

Business Decision Making

Course No. 20115

Final Exam

July 14, 2010

The total time for this exam is 60 minutes. The exam consists of three questions. Each question is composed for approximately 20 minutes answering time. Accordingly, each question offers the possibility of obtaining 20 points. The importance of the sub-questions is indicated by the points that you can achieve. The maximum number of points that you can achieve in the exam is 60. Only answers in the predetermined boxes and graphs will be graded. The back sides of each page can be used for auxiliary calculations. It is not allowed to open the binding. Note your name and student identification number in the box below.

Admitted Aids: Non-programmable pocket calculator; dictionary without hand-written notes.

name:..... student identity number:.....
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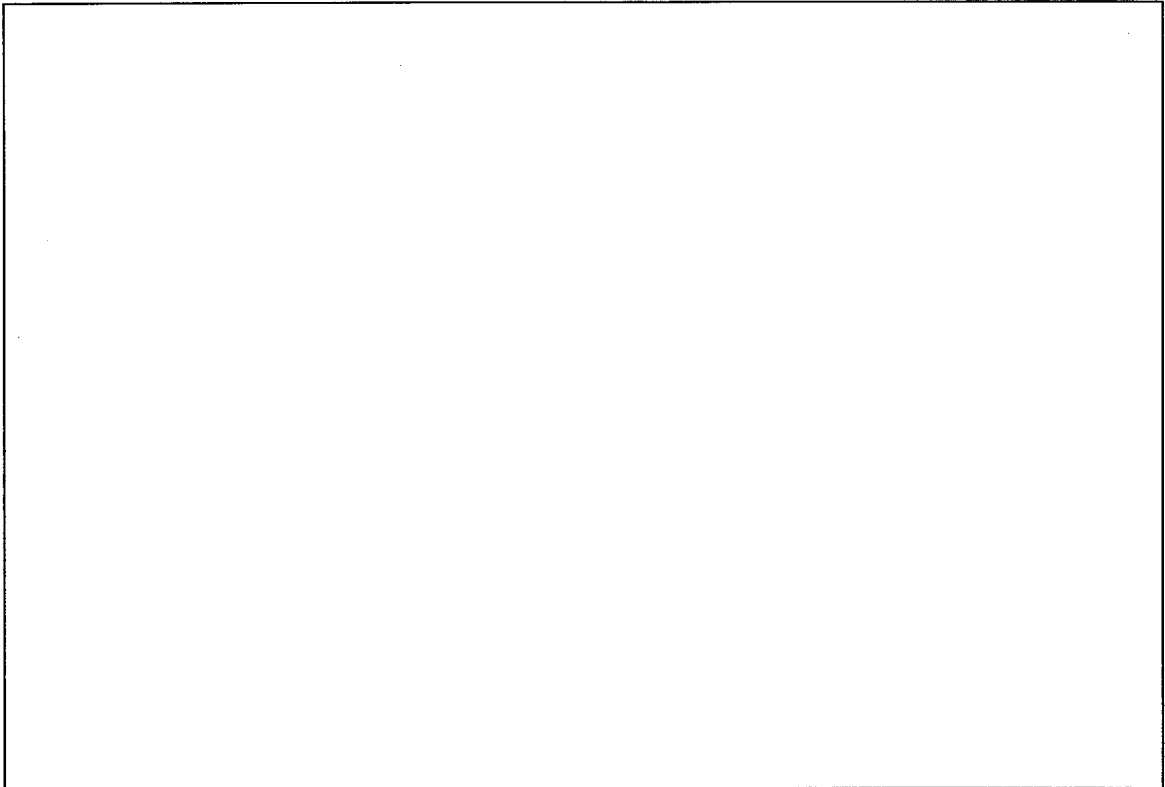
Q1	Q2	Q3	Total	Grade

Question 1:

