

Exercise 16.10

Question

16.10 PY-RIC Enterprises

M.T. "Vic" Torrey heads the division of PY-RIC that launches communications satellites. Vic has to decide whether to go ahead with today's launch or delay it for more favorable conditions. At present the probability of a successful launch is estimated at 0.90. The resulting profits would be \$20M. If the launch fails, the loss of the payload costs \$120M. A month's delay would increase the probability of success to 0.95, but the profit would drop to \$10 M due to penalty fees paid to clients. If the launch is totally aborted, PY-RIC must refund clients \$10M.

(a) Draw the decision tree.

(b) What should Vic do if he decides only according to expected values of profit?

Solution from Manual

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a)

D	-----		Launch	----- C -----		----- P = 0.9 ----	20 M
						----- P = 0.1 ----	-120 M
			Delay	----- C -----		----- P = 0.95 --	10 M
						----- P = 0.05 --	-120 M
			Abort	----- C -----		P = 1.0 ----	- 10 M

b)

$$\text{EV (Launch)} = 0.9 (20) + 0.1 (-120) = 18 - 12 = 6$$

$$\text{EV (Delay)} = 0.95 (10) + 0.05 (-120) = 3.5$$

$$\text{EV (Abort)} = - 10$$

Therefore launch.