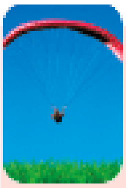
Extra Case Studies from the 1st Edition

[NB: all now relate to *Chapter 22*]



Cases

C21–1 Culharb plc

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INTRODUCTION Culharb plc is a large, long-established, and now widely diversified UK company mainly engaged in manufacturing industrial products in more than ten divisions. There is a significant bias towards 'traditional industries' in its strategic portfolio. In recent years earnings per share, sales growth rates and rate of return on investment levels achieved by the company have been disappointing. There has recently been a major restructuring of the

[continued on next page]

(b) Expansion projects
These are justified on the basis of payback period, return on capital employed, and DCF analysis.

(c) New product proposals
Two types of project are distinguished – extensions to product lines and diversifications. While both are justified on the basis of return on capital employed and DCF analysis, they are also subject to sensitivity analysis and tested for consistency with strategic plans.

(d) Proposals not justified on profitability criteria
These encompass safety, convenience, nonproductive, and necessity projects, and so on. Where appropriate and feasible a financial analysis is performed and alternative ways of carrying out the project are assessed. At a minimum the full cost consequences over time must be identified.

On average, proposals falling into groups (a) and (d) have dominated the capital expenditure bids from divisions, with the emphasis falling on group (a) proposals.

DGMs have some discretionary authority as regards capital expenditure. Up to £250,000 per year can be authorized by a DGM, without reference to headquarters, for purposes which have general approval from headquarters. However, there is an upper limit on individual discretionary expenditures of £25,000. Approximately 25 per cent of capital expenditure per year is accounted for by discretionary spending by divisions.

THE DIVISIONS Divisions have made their budget submissions and capital expenditure proposals for the next financial year. Characteristics of three of the divisions and summaries of their actual and projected financial performance now follow.

PUMPS DIVISION This division manufactures and assembles pumps that are widely used in manufacturing, construction and primary industries. It is one of the original core businesses of the group and operates in an industry which has seen a slow pace of technical change in both products and production methods. Competition is relatively low-key and the division enjoys a reputation as a good-quality reliable supplier. Three factories are operated by the division using plant that is long lasting and not prone to obsolescence.

The average age of plant is ten years old. As indicated by the financial summary in Appendix 2, there has been only a low rate of growth in the sales and asset base of the division even though demand for the products of this industry has been quite buoyant for several years. Most capital expenditure proposals in the last three years had been for cost-reduction projects, with the remainder being necessity projects. Although all capital quests had been granted by headquarters, no large expansion projects had been proposed and annual additions to assets had approximately equalled retirements.

The product line of the division, which involves a large number of standard products as well as a significant amount of specialty contract work, is divided into five product groups so that the profitability of each group can be examined. There is a significant degree of specificity between types of pump and the equipment needed to produce them.

Details of the additional capital project proposals being considered for submission to headquarters for approval are given in Appendix 3.

FORGING DIVISION This division also has a long history within the group. Since the severe trading difficulties of the early 1990s, when sales fell 40 per cent in real terms in two years and employee numbers from all levels were reduced by 50 per cent, the division had pursued a major shift in strategy. The majority of the high-volume, low value-added product range had been discontinued and emphasis placed on highly specialized, large-size, high-quality, lower-volume products for two main unrelated groups of customers. Demand is more predictable in these market areas and there is less competition but the market is still subject to major cyclical fluctuations. Since the early 1990s demand has steadily strengthened. The division enjoys formally recognized status as a high-quality supplier with several of its major customers.

Each new product needs expensive specially developed design work and tooling that is carried out under contract for a customer. Because of this there is a need to maintain the design and technical capability of the division.

One factory is operated and the plant for the most part comprises large-scale traditional forging equipment, the majority of which is well over twenty years old but is still reliable. However, the very expensive, largely hand-made, dies which are used are largely manufactured in-house by highly skilled but ageing toolmakers who are in increasingly short supply. Relative to other long-established divisions based on traditional industries, this division has performed quite well (see Appendix 4 for a summary of financial results) and almost all of its capital expenditure proposals in the past have been accepted.

The technology of the product design, die making and forging processes, and the quality standards demanded by customers have changed markedly in recent years. The last major investment in new-technology forging equipment cost the equivalent of 60 per cent of annual gross sales revenue and took two years to install and commission. It is predicted that several more years will be needed to explore the learning curve and develop sales to a level that fully exploits its potential. Only one other company in the world has a plant to match the new investment made by this division. More recently the division has made significant investments in computer-aided design and integrated automated manufacture of dies. The Engineering Manager is now arguing for a major new investment in forging equipment that would give a world lead to the company but the rest of the divisional management team are resisting the proposal (see Appendix 5 for the additional major capital investment proposals the division is considering).

