NPV AND SENSITIVITY ANALYSIS

Riverside Leisure Centre

Introduction

The Riverside leisure centre was opened in 1973 with a leisure pool, sports hall, 4 squash courts and changing rooms. June West is the new and very ambitious manager.

Squash courts 1 and 2 have been recently refurbished and are fully booked most of the day. The other two squash courts next to the fitness room are now in urgent need of repair and are rarely booked.

The fitness room is too small. It is clear that the leisure centre is losing members because the fitness room is too busy. Other leisure centres locally are reporting a big increase in membership of their fitness rooms.

June believes it is important to increase the size of the fitness room by incorporating one or both of the squash courts that are rarely booked.

Laura is the management accountant for the leisure centre and she has been asked to evaluate the alternative proposals.

Proposals

(i) Alternative 1- Incorporate squash court No. 4

Increase the size of the fitness room by incorporating squash court 4. This would increase the size of the fitness room from 2,200 sq. ft to 2,700 sq. ft.
Squash court 3 would remain and it would be refurbished immediately.

(ii) Alternative 2 – Incorporate squash courts 3 and 4

Increase the size of the fitness room by incorporating squash courts 3 and 4. This would increase the size of the fitness room from 2,200 sq. ft to 3,200 sq. ft.

Capital costs

The capital costs of the alternatives include building works, services, equipment, and professional fees. Estimates are given below:

Building works

	Alternative 1	Alternative 2
	(£)	(£)
Doors	£1,100	£1,100
Remove existing walls	£2,200	£3,600
New ceilings	£1,900	£3,200
Fire exit	£3,300	£3,600
Decoration	£7,100	£10,600
Total	£15,600	£22,100

Services

	Alternative 1	Alternative 2
	(£)	(£)
Electrical	£4,000	£5,700
Lighting	£2,000	£3,200
Air conditioning	£14,000	£12,000
Total	£20,000	£20,900

Equipment

	Alternative 1	Alternative 2
	(£)	(£)
Cardio-vascular machines (bikes, rowers)	£38,000	£78,000
Cardio theatre	£7,000	£7,800
Drinking fountain	£1,100	£1,100
Total	£46,100	£86,900

A residual figure at the end of 6 years was estimated at £6,000 for alternative 1 and £9,000 for alternative 2.

Professional fees and charges

Professional fees and charges have been estimated at £6,000. (This cost will be incurred as soon as a decision is made)

Annual costs

The management wants to appoint only one permanent member of staff and then increase the number of casual staff at peak times. A nominal estimate for utilities and cleaning costs has been included in the costings as these costs are not expected to change significantly. The maintenance and repair contracts are for the first year only and the suppliers will not commit themselves to providing estimates after the first year. An estimate for the costs are given below:

	Alternative 1	Alternative 2
	(£)	(£)
Permanent staff	£19,000	£19,000
Casual staff	£8,000	£12,000
Utilities	£1,400	£1,800
Maintenance contracts	£8,200	£12,200
Cleaning and other	£2,100	£2,100

The cost of advertising the new facilities at the leisure centre is estimated at £15,000 in the first year. June believed an aggressive advertising policy was essential to ensure the project was a success. No estimate for advertising was considered for later years.

Estimating additional annual revenue for fitness room (two different approaches are to be considered)

June

She has suggested that additional revenue should be estimated by dividing the current income of £180,000 by 2,200 sq. ft to determine income per sq. ft. The income per sq. ft. is assumed to remain constant as the size of the fitness room is increased. Basing income on square footage is seen as a simple but accurate way of estimating future income.

Laura

Laura suggested a different approach. She suggested that managers should use a probability distribution based on the judgement of all the senior managers to estimate the **total** revenue for the fitness room. After much discussion Laura was able to suggest the following probability distribution:

		Alternative 1
State of World	Total annual revenue for the fitness room.	Probability %
I - The fitness room will be an initial success but too few new members will be attracted. Usage will vary throughout the year.	£210,000	20%
II - The fitness room will be very successful initially but then membership will slowly fall. Usage will be seasonal.	£225,000	50%
III - The fitness room will be very successful. A lot of new members will be attracted and as existing members become more health conscious they will use the room throughout the year.	£250,000	30%

		Alternative 2
State of World	Total annual revenue for the fitness room.	Probability %
I - The fitness room will be an initial success but too few new members will be attracted. Usage will vary throughout the year.	£240,000	50%
II - The fitness room will be very successful initially but then membership will slowly fall. Usage will be seasonal.	£250,000	40%
III - The fitness room will be very successful. A lot of new members will be attracted and as existing members become more health conscious they will use the room throughout the year.	£270,000	10%

(The additional revenue equals the total revenue calculated above less the existing revenue of £180,000).

Cost of capital

Laura suggests that it is appropriate to use a cost of capital of 7% for this project.

Other related information from Laura
Laura wants the following information to be considered.

(1) Both squash courts 3 and 4 are in urgent need of refurbishment. It has been agreed that if one court is going to be used in the future it will be refurbished immediately at a cost of £10,000.
If both courts are going to be used in the future they will be refurbished immediately at a cost of £25,500.

(2) If one court is closed the total income from the squash courts will fall by £10,000 per annum.
If two courts are closed the total income from the squash courts will fall by £15,000 per annum.
(These estimates are based on last year's booking information)

(3) The restaurant manager expects to see more customers if the fitness room is increased in size.

If the fitness room is increased in size by closing one court the restaurant manager estimates his profits will increase by £17,000 per annum.
If the fitness room is increased in size by closing two courts the restaurant manager estimates his profits will increase by £23,800 per annum.

Life of project
The life of the project was discussed at some length by the senior management. June wanted to assume that the equipment had a life of 6 years but a more conservative estimate of 5 years was proposed by John Jones who had experience of a similar project at a different leisure centre. Laura suggested that a project life of 4 years should also be considered but this was quickly dismissed by June. There was no agreement over what was a suitable life for the project and it was agreed that given the technological advance within the industry more information was required.

Question 1
Evaluate the sensitivity of the investments and make a clear recommendation on financial grounds to accept or reject the investments.

Question 2
Identify and evaluate any additional information that is not included in this case study.

Question 3
Evaluate the different approaches described by June and Laura to forecasting income for the investments.

Reference:
McGraw-Hill Higher Education
http://highered.mcgraw-hill.com/sites/0077098595/student_view0/case_studies.html