

CFE SDM Model Solutions

Spring 2017

1. Learning Objectives:

2. The candidate will be able to identify the presence of liquidity & counterparty credit risk, and critique approaches to measure and manage these risks

Learning Outcomes:

- (2a) Identify counterparty credit and liquidity risks concepts that arise from specific business activities.
- (2b) Assess the critical nature of the counterparty credit risk exposure and the specific situations where liquidity risk exposure also becomes critical.
- (2c) Critique the applicability and relevance of various counterparty credit and liquidity measurement and management techniques, as well as the associated impacts.

Sources:

Managing CVA (Gregory chapter 18)

Commentary on Question:

This was designed to be a simple initial question and most candidates managed to answer the questions fairly well.

Solution:

- (a) Describe the risks for Cheery and the investment bank under this contract.

Commentary on Question:

Candidates needed to identify the risk exposures of this contract with a short description: weather risk and counterparty risk.

For Cheery, the weather risk of the contract offsets the weather risk of their business. Weather risk is a new risk for the investment bank.

Counterparty risk is relevant to both.

- (b) Quantify the impact on the risk exposures for each party due to this new forecast.

Commentary on Question:

Many candidates did not attempt a quantification and therefore received few points.

1. Continued

Expected average temperature over the month is now $\frac{1}{4} \times 90 + \frac{3}{4} \times 80 = 82.5$.
This maps to a 2.5M mark to market gain in terms of weather/ market risk.
This maps to a 2.5M increase of credit risk to the bank.

- (c) Recommend two alternatives for Cheery to manage its weather risk. Justify your recommendations.

Commentary on Question:

The hope was that the candidates explore options of product and geographic diversification, based on the risk inherent in the business. A few candidates proposed scenarios that would defeat the objective of the company such as closing the business. Such scenarios received fewer marks.

Cheery can diversify its product offering to accommodate cold weather products (hot chocolate would be one example); Cheery can also diversify by geography either within the country or internationally where the weather is either always hot or negatively correlated to Cheery's weather exposure. Some of these ideas will introduce new risks (for example currency risk if Cheery pursues international diversification).

- (d) Propose how both parties could reduce their credit risk exposure created by this contract. Justify your answer.

Commentary on Question:

Most candidates understood the need for collateral but few noted CDS as a potential tool.

Reduce credit risk via posting of collateral by both parties. Could do another third party transaction (CDS) - transfer credit risk to someone else e.g. use of clearing house as central clearing of credit risk.

- (e) Evaluate whether this contract creates wrong way risk or right way risk from both parties' perspectives. Justify your answer.

Commentary on Question:

Most of the candidates understood the notion of right way risk but some confused which party benefits from it (i.e., the bank benefits from Cheery's right way risk).

Wrong way risk is contemplated in respect of market/credit risk.

There is Right Way risk for the bank as Cheery owes money then temperatures drop. For Cheery there is no Right or Wrong Way Risk under the assumption that the bank has a broadly diversified business with a modest exposure to weather.

1. Continued

- (f) Propose an additional derivative contract that the investment bank could enter into that would reduce its risk exposure to weather risk. Justify your answer.

Commentary on Question:

Most candidates explored the implementation of a similar transaction with another client with the opposite exposure. A few discussed put options or different forms of securitization.

They could enter into a contract with a hot chocolate vendor. Hot chocolate vendor would pay bank when weather is cold and its business is doing well.

- (g) Critique the risk profile of the investment bank if it enters into both the contract with Cheery and the proposed contract in part (f).

Commentary on Question:

Most candidates earned partial credit here. Those that commented on both weather and counterparty received the most marks.

The two contracts could reduce or ideally eliminate first order market risk (temperature/weather). However, this would introduce more credit risk which could be mitigated via collateral posting. They may not eliminate credit risk for investment bank's exposure to Cheery & to the other party.

If collateral is used, there would also be residual liquidity risk when either side needs to post collateral.

2. Learning Objectives:

4. The candidate will understand organizational behavioral concepts and apply strategic management frameworks to corporate financial and ERM business problems.
5. The candidate will understand the decision making process and the lessons learned from the risk taking activities and experiences of other organizations. In particular, the candidate will be able to apply the learning objectives of all the prior sections of the syllabus to the risk management principles embodied within the case studies explored in this section.

Learning Outcomes:

- (4b) Evaluate and apply the concepts of strategic management, recognizing the factors that affect the development and implementation of strategies.
- Demonstrate the importance of analyzing the firm's external environment and the internal organization.
 - 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.
- (4c) Use organizational behavior and strategic management concepts to evaluate and recommend corporate financial and ERM decisions.
- (5a) Critique financial models, assumptions and decisions including the impact of behavioral finance concepts.
- (5c) Assess the risk of the status quo alongside any other risky and or risk management decision.

Sources:

SDM-138-14 When and When Not to Vertically Integrate

SDM-244-13 Strategic Management - Ch 1

SDM-247-13 Strategic Management - Ch 4

SDM-315-14 Strategic Management - Ch 6

SDM-600-17 Case Study

Commentary on Question:

Commentary listed underneath question component.

2. Continued

Solution:

- (a) Identify two benefits and two drawbacks of vertical integration.

Commentary on Question:

Most candidates scored well on this retrieval question.

Acceptable answers include the following (however, there are more):

Benefits

- Vertical integration would benefit a company given existence of vertical market failure (i.e. a risky or unreliable market. Indicators of a risky market include a small number of buyers and sellers, high asset specificity, frequent transactions)
- Acquire additional economic surplus from companies in other stages of the industry chain that have more market power or have abnormally high returns (i.e. indicating an industry that is attractive to enter into)
- Create or exploit market power by raising barriers to entry, or to further price discriminate e.g. by forward integrating into price-sensitive segments.
- Integrate to further develop a young market
- Increase control of other stages of the industry chain for a variety of reasons including decreasing supply uncertainty, protecting ideas and property rights to limit the threat of opportunism.

Drawbacks

- Mistaken belief that knowledge within one stage of an industry chain transfers easily to another adjacent stage and confers cost-savings benefits that make vertical integration an attractive option all else equal.
- Easily imitated strategy whose economic benefits are short-lived at best.
- Requires tremendous amount of initial capital to execute.
- “Synergistic” benefits often do not materialize in wake of integration due to unforeseen complexities and difficulties of merging two companies.
- There may be little value to gain if markets in the adjacent industry chain are efficient, indicating fairly priced outputs.
- Risk of ruin is potentially amplified due to usually positively correlated macroeconomic factors.

- (b) Evaluate whether the current airline industry conditions outlined in the Case Study would support BJA’s vertical integration, based on the above four factors (I to IV). Justify your answers.

2. Continued

Commentary on Question:

Many candidates' responses failed to provide sufficient examples from the Case Study and/or failed to understand the common spurious reasons for vertical integration (i.e. guarantee supply, capture more value).

Guarantee Supply:

- Industry conditions do not justify vertical integration. Given that both Xolar and Skylite are in close competition and have experienced recent losses, BJA can expect efficient market prices for airplanes through simple bilateral trading.
- Alternatively, candidates may argue that the risk of one supplier (Xolar or Skylite) exiting the market (a possibility given both are struggling) may increase the power of the other in some future scenario, supporting vertical integration.

Capture More Value:

- Industry conditions do not justify vertical integration. The unprofitability of Skylite and Xolar in the prior year indicates limited economic surplus.

