1. **Learning Objectives:**

3. The candidate will understand the ERM processes that consider all types of risks and their use in setting a risk return strategy in any industry.

**Learning Outcomes:**

(3a) Identify and assess second-order risk factors:

- Explain the various types of risks that can arise from specific business activities but are not directly specific to the business itself.
- Critique the applicability and relevance of measurement and management techniques for these second-order risks.

(3b) Explain ERM principles and frameworks:

- Describe the components of a risk appetite statement. Design and develop a risk appetite statement and risk-return strategy.
- Evaluate a company’s ERM processes in its ability to adapt to emerging issues and identify strategic opportunities based on risk-return trade-off.
- Evaluate the sustainability of a given business enterprise based on its risk tolerances and appetite.
- Apply risk mitigation strategies in ERM decisions.

**Sources:**

SDM-108-13, Chapters 2 and 3 of Liquidity Risk – Measurement and Management, Matz and Neu, pg. 20-28

**Commentary on Question:**

*The intent of the question is to test understanding basic ERM concepts and liquidity risk in particular by applying these concepts to case study company Big Ben Bank. Candidates struggled with this question. Many provided only generic commentary on the six features as opposed to linking them to the case study. Candidates would not have received full marks for answers that did link to the case study.*

**Solution:**

(a) Describe how each of the drawbacks (I to VI) affect the analysis of Big Ben Bank’s liquidity.

**Commentary on Question:**

*In addition to the overall commentary, many candidates did not properly consider derivatives and commercial paper in their answers.*
1. Continued

1. Missing time dimension

Balance sheet positions are not simply illiquid or liquid. For example, prudential or stand by liquidity can buy time but not a permanent solution.

For Big Ben…
All banks are exposed to this issue. Net liquidity position is deteriorating since 2015 which suggests more substantial risk. Assets in the form of central bank deposits and loans and advances appear to be rising.

2. Impact of Accounting rules

Sometimes accounting values do not reflect the economic cash flows. For example, banking book held at book not market value.

For Big Ben…
Investment securities held at amortized cost can be an issue as they are not marked to market. Loans are held at book, not marked to market.

3. Off balance sheet commitments
For example: derivatives. Introduce contingent liquidity risk.

For Big Ben…
This could be a problem for Big Ben especially given substantial derivative commitments noted in the case study. These have been increasing over time.

4. Marketability of securities

For example, assets are not always held at market value.

For Big Ben…
Could be an issue as loans are likely to be less marketable than publicly traded securities. Same is true for real estate.

5. Commercial paper

Must be treated as unsecured money market funding.

For Big Ben…
Not relevant as Big Ben is not involved in this market.
1. Continued

6. Non-bank deposits may not be sticky

For Big Ben…
Not a very high proportion on the balance sheet (3,758 out of 16,434 deposits, out of 36,168 assets), which means not a material concern.

(b) Identify two potential Black Swan events related to liquidity that may affect Big Ben.

Commentary on Question:
This part was designed to identify whether the candidates understood both the case study and the concept of black swan events.

Many potential answers were acceptable here but it was critical to link this to the case study. Most candidates got some points in this part. Some candidates were a little too creative though (e.g. nuclear disaster or war between Canada and US weren’t really related to Big Ben or liquidity.

Examples that would have been awarded full marks…

1. Big Ben Bank’s reputation is compromised, leading to a run on the bank.
2. Failure of the financial system results in a run on all banks, including Big Ben.
2. **Learning Objectives:**

1. The candidate will understand and apply strategic management concepts and frameworks to corporate financial and ERM business problems.

2. The candidate will understand measures or corporate value and their uses in corporate decision making.

**Learning Outcomes:**

(1a) Evaluate and apply strategic management concepts, recognizing factors that affect development and implementation of strategies:
- Analyze the firm’s external environment and the internal organization.
- Describe and apply models such as Porter’s five forces.
- Define types of business-level strategies and recommend an appropriate business-level strategy for a given situation.

(2b) Assess how performance metrics and incentives could impact key business decisions and create value for shareholders:
- Explain how managerial accounting can impact strategic decisions.
- Explain and recommend methods a firm may use to allocate its costs and how these methods impact the perceived performance of a firm or its component lines of business.

**Sources:**
- Strategic Management - Ch. 4, pg. 120-121
- Accounting for Decision Making and Control - Ch. 10, pg.450-452, 454-458, 461-463
- Accounting for Decision Making and Control - Ch. 5 pg. 175-180
- Strategic Management - Ch. 10 pg. 322-323

**Commentary on Question:**

The goals of the question were to test the candidates understanding of the source material and to apply it to the case study. Overall, candidates performed poorly on both aspects. Candidates had trouble with the accounting concepts being tested and transfer pricing. As a result, this made it difficult for many to apply the concepts specifically to the case study. There were many instances where candidates offered only generic answers, which were not awarded full marks.
2. Continued

Solution:

(a) Evaluate recommendation A in terms of the Bargaining Power of Buyers (Customers).

(ii) Evaluate recommendation A in terms of Threats of Potential New Entrants.

(iii) Evaluate recommendation B in terms of the Bargaining Power of Suppliers.

Commentary on Question:
Candidates needed to evaluate each recommendation by referencing information from the case study to receive full marks.

(i) Customers are fragmented (largest customer only 5% of sales) as tires are sold through independent distributors and therefore, they do not have the ability to force a reduction in price.

(ii) Prices have been low enough to prevent competition as per Pierre, which suggests that BJT has pricing power over their customers. Price increase could bring potential entrants into the market. This could result in loss of market share, but Blue Jay Tire would likely have higher margins. Blue Jay Tire could earn above average returns with a price increase if the increased margins outweigh the potential loss in market share.

(iii) Rubber makes up 48% of the manufacturing purchases. BJT has had the same supplier for 30 years and has system integrated to maximize efficiencies. If BJT asks for a price decrease the supplier could refuse and it would be hard for BJT to find another supplier given their long and stable history. Therefore, the supplier has some power so BJT most likely could not earn an above average return by asking for a price decrease unless they work with their supplier to mitigate the impact of a price decrease.

(b) Calculate the profit of each tire model using absorption costing. Show your work.

(ii) Explain which tire model has a higher incentive to overproduce. Justify your answer.

Commentary on Question:
Some candidates confused the calculation of fixed cost per unit by using units sold instead of produced.
2. Continued

Fixed costs per unit: 1.1875 (Fixed Cost / Units Produced)

<table>
<thead>
<tr>
<th></th>
<th>RU42WR</th>
<th>RU42WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Revenue (Price x Unit Sold)</td>
<td>40,500,000</td>
<td>116,000,000</td>
</tr>
<tr>
<td>Variable Costs (Direct + Variable) x Unit Sold</td>
<td>22,500,000</td>
<td>80,000,000</td>
</tr>
<tr>
<td>Fixed Cost (OH/Units Produced x Unit Sold)</td>
<td>1,068,750</td>
<td>2,375,000</td>
</tr>
<tr>
<td>Profit (Rev - Variable - Fixed)</td>
<td>16,931,250</td>
<td>33,625,000</td>
</tr>
</tbody>
</table>

As an example, increase the units produced by 500K. The resulting % increase in profit for each tire model are:

<table>
<thead>
<tr>
<th></th>
<th>RU42WR</th>
<th>RU42WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Profit - Original</td>
<td>16,931,250</td>
<td>33,625,000</td>
</tr>
<tr>
<td>Profit - Additional 500K produced</td>
<td>17,075,676</td>
<td>33,945,946</td>
</tr>
<tr>
<td>% Increase</td>
<td>0.85%</td>
<td>0.95%</td>
</tr>
</tbody>
</table>

RU42WD would benefit the most because of their lower cost basis. Overproduction reduces dollar wise the absorption cost and therefore there is a larger % increase on profit.