VISICON SYSTEMS DIVISION This is a new division, small in size relative to other divisions, but achieving high growth in a market that is already expanding rapidly and is expected to continue to do so for many years. There are as yet few competing companies.

A Vision system is a computer-based visual recognition system used in automated manufacturing systems. Images of product components, usually obtained by video cameras, are electronically processed and identified. The information is fed to automated handling equipment, which then selects the appropriate component and feeds it to automated assembly systems. The system can distinguish different components and guide handling equipment to select appropriate ones.

The technology is developing rapidly and each customer has somewhat different needs. A high investment is needed in research, technical development, systems design, marketing, and engineering services. The majority of physical components are bought-in so the essential nature of provision to customers is advice, system design and system installation services.

As indicated in Appendix 6, the division, although it is growing rapidly, cannot yet be regarded as financially successful and future market prospects are far from clear although independent commentators on the industry appear confident that there will be sustained rapid growth in combination with an increasing pace of technological change and diversity.

Appendix 1
Summary of corporate financial results

	Budget 1998 £m	1999 £m	2000 £m	2001 £m	2002 £m
Net sales	499	556	548	557	601
Cost of goods sold	368	410	390	387	407
Gross profit	131	146	158	170	194
Period expenses	104	115	123	130	141
Operating profit	27	31	35	40	53
Financing costs	2	2	2	2	4
Taxation	7	9	11	11	12
Profit after tax	18	20	22	27	37
Net current assets	122	120	139	156	189
Net fixed assets	207	187	218	225	252
Net assets	329	307	357	381	441
Equity	196	197	216	228	239
Long-term liabilities	133	110	141	153	202
Capital employed	329	307	357	381	441
ROCE	8.2%	10.1%	9.8%	10.5%	12.0%
Earnings per share (EPS)	4.5	5.0	5.5	6.75	9.25

During the period to which these results relate the annual rate of increase in a generally accepted price index has averaged 5 per cent.

Appendix 2
Summary of Pumps Division financial results

	Budget 1998 £m	1999 £m	2000 £m	2001 £m	2002 £m
Net sales	70	67	69	76	92
Cost of goods sold	46	42	45	48	59
Gross profit	24	25	24	28	33
Selling and administration	13	12	12	13	16
Research, development and technical services	2	2	2	3	3
Allocation of central overhead	3	3	2	3	4
Operating profit	6	8	8	9	10
Financing costs	–	1	2	3	2
Taxation	2	3	1	1	2
Profit after tax	4	4	5	5	6
Net current assets	15	17	18	19	20
Net fixed assets	18	20	21	25	26
Net assets	33	37	39	44	46
Equity	31	35	34	36	39
Long-term liabilities	2	2	5	8	7
Capital employed	33	37	39	44	46
ROCE	18%	21.7%	20.4%	20.4%	21.7%
Target ROCE					25%

Appendix 3
Pumps Division
Additional capital project proposals

Proposal A: Pump assembly automation
The automation of the pump assembly operation for one of the main product groups includes the installation of an automated part handling system relying on a Visicon system that would be supplied by the Visicon Division (estimated cost to Pumps Division £250,000). Existing assembly equipment, which has a zero net book value, would become redundant if the project proceeds, as would the majority of its supporting workforce.

Financial projections:	
Initial investment	£4.9m
Net cash flows	£1.862m per year for 5 years
NPV at 15%	£1.341m
ROCE	18%

Proposal B: Product termination
One of several proposed terminations, this product was launched five years ago and had an expected six-year life. The original cost of the assets was £3.6m, the project profit for 2002 is £102,000 and its current realizable value is estimated to be £600,000.

The divisional management has decided to proceed, with the request for approval for Proposal B but not A.