Infrequent Large Transactions:

- Airplanes are purchased infrequently, so vertical integration would not benefit BJA from reducing costs of trading.

Number of Buyers and Sellers:

- There are very few number of sellers of aircraft (only two: Xolar and Skylite), supporting vertical integration to protect against the possibility of vertical market failure.

- (c) Evaluate how BJA's vertical integration would align with four of BJA's key long term objectives. Justify your answers.

Commentary on Question:

Most candidates erroneously conflated the benefits of vertical integration with the benefits of purchasing state of the art airplanes, which could be achieved through other means. The question required candidates to evaluate the impact of vertical integration relative to its existing strategy of bilateral trading. In many cases, vertical integration harms BJA, and provides no unique benefits outside of simple bilateral trading.

2. Continued

Objective of increased safety, comfort, punctuality and focus on the customer:

BJA owning BJT, which has had safety recall problems in the past makes BJA especially sensitive to safety concerns. Both aircraft manufacturers have had well published accidents in the past, which could hurt BJA's reputation and safety image by association. Vertical integration does not align with this objective.

Objective of maintaining a BBB credit rating or higher:

Acquisition financing could hurt BJA's crediting rating, critical to its operations. Vertical integration does not align with this objective.

Objective of expanding to international markets:

BJA can just as easily or more cheaply contract or partner with a manufacturer to build planes that fly internationally and cater to business travelers. Vertical integration does not align with this objective.

Objective of controlling costs to remain competitive:

A large part of BJA's ability to keep costs under control stems from its un-unionized labor force. Vertical integration with another company whose labor force may be unionized may increase the risk that BJA's labor force unionizes. Does not align.

Consider BJA's financial position.

- (d) Describe two significant concerns that BJA would face post vertical integration. Justify your answer.

Commentary on Question:

The two most important financial concerns for BJA are to maintain its credit rating that BJA needs to remain operational, and the limited diversification benefit from vertical integration. A few candidates mentioned operational or "corporate culture" concerns, which were awarded no credit since they were not directly financial concerns.

Credit rating (a key point): BJA purchasing with cash or debt could lower credit rating below BBB-, which would jeopardize BJA's ability to remain operational, as BJA needs the ability to raise and service debt.

Impact of method of financing purchase: BJA does not have enough cash to purchase an aircraft manufacturer outright and would need to BJT or raise debt. Either will weaken BJA's position, and may require RPPC parental guarantees.

Impact on balance sheet: the purchase may reduce BJA cash level, increase debt liability or reduce other asset positions. The balance sheets of both companies will become commingled.

2. Continued

Interest rate sensitivity: If the purchase is financed through debt, then BJA will be more sensitive to interest rate fluctuations.

Diversification benefit (a key point): BJA will not achieve a large diversification benefit since both industries are affected by similar macroeconomic trends.

Drag on future net income: Both Xolar and Skylite have been unprofitable in recent years.

Profits: Despite rosy forecasts from Rebecca, future profits for either Xolar or Skylite are uncertain.

Economic surplus/return on investment: Achieving an acceptance return on investment will be difficult given the size of the investment as well as the recent poor performance of each aircraft manufacturer.

Expense savings: BJA may be able to realize some benefit through shared knowledge, “synergies”, maintenance savings; however, this is uncertain.

Assume BJA has decided to proceed with quasi-integration.

- (e) Recommend the type of quasi-integration strategy that Blue Jay Air should proceed with based on your assessments in parts (b), (c) and (d). Justify your recommendation.

Commentary on Question:

Most candidates provided an acceptable answer.

Joint venture of strategic alliance: this strategy allows BJA to minimize trade conflicts, and can potentially leverage the companies of the aircraft manufacturer without the substantial cost of a full vertical integration.

Asset ownership: BJA can also purchase manufacturing facilities and subcontract out the facilities to limit opportunism by the aircraft manufacturer.

Licensing is not an acceptable answer because specialized assets are required and copying new aircraft designs and features are relatively easy.

2. Continued

- (f) Assess how the integration impacts BJA's market position with respect to:
- (i) Business level strategy
 - (ii) Corporate level strategy
 - (iii) Competitive position according to the Industrial Organization Model
 - (iv) Any one of BJA's core competencies

Commentary on Question:

The question is ambiguous – can refer to either a quasi-integration or a vertical integration strategy. Justified answers were acceptable in either case and credits were given to either assumed integration strategy. However, the justifications need to align with the assumed integration strategy. A model solution assuming “vertical integration” is provided below.

Business level strategy:

- Under either predominant business level strategy – either cost leadership or differentiation, vertical integration harms BJA's market position. Given Xolar and Skylite are in efficient competition with one another, BJA should be able to purchase airplanes at a fair market price. Acquiring either manufacturer to purchase aircraft at an artificial below-market price creates no economic value and does not allow BJA to pass on lower costs to customers. Other the other hand, vertical integration does not help BJA offer more differentiated products (airplanes) as BJA can just as easily purchase unique airplanes from an external vendor.

Corporate level strategy:

- Since both aircraft manufacturers and airlines are affected by similar economic trends, diversification benefits are limited. There is low operational diversity and low corporate (as in core competencies) diversity between aircraft manufacturers and airline companies.

Competitive position according to the Industrial Organization Model:

- Vertical integration is unlikely to raise barriers to entry as other airlines can easily source airplanes from other manufacturers.
- The market attractiveness of the aircraft manufacturing industry is low at best, given Xolar and Skylite's recent losses.

2. Continued

Core competencies:

- Although acquiring an aircraft manufacturer is potentially valuable, rare, and costly to imitate, this strategy is substitutable – other airlines can purchase aircraft simply through bilateral trading with another aircraft manufacturer.

- (g) Evaluate if the integration increases Blue Jay Air's potential to earn above-average returns. Justify your answer.

Commentary on Question:

Many candidates failed to provide a cohesive response that brings together responses from previous question parts. A subset of candidates conflated a vertical or quasi-integration strategy as a core competency and incorrectly applied the 4 criteria (rare? valuable? substitutable? costly to imitate?) for a sustainable competitive advantage to the act of vertical/quasi-integration. A sample answer is provided below assuming “vertical integration”.

Vertical integration is unlikely to enhance BJA's ability to earn above average returns. As stated in part f, BJA can easily engage in actions that align with its long-term objectives through bi-lateral trading that do not require vertical integration. The drawbacks of vertical integration for BJA are also numerous including the high initial cost of financing an acquisition that BJA cannot afford, the dubious benefits of integrating into an unattractive market, and the uncertain benefits coming from merging two corporate cultures that may jeopardize BJA's core competencies of keeping costs low.

3. Learning Objectives:

1. The candidate will understand measures of corporate value and their uses in risk management.
3. The candidate will understand best practices for ERM processes and Capital Management and their use in setting a risk-return strategy in any industry.
5. The candidate will understand the decision making process and the lessons learned from the risk taking activities and experiences of other organizations. In particular, the candidate will be able to apply the learning objectives of all the prior sections of the syllabus to the risk management principles embodied within the case studies explored in this section.