(c)

(i) Calculate the profit of each tire model using variable costing when overhead is assigned using direct material labor cost. Show your work.

(ii) Calculate the profit of each tire model using variable costing when overhead is assigned using all costs except for fixed overhead. Show your work.

(iii) Compare and contrast the previous two methods in assigning overhead costs for determining which tire model to produce at the Montgomery plant.

Commentary on Question:

Most candidates could not calculate the profit using variable costing. Candidates had trouble knowing when to use unit produced or units sold in their calculations. Candidates were also unable to apply the variable costing concept to the case study.
2. Continued

<table>
<thead>
<tr>
<th>VC using all costs except for fixed OH</th>
<th>RU42WR</th>
<th>RU42WD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sales Revenue (Price x Unit Sold)</td>
<td>40,500,000</td>
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</tr>
<tr>
<td>Variable Costs (Direct + Variable) x Unit Sold</td>
<td>22,500,000</td>
<td>80,000,000</td>
</tr>
<tr>
<td>Fixed Cost (OH*(dir&amp;var x sold/[dir&amp;var all x sold all] x Unit Sold))</td>
<td>834,146</td>
<td>2,965,854</td>
</tr>
<tr>
<td>Profit (Rev - Variable - Fixed)</td>
<td>17,165,854</td>
<td>33,034,146</td>
</tr>
</tbody>
</table>

Both methods are reasonable. However, using variable overhead costs in allocating fixed OH includes the inspection costs, which are suggested as temporary by Chris Carpenter. If these costs are only temporary, this would overstate the fixed cost for producing RU42WD.

(d)

(i) Explain a possible problem of using a unit cost assumption derived from the above historical cost/benefit analysis.

(ii) Propose an alternative cost/benefit analysis that could be used to improve the analysis. Justify your response.

Commentary on Question:
Candidates needed to apply the concepts they were proposing specifically to Blue Jay Tire to receive full marks. Many candidates offered generic alternatives, with no such rationale.

The analysis does not accurately estimate the opportunity cost of the additional tires being produced. If Blue Jay Tire expands into areas of its historical cost curve where it has not been before, there is no historical information regarding the level of costs in this region.

Interview the production engineers to understand the marginal cost of increasing tire production. Incorporate their insight into the historical cost/benefit analysis to come up with a more accurate marginal unit cost.

(e)

(i) Discuss the merits of Amelia’s proposal addressing the areas of profitability and the compensation structure.

(ii) Identify the transfer price that maximizes BJT’s total profit.

(iii) Propose a management compensation design, which is equivalent in terms of dollar amount to Amelia’s current level that could better avoid agency costs for BJT.
2. **Continued**

**Commentary on Question:**

*Candidates had difficulty linking transfer pricing to agency cost. Generally, candidates did understand the compensation incentive for increasing profit in the tire division but they did not elaborate on the overall impact to the company.*

The transfer price, being left alone, is not a reflection of the true value of tires since unit cost are expected to be 10% lower. Amelia is making an inappropriate decision and the overall firm value will be reduced. The warranty division will consume too little of the tires as the warranty price would be set too high thus reducing demand for the program.

Having a management compensation structure that over weights the VP on their divisional results could incentivize incorrect decision making. A possible reason for Amelia proposing to leave the transfer price alone is that her performance is significantly linked to the plant operation’s ability to generate profit. By charging more to the warranty program, Amelia can generate more profit in her division, which can affect her promotion and will affect her annual bonus. Since her compensation is evenly split between salary, short-term and long-term, Amelia might value her salary and short-term more than the long-term since there is less long-term systematic risk.

The opportunity cost is the transfer price that maximizes BJT’s total profit.

Design a management compensation plan that over-compensate on the long-term incentives to avoid the potential agency problems. Decrease the annual bonus and increase the stock option and/or reduce the vesting period.

300K salary with 50% annual bonus and 450K stock option and vesting period down to 5 years
3. Learning Objectives:
4. The candidate will understand how to apply decision making models to general managerial decisions within specified business constraints.

Learning Outcomes:
(4a) Apply fundamental techniques and frameworks of management science to make informed business decisions:
- Apply linear optimization models to managerial decisions.
- Develop decision trees, scenario tests, and simulation models.

Sources:
Data, Models, and Decisions: The fundamentals of Management Science (Chapters 1, 7 and 9)

Commentary on Question:
The intent of the question is to test the candidate’s ability to interpret a business problem related to the Case Study, and translate the information provided into a problem that can be evaluated using linear optimization methods. While the recalling of syllabus material was done relatively well, understanding the real-world application of the concepts continues to be a challenge for candidates. This application, though, is essential to demonstrating mastery of the material.

Solution:
(a) Define discrete optimization.

An optimization model is a discrete (or integer) optimization model if all of the decision variables are required to be positive integers, and all of the constraints and the objective function are linear functions.

A regular linear optimization model has the added flexibility that the decision variables need not be integers. A discrete linear optimization model is similar to a regular linear optimization model, but with the added constraint that all input variables must be positive integers.

(b)
(i) State the objective function.
(ii) State the constraint functions.
3. Continued

(i) Objective function: \( \text{max } 500x + 900y = C \), where \( x \) is the number of Economy Class seats, and \( y \) is the number of Comfort Class seats.

(ii) Constraint functions:

\[
\begin{align*}
x + 1.5y &\leq 300 \\
x + y &\geq 280 \text{ (alternatively: } -x - y \leq 280) \\
x - 3y &\geq 0 \text{ (alternatively: } -x + 3y \leq 0) \\
x, y &\geq 0
\end{align*}
\]

where \( x, y \) are elements of \( P \) (where \( P \) is the set of positive integers).

(c) For the optimization problem defined in part (b):

(i) Sketch the feasible region with binding constraints clearly labelled.

(ii) Calculate the optimal solution. Show your work.

(i)
3. Continued

(ii) Per the sketch above, we need to find intersect of \( x + y = 280 \) and \( x + 1.5y = 300 \)

\[
x = 280 - y
\]

\[
(280 - y) + 1.5y = 300 \rightarrow y = 20 \div 0.5 = 40
\]

\[
x = (280 - 40) = 240
\]

Optimal solution occurs when \( x = 240 \), and \( y = 40 \)
At this optimal point the objective function is:
\[
C = 500*(240) + 900*(40) = 156,000
\]

(d) State the new constraint functions.

The constraint functions are also unchanged, except we need to remove the constraint \( x + y \geq 280 \) and replace with the constraint \( x + y \geq 240 \) (i.e. \( 240 = 0.8*300 \)).

