Strategic Decision Making Exam

Exam CFESDM

Date: Thursday, April 27, 2023

INSTRUCTIONS TO CANDIDATES

General Instructions

1. This examination has 4 questions numbered 1 through 4 with a total of 70 points.

   The points for each question are indicated at the beginning of the question. All questions pertain to the Case Study.

2. While every attempt is made to avoid defective questions, sometimes they do occur. If you believe a question is defective, the supervisor or proctor cannot give you any guidance beyond the instructions provided in this document.

Written-Answer Instructions

1. Each question part or subpart should be answered either in the Word document or the Excel file as directed. Graders will only look at work in the indicated file.

   a) In the Word document, answers should be entered in the box marked ANSWER. The box will expand as lines of text are added. There is no need to use special characters or subscripts (though they may be used). For example, β_1 can be typed as beta_1 (and ^ used to indicate a superscript).

   b) In the Excel document formulas should be entered. Performing calculations on scratch paper or with a calculator and then entering the answer in the cell will not earn full credit. Formatting of cells or rounding is not required for credit.

   c) Individual exams may provide additional directions that apply throughout the exam or to individual items.

2. The answer should be confined to the question as set.

3. Prior to uploading your Word and Excel files, each file should be saved and renamed with your five-digit candidate number in the filename.

4. The Word and Excel files that contain your answers must be uploaded before time expires.

Navigation Instructions

Open the Navigation Pane to jump to questions.

Press Ctrl+F, or click View > Navigation Pane:
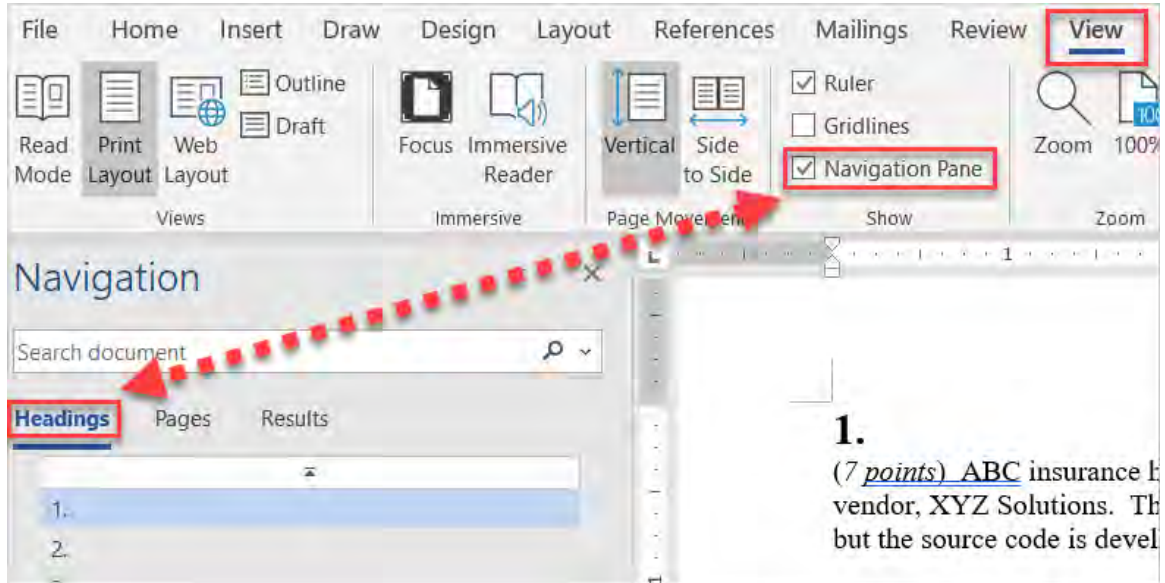
CASE STUDY INSTRUCTIONS

The case study will be used as a basis for some examination questions. Be sure to answer the question asked by referring to the case study. For example, when asked for advantages of a particular plan design to a company referenced in the case study, your response should be limited to that company. Other advantages should not be listed, as they are extraneous to the question and will result in no additional credit. Further, if they conflict with the applicable advantages, no credit will be given.