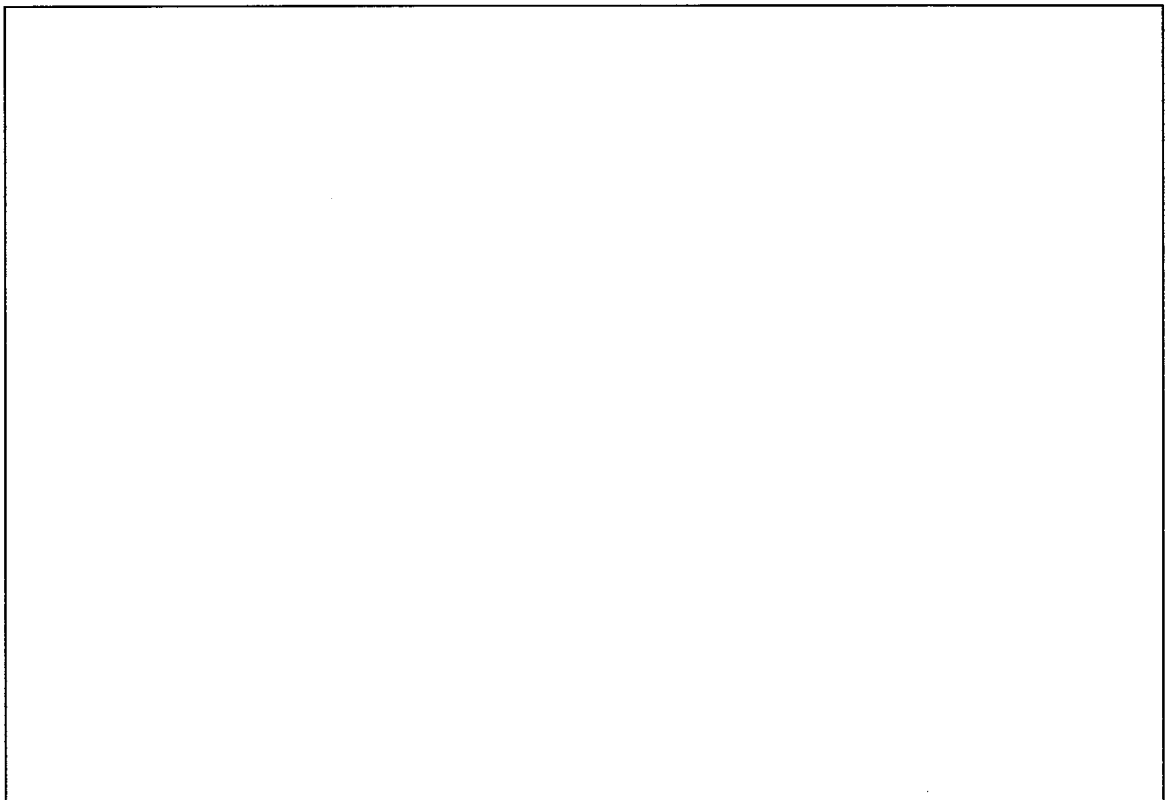
A risk-averse investor has the choice between three alternative projects. The realized net present values of these projects, dependent on five possible states of nature, are given in the following table, which also shows the probabilities of the five states in the bottom row.

	S1	S2	S3	S4	S5
P1	-100	500	100	300	500
P2	-100	0	500	500	-100
P3	-100	200	300	400	500
	0.1	0.2	0.3	0.3	0.1

- a) Determine the risk profiles of the three projects and characterize them graphically with their distribution functions. **(10)**



- b) Analyze which project the investor should choose if he wishes to maximize his expected utility. Explain the criterion that leads to the investor's choice. **(10)**