Therefore, new constraint functions are as follows:

\[
x + 1.5y \leq 300
\]

\[
x + y \geq 240 \text{ (alternatively: } -x - y \leq 240)\]

\[
x - 3y \geq 0 \text{ (alternatively: } -x +3y \leq 0)\]

\[
x, y \geq 0
\]

where \( x, y \) are elements of \( P \) (where \( P \) is the set of positive integers)

(e) Calculate the optimal solution for the optimization problem defined in part (d). Show your work.
3. Continued

Per the sketch above, we need to find intersect of \( x - 3y = 0 \) and \( x + 1.5y = 300 \)

\[
x = (0 + 3y) = 3y
\]

\[
(3y) + 1.5y = 300 \Rightarrow y = \frac{300}{4.5} = 66.66
\]

\[
x = (3\times66.66) = 200
\]

The optimal solution would occur when \( x = 200 \), and \( y = 66.66 \), but this violates the requirement for \( x \) and \( y \) to be positive integers (i.e. we cannot have a fractional number of seats).

Without violating the integer requirement, optimal solution occurs at \( x = 201 \) and \( y = 66 \), at this optimal point the objective function is:

\[
C = 500\times(201) + 900\times(66) = 159,900
\]

(f)

(i) Explain how linear optimization can be used to approximate solutions to discrete optimization problems.

(ii) Describe two additional considerations to adapt the answer from part (e) into a practical solution.

**Commentary on Question:**

*Candidates were expected to understand that real-world problems often times require discrete integer solutions. Candidates were expected to explain this based on syllabus material and then contextualize it for the seat problem at hand.*

(i) The usual linear optimization methods can still be used to solve discrete optimization problems. The usual method would be used to find a solution without consideration for the positive integer requirement. This solution will essentially be "in the neighborhood" of a solution which will satisfy the need for the solution points to be discrete.

The solution values can then be rounded and tested at the nearest integer points to give insight into what the optimal solution would be under the additional positive integer requirement. This structure is a practical solution since it is "near-optimal", and operationally much easier to arrive at by first solving the problem with the positive integer constraints removed.
3. Continued

(ii) BJA will need to consider the implications of the Economy vs. Comfort Class seating arrangements on their aircrafts. For instance, typically there are sections across the aircraft which separate these two seating classes, and these sections are comprised of a number of rows each contain a certain number of seats. Further, the odd number of seats for the Economy Class is particularly perplexing. Where will the 201\textsuperscript{st} seat of the Economy Class be installed, would it be in its own row? That would likely be a significant waste of space. Or would it be installed next to a Comfort seat? That will likely not be an agreeable proposition to the customer who purchased said Comfort seat.

These are nuances which are critical and should be considered in the aircraft seating arrangements. The optimization model as it is presented does not account for how this arrangement would look on an aircraft. A practical solution may be to include additional constraints to account for these nuances, or at least complement the optimization model with some qualitative analysis to ensure the solution coming out of the model is congruent with these practical considerations.

(g) Critique whether the decision models in parts (b) and (d) are appropriate for BJA. Provide a recommendation and justify your answer.

Aside from seating arrangements, the decision models from parts b) and d) do not capture other considerations which are essential to BJA and their stated strategic objectives. For example, BJA’s intent on developing service differentiation, i.e. by catering to the business traveler, is not at all addressed by this model as it stands. Further, BJA’s desire to distinguish itself by providing a higher standard of flight travel experience and safety is not something that the current optimization model accounts for.

The current model is too simplistic in the sense that it only looks at revenue maximization as the end goal. It does not consider BJA’s strategic initiatives, its reputation, nor the demand for its services at different seating class levels. BJA management should consider developing complementary decision-making models (quantitative or qualitative where appropriate) to help them ensure that they are making holistic decisions which are well aligned with BJA’s medium to long-term business objectives.
4. Learning Objectives:
1. The candidate will understand and apply strategic management concepts and frameworks to corporate financial and ERM business problems.

5. The candidate will understand the role that organizational behavior and communication play in organizational decision making and efficacy, as well as learn how to ineffective communication is a risk to organizations.

Learning Outcomes:
(1a) Evaluate and apply strategic management concepts, recognizing factors that affect development and implementation of strategies:
   • Analyze the firm’s external environment and the internal organization.
   • Describe and apply models such as Porter’s five forces.
   • Define types of business-level strategies and recommend an appropriate business-level strategy for a given situation.
   • Explain the impact of competitive dynamics on strategic management.

(5a) Apply best practice techniques to structure and communicate ideas logically and persuasively:
   • Explain differences between good and poor communication techniques and their implications.
   • Apply techniques to structure ideas logically.
   • Develop clear fact-based messages that can be communicated persuasively.

Sources:
Organizational Behavior - Ch. 9 Communication, pg. 281, 291-293, 297-300
Strategic Management - Ch. 3 pg. 84-94
The Pyramid Principle - Ch. 1-3

Commentary on Question:
This question tested candidates’ understanding of core competencies and outsourcing. Candidates were also asked to apply communication barriers and styles described in the syllabus, including the Pyramid Principle, to the case study.

Generally, candidates did well when they justified their answers with concepts from the source readings and justified their answers with evidence from the case study. General answers and/or answers that did not reference source materials did not receive full points.

Solution:
(a) Identify two core competencies of BJT from the list of activities (I – IV). Justify your answer.
4.  Continued

**Commentary on Question:**
Most candidates were able to provide justification for the two activities they chose as core competencies. To receive full marks, evidence from the case study and also analysis of what constitutes a core competency were required. Answers besides the ones below were accepted only if sufficient justification was provided using:

- Using the Valuable, Rare, Costly-to-Imitate, and Nonsubstitutable criteria; or
- Using Value Chain Analysis by identifying at least one support function or value chain activity for the activity. The candidate would explain why the chosen support function/value chain activity contributes to customer value for BJT’s customers

BJT’s core competencies are Distributor relations (I) and Labor Relations (III):

- Distributor Relations are a core competency as the company has long-standing relationships with many dealerships. These relations are rooted in the company’s history and developed over time. They are hard to imitate and valuable.
- Labor Relations are also a core competency as its Canadian plant does not currently have a unionized work force. This is unusual within the industry, and allows BJT-Canada to avoid many possible contentious issues that could arise from unionization. BJT-USA is only 50% unionized. A non-unionized workforce in the manufacturing sector is rare, valuable and difficult for other companies to imitate, as de-unionization is hard to achieve.

(b) Identify the activity (I – IV) that is most likely to be outsourced. Justify your answer.

**Commentary on Question:**
Candidates did not receive any points if the justification they provided was not specific to BJT and the activity selected. Some candidates also argued for an activity to be outsourced by arguing against other activities to be outsourced – this justification only received partial marks. Finally, while Social Media Management was the ideal solution, other activities were accepted if the justification provided was logically sound and agreed to the case study.

The most likely activity to be outsourced is Social Media Management (IV). While BJT has a strong brand, social media management is just one part of BJT’s marketing strategy. It is also a relatively new function of BJT. An external firm specializing in social media would likely be more effective than BJT’s in-house social media management team.
4.  Continued

Furthermore, from Part (a), Distributor Relations (I) and Labor Relations (III) are core competencies of BJT and should not be outsourced. Finance and Accounting (II) is also a strong activity for BJT, given its track record of financial growth and capability in consolidating finances across two geographies.