Learning Outcomes:

- (1b) Explain how economic capital and related concepts can be used as the building block of value measure in any industry.
- (3a) Explain ERM principles and frameworks.
 - Evaluate a company's ERM processes in its ability to adapt to emerging issues and identify risk opportunities.
 - Critique the direction of new regulation and industry standards in risk governance.
 - Describe the components of a risk appetite statement. Design and develop a risk appetite statement and risk return strategy.
- (3b) Explain ERM and capital management concepts to evaluate and recommend corporate financial and ERM decisions.
 - Apply capital allocation models to a multi-line organization.
 - Compare and contrast various ERM and Capital Management frameworks as to their ability to assess value and articulate the risk-return strategy of an organization.
 - Evaluate the value-added for an organization by jointly evaluating risk measurement and capital allocation.
 - Assess how an ERM process can improve capital efficiency and articulate the risk-return strategy.
- (5b) Evaluate the robustness and flexibility of the risk management framework and recommend approaches for continual improvement in the framework and processes.

3. Continued

Sources:

The Failure of Risk Management

Case Study

Berkshire Hathaway Case Study

Strategic Management 11th ed Ch. 1

Commentary on Question:

Many questions asked for justification of a response. Justification was achieved if a candidate gave one or two well-reasoned judgements for the recommendation or response that they made. A response without justification was not given full credit.

Solution:

- (a) Describe how the insurance risk of the Renewable Energy Insurance Business differs from Blue Ocean's existing insurance risks.

Commentary on Question:

Candidates had trouble discerning the very different risk that the Guarantee Energy Price business brought to Blue Ocean. Full marks were not given unless a candidate gave some detail on the one sided risk of the Guarantee Energy Price business and how it is fundamentally different from traditional P&C business lines.

The Renewable Energy Insurance Business has two features that a policyholder can opt into:

- 1) Insurance on the "Production Level" of the Renewable Energy Technology (sun, water, wind)
- 2) Insurance on the "Price Per Unit" of energy generated

The Insurance Risk associated with the Production Level feature is similar to traditional Property and Casualty Insurance Risks. Production will have an expected level and will variate around that expectation due to weather and mechanical failures. The more policies that are sold the more pooling of risk there can be which is very similar to the current Marine, Pet, and Travel insurance products Blue Ocean sells. It should be noted that there is still some limitation to risk pooling to the extent that certain underlying risk drivers are common across all contracts (e.g., amount of sunshine).

3. Continued

The Insurance Risk associated with Price Per Unit protection is quite different from the current Blue Ocean product suite. This is a guarantee on a market factor similar to a Variable Annuity or UL policy with Secondary Guarantee. This risk is one sided in that it will affect all policies at the same time and cannot be managed with additional pooling of risk.

- (b) Identify the risk management capabilities that Blue Ocean needs in order to manage the Renewable Energy Insurance Business. Justify your answer.

Commentary on Question:

Responses that were specific to the additional capabilities needed for the Renewable Energy Business were awarded points. Some candidates gave generic information about risk management capabilities that would be good practice to manage any business. These comments were not given credit.

Blue Ocean is unlikely to have the modelling capabilities that capture the risk of the Guarantee Energy Price business. From a risk management perspective, it would need to build a stochastic model that can capture the tail risk associated with this new business. This model is also needed to determine how much risk is tolerable within the company appetite.

Once they determine their tolerance for risk on the Renewable Energy product, Blue Ocean needs to develop a method to ensure it can transfer unwanted risk from its portfolio. A risk management capability that Blue Ocean needs is a hedging program to limit the risk that the Renewable Energy product has to market factors.

- (c) Recommend an RPPC subsidiary for Blue Ocean to partner with to build the required capabilities needed to manage the risk of the Renewable Energy Insurance Business. Justify your answer.

Commentary on Question:

Darwin Insurance is the most suitable candidate given their Variable Annuity and UL Secondary guarantee experience. Part marks were given for a well justified response to recommending Big Ben bank given their experience with derivatives. However, the case study does not describe why Big Ben bank uses derivatives, furthermore Big Ben's expertise is in wealth management which is not the same risk profile that Blue Ocean is entering.

Other companies were not given credit.

3. Continued

Blue Ocean should look to partner with Darwin Insurance for the management of the Renewable Energy Insurance (REI) product. Darwin insurance sells products with one sided tail risk through their Variable Annuities and UL with secondary guarantee products, and has the risk management infrastructure to model and hedge this risk. This is the risk that Blue Ocean does not have experience with and could partner with Darwin management to obtain expertise with this one-sided risk.

However, Blue Ocean may not reinsure the guarantee risk to Darwin as Darwin is a life company and cannot reinsure “property” risks. In addition, Blue Ocean and Darwin are regulated by different regulatory bodies which may have further regulatory restrictions. Other means of partnership should be considered.

- (d) Describe the impact to income and capital under each stress scenario for each product offering. Justify your answer.

Commentary on Question:

The stress scenarios were interpreted two ways, an increase in rates could be interpreted as increased prices in the market for energy or an increase in the production of energy. Both interpretations were marked and could be allotted full credit.

Candidates erred in thinking that the rates would have any effect on the production of energy. Solar panels, wind turbines, and hydro turbines are always working unless broken and would not be turned off simply due to rates.

Full credit was not given unless a candidate commented on the which of the products might sell more or fewer policies under the scenarios and how that would impact capital and income.

Guaranteed Energy Production:

The effect of the increase or decrease in prices of energy should have relatively low impact on the income or capital levels of the guaranteed energy production. This product is similar to traditional Property and Casualty insurance.

Guaranteed Energy Rate:

Scenario I: The high energy rate scenario would see income for Blue Ocean rise for this product as rates will be above the guaranteed price meaning Blue Ocean will not have to pay claims and will see rising profits in the first 5 years.

3. Continued

With higher energy rates it is likely more customers will see the value of locking in a guaranteed price so the take up of this product will increase.

With higher rates as policies renew their guaranteed rate level will rise and by the end of the 5 years income levels will have stabilized. However, with higher guaranteed rates the downside risk for Blue Ocean increases substantially.

This means that a higher level of capital would be required by Blue Ocean to ensure they can absorb a drop in energy rates which would trigger many claims. When rates fall almost all policies make a claim giving significant tail risk.

In this scenario more customers will be signing up in the first 5 years than expected and this will only increase the level of required capital needed to offset the downside risk.

In the last two years of the scenario as rates drop, claims will increase and this will cause a drop in income (likely below \$0) for Blue Ocean. The additional capital held in the first 5 years will be depleted, but given the drop in rates the downside risk will now disappear so capital won't need to be replenished to the original levels.

Scenario II:

In scenario II the low energy rates will see lower or negative income in the first few years due to higher claims being paid out. As rates decrease the take up of this product will also decrease as customers will not be keen to lock in a lower rate and hope to profit from rates rising in the future. Income will therefore stabilize as new customers who do opt for this product will have a lower guaranteed rate and claims will decrease. As rates rise in the last two years the income for this product will also increase as claims decrease.

Given the low energy rates the impact of rates falling farther is decreased. Therefore required capital to insure the downside risk of the product is lower under scenario II. As rates start to rise the required capital will need to follow suit as the downside risk will increase.

3. Continued

Policy with Both Options:

The income and capital for policies that insure both their rates and will follow that of the Guaranteed Energy rate product.

Scenario I

After a few years of high energy rates customers will be keen to lock in their rate and production so sales of this product would be anticipated to increase. This will mean that the capital needed to offset the downside risk of the Guaranteed energy rate will also increase.