Drawing Models in a CBT Setting

The following shapes are commonly used when modelling dynamic process and complex systems, such as those in *Business Dynamics* (Sterman, John D., 2000). Not all shapes may be needed, nor should this be considered an exhaustive list of possible shapes. Candidates may copy, paste, and manipulate shapes to answer questions where a sketch is required. For reference, candidates can also insert a variety of shapes using either Microsoft Excel or Microsoft Word under the insert menu:
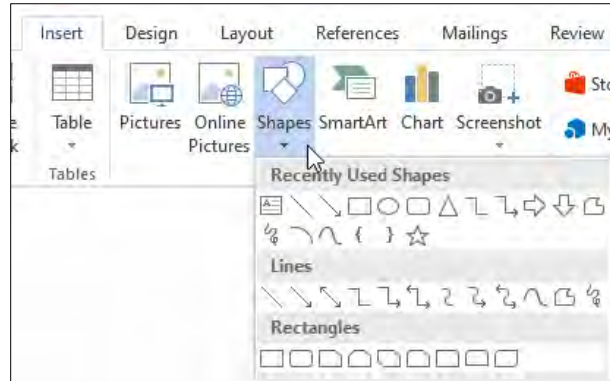
Selected shapes used in Business Dynamics:
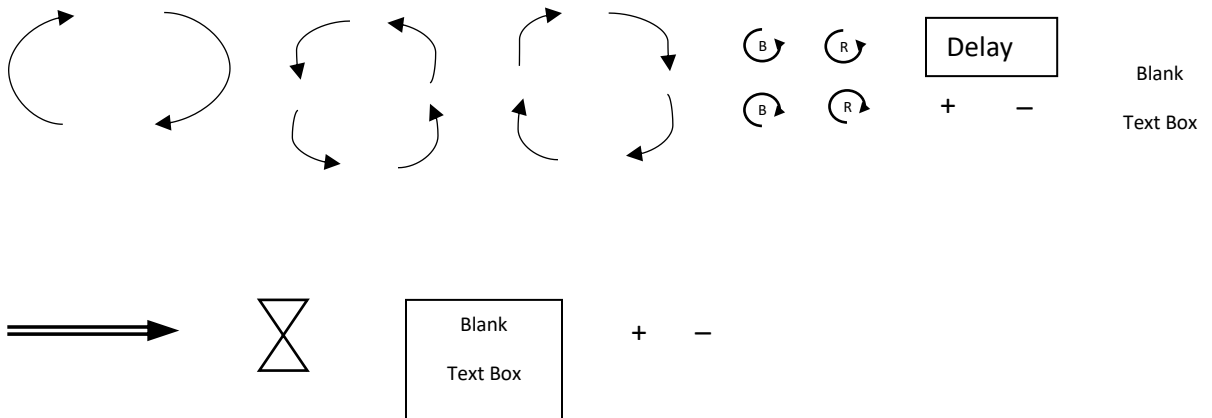
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1.

(*8 points*) Information on Blue Jay Air (BJA) can be found in Section 2 of the Case Study.

BJA produced a Balanced Score Card, shown in case study Section 2 Exhibit 4.

(a)   (*2 points*)

(i)   Identify a leading measure on the balanced score card. Justify your answer.

ANSWER:

(ii)   Identify a lagging measure on the balanced score card. Justify your answer.

ANSWER:

(iii)   Identify an efficiency measure on the balanced score card. Justify your answer.

ANSWER:

(iv)   Identify an effectiveness measure on the balanced score card. Justify your answer.

ANSWER:

1. Continued

BJA uses Incremental Budgeting. Susan Feather wants to switch to Zero Based Budgeting (ZBB). The following new initiatives are recommended by the department managers.

> A – Expand the current IT team and acquire employees with mobile app development expertise
> B – Update employee training courses and increase the frequency of employee training
> C – Renovate and improve amenities in business lounges in major hubs
> D – Reduce staff working hours and staffing for short domestic flights

(b) (*2 points*)

(i) State the two questions that the ZBB Ranking Process answers.