(c)

(i) Describe two individual barriers to effective communication that may negatively impact how the memo is received by the employees.

(ii) Propose one action to overcome each barrier identified in part (i). Explain your proposal.

Commentary on Question:
Some candidates confused individual barriers with organizational barriers. Also, actions proposed to overcome each barrier must directly relate to source material.

The best choices would be differing perceptions, semantic differences, consideration of self-interest (definitions are in source text). The description of the barrier must be applicable to the writing of the memo. Other options from the text may be possible, provided the candidate demonstrates how it may apply in this context. Other individual barriers described in the text are status differences, poor listening skills and personal space.

Acceptable actions to overcome communication barriers: encourage proactive individual actions (know your audience, select an appropriate communication medium, regulate information flow and timing, encourage feedback related to understanding, listen actively), conduct communication audits, improve communication climates.

Perceptual differences: people have different frames of reference and experiences, so may see things differently. To overcome this, ask for feedback to ensure that the message is being received as intended and that everyone is on the same page.

Semantic differences: the memo may mention words such as “efficiency”, “profit”, “core competency” and “shareholder value”, which could all be misconstrued by employees as saying that the activity being outsourced was not efficient, wasted money and was not competent. To overcome this, it would be important for BJT to know their audience. Drafts of the memo should be reviewed by different levels of employees with feedback on wording collected.
4. Continued

(d)

(i) Describe two organizational barriers to effective communication that may negatively impact how the memo is received by the employees.

(ii) Propose one action to overcome each barrier identified in part (i). Explain your proposal.

Commentary on Question:
Some candidates confused individual barriers with organizational barriers. Also, actions proposed to overcome each barrier must directly relate to source material.

The best choices would be information distortion and network breakdowns (definitions are in source text). The description of the barrier must be applicable to the writing of the memo. Other options from the text may be possible, provided the candidate demonstrates how it may apply in this context. Other organizational barriers described in the text are information overload, specialty jargon, time pressures and cross-cultural barriers.

Acceptable actions to overcome communication barriers: encourage proactive individual actions (know your audience, select an appropriate communication medium, regulate information flow and timing, encourage feedback related to understanding, listen actively), conduct communication audits, improve communication climates.

Informational overload: lay-off procedures are complex and can involve many different departments. Employees can miss crucial information amongst the flood of announcements and memos that they receive. To overcome this, BJT should clearly outline the timeline and process to employees, as well as have a clearly defined communication plan that will appropriately regulate the flow and timing of information.

Jargon: if the memo contains very technical or legal terminology that employees are unfamiliar with, they may misunderstand and misinterpret the news. To combat this, BJT should conduct a town hall to make the announcement (an appropriate medium). This will allow employees to ask questions and management to provide answers.
4. Continued

(e) Explain how using appropriate communication styles will impact the following risks for BJT with respect to the layoff decision:

(i) Legal

(ii) Reputational

Commentary on Question:
Many candidates struggled with this question and provided vague, generic answers that did not reference any of the six communication styles referenced in the source readings. It was also important to reference BJT when answering the question. The communication styles introduced in the text are expressiveness, preciseness, verbal aggressiveness, questioning orientation, emotionality, and impression management.

Legal: possible litigation may result because of the layoffs. Precise communication will ensure no errant statements are then used later in a lawsuit. Verbal aggressiveness must be avoided to avoid any sense that BJT is being unsupportive or derogatory towards its employees. Despite good labor relations, one misstep when announcing the layoffs could lead to future trouble with its remaining employees.

Reputational: BJT should use expressiveness and preciseness – it should be thoughtful and unpretentious in its communication with employees. This will reflect well BJT’s reputation if the layoff decision is ever leaked externally. There should also be an element of impression management, where BJT is carefully choosing how it is communicating the message.

(f) Sketch a diagram of the first two levels for the internal announcement about the layoff using the Top-Down Approach from the Pyramid Principle.

Commentary on Question:
Many candidates struggled with this question. In particular, a common misunderstanding was that the Pyramid Principle provides a structure to make a piece of writing more clear and easily understood. It is not a decision making tool – the content of the pyramid should be the internal layoff memo and not the strategic decision of outsourcing/how to communicate the decision.

Candidates were awarded points for using the pyramid principle as described in the text, with a clear Subject, Question, Answer, Situation and Complication. Points were also provide for having relevant key lines and also actually sketching a diagram. One possible solution is provided below.
4. Continued

Subject (what the writer is discussing): Outsourcing of social media management and resulting layoffs
Question (what the reader wants to know): Am I affected by the layoffs?
Answer: Yes, employees of social media management will be laid off
Situation (non-controversial context that the reader will accept as fact): Social media management is being outsourced
Complication (arises from the situation): This will result in layoffs

Why?

Outsourcing of social media management and resulting layoffs

Core competencies were evaluated and social media management is not one

Outsourcing social media management to an external firm will make our brand stronger

This will make us more efficient as a company
5. Learning Objectives:
3. The candidate will understand the ERM processes that consider all types of risks and their use in setting a risk return strategy in any industry.

5. The candidate will understand the role that organizational behavior and communication play in organizational decision making and efficacy, as well as learn how to ineffective communication is a risk to organizations.

Learning Outcomes:
(3a) Identify and assess second-order risk factors:
- Explain the various types of risks that can arise from specific business activities but are not directly specific to the business itself.
- Critique the applicability and relevance of measurement and management techniques for these second-order risks.

(3b) Explain ERM principles and frameworks:
- Describe the components of a risk appetite statement. Design and develop a risk appetite statement and risk-return strategy.
- Evaluate a company’s ERM processes in its ability to adapt to emerging issues and identify strategic opportunities based on risk-return trade-off.
- Evaluate the sustainability of a given business enterprise based on its risk tolerances and appetite.
- Apply risk mitigation strategies in ERM decisions.

(5b) Evaluate the impact of human behavior factors on the effectiveness of decision making processes within organizations:
- Explain the role of cognitive biases on making suboptimal individual decisions.
- Evaluate the role of organizational behavior on organizational decision-making processes and efficacy.

Sources:
The xVA Challenge - Ch. 1-3 pg. 20

The xVA Challenge - Ch. 5.1.1-5.2.7, 6.2.1-6.2.9, 6.6.1-6.6.6,14.1.1-14.5.2, 17.1.1-17.4.7 pg. 78-79, 377-382

SDM-108-13 Chapters 2 and 3 of Liquidity Risk – Measurement and Management, Matz and Neu

Cognitive Biases that Screw Up Your Decisions
5. Continued

Commentary on Question:
This question asks the candidate to evaluate Big Ben Banks ERM strategies related to the LTPPF product. To receive full marks, the candidate is expected to demonstrate an understanding of various risk mitigation principles and how they generate second-order risk, with explicit reference to Big Ben Bank.

In general, this question was very well done.

Solution:
(a) Calculate the amount of collateral that can be called by Big Ben Bank. Show your work.