Scenario II

Low energy rates would likely see a decline in the take up of this product option. The income and capital effect will follow the same pattern as the Guaranteed Energy rate product.

- (e) Describe two characteristics of property and casualty insurance that are priorities for Berkshire Hathaway.

Commentary on Question:

This question was answered very well by candidates.

There are other acceptable answers that candidates provided that received full credit.

Property and casualty insurance has the business model that premiums are paid up front and claims are paid later. This allows the company to hold those premiums until they are needed to pay claims. This generates a large amount of 'Float' or reserves for the insurer that can be invested to earn returns for the insurance company.

Berkshire also likes that P&C business is usually annually renewable allowing for quick repricing to capture changes in the underlying risks being insured, ensuring a stable float.

3. Continued

- (f) Evaluate whether Renewable Energy Insurance aligns with Berkshire Hathaway's priorities. Justify your answer.

Berkshire Hathaway wants to earn stable investment returns on the assets that back float and have a stable loss distribution. The Renewable Energy Business does not generate a large amount of float. This is a capital intensive business; it has a low reserve amount but needs a large amount of capital to prevent against downside risk. Large capital amounts can earn investment income, but do not carry the same fundamentals of investment earnings on float. Capital is owned and returned to shareholders.

Therefore, the Renewable Energy Insurance business does not align with Berkshire Hathaway's priorities.

4. Learning Objectives:

1. The candidate will understand measures of corporate value and their uses in risk management.
3. The candidate will understand best practices for ERM processes and Capital Management and their use in setting a risk-return strategy in any industry.
5. The candidate will understand the decision making process and the lessons learned from the risk taking activities and experiences of other organizations. In particular, the candidate will be able to apply the learning objectives of all the prior sections of the syllabus to the risk management principles embodied within the case studies explored in this section.

Learning Outcomes:

- (1b) Explain how economic capital and related concepts can be used as the building block of value measure in any industry.
- (3b) Explain ERM and capital management concepts to evaluate and recommend corporate financial and ERM decisions.
 - Apply capital allocation models to a multi-line organization.
 - Compare and contrast various ERM and Capital Management frameworks as to their ability to assess value and articulate the risk-return strategy of an organization.
 - Evaluate the value-added for an organization by jointly evaluating risk measurement and capital allocation.
 - Assess how an ERM process can improve capital efficiency and articulate the risk-return strategy.
- (5b) Evaluate the robustness and flexibility of the risk management framework and recommend approaches for continual improvement in the framework and processes.

Sources:

SDM-600-17 Case Study

SDM-133-14 Solvency II: Rainmakers and the Elements of Risk

SDM-151-17 Global Insurance Capital Standards: Origin, Perspectives and Impact on US Markets

SDM-314-14: Risk Appetite: Linkage with Strategic Planning

Commentary on Question:

Commentary listed underneath question component.

4. Continued

Solution:

(a) Describe how Darwin is exposed to each of the following three risks:

- (i) Market
- (ii) Liquidity
- (iii) Operational

Commentary on Question:

Candidates generally met expectations but did not exceed expectations on part (a). Candidates were expected to provide a thorough response with multiple references to evidence from the case study. On average Candidates, provided 1-2 examples per risk class from the case study but did not provide a deeper assessment of Darwin's risks. Direct copy from the case study isn't sufficient to get full points, candidates should always refer to the case study and then make a comments on the reference as to how the evidence from the case study relates to the question asked.

Market Risk:

Darwin has a significant inforce block of UL and high cash value traditional life products. UL products are exposed to interest rate spread risks due to the potential lag between the changes in investment income and crediting rate adjustments.

Traditional life products have implicit interest rate guarantees built into the pricing assumptions. The company might be exposed to interest rate risk if the actual investment income is lower than assumed in pricing. The level of interest rate risk increases for the products offering high cash value.

Even though Darwin has separate investment portfolios for each of the main product lines and tries to minimize the asset/liability duration gap, the portfolios are only rebalanced semi-annually. The residual interest rate risk to Darwin from these products might still cause unexpected losses.

Although the case study didn't mention what type of guarantees and underlying funds are available for its VA products, with a semi-static hedge program updated for market factors weekly and for in force changes monthly, Darwin is still likely to be exposed to market risks.

4. Continued

Liquidity Risk:

Majority of Darwin's products are savings/investment type products with features that allow the policyholders to take out all or at least majority of their premiums/deposits with some or no penalties. A reputational risk event to Darwin, or a sharp increase in rates leading to better investment opportunities elsewhere, could potentially cause large withdrawals from policyholders and surrenders on its high cash value products (similar to run on the bank). The stickiness of the cash outflows decreases as the policies age with decreasing withdrawal/surrender charges.

Majority of the assets in the general accounts are fixed income assets with longer durations in order to match the liability durations. Darwin might not be able to sell or otherwise convert its assets into liquid funds to meet its liability obligations, without having to suffer significant haircuts to the fair value of those assets under a crisis.

Operational Risk:

Operational risk is the risk of loss, whether direct or indirect, to which a company is exposed due to external events, human error, or the inadequacy or failure of processes, procedures, systems or controls. Operational risk includes legal risk, but excludes strategic risk and reputational risk. Every company is exposed to operational risks to a certain extent. In general, insurance companies collect and have access to private customer data including medical information, hence protection of customer privacy is of high concern. Insurance companies also have potentially high exposure to internal and external fraud, hence comprehensive internal controls and other mitigation actions are necessary to keep the residual operational risk low.

Darwin offers relatively more complex products like UL and VA. These involve more complex administration and illustration systems, and management of multiple investment accounts that are more exposed to the risk of system failure and errors. These more investment focused products might also have higher exposure to legislations on anti-money laundering. The sales, administrations and claims adjudication processes involve many steps and the coordination with many different stakeholders and departments that can introduce potential human errors and lack of control on internal procedures. In addition, the insurance industry is heavily regulated. Darwin faces increasing regulatory requirements and legislations, which would expose Darwin to operational risks.

- (b) Assess each of the three risks for Darwin identified in part (a) according to criteria I, II and III based on Big Ben's Assessment of Risk process. Justify your answer.

4. Continued

Commentary on Question:

Candidates generally struggled on part (b). Syllabus materials such as SDM-133-14 and SDM-151-17 describes the materiality and relevance of risk classes to economic capital from both a quantitative and qualitative perspective.

Market Risk:

Darwin Life's market risk exposures mainly come from the UL, VA and high cash value life products and the assets backing those products. These constitute the majority of Darwin Life's current inforce block as well as new business coming in the near future. In addition, Darwin does not have a very robust ALM process or hedging program in managing its general account and exposures to its VA products. Therefore market risk is deemed material for Darwin.

Holding capital mitigates market risk by providing a cushion to absorb losses. Market risk is quantifiable using reliable and widely accepted methodologies.

Market risk should be included in Darwin's EC model.

Liquidity Risk:

As explained in part (a), based on Darwin's current product and asset mix, the underlying liquidity risk is deemed material.

Even though Darwin has standard accounting liquidity ratios to measure liquidity and a maturity ladder to analyze its ability to fund cash outflows over time, holding extra capital does not mitigate liquidity risk. The primary measure of liquidity risk is the amount of cash flow mismatch at a given time horizon in either stressed or unstressed scenarios. Higher capital levels do not mean higher cash levels available to satisfy outflows. Liquidity buffer requirements and liquidity stress testing are used to manage the risk of a cash shortfall.

