting the organization, to seek events which could positively or negatively affect achievement of objectives. Methods to perform this are addressed in Objective 2 of this Assignment.

Risk Analysis: Once risks are identified, they are investigated to determine if treatment is necessary, and what type of treatment if so. All of the potential positives and negatives are laid out in a matrix sometimes called a risk map, and are analyzed according to one of several methods.

Key Words and Phrases

1. Risk is uncertainty about outcomes. The outcomes can turn out to be either positive or negative.
2. Risk management is the process of making decisions about risk which enable an organization to optimally address the risks present.
3. A risk map is a template which lays out the likelihood and potential impact and consequences of various types of risk.

Review Questions

1-1. The concept of risk assessment involves the identification of uncertainties (risk identification) and the analysis of these risks (risk analysis).

1-2. The goals of risk management are to inform organization management of risks facing the organization, and to identify how the risks affect the organization’s ability to meet its objectives.

1-3. Qualitative risk assessment techniques involve a measure of subjectivity because the data come from instruments such as surveys and interviews. Quantitative techniques are more objective because they arise from numerical data, statistics, calculations and the like.
Risk identification involves as exhaustive as possible a review of all facets of the external and internal environments affecting the organization, to seek events which could positively or negatively affect achievement of objectives.

**Educational Objective 2**

The major risk identification techniques include:

**Questionnaires and checklists**: these are lists of possible sources of risk which an organization can review and determine if any of the entries apply to it. Questionnaires can elicit thought and input in given areas, and checklists can try to list as many pre-identified sources of risk as possible. They do not rely upon objective data, and they may not exhaustively identify all possible sources of risk.

**Workshops** can be effective risk identification mechanisms. In most, a trained facilitator leads the appropriate group through guided discussion which brings out risks which could affect the organization. Effectiveness can be high because multiple departments and stakeholders can provide input. Brainstorming can be one technique used in this format. All input is considered, and people can feel more creative in such a format. The Delphi technique uses a panel of experts who provide a consensus opinion based upon a questionnaire to which its members respond.

The major risk analysis techniques include:

**Cause and Effect analysis**: once an issue is identified, this method uses a structured approach to examine all of the possible causes and sub-causes of an issue. The end result is a template which portrays all of the identified causes and their effects. Methods of performing this analysis include the fishbone diagram, which begins with a problem and then charts backwards through all possible causes to arrive at a root cause. The Five Whys method is another approach which begins with the problem and uses a technique where the question “Why?” is asked however many times it takes to finally arrive at the root cause.

**Failure analysis**: After failures of several types occur, focus on identifying the causes in order to prevent repetition is the technique used by the following three methods:

- **Hazard and Operability Studies (HAZOP)** – a team of specialists from various operational areas studies a process or procedure to determine how failures can create hazard. Usually used in manufacturing/processing operations.

- **Fault Tree Analysis (FTA)** – a systematic, graphic way to represent a top event (for instance a fire), and chart out all the factors that contributed to it. Treatment of the factors can then reduce the likelihood of future occurrence of the event.

- **Failure Mode and Effects Analysis (FMEA)** – each component within a system or process is examined to determine possible failure points and how the failure would affect the overall system.

**Future States Analysis** – these methods look to determine risks that may develop in the future. In the scenario analysis method, a team of analysts puts forth possible changes or major trends which may arise, such as new competitors entering the market, and play out possible outcomes for risk potential. In the Monte Carlo simulation, a broad scope of variables (such as levels of product demand) are put forth and calculations made on how likely events are to happen, and their economic impact when they do.

**Strategy Analysis** – the overall operational strategy of an organization can open it to risks of various kinds. Identifying and evaluating their potential impact is the goal of different strategy analysis techniques such as SWOT (a charting of strengths, weaknesses of the organization, and opportunities and threats present externally). The opportunities and threats are sometimes analyzed by a framework known as PEST, the political, economic, social, and technological factors which could bring risk.
Review Questions

2-1. Two disadvantages of using questionnaires and checklists are that they do not rely upon objective data, and they may not exhaustively identify all possible sources of risk.

2-2. The Delphi technique uses a panel of experts who provide a consensus opinion based upon a questionnaire to which its members respond.

2-3. Two methods of performing cause and effect analysis include the fishbone diagram, which begins with a problem and then charts backwards through all possible causes to arrive at a root cause. The Five Whys method is another approach which begins with the problem and uses a technique where the question “Why?” is asked however many times it takes to finally arrive at the root cause.

2-4. A disadvantage of the cause and effect analysis method is that the participants may stop the process before all underlying causes have been identified and examined, perhaps missing the actual root cause of the event.

2-5. In the HAZOP technique, a team of specialists from various operational areas studies a process or procedure to determine how failures can create hazard. Usually used in manufacturing/processing operations.