Commentary on Question:
This question was very well done. Most candidate received full or close to full credit. The final answer had to be rounded up to receive full credit.

\[ C = \max (\text{MTM} - \text{Threshold}, 0) - \text{MTM of Collateral Held} \]
\[ C = \max (500,000 - 75000, 0) - 250,000 \]
\[ C = 425,000 - 250,000 \]
\[ C = 175,000 \]

With rounding, the amount that can be called by Big Ben Bank is $200,000

(b)
(i) Describe three problems with the CSA agreement from Big Ben Bank’s perspective.

(ii) Recommend changes to the CSA agreement based on your answer in (i).

Commentary on Question:
This was a recall question which tested the candidates understanding of using collateral as a risk mitigation strategy. In addition to finding three problems with the CSA agreement, candidates needed to understand that using company shares as collateral introduces wrong-way risk.

In general, this question was very well done.

(i) **Wrong-way risk:** The value of the collateral is correlated to the credit quality of the counterparty. If ABC bank’s credit quality declines, the value of the collateral will fall.

**Quarterly timing:** Collateral is posted quarterly which is infrequent. Exposure can fluctuate between collateral calls.
5. Continued

**Threshold:** Presence of a threshold means some risk is uncollateralized. The threshold in this case is unusually high given the MTM amount.

(ii)
1. Collateral needs to be uncorrelated to ABC banks performance.
2. Implement more frequent collateral calls.
3. Threshold can be lowered.

(c) Evaluate each of the three strategies I to III based on Big Ben Banks business objectives and exposure to secondary risks.

**Commentary on Question:**
This question tests the candidates understanding of various risk mitigation strategies and how they generate second order risk. Candidates are expected to evaluate each strategy in terms of the impact on Big Ben Banks business objectives.

Three business objectives and how they relate to the risk mitigation strategies are included in the solution. Other considerations may be acceptable if they are specific to Big Ben Bank and is referenced in the case study.

Performance on this part of the question was poor. Candidates lost credit when they did not evaluate a strategy with specific reference to Big Ben Bank, or correctly make the connection to a business objective or secondary risk.

**Three business objectives are:**

1. Maintain a strong capital position
2. Expansion of client base
3. Build innovative new global platforms to enhance growth

I. **Withdrawal limit**
   a. **Capital Requirements:** Limiting the amount of withdrawals limits the risk of liquidating assets early, particularly in the event that interest rates have been lower than expected. This mitigation of policyholder behavior risk should decrease capital requirements. Additionally, limiting the amount of withdrawals for the first ten years increases the liability duration. However, this liability is backed by short-term assets as stated in the Case Study. Therefore, this increases interest rate risk and has a negative impact on capital requirements.
   b. **Clients:** This has a negative impact, because customers lose the freedom to withdraw their money. This potentially has a bigger impact on smaller clients who needs the liquidity but less impact for long-term investors. This goes against Big Ben Bank's goals of expanding their client base.
5. Continued

c. Platforms: This has a slight indirect negative impact, mostly due to customer dissatisfaction but no real negative impact as this does not directly affect this item.
d. Secondary Risks: Reduces liquidity risk and policyholder behavior risk.

II. Interest rate cap
a. Capital Requirements: This will have a negative impact. While capping the interest credited may seem like a benefit, this leads to additional policyholder behavior risk (additional unwanted withdrawals).
b. Clients: This has a direct negative impact and goes against Big Ben Bank's goals of attracting new customers.
c. Platforms: This has an immaterial impact.
d. Secondary Risks: Increases policyholder behavior risk and may increase liquidity risk

III. Fixed product through online distribution
a. Capital Requirements: This will have a negative impact. However, it is part of a normal business expansion and additional capital requirements are expected. The Case Study does state that minimum capital requirements are being revised so care needs to be taken in this regard. Additionally, fixed benefit products usually have long duration, which may be risky as banks typically invest in short term assets.
b. Clients: This has a positive impact and introducing a new product goes in line with Big Ben Bank's goal of expanding its customer base.
c. Platforms: This has a positive impact since this new fixed benefit product will be marketed through online channels. This will expand Big Ben's capabilities in this area and goes along with their goal of advancing their global platforms.
d. Secondary Risks: Increases cyber risk, operational risk, reduces market risk

(d) Recommend a strategy for Big Ben Bank to pursue based on your answer in part (c).

Commentary on Question:
Performance on this part of the question was poor. Many candidates did not provide appropriate justification for their recommendation. Candidates that recommended multiple strategies or created strategies of their own were not given any credit as the question asks the candidate to recommend one of the given strategies.
5. Continued

The recommendation is to go with strategy III.

By introducing a new product, strategy III aligns with Big Ben Banks business objectives of expanding their customer base. The other two options do not align with this objective.

Additionally, it also expands their global platform initiative by offering this new product through online distribution channels. The other two options do not align with this objective.

Capital requirements are likely to increase, which is risky, especially given the tightening regulations around capital. However, as with any new product launch, capital requirements are expected to increase, and this aligns with Big Ben Bank's growth plans. The other two strategies either indirectly increase interest rate risk (which raises capital requirements) or policyholder behavior risk (which raises capital requirements).

In terms of interest rate risk mitigation, fixed benefit products have long duration, which will prompt Big Ben Bank to invest in longer duration assets which can also potentially reduce interest rate risk on their other products.

(e) Identify the biases that your coworker exhibits. Justify your answer.

Commentary on Question:
This part of the question was very well done. Most candidates were able to correctly identify the biases that were exhibited.

Pro-Innovation Bias: Co-worker thinks that “Innovation is always the way to go”, even though this may not be the best strategy.

Survivorship Bias: Co-worker is biased towards company XYZ's success but does not consider all the companies that might have failed.

Recency Bias: Co-worker thinks that since company XYZ made a great profit recently (last year), this must work for Big Ben Bank.
6. **Learning Objectives:**
4. The candidate will understand how to apply decision making models to general managerial decisions within specified business constraints.

**Learning Outcomes:**
(4a) Apply fundamental techniques and frameworks of management science to make informed business decisions:
- Apply linear optimization models to managerial decisions.
- Develop decision trees, scenario tests, and simulation models.

(4b) Apply statistical and quantification methods to analyze managerial decisions with uncertain conditions:
- Apply probability distributions to business situations with random variables.

**Sources:**
Data, Models, and Decisions: The fundamentals of Management Science

**Commentary on Question:**
Candidates generally well on Part (a) and were able to achieve full marks.

**Solution:**
(a)
(i) Calculate the statutory required capital for this segment.

(ii) Calculate the statutory capital ratio (Statutory Equity / Required capital) for this segment. Statutory equity is 109,200.

**Commentary on Question:**
Candidates did well on this part.

(i)\[ C_{1o} = 21,809 \]
\[ C_{1cs} = 12,193 \]

Required Capital = \sqrt{(21809 + 9646)^2 + 12193^2 + 19292^2} = 38,862

(ii)
Capital ratio = \frac{109,200}{38,862} = 281\%
6. **Continued**

(b) State the objective function.

**Commentary on Question:**
Candidates did generally well on this part. Most candidates correctly identified the objective function. Full marks were awarded if objective function written out as formula and variables identified.