A "liquidity run" could result in losses to Darwin if market perception was that Darwin may not be able to meet obligations. This is a form of reputational risk. Like other reputational risks, the risk is not easily quantified, especially with respect to likelihood.

Liquidity risk should not be included in the economic capital calculation.

Operational Risk:

Operational risk is material to Darwin.

4. Continued

The case study states that “Operations lacked discipline with frequent exceptions to administrative and underwriting standards.” It also states that “Darwin has had high costs partly due to misaligned resources. Legacy products and systems have drained resources. As a result not enough resources have been devoted to infrastructure or in force management. Resources are devoted to new products and new business and priority placed on customer service and growth in distribution. Dedicated resources to manage in force business have been insufficient. Darwin was slow relative to its peer group in actively managing its spread compression due to low interest rates. Time constraints and lack of expertise in some cutting edge product areas resulted in less than effective back office operations including risk mitigation and operational risk monitoring and reporting. Greater speed is needed to respond to business problems including risk monitoring and escalation. Operational areas are silo-based resulting in less effective collaboration and cross-functional continuous improvement processes. Darwin is moving towards a disciplined operational focus in underwriting, investments and diversified competitive products”. All these descriptions suggest that Darwin has material operational risk issue.

Risk tolerances should be based on the estimated impact of quantified risks on statutory capital since the core mission is policyholder protection. Market risk, credit risk, underwriting risk, operational risk, strategic and liquidity risks are quantified using a variety of metrics to capture multiple perspectives.

Thus, Operational risk should be included in the economic capital calculation.

- (c) Explain how Darwin should embed its economic capital results into its risk management framework. Justify your answer.

Commentary on Question:

Candidates generally met expectations but did not exceed expectations on part (c). Syllabus reading SDM-314-14 provides examples of how economic capital can be embedded into a firm’s risk management framework.

A risk appetite framework is good to the extent that it allows the people who set a firm's strategy to accept in a conscious way the risks that correspond with that strategy and the underlying business model. If they are not calibrated as part of a shared, firm-specific risk appetite language then individual limits may be largely irrelevant.

Economic capital measures the amount of risk capital that a company needs in order to remain solvent at a given confidence level and time horizon. It could act as a risk measure comparing different products and business lines on a consistent basis.

4. Continued

Without unlimited access to capital, there might be limitations on product growth and product strategy for Darwin as measured by the projected economic capital and available capital. Hence, economic capital allocation would be part of the business strategic planning and decision making process.

However, as regulatory requirements get more stringent, regulatory capital might exceed economic capital, becoming the capital constraint. In this case, regulatory capital should be co-managed with economic capital for business and capital planning.

5. Learning Objectives:

2. The candidate will be able to identify the presence of liquidity & counterparty credit risk, and critique approaches to measure and manage these risks

Learning Outcomes:

- (2a) Identify counterparty credit and liquidity risks concepts that arise from specific business activities.
- (2b) Assess the critical nature of the counterparty credit risk exposure and the specific situations where liquidity risk exposure also becomes critical.
- (2c) Critique the applicability and relevance of various counterparty credit and liquidity measurement and management techniques, as well as the associated impacts.

Sources:

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

SDM-107-13 – Chapter 17 of Financial Institutions Management by Saunders and Cornett

Commentary on Question:

This question tests the candidates' ability to understand a liquidity profile and assess liquidity risk measures. In addition, the question tests liquidity management techniques and the impact they have on liquidity profile. Candidates did generally well on this question.

Solution:

- (a)
 - (i) Describe the liquidity index and financing gap methods.
 - (ii) Explain the change in liquidity profile from 2010 to 2015 based on the table above by stating if the liquidity profile of XYZ either (I) did not change, (II) improved or (III) deteriorated. Justify your answer.

Commentary on Question:

This question tests a basic understanding of liquidity measurement and how to use those measurements to analyze the liquidity profile of a company. Candidates did well on part (a). Some candidates confused the concept of maturity value versus fair market price in the Liquidity Index.

5. Continued

- (i) Liquidity Index: ratio of immediate fire sale price of asset over fair market price. May also write this out as a formula

Financial Gap: difference between average loans and average deposits.
May also write this out as a formula

- (ii) Liquidity profile improved as the fire sale price is higher as shown by the liquidity index.
Higher deposits compared to loans in 2015 as shown by the financial gap measure.
Both measures above suggest XYZ's liquidity profile has improved since 2010.

- (b) Assess XYZ's liquidity risk as of year-end 2015 based on a balance sheet liquidity analysis. Show your work.

To secure an appropriate balance sheet structure with respect to liquidity risk, sticky assets should be funded by stable liabilities, and liquid assets can be funded by volatile liabilities.

Sticky assets: loans 23,394

Stable liabilities: long-term deposits and equity ($22,725 + 2,258 = 24,983$).

The value of stable liabilities is more than sufficient to fund the sticky assets.

Liquid assets: assets held for trading and cash ($6,793 + 1,589 = 8,382$)

Volatile liabilities: trading liabilities (6,793)

The value of the volatile liabilities is more than covered by the value of the liquid assets.

Therefore, the balance sheet liquidity analysis shows that XYZ's balance sheet is considered liquid.

- (c) Identify three common shortcomings of using the liquidity analyses in parts (a) and (b) to assess the liquidity profile of a financial institution. Justify your answer.

Commentary on Question:

Candidates performed very well on part (c).

5. Continued

- Time dimension: does not characterize in which time period the balance sheet can be liquidated.
 - Impact of accounting rule: balance sheet figures are shown according to accounting rules that don't represent economic cash flows.
 - Off Balance Sheet Commitments: significant liquidity risk from off balance sheet items.
 - Marketability of securities: market value doesn't capture the price you'd be able to sell the asset at.
 - Commercial papers: in some balance sheets stable and volatile products are put together but for liquidity analysis these would need to be split up or treated like unsecured debt.
 - Non-bank deposits: are considered stable but a fraction of these are volatile and must be treated like unsecured money market funding for liquidity analysis
- (d) Determine the cash flow cushion for each month of the 6-month period. Show your work.

Commentary on Question:

Most candidates did poorly on Part (d).

Answer:

CF Cushion	1.2:1	1.5:1	1.17:1	1.5:1	1.11:1	1.04:1
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- (e)
- Determine the amount of standby liquidity reserves needed under the FREXIT scenario if XYZ's liquidity risk framework requires the bank to be able to sustain a liquidity crisis for at least 6 months. Show your work.
 - Propose two strategies XYZ can use to mitigate the additional exposure arising from potential FREXIT in the near term. Justify your proposal.
 - Identify one additional risk that arises from each of the above two proposed mitigation strategies in part (ii). Justify your answer.

Commentary on Question:

Candidates did generally well on part (e) (i). Some candidates who increased loyalty program exposure by 30% across all 6 months, instead of only the first 2 months, would still get points for recognizing cash inflow increases. Part (e) (ii) and (iii) tests the candidate's ability to come up with mitigation strategies and their impact. Answers are not limited to the model solution and any answer where the candidate utilized appropriate mitigation strategies was awarded credit.

5. Continued

- (i) Increase the cash outflows by 30% for first two months
 Increase the cash inflows by 2.9% for all years
 Calculate the deficit which is the difference between outflows and inflows.
 The standby liquidity reserve should be enough to cover all negative deficits across our projection periods.

