

CASE STUDY

PROJECT EVALUATION AND PRIORITISATION

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1. Executive Summary

The scores ranged from 306 down to 222, with four of the projects grouped closely in the middle with scores around 250.

By applying the ranking methods outlined in this report, the project deserving the highest priority has been clearly identified as the MRPII Impact Study, with an overall score of 306. In terms of the potential benefits of doing this study, the costs appear to be well justified.

A second project was also well clear of the group in the middle, and that was the Improved PC Based Testing Facilities project, with a score of 279. This project is dependent on the Electronic Mail project, which was one of the leaders in the middle group of four projects (score 254). These two projects should be considered together, and should receive the second highest priority.

The assessment methods used to derive these rankings were based on the Critical Success Factors outlined by the CEO. These methods are described in Section 2 (Selection of Assessment Criteria and Weightings) and in Section 3 (Assessment of Project Priorities). The individual project assessments and rankings are presented in a table in Section 3.3 (Project Rankings).

2. Selection of Assessment Criteria and Weightings

2.1 Justification of Assessment Criteria

The CEO has identified four Critical Success Factors, and these must be kept in mind when evaluating capital requests and setting project priorities. These factors can be stated very briefly as follows:

- time to market
- quality products
- quality people
- profit

Ten assessment criteria have been derived from these Critical Success Factors. By choosing appropriate weightings for each criterion, the process of approving capital projects and assigning priorities will be given valuable input. These criteria have been chosen because of their close alignment with the stated objectives of the CEO.

To simplify the assessment process, they are stated in the form of active phrases, as follows:

1. Speeds up R & D
2. Speeds up Production
3. Speeds up Distribution
4. Produces quality-minded culture
5. Improves product quality
6. Facilitates recruiting
7. Fosters morale
8. Has minimal payback period
9. Has minimal 4-year cost of ownership
10. Has maximal benefit

2.2 Justification of Criteria Weightings

The CEO has not given any indication of the relative importance of each of the four Critical Success Factors that he identified. However, he has a mission to make the company more profitable (to “turn it around”), and he sees the effective use of IT as pivotal. For this reason, profit is directly or indirectly involved with several of the criteria list above, and the weightings that are assigned should reflect its importance. At the same time, it is important to have a clearly defined and agreed understanding of what each of the criteria means to avoid overlap and double counting.

The use of IT has not been shown explicitly in the list of criteria, partly for reasons of political expediency. The acceptance of these criteria, and of a ranking system, by other members of the Strategic Investment Review Committee is important to the success of this exercise. It is hoped that where projects can put the potential of the IT resource to good use, those projects will clearly warrant higher assessment scores.

2.3 Criteria Chosen and Weightings Assigned

The assessment criteria and weightings are summarised in the following table.

CSF		Criterion	Weighting
Time to Market	A	Speeds up R & D	4
	B	Speeds up Production	7
	C	Speeds up Distribution	6.5
Quality Products	D	Produces quality-minded culture	4.5
	E	Improves product quality	7
Quality People	F	Facilitates recruiting	4.5
	G	Fosters morale	4.5
Profit	H	Has minimal payback period	7
	I	Has minimal 4-year cost of ownership	6
	J	Has maximal benefit	9

3. Assessment of Project Priorities

3.1 Using the Project Priority Assessment Template

3.1.1 Assessment Procedures

The objective of this assessment procedure is to be able to rank projects in order of strategic importance. Each of the projects being assessed is analysed with respect to each of the criteria, and a number from 0 to 9 is derived through consensus for each criterion. These numbers are then multiplied by the relevant criteria weightings and totalled up. The totals are sorted to produce a ranked list.

Some of the criteria are qualitative and judgement has to be used to determine a fair assessment value. Others are at least partly qualitative, and a conversion table can be used to translate the numbers into assessment values. This was done for the three profit-related criteria.

Assessment Scales for Quantitative Criteria

H. Has minimal payback period:

Payback Period (months)	Assessment
12	8
24	6
36	4
38	2

I. Has minimal 4-year cost of ownership:

Cost (K\$)	Assessment
500	9
1,000	8
1,500	7
2,000	6
2,500	5
3,000	4
3,500	3
4,000	2
4,500	1

J. Has maximal benefit:

Benefit (\$M)	Assessment
500	1
800	2
1000	4.5
2000	6
2000	6
2000	6
6000	8
10000	9

When considering benefits, monetary factors are not the only ones that should be taken into account. Care needs to be taken to ensure that the non-monetary factors are reflected in the assessments.

Another factor that has to be included in the judgement process is risk.

3.1.2 Benefits and Pitfalls

The benefits of going through a ranking procedure like this should be fairly obvious. It introduces an element of objectivity that should minimise the effects of personal bias and private agendas.

At the same time, there is a possible danger due to the fact that *numbers* are being used in the assessment. When the individual assessments are fed into the assessment spreadsheet and total scores are ranked, the result should be taken as only one of the inputs to the decision making process. The accuracy of the ranking cannot be any better than the appropriateness of the assessment criteria that have been chosen, the validity of the weightings assigned to the criteria or the quality of the individual assessments given to the projects by the review committee.