Four variables for the following asset classes: cash/treasuries, corporate bonds, high yield bonds and commercial mortgages

\[ A := \text{Cash/Treasuries}; \]
\[ B := \text{Corporate bonds}; \]
\[ C := \text{High yield bonds}; \]
\[ D := \text{Commercial mortgages} \]

Objective function: Maximize \( A \times 0.5\% + B \times 2.5\% + C \times 7\% + D \times 5\% \)

(c) State three constraint functions that would need to be considered by Darwin. Justify your answer.

**Commentary on Question:**
Most candidates were able to identify three constraints functions. Points were awarded for stating > 0; however, many of these same candidates did not use binding constraints, thus did not receive full marks as the constraints did not offer a valid modelling of the problem.

Possible solutions are below, but non exhaustive.

1. Maintain a minimum level of cash/treasuries for liquidity (case study did not list a specific level; however reasonable answers were accepted)
2. Potentially a minimum spread would need to be achieved as one of the key design choices of the NB portfolio is whether to offer 1\% or 2\% minimum crediting rate
3. Likely would have max allocation limit to high yield bonds/commercial mortgages given Darwin investment team probably doesn’t have the core competencies to source these in large quantity given their inexperience.
4. Overall portfolio rating for the fixed income piece should be below 3.5. (AAA=1, AA=2, A=3, BB=5)
5. Capital ratio should be above 250\%
6. Continued

(d) Determine a feasible solution along a boundary using two of the constraints identified in part (c) that produces a higher yield than the current portfolio. Justify your answer.

Commentary on Question:
Candidates generally did poorly on this section of the question. Most candidates choose constraint functions such as non-negativity and \(< 1,061,060\) thus making the entire quadrant a feasible region. Plotting was not required to achieve full marks; however, candidates were required to justify their answer.

Select two variables, one of which has to be corporate bonds since this is the asset class that Darwin is selling. The other has to be one of high yield bonds or commercial mortgages.

Then plot the non-negativity constraints. So for example: variable B:= corporate bonds \(> 0\); second variable C:= high yield bonds \(> 0\)

1) Rating below 3.5. constraint 1: \((0.1\times 1 + B \times 2 + C \times 5)/0.6 < 3.5\) (if second variable is high yield bond) or \((0.1\times 1 + B \times 2 + C \times 3)/0.6 < 3.5\) (if second variable is a commercial mortgage)
2) Maximum C1o capital charge. To meet a 250% capital ratio the capital charge cannot exceed 43,680. Using the formula provided in stem you can back into a maximum C1o charge of 27,598. So if corporates were being swapped for high yields the constraint would look as such \(1,061,060 \times (B \times 1.027\% + C \times 3.634\%) < 27,598\)

Then plot the constraints and determine feasible region.

1) \((B,C) = (0,(3.5\times 0.6-0.1)/5) = (0,0.4)\) and \(((3.5\times 0.6-0.1)/2,0) = (1,0)\);
2) \(B + C \leq 1\) since these are allocations.
3) The zeros for #2) would be \((B,C) = (0,(27,598/1,061,060)/3.634\%) = (0,0.72)\) and \(((27,598/1,061,060)/1.027\%,0) = (2.53,0)\)

Plotting these two lines the candidate would determine the feasible region is in the first quadrant below constraint 1. Implying the optimal solution is on line 1.
7. **Learning Objectives:**
1. The candidate will understand and apply strategic management concepts and frameworks to corporate financial and ERM business problems.

3. The candidate will understand the ERM processes that consider all types of risks and their use in setting a risk return strategy in any industry.

**Learning Outcomes:**

(1a) Evaluate and apply strategic management concepts, recognizing factors that affect development and implementation of strategies:
- Analyze the firm’s external environment and the internal organization.
- Describe and apply models such as Porter’s five forces.
- Define types of business-level strategies and recommend an appropriate business-level strategy for a given situation.
- Explain the impact of competitive dynamics on strategic management.

(3a) Identify and assess second-order risk factors:
- Explain the various types of risks that can arise from specific business activities but are not directly specific to the business itself.
- Critique the applicability and relevance of measurement and management techniques for these second-order risks.

**Sources:**
Supply Chain Risk Management: An Emerging Discipline – Ch. 13

When and When Not to Vertically Integrate

Strategic Management: Competitiveness and Globalization, Concepts – Ch. 9

**Commentary on Question:**
This question required candidates to evaluate different forms of joint ventures and vertical integration, as well as the potential risks of vertical market failure. While the basic calculation parts of the question were done well, candidates were generally not able to apply concepts to case study company Frenz.

**Solution:**

(a) Calculate the SPI for Luna Beans and Vida Coffee. Show your work.

**Commentary on Question:**
Most candidates received full marks on part (a).

\[
\text{SPI} = \frac{(\text{Cost of material} + \text{Nonconformance costs})}{\text{Cost of material}}
\]

SPI for Luna Beans = \((97,600,000 + 1,740,000 + 1,090,000) / (97,600,000)\)

SPI for Luna Beans = 102.9%
7. Continued

SPI for Vida Coffee = ($2,400,000 + $310,000 + $0)/($2,400,000)
SPI for Vida Coffee = 112.9%

(b) List two drawbacks of using SPI.

Commentary on Question:
Many candidates were able to identify at least one drawback.

1. Actual unit cost is not considered directly, only total value. Thus, a higher supplier unit cost will inflate the value of the beans compared with a supplier with lower unit cost, making infractions look smaller.

2. SPI will be biased against small volume suppliers, which will appear worse compared with larger suppliers.

(c) (i) Calculate an adjusted SPI using the Q adjustment factor. Show your work.

(ii) Interpret the adjusted SPI results.

Commentary on Question:
For part (i), candidates that were unable to calculate the Q adjustment factor correctly received partial credit as long as the factor was applied appropriately. For part (ii), candidates were generally able to interpret their results from part (i) appropriately.

Part (i)
Average delivery value from Luna Beans = $97,600,000 / 900 = $108,444
Average delivery value from Vida Coffee = $2,400,00 / 40 = $60,000
Average shipment from all suppliers = $205,400,000 / 2600 = $79,000

Q Adjustment factor for Luna Beans = $108,444 / $79,000 = 1.373
Q Adjustment factor for Vida Coffee = $60,000 / $79,000 = 0.759

Adjusted SPI for Luna Beans = ($97,600,000 + ($1,740,000 + $1,090,000)*1.373)/($97,600,000) = 104.0%
Adjusted SPI for Vida Coffee = ($2,400,000 + $310,000*0.759)/($2,400,000) = 109.8%
7. Continued

Part (ii)
The adjusted SPI for Luna Beans increased, and the adjusted SPI for Vida Coffee decreased. This means that previously, our calculated SPI of 103% for Luna Beans was favorably biased because of Luna’s relatively larger delivery value, and the additional cost of doing business with Luna Beans is actually closer to 4%. Vida Coffee had a relatively low delivery value, so the previously calculated additional cost was biased upwards. Based on the adjusted SPI, the additional cost of doing business with Vida Coffee is actually closer to 10%.

(d) Determine whether each of these four features are relevant for Frenz’s proposed Vietombia project. Justify your answer.