Answer:

65.2

+

£ 000's	Month 1	Month 2	Month 3	Month 4	Month 5	Month 6
Customer Driven CFs	-1000*(1.3) = -1300	=-200*(1.3) = -260	-600	-100	-900	-1250
Non-Discretionary CFs	+1200 * (1.029) = 1234.8	+300 * (1.029) = 308.7	+700 * (1.029) = 720.3	+150 * (1.029) = 154.39	+1000 * (1.029) = 1029	+1300 * (1.029) = 1337.7
Deficit	-65.2	48.7	120.3	54.39	129	87.7

- (ii) XYZ can provide an incentive to the customers to delay redemption for a 6-month period. This could be as simple as providing additional points if the customers wait to redeem.

Credit facility would help provide XYZ some short term standby liquidity.

- (iii) XYZ is on the hook if ABC defaults on its obligation. This would increase XYZ's insurance risk exposure to ABC.

This would increase counterparty risk. You'd effectively be swapping liquidity risk for counterparty risk.

6. Learning Objectives:

3. The candidate will understand best practices for ERM processes and Capital Management and their use in setting a risk-return strategy in any industry.

Learning Outcomes:

- (3a) Explain ERM principles and frameworks.
 - Evaluate a company's ERM processes in its ability to adapt to emerging issues and identify risk opportunities.
 - Critique the direction of new regulation and industry standards in risk governance.
 - Describe the components of a risk appetite statement. Design and develop a risk appetite statement and risk return strategy.
- (3b) Explain ERM and capital management concepts to evaluate and recommend corporate financial and ERM decisions.
 - Apply capital allocation models to a multi-line organization.
 - Compare and contrast various ERM and Capital Management frameworks as to their ability to assess value and articulate the risk-return strategy of an organization.
 - Evaluate the value-added for an organization by jointly evaluating risk measurement and capital allocation.
 - Assess how an ERM process can improve capital efficiency and articulate the risk-return strategy.

Sources:

Strategic Management, Ch. 10

Failure of Risk Management, Ch. 6, Ch. 12

Risk Appetite: Linkage with Strategic Planning

Commentary on Question:

This question tested if candidates understood the linkage between risk culture, execution of risk frameworks, and compensation / performance measures. Parts (a) and (b) of the question were answered well by the majority of candidates, whereas candidates struggled more on part (c).

Solution:

- (a)
 - (i) Define an agency relationship.
 - (ii) Describe one agency problem at BJT that might have contributed to the tire recall including identification of the agent(s) involved. Justify your answer.

6. Continued

Commentary on Question:

Overall, this part of the question was answered very well, with part (i) being a simple retrieval question. For part (ii), full marks were only given if the agents were identified, which many students forgot to include.

- (i) An agency relationship exists when one party delegates decision-making responsibility to a second party for compensation.
- (ii) There was mis-alignment between management / employee and shareholder interests. The compensation plan was linked to hitting aggressive production targets, and was not tied to long-term shareholder value. Employees had no incentive to improve the quality of the product.

Chris Carpenter and Jack Tavares are employees with agency problems. Chris Carpenter was able to join competitor and leave company with no repercussions from recall. Jack Tavares was focusing on the tire sales rather than the tire qualities and delegated the monitoring to Paul Gosling, Head of Engineers is located in Canada.

- (b)
 - (i) Describe the importance of risk culture to a company's risk management framework.
 - (ii) Explain why BJT US's risk culture might differ from BJT Canada's risk culture.

Commentary on Question:

In part (ii), some candidates commented on the implications of differing risk cultures, rather than identifying why there were differences in the first place. To get full marks, candidates had to identify more than one reason.

- (i) A weak risk culture can lead to improper execution of a company's risk management framework. Without a strong risk culture and risk-aligned incentives, a company's risk management framework can become a "check the boxes" process, with more form than substance, that does not properly and adequately influence the decisions that are actually made by management and employees.
- (ii) BJT Canada was originally family-owned with high emphasis on quality assurance and the brand's reputation. Rapid expansion and aggressive targets for BJT US has led to less emphasis on quality assurance and risk awareness in the US operation. The BJT Canadian operation is also not unionized, but 50% of the US operation is unionized, with an increasing number of staff electing to be under union representation.

6. Continued

- (c)
- (i) Recommend changes to the compensation structure to reduce reputational and operational risks in BJT's US plants. Justify your recommendation.
 - (ii) Propose a risk appetite statement to address reputational and operational risks in BJT's US plants. Justify your recommendation.

Commentary on Question:

In part (i), to obtain full marks, we were looking for candidates to recommend that compensation measures should be more aligned with the long-term value of the firm. In part (ii), candidates were expected to provide a risk appetite statement for both reputational risk and operational risk to obtain full marks. The model solution below provides a statement to address reputational risk.

- (i) Compensation should be paid such that the timeline is aligned with the measurement of risk, i.e. once risks have materialized, agents cannot have already been compensated for taking undue risks. Measure should penalize management for taking excessive risks. Compensation could be tied to LTIFR measure to link management performance to operational risk, and to the positive / negative ratio to link management performance to reputational risk.
- (ii) Reputational Risk: BJT's appetite for reputational risk is low. BJT will maintain a positive / negative ratio of at least 2.0.
Justification: Setting an explicit risk tolerance level for reputational risk based on press coverage may help managers keep reputational risks top of mind in their day-to-day decision making.

7. Learning Objectives:

2. The candidate will be able to identify the presence of liquidity & counterparty credit risk, and critique approaches to measure and manage these risks

Learning Outcomes:

- (2a) Identify counterparty credit and liquidity risks concepts that arise from specific business activities.
- (2c) Critique the applicability and relevance of various counterparty credit and liquidity measurement and management techniques, as well as the associated impacts.

Sources:

The xVA Challenge Chapter 4
SDM-148-16

Commentary on Question:

This question tests the candidate's understanding of CVA, the various ways of calculating CVA, and its uses in practice. Most candidates struggled with part c) ii) and c) iii), where candidates did not apply the concepts of risk neutral and real world valuation to the CVA context but instead provided generic responses.

Solution:

- (a) Explain how the use of this investment hedging strategy can convert one form of risk into another.

Commentary on Question:

Most candidates were able to explain the conversion of risks. However, most did not explain the nature of the risk prior to hedging and therefore did not receive full credit.

This hedging strategy removes any basis and investment risk that could exist between ABC's investment strategy and its deferred annuity obligations, namely that ABC's investment portfolio returns may not match its liabilities' crediting rate. In turn, the hedge introduces counterparty risk in case the counterparty defaults and cannot pay its obligations to ABC.

- (b) Define the three fundamental components generally used in the measurement of counterparty credit risk.

Commentary on Question:

Most candidates were able to list the three fundamental components, however full credits are given for defining the components. Many candidates confused loss given default with recovery rate, which are complements of each other.

7. Continued

The three components are:

- Credit exposure: this is the total potential principal that could be lost in the event of a default by a counterparty
- Probability of default: this is the likelihood of a counterparty, to whom there is credit exposure, is no longer able to meet its financial obligations
- Loss given default: is equal to 1 minus the recovery rate, and is the magnitude of the loss in the event of a default

(c)

- (i) Explain how CVA is used in the measurement of counterparty credit risk.
- (ii) Compare and contrast the use of historical data versus market data for determining appropriate CVA charges.
- (iii) Describe when to use historical data versus market data to determine CVA charges.