ANSWER:

(ii) Define "decision package" as it relates to the ZBB Ranking Process.

ANSWER:

(iii) Explain how management would use the ZBB Ranking Process to compare different initiatives.

ANSWER:

(c) (*2 points*) Recommend a relevant decision unit to use during the ZBB Ranking process for each initiative (A – D). Justify your answers.

ANSWER:

All of the initiatives have a similar return on investment.

(d) (*2 points*) Recommend a ranking for the initiatives (A – D). Justify your answer.

ANSWER:

2.

(*18 points*) Information on Darwin Life Insurance Company (Darwin) can be found in Section 6 of the Case Study.

Information on Snappy Life Insurance Company (Snappy) can be found in Section 7 of the Case Study.

Darwin is considering three acquisition targets (I – III) to increase firm value. Information on I – III can be found in Section 6A of the Case Study.

     I.   ABC
     II.   XYZ
     III.   Yolo

(a)   (*1.5 points*) Identify the best target (I – III) based on each of the following criteria. Justify your answer.

    (i)   Growth potential

ANSWER:

    (ii)   Volatility

ANSWER:

    (iii)   Value

ANSWER:

2. **Continued**

Darwin is considering acquiring Snappy as an alternative to the three companies above.

(b) (*0.5 points*) Explain how the valuation of Snappy may differ from I – III due to it being privately owned.

ANSWER:

When asked about Snappy's strategy, Frank Veltro replied "Our strategy is to be the best. Whatever our competitors do, we will do it better and for a lower price."

(c) (*2.5 points*)

   (i) Define "strategy" according to Porter.

   ANSWER:

   (ii) Critique Frank's statement.

   ANSWER:

Darwin plans to acquire Snappy.

(d) (*2.5 points*)

   (i) Define economies of scope.

   ANSWER:

   (ii) Define corporate-level core competency.

   ANSWER:

   (iii) Identify the value-creating diversification strategy Darwin is pursuing by acquiring Snappy. Justify your answer.

   ANSWER:

2. Continued

(e) (*0.5 points*) Propose one way Darwin's acquisition of Snappy could increase the value of the combined firm through value of control. Justify your answer.

> ANSWER:

(f) (*1 point*) Propose one way Darwin's acquisition of Snappy could increase the value of the combined firm by creating an operating synergy. Justify your answer.

> ANSWER:

(g) (*1 point*) Propose one way Darwin's acquisition of Snappy could increase the value of the combined firm by creating a financial synergy. Justify your answer.

> ANSWER:

Snappy is planning to begin selling variable annuities. The estimated NPV for the project is $10 million. Gabriela Martinez says, "If we acquire Snappy today, the value of synergy will be $10 million on this project alone, in addition to other aspects of the acquisition."

(h) (*1.5 points*) Critique Gabriela's statement.

> ANSWER:

Your colleague computes firm values using two valuation models (see the attached Excel spreadsheet):

A. Stable-growth model
B. Two-stage model

(i) (*2 points*)

(i) Recommend which model (A or B) is appropriate for valuing Darwin prior to the acquisition. Justify your answer.

> ANSWER:

2. Continued

    (ii)   Recommend which model (A or B) is appropriate for valuing Snappy prior to the acquisition. Justify your answer.

> ANSWER:

    (iii)   Describe the model for valuing the combined firm once the acquisition is complete. Justify your answer.

> ANSWER:

The due diligence team has completed an initial analysis of Darwin's acquisition of Snappy, included in the Excel spreadsheet. The team provides the below assumptions for you to complete additional analysis.

- Pre-acquisition, Snappy is not optimally managed and the cost of capital can be lowered from 8% to 7% if management is changed.
- Post-acquisition, the combined firm will save $1 million in costs per year.
- Assume a tax rate of 21% for both Darwin and Snappy.

(j)   (*1.5 point*) Calculate the value of control. Show your work.