Commentary on Question:
Candidates had mixed responses on this question, partly due to a lack of understanding of the syllabus material. Candidates could receive credit for alternative answers as long as they were properly explained and supported by the case material. Simple “Yes” or “No” responses did not receive credit.

1. Low Number of Buyers and Sellers: Yes – there are very few areas that can produce these high quality beans.

2. High Asset Specificity: No – Switching costs do not appear prohibitive, and market research is showing that there are alternatives with comparable flavors that exist. There are also a high number of potential buyers in this market.

3. High Transaction Frequency: Yes – Frenz and other coffee bean purchasers will require frequent transactions with suppliers for their business.

4. Uncertainty, Banded Rationality, and Opportunism: No – there is nothing to suggest that contracts with super-premium coffee bean suppliers would be difficult to draw up.

(e)

(i) Identify which company is the best candidate for an alliance for Frenz to be able to offer the Vietombia Finca Palmilera. Justify your response.

(ii) Identify a type of corporate-level cooperative strategy that Frenz could pursue with the company selected in part (i). Explain how the proposed strategy would work.

(iii) Describe one advantage and one disadvantage of the strategy proposed in part (ii) over the strategy with the government of Vietombia outlined in the case study.
7. Continued

Commentary on Question:
For part (i), candidates generally did well and could receive full credit for either company as long as it was properly justified. The majority of candidates did poorly on part (ii), where many suggested generic types of strategic alliances instead of specifically identifying a corporate-level cooperative strategy. For part (iii), many candidates did well and were able to relate the strategy back to Frenz appropriately. However, a number of candidates did poorly if their identified advantage and disadvantage was not specifically unique to their identified strategy and applied equally to the strategy with the government of Vietombia.

Part (i)
Luna Beans is a better fit for an alliance with Frenz. Because they are already have much expertise in the coffee bean production market, they would be able to bring this knowledge to build and maintain a production facility in Vietombia. They are also already Frenz’s largest supplier, which means they already have a trustworthy working relationship with Frenz. On the other hand, King Coffee, which is relatively new and a company that Frenz has not worked with in the past, may be more likely to exhibit opportunistic behavior.

Part (ii)
Frenz can pursue a synergistic strategic alliance with Luna Beans. This alliance would help to create economies of scope as they share their resources, where Luna Beans could leverage their expertise in building and maintaining a production facility in Vietombia, and Frenz could assure that the produced product would be purchased.

Part (iii)
One advantage of this strategy is that Frenz would save on costs in building a production facility in Vietombia. This means that this deal would not materially affect the company’s leverage ratio or credit rating.

One disadvantage of this strategy is that Frenz will increase their exposure to supply chain risk, as they will now be increasing their reliance on Luna Beans, and control of production quality would also not be controlled by Frenz here.
8. **Learning Objectives:**

2. The candidate will understand measures or corporate value and their uses in corporate decision making.

5. The candidate will understand the role that organizational behavior and communication play in organizational decision making and efficacy, as well as learn how ineffective communication is a risk to organizations.

**Learning Outcomes:**

(2a) Assess various measures that firm can use to assess value and recommend appropriate measures to evaluate corporate value.

(2b) Assess how performance metrics and incentives could impact key business decisions and create value for shareholders:

- Explain how managerial accounting can impact strategic decisions.
- Explain and recommend methods a firm may use to allocate its costs and how these methods impact the perceived performance of a firm or its component lines of business.

(5b) Evaluate the impact of human behavior factors on the effectiveness of decision making processes within organizations:

- Explain the role of cognitive biases on making suboptimal individual decisions.
- Evaluate the role of organizational behavior on organizational decision-making processes and efficacy.

**Sources:**

Accounting for Decision Making 9th Edition, pg. 393-424 (Ch 9), pg. 575-591 (Ch 13)

Organizational Behavior - Ch. 11

**Commentary on Question:**

*This question intended to test the candidates’ understanding of how cost allocation and managerial accounting can impact business decisions, as well as how human behavior can impact such decisions.*

**Solution:**

(a) Determine whether the overhead account is under- or over-absorbed. Show your work.

**Commentary on Question:**

*This was a straight-forward calculation using syllabus material and figures from the case study. Candidates performed well on this part.*
8. Continued

Budgeted Rate = $2.5 million / 28,750 hours = $86.96 / hour

Over/underabsorbed overhead
= Actual Overhead Incurred – (Budgeted Rate x Standard Volume)
= $2.8 million – ($86.96 / hour x 33,500 hours) = – $113,000

Therefore, the overhead account is overabsorbed (actual < budgeted)

(b) Calculate the variance components (I to III) of the absorbed amount.

Commentary on Question:
It was determined that one of the figures required to calculate this answer was not provided. Grading of this question was adjusted to account for this as to ensure that no candidate was unfairly penalized.

AOH = Actual Overhead Cost Incurred = $2.8 million
FOH = Fixed Overhead Cost = $0
VOH = Variable Overhead per unit of Volume = $86.96 / hour
OHR = Overhead Rate = $86.96 / hour
SV = Standard Volume = 33,500 hours
AV = Actual Volume = 33,000 hours (Assumed)

Overhead Spending Variance
= AOH – (FOH + VOH x AV)
= $2.8 million – ($0 + $86.96 / hour x 33,000 hours)
= – $69,680

Overhead Efficiency Variance
= VOH x (AV – SV)
= $86.96 / hour x (33,000 hours – 33,500 hours)
= – $43,480

Overhead Volume Variance
= FOH + SV x (VOH – OHR)
= $0 + 33,500 hours x ($86.96 / hour – $86.96 / hour)
= $0

Overabsorbed overhead = – $69,680 – $43,480 = – $113,000

(c) Explain the change of each variance component, with respect to its favorability or unfavorability, after the re-allocation of $1.5 million to fixed expenses.

Positive variances are unfavorable, while negative variances are favorable.
8. Continued

Spending Variance is the difference between actually incurred vs should have incurred given actual volume. Spending Variance went from negative to positive, which means it was favorable before, but unfavorable now by a high magnitude.

Efficiency Variance is the difference between actual volume and standard volume. Efficiency Variance became less negative, which means it is now less favorable (but still favorable).

Volume Variance is the difference between the flexible budget at standard volume and overhead absorbed. Volume variance was even, and is now negative, which is highly favorable.

(d) Explain how Mulroney’s compensation influences her decision regarding the classification of the $1.5 million in expenses using the absorption costing system.

Commentary on Question:
Candidates performed very well for this section, making the connection between the structure of Mulroney’s compensation and the decision on how to allocate costs.

Under the absorption costing system, if all expenses are variable then there is no incentive for the factory to overproduce. However, if there is a fixed component to the overhead then the more tires produced, the smaller the unit cost per tire. A fixed component would incentivize the production of more tires and would therefore increase Mulroney’s compensation.

(e) Recommend one change to Mulroney’s compensation based your answer in parts (c) and (d). Justify your answer.

Commentary on Question:
Many answers could obtain full credit if they were well-explained and reasonably address the issue identified in part (d). Below is an example

Blue Jay Tire should charge managers for inventory holding costs, which means that managers are compensated based on residual income vs net income. This policy helps reduce the incentive to build inventory.