Commentary on Question:

Candidates struggled with the second and third parts of this question. For part ii), many candidates provided generic responses to the use of historical versus market data, when the question specifically refers to CVA. Similarly, many candidates provided generic answers to part iii), with little distinction from their answer to part ii).

- (i) The Credit Value Adjustment is the difference between the value of a portfolio compared to that same portfolio if it were completely risk free. It can be thought of as the market value of the credit risk inherent in the portfolio.

This second term must be computed with consideration to netting arrangements across counterparties (i.e. total positions must be considered and netted for each counterparty).

- (ii) With the use of historical data, CVA represents an expected value of future cash flows, incorporating some adjustment for the risk being taken (the risk premium, which would be determined from actual historical credit loss experience). Under this approach, CVA charges are comparable to insurance premiums used to create a reserve against counterparty default.

7. Continued

With the use of market data, CVA is the cost of an associated hedging strategy. CVA charges would be calculated using risk sensitivities (i.e. greeks) of all underlying credit-related variables. The CVA charge then reflects the market implied cost of hedging the counterparty risk exposure.

Typically the risk-neutral CVA under the market data approach would be larger than the expected loss CVA calculated under the historical data approach. This is primarily due to risk-premiums implicit in market-implied parameters. Furthermore, the risk-neutral CVA can be interpreted as a point-in-time credit risk measure, reflecting current market dynamics and pricing of credit risk, whereas the expected loss CVA will reflect through-the-cycle expectations of credit risk.

- (iii) Companies generally use a combination of both methods when determining CVA. A company should hedge key sensitivities dynamically using the market data where feasible. Where market data is unavailable or unreliable, companies should use historical data to account for other key risks that are more difficult to measure or capture in the short term. Historical data is useful for stress testing and capital considerations, in order to assess potential losses incurred from extreme credit events.

8. Learning Objectives:

4. The candidate will understand organizational behavioral concepts and apply strategic management frameworks to corporate financial and ERM business problems.
5. The candidate will understand the decision making process and the lessons learned from the risk taking activities and experiences of other organizations. In particular, the candidate will be able to apply the learning objectives of all the prior sections of the syllabus to the risk management principles embodied within the case studies explored in this section.

Learning Outcomes:

- (4a) Apply organization behavior concepts.
- Describe the communication process and explain the strategic importance of communication to organizations.
 - Describe the fundamentals of decision making and explain decision-making styles and influences.
 - Describe common types and causes of organizational conflict and apply the elements of a basic negotiation process.
 - Assess how the behavior of individuals and groups in organizations drives organizational decisions and performance.
- (4b) Evaluate and apply the concepts of strategic management, recognizing the factors that affect the development and implementation of strategies.
- Demonstrate the importance of analyzing the firm's external environment and the internal organization.
 - 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.
- (5d) Apply concepts of innovation and market disruption.

Sources:

Creating Bold Innovations in Mature Markets

Organizational Behavior Ch. 10, 12

Strategic Management Ch. 3, 4

Commentary on Question:

This question incorporates case study material pertaining to Darwin setting up a direct marketing/internet distribution channel. It tests candidates on the dynamics of group and individual decision making, assessing a company's ability to compete, conflict outcomes, negotiation, and distinct business level strategies.

8. Continued

Solution:

- (a) Describe two advantages and two disadvantages of group decision making relative to individual decision making.

Commentary on Question:

Most of the candidates obtained most of the points on part (a). There were no significant irregularities.

Advantages:

- Groups can gather more knowledge and facts. As a result, a greater number of improved alternatives is produced.
- Group involvement in the decision making process leads to a higher level of acceptance among members of the group.

Disadvantages (only two required for full credit):

- Groups take longer to reach decisions.
- Groups may become dominated by “decision leaders.” This reduces acceptance, satisfaction, and quality of the final decision.
- Groups may exhibit “risk shift”, where riskier decisions are accepted given that no one individual feels entirely accountable.

- (b) Determine the appropriate level of associate involvement in making this decision by considering the Vroom-Yetton Decision Tree method. Justify your answer.

Commentary on Question:

Candidates performed relatively poorly on part (b), and were unable to fully demonstrate their understanding of the Vroom-Yetton Decision Tree method. Most points were lost when candidates provided generic benefits and/or commented on the general complexity of the problem. Constructing a tree diagram was not required.

CII – Brandon Kaladin explains the situation to the associates as a group to obtain ideas and suggestions in a group setting, but ultimately he makes the decision alone.

This level of associate involvement is based on the following criteria.

- A quality requirement exists (one solution is likely more rational than another)
- Kaladin does not have sufficient information
- The problem is not structured
- Associates’ acceptance of the decision is crucial to Darwin’s success
- Associates’ acceptance of the decision is not likely if Kaladin made the decision alone

8. Continued

- Associates likely do not share the organization's goals to be attained in solving the problem
- (c) Identify two reasons why product innovation is difficult in the life insurance industry.

Commentary on Question:

Most candidates were able to obtain some points on part (c). Points were primary lost when candidates provided general conditions of the life insurance industry that would not necessarily curtail innovation.

- The life insurance industry is highly regulated. Insurers must deal with a high level of scrutiny and a long and costly approval process when they try to introduce an innovative product.
 - Life insurance is a relatively mature market, in which evident customer needs have already been satisfied reasonably well.
- (d) Assess whether Darwin can successfully compete in the direct online marketplace by addressing its:
- (i) Resources
 - (ii) Capabilities
 - (iii) Core competencies

Justify your assessment.

Commentary on Question:

Most candidates were able to obtain points for their responses to part d. Some points were lost if the number of resources, capabilities, and core competencies were limited. Also, points were lost if candidates were not able to clearly distinguish between resources, capabilities, and core competencies. Finally, points were lost if candidates failed to include a conclusion to whether these three items would lead to success or failure.

8. Continued

(i)

- Legacy systems are a big drain on Darwin's ability to keep up with information technology.
- Financial resources are available. Darwin has adequate resources on hand or could borrow from RPPC or a bank.
- While Darwin has a brand name with growing recognition, they may be lacking this resource in getting attention for their direct marketing channel.

Resources may hold back Darwin from succeeding in the direct market place.

(ii)

- Producing innovative technology is not a capability Darwin has developed. They are a fast follower.
- Efficient agent distribution is something Darwin has, but this may not help in developing a direct marketing channel.
- The design of competitive products is a capability of Darwin, but its contribution to success of the online marketplace is limited.

Capabilities may hold back Darwin from succeeding in the direct market place.

(iii)

- Insurance and wealth product development may contribute to the success of the online marketplace.
- Darwin's core competency in agent service and delivering products through the agent channel will likely hinder the direct online marketplace, since conflicts among the agents and management are likely to occur.
- Darwin lacks the core competency to deliver technological solutions.

Overall, Darwin lacks the core competencies that correspond to successfully competing in the direct online marketplace.

In conclusion, Darwin does not possess appropriate resources, capabilities, or core competencies for this strategy to be successful.

- (e) Identify the business level strategy for the direct marketing channel. Justify your response.

Commentary on Question:

Candidates performed very well on part (e) and obtained most or all of the points.