> *The response for this part is to be provided in the Excel spreadsheet.*

(k)   (*1.5 point*) Calculate the value of synergy. Show your work.

> *The response for this part is to be provided in the Excel spreadsheet.*

Darwin will pay $60 million for Snappy.

(l)   (*2 points*) Evaluate the decision with respect to the answers in parts i, j, and k.
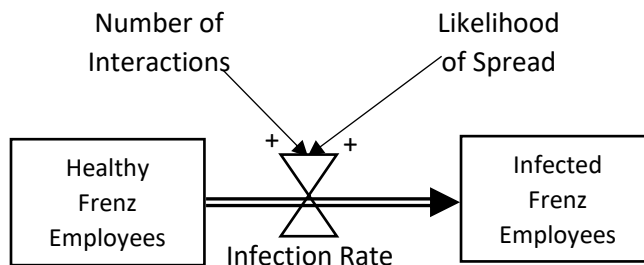
> ANSWER:

3.

(*24 points*) Information on Frenz can be found in Section 4 of the Case Study.

Frenz hires a consultant to model the possible impact of a pandemic on Frenz's ability to keep stores open. The consultant suggests a simple SI model for the entire company using only the following inputs:

- Size of the work force
- Number of employee-to-employee interactions
- Likelihood of the disease to spread per interaction

Frenz has 500 stores, each with 20 employees. The stores are all located in unique, independent locations. Employees work in shifts of five and each store does about 1,100 transactions per day.

(a)   (*3 points*) Critique the consultant's model.

ANSWER:

(b)   (*1.5 point*) Recommend three improvements to the SI model based on your critique in part (a).

ANSWER:

3. Continued

A specific disease of concern has several unique characteristics:

- The incubation period is exactly two days, during which an infected person is contagious but shows no symptoms.
- There is no test to confirm a person is infected during the incubation period.
- The symptomatic period averages five days following the end of the incubation period.
- After that, a person recovers and gains immunity for life.
- Infection rate is 10%.

Frenz's action plan for responding to epidemics includes the following actions:

- Five non-symptomatic employees at each store are randomly selected to work each day.
- Stores will have 1,100 customer interactions per day, distributed equally among the employees.
- Each customer interacts with only one employee.
- Employees will not interact with each other.
- 5% of customers are expected to be contagious.
- Frenz will close a store if ten or more employees are symptomatic at the same time at the end of the previous day.

(c)   (*5 points*) Calculate how many days it is expected to take for a Frenz store with no infected employees to reach ten symptomatic employees. Show your work.

> *The response for this part is to be provided in the Excel spreadsheet.*

Frenz considers three new policies (A – C) to limit employee exposure. Each is considered independently.

- A.   Employees will have two days off after each shift.
- B.   Require customers to wear masks, reducing the infection rate to 5% per interaction.
- C.   Install vending machines with basic instant coffee. This way the number of employees per store can be reduced to four and the number of customer interaction per day drops to 600.

(d)   (*2.5 points*) Calculate the impact of each policy (A – C) on the number of days it is expected to take for a Frenz store to close. Show your work.

> *The response for this part is to be provided in the Excel spreadsheet.*
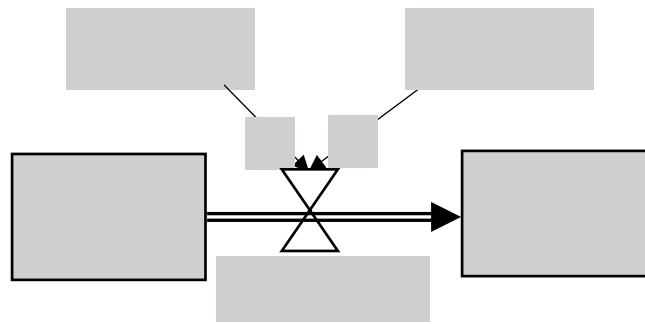
3. **Continued**

(e)   (*0.5 points*) Recommend one of the three policies (A – C) for Frenz to adopt. Justify your answer.