(f) Sketch the Decision Management Versus Decision Control model as it relates to the classification of the $1.5 million in expenses.
(g) Recommend a change to the decision-making process based on your answer in part (d).

**Commentary on Question:**
Candidates performed poorly in this section. Rather than focusing on the process referred to in the question, some candidates instead applied other formal decision-making process methodologies. Generic answers were also not awarded full marks.

The change suggested should either involve specifically separating decision and control, and/or moving both directly to the Blue Jay Tire level.
8. Continued

An RPPC executive (Mulroney) possesses influential power on both decision and control, which is a problem. The power of decision and control should be separated to avoid agency cost, and to increase the robustness of risk management. The power should also reside in the Blue Jay Tire level, as the RPPC executive may be too removed from the process to make small expense classification decisions.
9. **Learning Objectives:**

1. The candidate will understand and apply strategic management concepts and frameworks to corporate financial and ERM business problems.

5. The candidate will understand the role that organizational behavior and communication play in organizational decision making and efficacy, as well as learn how to ineffective communication is a risk to organizations.

**Learning Outcomes:**

(1a) Evaluate and apply strategic management concepts, recognizing factors that affect development and implementation of strategies:

- Analyze the firm’s external environment and the internal organization.
- Describe and apply models such as Porter’s five forces.
- Define types of business-level strategies and recommend an appropriate business-level strategy for a given situation.
- Explain the impact of competitive dynamics on strategic management.

(5b) Evaluate the impact of human behavior factors on the effectiveness of decision making processes within organizations:

- Explain the role of cognitive biases on making suboptimal individual decisions.
- Evaluate the role of organizational behavior on organizational decision-making processes and efficacy.

**Sources:**

Strategic Management - Ch. 4

Strategic Management - Ch. 2

Cognitive Biases that Screw Up Your Decisions

Organizational Behavior - Ch. 11

**Commentary on Question:**

*Commentary listed underneath question component.*

**Solution:**

(a) Identify the business-level strategy for each of the following opportunities being considered by Darwin. Justify your answers.

(i) Development of a digital distribution platform

(ii) Organic growth generated by the innovation program
Commentary on Question:
This question tests candidates’ understanding of the different types of business strategies. Overall, candidates did well on this question. To receive maximum points, candidates need to explain thoroughly on the aspects of the strategy that correspond to the type of strategy identified.

The development of a digital distribution platform is an Integrated Cost/Differentiation Strategy:
• Target millennials whom Brandon found were particularly disengaged in traditional channels
• There is opportunity for product differentiation and tap in to new market
• Potentially lower costs from incorporating new technology; traditional distribution channels are costly

The organic innovation program is a Cost Leadership Strategy
• Having low cost position is important when competing with rivals.
• Increase probability that consumers prefer its product that rivals’.

(b) Explain how the adoption of each of the two strategies described in part (a) would change Darwin’s competitive position among other life insurance companies with respect to the following three aspects of the Five Forces of Competition Model.

(i) Threat of new entrants
(ii) Bargaining power of buyers
(iii) Rivalry among competitors

Commentary on Question:
The candidate is expected to make a conclusion about the three selected Porter’s Five forces before discussing how new strategy changes the business. To receive maximum points for this sub-question, candidates should note Darwin’s existing state in the insurance industry and then discuss how the two strategies would change the current situation.

Overall, candidates have exhibited good understanding of Porter’s Five Forces. Most candidates discussed the impact of each strategy without reference to Darwin’s existing state in the insurance industry to show some understanding of the current situation. A lot of candidates had trouble with the impact of the Cost Reduction strategy on buyer’s bargaining power.
9. Continued

Relative to its peer group, Darwin has had a lower operating income margin and a lower net income margin, a higher investment yield, a higher expense ratio, higher growth in life insurance in force, higher growth in equity, and average mortality and persistency.
• The growth in customer base from targeting the middle to upper income individuals and building strong relationships with the agency and institutional distribution channels.
• It has not pursued a first to market strategy but has developed competency to be a fast follower and replicate new product designs in the market.
• The higher expense ratio is due to time constraints and lack of expertise in some cutting-edge product areas which resulted in less than effective back end operations, including risk mitigation and management, operational monitoring, and reporting.

Overall, Darwin has been competing actively in a niche market through a passive follower strategy that is supported by strong relationship with agents and institutional distribution channels.

1) Threat of new entrants: Due to the “follower” nature of Darwin’s strategy, it faces high threat of new entrants.
• Digital distribution platform: Competition using digital distribution is going to become fiercer in the future, where technology can be disruptive in the insurance industry. As digital distribution gains momentum, the access to distribution becomes easier compared to traditional insurance distribution, making new entrance to insurance industry easier. If Darwin does not invest in the process and infrastructure front now, it will lack behind new entrants who compete on cutting-edge technology.
• Cost reduction strategy: Competing on costs of product could increase the barrier to entry, as new entrants may not have the same economies of scale to be able to compete with the same cost advantages.

2) Bargaining power of buyers
• Digital distribution platform: Buyer power increases as customers will now have easier access to greater amounts of information on Darwin and competitors.
• Cost reduction strategy: No change. The price is lowering.

3) Rivalry among competitors: There are a large number of competitors in the market. The ability to reach and retain customers is key as switching costs are low.
• Digital distribution platform: Improves Darwin's position as digital platforms push products to potential customers and provide ease of switching to Darwin.
• Cost reduction strategy: Lowering the price to spur organic growth may will improve retention and make Darwin less reliant on new sales, improving its position.
Overall, Darwin’s position in potential substitution is highly dependent on its ability for innovation, whether it is in current market or in the future technology-driven market. This leads to the most important force that affects Darwin’s competition: Industry Rivalry.

(c) Identify one bias exhibited in each of the three stakeholders’ opinions above. Justify your answer.

**Commentary on Question:**
*This question is directly linked to the cognitive biases introduced in the study syllabus. Overall, candidates did well on this question. In a lot of instances, candidates had the correct explanation but not referring to the bias as introduced in the syllabus; in such cases, partial points are given.*

**VP Distributions** – conservatism bias, where people favor prior evident over new evidence or information that has emerged.

**VP Insurance Product Development** – overconfidence, some of us are too confident about our abilities

**VP Business Strategy** – pro-innovation bias, when a proponent of an innovation tends to overvalue its usefulness and undervalue its limitations. There is little argument around whether the technology works equally well in the life insurance industry. Bandwagon bias is also an appropriate answer to this question, since the comment demonstrates groupthink tendency.

(d) Identify the task role that each member is playing within the senior management team in the context of providing assistance to select the business strategy based on the opinions given above. Justify your answer.

**Commentary on Question:**
*This question is directly linked to the task roles introduced in the study syllabus. Overall, candidates did poorly on this question. Only a handful few candidates demonstrated some focus in studying the task roles from the study syllabus.*

**VP Distributions** – Opinion giver, concern with feelings/relationships with traditional network. Offers opinion on strategy.

**VP Product Development** – Initiator/Contributor, suggests new ideas, solutions, or ways to approach the problem

**VP Business Strategy** – Elaborator, gives additional information, such as rephrased ideas and concrete examples. Partial points also given for “information giver”.