Case Study: Howe Properties Ltd.

Mr Reginald Howe operated a real estate agency which specialised in finding buyers for commercial properties. Howe was approached one day by a prospective client who had three properties in and adjoining Bondi Junction, and who wished to receive prices for these properties as follows:

Property	*Price*
Randwick	$200,000
Surry Hills	$480,000
Bondi Junction	$800,000

Howe would get a commission of 4% on any of the properties he was able to sell. The client laid down the following conditions for an exclusive listing:

Howe, you have to sell the Randwick property first. If you can't sell it within a month, the entire deal is off — no commission and no chance to sell the other properties. If you sell the Randwick property within a month, then I'll give you the commission for Randwick and the option of (a) stopping at this point, or (b) trying to sell either the Surry Hills or the Bondi Junction properties next under the same conditions (i.e., sell within a month or no commission on the second property and no chance to sell the third property). If you succeed in selling the second property with the month, you'll have the option of selling the third.

After the client had left, Howe proceeded to analyse the proposal which had been made to him to determine whether or not to accept it. He figured his selling costs and his chances of selling such property at the prices set by the client to be:

Property	*Costs*	*Howe's assessment of prob. of: Sale*	*Commission*
Randwick	$6,400	0.6	$8,000
Surry Hills	$1,600	0.7	$19,200
Bondi Junction	$3,200	0.5	$32,000

Howe believed that the sale of the first property would not make it any more or less likely that the two remaining properties could be sold. Selling costs would have to be incurred whether or not the property was sold, but could be avoided by deciding not to try to sell the property.

Since the Randwick property would have to be sold before any further action could be taken, Howe prepared the following table showing the profit under various circumstances in an attempt to determine whether or not to accept the Randwick property:

Event	*Prob.*	Act: *Accept Randwick*	Act: *Refuse Randwick*
R. Sold	0.6	\$1,600	\$0
R. Not Sold	0.4	–\$6,400	\$0
Expected value		–\$1,600	\$0

Thus, based on expected value, accepting Randwick would be unprofitable by itself. Howe was not very happy with this conclusion. But, he reasoned, success in selling the Randwick property would entitle him to offer either the Surry Hills or Bondi Junction properties, and it looked as if either of these properties would result in an expected profit. He felt that somehow or other the value of this opportunity should be taken into consideration.

a. Model Mr Howe's decision as an influence diagram.

b. What recommendation would you make to Mr Howe?

c. Suppose a sudden change occurs in the Randwick market and that Mr Howe believes that the probability of selling Randwick is now only 0.4. Would your recommendation change?