8. Continued

The strategy is differentiation since Darwin is the only company to offer all of its products using an online distribution. It is not a cost leadership strategy because there is no price difference between Darwin's distribution channels.

- (f)
- (i) Describe a potential scenario for each of the conflict outcome categories (I to IV) above for the conflict between Darwin and its career agents.
 - (ii) Compose a message for the CEO to send to all career agents that will maximize the potential for a Win-Win outcome using integrative tactics.

Commentary on Question:

Candidates generally were able to obtain many points for part (f).

*The primary reason for losing points in part (i) was describing an outcome of the online strategy in general and not relate it to the **conflict** between Darwin and its career agents.*

In part (ii), points were awarded to candidates who provided clear examples of integrative negotiation tactics in the CEO's letter, in particular involving a collaborative, win-win approach. Successful responses also avoided using distributive tactics (e.g. convincing the agents that Darwin's target outcome is fair) or attitudinal structuring tactics (e.g. reminding the agents of their role obligations.)

- (i)
- I. Many career agents quit or begin selling fewer Darwin policies, resulting in financial adversity for both the agents and Darwin.
 - II. Darwin reduces career agents' compensation, while reinvesting in the online channel. Darwin becomes more efficient and the agents lose money.
 - III. The two parties negotiate a group of products that will be sold online, only, and the rest of Darwin's product portfolio will be sold through the agent distribution system. The agents coexist with the online channel and lose some products, while Darwin gives up the strategy of offering all of its products online.
 - IV. A strategy is designed and implemented in which the agents primarily sell more sophisticated products and also have a stake in the online channel through a profit sharing program. Darwin is able to retain the strategy of offering all of its products online and the career agents' overall compensation has not been reduced.

8. Continued

(ii) Dear Career Agents,

Darwin Life Insurance has always said that one of its most important resources is the agents in the field. In this time of change, we want you to know your concerns are important to us. Furthermore, we would like to offer a three phase approach in addressing your concerns:

1. We will provide more commission income for agents selling complex products as well as providing training support to enhance your skills in the understanding of these products.
2. We will maintain performance bonuses for high volume agents.
3. For high performers who are interested in leaving the sales force, we would provide management training for you to excel in future management roles.

Overall, we are introducing profit sharing bonuses associated with the online distribution for all of you. This allows each of you to enjoy the success of this innovative channel. We want to make sure that selling insurance for Darwin is profitable for all our agents and that Darwin will provide the most competitive products on the market. It is crucial for the future success of Darwin, our agents, and the rest of our workforce that we continue to grow and innovate as times change. Moreover, we desire that the ultimate solution addresses all of your needs, so we will be open to further suggestions.

Yours Truly,
Brandon Kaladin

9. Learning Objectives:

1. The candidate will understand measures of corporate value and their uses in risk management.
4. The candidate will understand organizational behavioral concepts and apply strategic management frameworks to corporate financial and ERM business problems.
5. The candidate will understand the decision making process and the lessons learned from the risk taking activities and experiences of other organizations. In particular, the candidate will be able to apply the learning objectives of all the prior sections of the syllabus to the risk management principles embodied within the case studies explored in this section.

Learning Outcomes:

- (1a) Critique accounting concepts used in the production of financial statements.
- (1c) Evaluate various financial reporting metrics for use in corporate decision-making.
- (4b) Evaluate and apply the concepts of strategic management, recognizing the factors that affect the development and implementation of strategies.
 - Demonstrate the importance of analyzing the firm's external environment and the internal organization.
 - 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.
- (4c) Use organizational behavior and strategic management concepts to evaluate and recommend corporate financial and ERM decisions.
- (5b) Evaluate the robustness and flexibility of the risk management framework and recommend approaches for continual improvement in the framework and processes.

Sources:

SDM-100-13 (p. 25-45)

Strategic Management: Competitiveness and Globalization, Concepts

Commentary on Question:

The intent of this question was to test the candidates' understanding of managerial accounting concepts when applied to both non-insurance and insurance companies. Candidates who discerned that although Blue Jay Tire was not an insurance company, its warranty program resembles a P&C insurance product performed well. Many candidates were unable to provide concrete examples, from the case study or otherwise, in their justifications.

9. Continued

Solution:

(a)

- (i) Critique BJT's treatment of warranty revenue based on generally accepted accounting principles.
- (ii) Describe how BJT should recognize the warranty revenue. Justify your answer.

Commentary on Question:

Candidates generally performed very well on this question. Full points were awarded to candidates who correctly identified the matching principle and provided a reasonable alternative. Only partial credit was awarded to the few candidates who recommended a reserve approach as BJT is not an insurance company and does not have a reserve liability on the balance sheet.

By recognizing a multi-year service contract immediately in the first year as revenue, BJT is violating the matching principle under GAAP. The revenue should instead be recognized over a seven-year period, matching the duration of the service contract and the potential tire replacement expenses incurred in that period.

(b)

- (i) Recommend an appropriate allocation method for each of the above costs. Justify your answer.
- (ii) Explain why appropriate cost allocation is important for evaluating the warranty program's performance.

Commentary on Question:

Only a handful of candidates received full credit for part (i), but part (ii) was generally well done. The original intent of the question was for the candidate to describe a concrete method in allocating the costs to the warranty program. Points are awarded to those candidates who correctly identified a suitable costing method such as normal or standard. However, most candidates suggested a method without making connections to the warranty program.

- (i) Attribute a percentage of SG&A expenses (salaries) to the warranty program by dividing the warranty sales staff salaries by all SG&A staff salaries. 100% of tire replacement costs should be directly attributable to the warranty program. Attribute a percentage of R&D costs to the program by dividing the number of R&D hours used for the warranty program by total R&D hours.

9. Continued

- (ii) Under-allocating costs to the program may overestimate the program's marginal contribution to the bottom line, distorting profitability and inviting more risk-taking and vice versa.
- (c)
 - (i) Describe two similarities between warranty programs and P&C insurance related to risk exposure.
 - (ii) Assess whether Blue Ocean has the capabilities to insure this warranty program. Justify your answer.
 - (iii) Assess whether this warranty program aligns with Blue Ocean's mission. Justify your answer.

Commentary on Question:

Candidates generally performed poorly on this question. Most candidates were able to identify that Blue Ocean has the capabilities, but did not provide adequate support from the Case Study. Furthermore, many candidates were not able to identify Blue Ocean's mission even though the mission statement was contained in the case study.

- (i) Any two of the following similarities would be granted full points. Other reasonable answers were also considered:
 - Distribution, severity and timing of liability (cash outflow) is uncertain.
 - Maximum probable loss is certain and capped.
 - There exists a non-negligible catastrophe risk.
 - Underwriting risk borne from upfront premiums with no premium adjustability.
- (ii) Yes, given the similarities between the warranty program and P&C business:
 - a. It operates P&C business.
 - b. It is already operating in North America. There are no currency issues.
 - c. It is expanding into new arenas and are able to develop and price new products.
 - d. Other reasonable justifications were also considered.

9. Continued

- (iii) No, the warranty program does not align with Blue Ocean's mission. Its mission statement is "to strength the brand identity as a dominant innovator in the UK market and maximize sustainable long-term growth in shareholder value". The warranty program is offered in North America, covering tires sold by BJT in North America. The BJT brand is not recognized in UK and, thus, is not compatible with Blue Ocean's mission in the UK.