ANSWER:

Frenz is modelling the adoption of a new drink. They plan to use the same SI model created by the consultant for the pandemic.

(f)   (*1 point*) Update the labels of the original model in the shaded boxes below.

ANSWER:

(g)   (*2 points*) Critique the use of the pandemic SI model for this application.

ANSWER:

(h)   (*2 points*) Recommend two changes to the model based on your critique in part (g). Justify your answer.

ANSWER:

Frenz wants to determine the point at which the new drink becomes a sustainable offering. Once a product reaches a critical mass, and moves beyond the tipping point, sales grow easily. Recall three of Frenz's current marketing strategies from the Case Study (I – III):

I.   Nurture relationships with other distributors
II.   Introduce a smartphone app
III.   Target local advertising in certain countries in conjunction with certain significant events

3. Continued

(i)   (*2.5 points*)

    (i)   Identify the elements in your model that affect the tipping point. Justify your answer.

> ANSWER:

    (ii)   Explain how each strategy (I – III) might affect the tipping point for the new drink.

> ANSWER:

One year after the launch of the new drink the following results were recorded:

(000s)	Prior year	Current year
Total Revenue	438,035	481,839
Total Expense	371,524	412,392
After-Tax Net Income	66,511	69,447
Total Liabilities	135,740	144,320
Total Invested Capital	119,536	143,443

Market Share	15%	17%

Lotte Janssen, CEO of Frenz, makes the following statements regarding the results:

    X.   Bringing this new drink to market has given us a competitive advantage.

    Y.   The operational effectiveness initiatives we've put in place will be an additional competitive advantage.

    Z.   Our competitive advantages are best demonstrated by better-than-expected growth in our sales and increased market share.

(j)   (*4 points*)

    (i)   Explain any flaws in each of Lotte's statements (X – Z)**.**

> ANSWER:

3.   Continued

    (ii)   Describe the use of return on invested capital (ROIC) according to Porter.

> ANSWER:

    (iii)   Calculate Frenz's ROIC for current year and prior year. Show your work.

> *The response for this part is to be provided in the Excel spreadsheet.*

    (iv)   Evaluate Frenz's ROIC results assuming the industry average is 40% over the same period. Justify your answer.

> ANSWER:

4.

(*20 points*) Information on Frenz can be found in Section 4 of the Case Study.

Frenz is evaluating the opportunity to enter into an exclusive production agreement with the government of Vietombia in order to optimize the company's supply chain. Robert Kaplan, CFO of Frenz, directs you to the risk assessment provided in Section 4 Exhibit 2b of the case study to understand the risk of losses with and without this agreement.

(a)   (*2 points*) Critique the model in Section 4 Exhibit 2b. Justify your answer.

> ANSWER:

You construct a model to simulate Frenz's annual revenue and expenses. In the accompanying Excel spreadsheet, you are given the model parameters and a pre-populated set of 10,000 uniform independent random variables.

Assume:

- Each variable in the model is independent.
- Frenz can order beans instantly based on demand, without holding excess stock of coffee beans.
- Sales are limited to total amount of beans actually supplied.

(b)   (*12 points*)

(i)   Calculate the profit (loss) for each of the 10,000 simulations, with and without the Vietombia agreement in place. Show your work.

> *The response for this part is to be provided in the Excel spreadsheet.*

(ii)   Calculate each of the relevant statistics identified in rows 29-40 of the Excel spreadsheet, with and without the Vietombia agreement in place. Show your work.

> *The response for this part is to be provided in the Excel spreadsheet.*

4.   Continued

(c)   (*4 points*)

(i)   Evaluate the Vietombia agreement based solely on the model output and statistics calculated.

> ANSWER:

(ii)   Recommend whether or not Frenz should enter into the Vietombia agreement. Justify your answer.

> ANSWER:

(d)   (*2 points*)

(i)   Identify two limitations of the current model design.

> ANSWER:

(ii)   Recommend how the model can be enhanced to address the limitations identified in part (i). Justify your answer.

> ANSWER:

END OF EXAMINATION