

Annex E

Appraising investment decisions – non-property example

This case study is presented as an example of an institution faced with a problem which is not wholly related to buildings or equipment. It shows how the problem can still be resolved into a choice between several options, which can be the subject of a financial analysis. However, there are also a number of non-financial and non-quantifiable aspects to be considered.

1. In the unusual aquatic environment of Atlantis, biological studies represent a particular challenge. Nearly all teaching is dependent on a fundamental understanding of the biology of the jabberwock.
2. Dissection of the common jabberwock has long been an intrinsic part of every foundation course in natural sciences. Every student is provided with an individual jabberwock to dissect, under the supervision of a staff of expert demonstrators. Such is the importance of the demonstrator's role that it is seen as a fundamental element of a successful academic career.
3. However, this policy is now being challenged on two grounds:
 - a. Many students, and some members of the teaching staff, question the morality of a policy that depends on the death of a living creature.
 - b. Despite its name, the common jabberwock is becoming increasingly rare. Furthermore, the university has hitherto acquired nearly all the specimens it requires from those that die trapped in the nets of fishermen. The widespread implementation of 'jabberwock friendly' fishing methods means that fewer specimens are available.
4. From a practical point of view, dissection specimens which were once available at a nominal cost as a by-product of the fishing industry are becoming increasingly expensive, and it is difficult to ensure a regular supply.
5. It has been suggested that the crested jabberwock would be an acceptable substitute. An aggressive scavenger, originally introduced to provide an environmentally friendly method of waste disposal, the crested jabberwock is largely responsible for displacing the common jabberwock from its natural feeding grounds. It is generally unloved, and regarded as a pest. However, it has significant disadvantages as a laboratory specimen:
 - a. It has never been bred successfully in captivity, and its feeding habits mean it is rarely caught in fishermen's nets, so a special trapping programme would be required.
 - b. Largely because of its revolting feeding habits, it acquires an obnoxious smell which makes it particularly unpleasant to handle, even when dead.

6. The other alternative specimen might be the spotted jabberwock. This docile creature is the result of many years of captive breeding. Prized for its decorative appearance, it is often kept as a child's pet. It would be entirely feasible to set up a breeding programme to provide laboratory specimens. However, this would be likely to exacerbate the moral objections to killing creatures to provide a teaching aid, particularly through an unfortunate association with the popular cartoon character 'Spot the Jabberwock'.

7. A number of technical alternatives have been proposed. Perhaps the simplest is to depart from the policy of 'hands on' dissection by students, and substitute a programme of teaching by demonstration. However, the delicate nature of jabberwock biology would make it difficult to provide an adequate demonstration without considerable investment in additional visual aids. Many academic staff argue that teaching standards would suffer, even if the most sophisticated closed circuit television equipment were used.

8. The department of computing science has suggested two alternative routes:

a. To supply each student with a demonstration on compact disc, which could be viewed as many times as required using the computer facilities available to every student. This would make most of the existing dissecting facilities redundant. More significantly, there would be considerable resistance from the existing staff of demonstrators, who see their livelihood disappearing.

b. To develop a 'virtual reality dissection experience'. The department of computing science is particularly keen to develop its expertise in this field. However, there are considerable doubts whether a suitably realistic solution could be made available in a sensible timescale. Cynical detractors suggest that this proposal is principally focused on satisfying the grandiose aspirations of the head of the department rather than providing a service to the natural sciences faculty. It is likely to be extremely capital intensive and have considerable set up costs.

Options for analysis

9. The university identified the following options for analysis:

a. The status quo. If no action is taken, it is likely that student numbers will fall, due in part to moral objections but also because there is a possibility that the learning experience will be diminished if insufficient dissection specimens are available.

b. Use the crested jabberwock. There are likely to be fewer moral objections to the use of a creature widely regarded as a pest. However, the university will have to set up a trapping programme. More importantly, the noxious nature of the creature will require significant improvements to the ventilation systems in the dissection laboratories, if staff and students are not to be overcome.

c. Use the spotted jabberwock. Moral objections may lead to a fall in student numbers. The university will have to set up a breeding programme to provide the

specimens. Because of the widespread public criticism that may ensue, it will have to finance a public relations programme to explain its actions, and even then it will have to provide enhanced security for both the new breeding premises and the existing laboratories.

d. Substitute demonstrations for hands-on dissection. This will require the provision of specialist audio-visual equipment, and significant reconfiguration of the existing dissection laboratories to suit the new teaching techniques. Some demonstrators may become redundant, though there is a possibility they can be retrained, at a cost, as equipment maintainers. There will still be some ethical concerns over the death of live specimens.

e. Produce a compact disc as a teaching aid. It is anticipated that this will require significant investment in specialist support, and also considerable time from academic staff. The extent of co-operation from the existing demonstrators is doubtful, and in any case this option will have to include provision for redundancy payments. Retraining demonstrators for a very different teaching support role may be possible, but is likely to be expensive.

f. Develop the virtual reality experience. Despite the enthusiasm of the department of computing studies, there is little information on the possible costs of this option, and the timescale to achieve an acceptable substitute is difficult to determine.

Risks and uncertainties

10. The university has identified that it will have to address the following areas of risk and uncertainty:

- student numbers
- timescale
- reaction of existing staff
- supply
- unproven technology.

Non-quantifiable aspects

11. The university will also have to consider a number of non-quantifiable aspects:

- moral acceptability
- environmental impact

- public perception of university
- quality of teaching/learning experience
- staff career development.

In this case study we have indicated the issues to be considered, but we have stopped short of developing the full details of the appraisal process and generating financial data. These aspects are illustrated in Annex D.