2-6. In the scenario analysis method, a team of analysts puts forth possible changes or major trends which may arise, such as new competitors entering the market, and play out possible outcomes for risk potential.
MULTIPLE CHOICE

QUESTIONS WORKBOOK

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CONTENTS

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Title</th>
<th>Que.</th>
<th>Ans.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Introduction to Risk Assessment and Treatment</td>
<td>7</td>
<td>77</td>
</tr>
<tr>
<td>2</td>
<td>Root Cause Analysis</td>
<td>15</td>
<td>80</td>
</tr>
<tr>
<td>3</td>
<td>Business Continuity Management</td>
<td>20</td>
<td>82</td>
</tr>
<tr>
<td>4</td>
<td>Physical Property Risk</td>
<td>26</td>
<td>85</td>
</tr>
<tr>
<td>5</td>
<td>Intellectual Property and Reputation Risk</td>
<td>34</td>
<td>88</td>
</tr>
<tr>
<td>6</td>
<td>Legal and Regulatory Risk</td>
<td>39</td>
<td>91</td>
</tr>
<tr>
<td>7</td>
<td>Management Liability</td>
<td>46</td>
<td>94</td>
</tr>
<tr>
<td>8</td>
<td>Human Resource Risk</td>
<td>51</td>
<td>96</td>
</tr>
<tr>
<td>9</td>
<td>Environmental Risk</td>
<td>57</td>
<td>98</td>
</tr>
<tr>
<td>10</td>
<td>Crime and Cyber Risk</td>
<td>64</td>
<td>101</td>
</tr>
<tr>
<td>11</td>
<td>Fleet Risk</td>
<td>70</td>
<td>104</td>
</tr>
</tbody>
</table>
Assignment 1

Introduction to Risk Assessment and Treatment

1. Uncertainty about outcomes that can be either positive or negative is known as:
   (Text 1.3)
   (A) Hazard
   (B) Risk
   (C) Speculation
   (D) Adverse selection

2. The main goal of risk assessment is to inform management at all levels about risks facing an organization, and how those risks affect the organization’s ability to:
   (Text 1.3)
   (A) Increase productivity
   (B) Meet objectives
   (C) Increase profitability
   (D) Have fewer losses

3. The total exposed amount that an organization wishes to undertake on the basis of risk-return trade-offs for one or more expected outcomes is known as:
   (Text 1.4)
   (A) Risk appetite
   (B) Risk tolerance
   (C) Risk ceiling
   (D) Risk exposure

4. Risk assessment involves evaluating data that is qualitative and quantitative. Which of the following types of data are used to develop quantitative assessments?
   (Text 1.4 – 1.5)
   (A) Surveys
   (B) Cause and effect analysis
   (C) Checklists
   (D) Loss history information

5. Risk assessment approaches are either top-down or bottom-up. What do these approaches mean?
   (Text 1.5)
   (A) Top-down assessments are made after a loss occurs, bottom-up assessments are made before the loss
   (B) Top-down assessments are made by outside assessors, such as consulting firms, bottom-up assessments are made by internal personnel
   (C) Top-down assessments are made by senior management downward, bottom-up assessments are made from lower operational levels upward
   (D) None of the above

6. Which type of risk presents only the chance of loss or no loss?
   (Text 1.6, 1.14)
   (A) Pure risk
   (B) Speculative risk
   (C) Financial risk
   (D) Strategic risk

7. Questionnaires and checklists are methods of identifying risks present within an organization. Which of the following statements about them is (are) true?
   (Text 1.7)
   (A) They do not produce quantitative results
   (B) They are cumbersome and difficult to use
   (C) They adequately identify all risks pertaining to an organization
   (D) They produce both quantitative and qualitative results
Assignment 1

Introduction to Risk Assessment and Treatment

1. B is the answer. Traditionally, the concept of risk had been more considered in view of only negative outcomes. Current risk management theory also deals with risk that can have a positive outcome.

2. B is the answer. A, C, and D may be components of B, but the overarching concept of all risk management activities is to contribute to the achievement of organizational objectives.

3. A is the answer. Risk tolerance is the amount of uncertainty an organization is prepared to accept for a specific initiative.

4. D is the answer. Quantitative analysis involves numerical data and historical experience. Qualitative methods use more subjective sources and are subject to interpretation.

5. C is the answer. Each approach has advantages and drawbacks, and they are best used together.

6. A is the answer. The top two quadrants of the risk quadrant layout show hazard and operational risk as being pure risk (only possible outcomes are loss or no loss). With financial and strategic risk, there are possible positive outcomes.

7. A is the answer. They produce qualitative results. B – the opposite is true. C – the fact that they don’t do so is a drawback to their use. D – no, just qualitative.