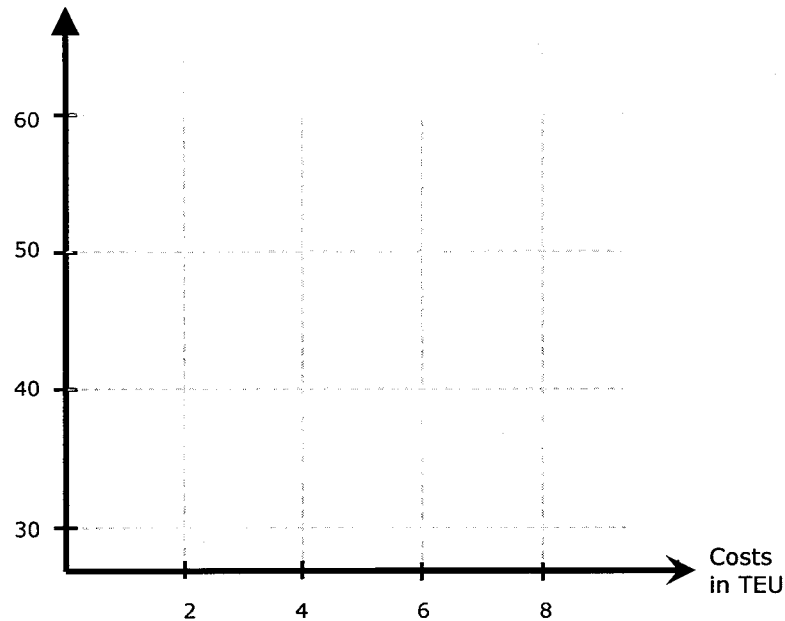
Question 2:

For the decision concerning the place to study, Anton only takes the University of Magdeburg, the University of Halle, the LMU Munich und the University of Applied Sciences Vienna into consideration. Assume that Anton would not be denied access to any of these institutions. In addition to the costs for study Anton considers the proximity to his home region, the character of the university and a city's night life to be relevant for his decision. He finds the proximity to his home region three times as important as the character of the university and 1.5 times as important as a city's night life. The following table contains his evaluations of all alternatives in all criteria with the best alternative receiving 100 points and the worst 0:

	proximity	character	night life	costs in €
Magdeburg	100	50	20	8.000
Halle	60	60	0	1.000
Munich	30	0	90	6.000
Vienna	0	100	100	5.000

- a) Apply a suitable technique to aggregate Anton's preferences concerning the three described attributes. Assume preferential independence between all attributes. Which alternatives can be eliminated? **(8)**

b) Contrast these results graphically with the costs and depict the efficiency frontier. **(4)**



c) The father of Anton, a famous entrepreneur, wants his son to additionally take the quality of entrepreneurship education into consideration. With the help of the national ranking by Schmunde/Neumann (2007) and personal recommendations his father values the locations as follows:

Magdeburg 100; Halle 0; Munich 80; Vienna 40

He offers Anton 80€ per entrepreneurship-point. Explain if Anton is now able to make a final decision. Determine the critical price per entrepreneurship-point his father would have to offer to make Magdeburg Antons first choice?

(8)

Question 3:

Two international companies, Isy Co. and Havvy Inc., are contemplating a "merger of equals". Both companies already agreed on all the major economic issues. However, five important social issues remain outstanding. Both sides are able to assess the relative importance of each issue. Moreover, both have an idea of the total monetary value of the social issues, so that they can also place a monetary value on each social issue. The following table shows the individual assessments, which, prior to negotiations, are held confidentially:

Issue	Isy Co.		Havvy Inc.	
	mill. €	%	%	mill. €
Name	600	6	44	4,000
HQ-location	4,000	38	13	1,200
Chairman	600	6	13	1,200
CEO	1,200	12	8	800
Layoffs	4,000	38	22	2,000
Sum	10,400	100	100	9,200

- a) Discuss the procedure "Taking Turns" and its possible variants. Assume that both parties do not know each other's preferences and always select the most preferred available item. **(7)**

- b) Discuss the procedure "Divide and Choose" and its plausibility for the problem at hand. If Isy is the divider, what difference does it make to know Havvy's preferences? **(6)**