Risk assessment is a matter of judgement, and is used to qualify the numerical rankings produced by this procedure.

Another potential pitfall is to accept project proposals at face value. The proposals need to be examined critically to ensure that benefits are not overstated, and that costs are not understated or overlooked. For projects with an IT component, it is very difficult to estimate costs for in-house development, but the most common problem is that the cost of maintenance is ignored.

3.2 Project Assessment Justifications

This section describes briefly some of the significant factors leading to the assessments that were given. The actual assessment scores and project rankings are presented in a table in Section 3.3.

3.2.1 Home PC Program

This project was given low assessments for the Time to Market and Product Quality criteria, but scored moderately well for the People and Profit related criteria. Improvements in customer service could lead to reductions in distribution time. The general feeling was that this was probably a low risk project, provided the expectation for work done at home was not too high.

3.2.2 Replace Distribution Centre

This is one of four projects that scored around the 250 mark. It ranked third overall and with a risk assessment of moderate, this project would deserve close attention. While the cost for this project is high, the expected cost savings and productivity gains more than compensate. With automation and IT, a project like this would serve the long-term interests of the company well.

3.2.3 EDI Link to Customer

This project would also take advantage of IT and make improvements in the area of distribution and Time to Market. It scored better than the new Distribution Centre on payback and cost, but the benefits were not as great. Overall the score was 14 points less than for the Distribution Centre, and the risk was felt to be higher.

3.2.4 EDI Link to Suppliers

This project and the Personnel Database tied for last place in the ranking, and this project was regarded as having a higher risk. This result is somewhat of a surprise in that this is another project where productivity gains could be made via IT, and management decisions would have the benefit of additional automatically captured data. A review of the assessments for Projects 3 and 4 may be warranted, but as in real life, time pressures have prevented that.

3.2.5 MRPII Impact Study

This project scored the highest, and that was partly for scoring well for improvements in production and for low cost and high benefit. This is partly because the costs relate only to the Impact Study, while the benefits relate to the implemented system itself. However, in view of those potential benefits, the costs of doing the Impact Study appear to be well justified.

3.2.6 Electronic Mail

This project scored fourth overall. It was felt to be a valuable tool in facilitating communication and the development of knowledge for the researchers. It scored moderately well for Cost and Benefit, and earned some contribution from all criteria. The success of a project is highly dependent on the implementation style and the commitment given by senior management. Because the current CEO wishes to maximise the value of IT, the risk associated with this project was considered to be low to moderate.

Another factor that gives additional weight to considering this project is its relationship with Project 8 - PC Based Testing. This project scored second overall, and is dependent upon the acceptance of the Electronic Mail project.

3.2.7 Personnel and Skills Data Base

This project scored well naturally enough for the Recruiting and Morale criteria and moderately well for Cost and Benefit. However, it did not do well enough across the other areas, and tied for last place with the EDI Link to Suppliers project.

3.2.8 Improved PC Based Testing Facilities

This project and the MRPII Impact Study were clearly ahead of the rest of the group (by 30 and 50 points approximately). Linking it to the Electronic Mail project is probably not too much of a burden since that project was one of the leaders in the group of four projects clustered around a score of 250. This project scored well in terms of contribution to quality products and research time, and was relatively inexpensive.

3.3 Project Rankings

Evaluation Criteria		R & D	Production	Distribution	Quality-minded culture	Product Quality	Recruiting	Morale	Payback	Cost	Benefit	Total	Ranking
		A	B	C	D	E	F	G	H	I	J		
Weighting		4	7	6.5	4.5	7	4.5	5	6	6.5	9		
Project	Risk	Sorted by Project											
1	L	2	0	5	2	1	6	7	6	6.5	6	251	5
2	M	0	0	9	4	5	4	5	4	1	8	257	3
3	H	0	2	9	4	2	3	3	8	6.7	2	243	6
4	H	0	5	0	3	1	2	2	8	9	4.5	222	7
5	M	1	9	2	4	5	3	4	0	9	9	306	1
6	M	6	2	5	4	2	3	4	4	6.1	6	254	4
7	M	1	1	1	2	2	8	9	2	5.3	6	222	8
8	M	9	5	4	8	9	1	1	6	9	1	279	2
Project	Risk	Sorted by Ranking											
5	M	1	9	2	4	5	3	4	0	9	9	306	1
8	M	9	5	4	8	9	1	1	6	9	1	279	2
2	M	0	0	9	4	5	4	5	4	1	8	257	3
6	M	6	2	5	4	2	3	4	4	6.1	6	254	4
1	L	2	0	5	2	1	6	7	6	6.5	6	251	5
3	H	0	2	9	4	2	3	3	8	6.7	2	243	6
4	H	0	5	0	3	1	2	2	8	9	4.5	222	7
7	M	1	1	1	2	2	8	9	2	5.3	6	222	8