Appendix 4
Summary of Forging Division financial results

	Budget				
	1998	1999	2000	2001	2002
Volume index	100	110	132	151	165
	£m	£m	£m	£m	£m
Net sales	38	46	58	70	83
Cost of goods sold	16	30	35	37	41
Gross profit	22	16	23	33	42
Selling and administration	7	7	9	10	11
Research, development and technical services	9	10	13	15	17
Allocation of central overhead	1	2	2	3	4
Operating profit	5	3	1	5	10
Financing costs	–	3	2	2	1
Taxation	2	–	–	–	4
Profit after tax	3	6	1	3	5
Net current assets	11	6	4	1	10
Net fixed assets	21	49	44	49	61
Other assets	2	2	2	4	5
Net assets	34	57	50	52	76
Equity	34	28	27	30	60
Long term liabilities	–	29	23	22	16
Capital employed	34	57	50	52	76
ROCE	14.7%	–	–	9.6%	13.1%
Target ROCE					15%

Appendix 5
Forging Division
Additional capital project proposals

Proposal 1: Energy Saving Project
This proposal is expected to produce significant economies in the consumption of gas in die preparation and use.

Financial projections:

Initial Investment	£3m
Net cash flows	£1.091m per year for 5 years
NPV at 15%	£0.657m
ROCE	16.4%

Proposal 2: 32,000 ton screw press
This project would equip the division with a technical forging capability unmatched by any other company in the world and would help to develop markets for precision production of large part sizes, which have been beyond the range of existing equipment.

Financial projections:

		£m
Initial investment		38
Net cash flows	Year 1	8
	Year 2	8
	Year 3	13
	Year 4	33
	Year 5	10
NPV at 15%		7.41
ROCE		17.9%

The major decline at the end of Year 5 is due to the predicted development of new casting and forging processes for the precision forging market. From Year 5 onwards the net cash flows are expected to stabilize at around £5m p.a.

Divisional management has decided to support Proposal 1 but not Proposal 2.

Appendix 6
Summary of Visicon Division financial results

	Budget				
	1998 £000	1999 £000	2000 £000	2001 £000	2002 £000
Net sales	98	240	356	540	810
Cost of goods sold	27	66	98	149	223
Gross profit	71	174	258	391	587
Selling and administration	33	58	71	93	116
Research, development and technical services	96	136	182	284	401
Allocation of central overhead	2	6	8	20	29
Operating profit	60	26	3	4	41
Financing costs	24	30	35	42	84
Taxation	–	–	–	–	–
Profit after tax	84	56	38	38	43
Net current assets	129	147	178	221	388
Net fixed assets	48	65	70	85	137
Other assets	23	38	42	64	85
Net assets	200	250	290	370	610
Net equity balance	200	144	176	250	362
Long-term liabilities	–	106	114	120	248
Capital employed	200	250	290	370	610
ROCE	–	–	–	1.1%	6.7%
Target ROCE – short and medium term					12%
Target ROCE – long term					25%

No additional capital expenditures are proposed. Rather, approval of the 2002 budget proposals is requested, which implies a major expansion of the staffing of the technical core of the division and its supporting services and equipment.

REQUIRED

1 Using the information provided, critically evaluate the use by Culharb plc of return on capital employed (ROCE) as the measure of divisional performance.
2 Demonstrate whether a move to Residual income as the key indicator of divisional performance would resolve any of the conflicts relating to the capital expenditure proposals being considered for both the Pumps Division and the Forging Division.
3 Suggest and evaluate alternative methods of measuring divisional performance that may be appropriate for Culharb plc.

C21–2 Edit 4U
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INTRODUCTION Sean O'Sullivan is a sports journalist. He was born, lived and worked in London, but in 1995 he was made redundant and decided to move to Ireland, from where his parents originated. He hoped to take advantage of Ireland's boom economy, at the time the Irish economy was experiencing an annual growth rate of 8 per cent and had done so for several years. Sean intended to set up his own business to take advantage of Ireland's rapidly growing service sector.

Sean found work as a freelance editor for a company, Technosports Ltd. The company produced several sports magazines. Sean worked on the design and layout of two of the company's sports magazines. Work on the magazines accounted for the majority of Sean's time, but for the remainder of his time he was free to work for other clients, which he did. Working for Technosports had a number of advantages for Sean: he had a regular income and he did not have to provide any working capital, even when working for his own clients.

Over a period of time, relations deteriorated between Sean and the owners of Technosports Ltd. The two brothers who owned Technosports Ltd. were not happy about Sean working for other clients; they thought he should spend more time producing their magazines.

For his part Sean wanted more control over the affairs of Technosports Ltd. Sean thought that the full potential of the company was not being realized. In Sean's opinion the owners of the company were very conservative and were not taking full advantage of the opportunities a growing economy provided. The brothers were happy with the size of their business, they provided all of its funding needs and they were not interested in borrowing money to fund growth. Sean did not have funds to invest in the business. Therefore the two brothers were reluctant to give him any major say in the running of the business. Over time relations deteriorated to such an extent that the brothers and Sean parted company, less than a year after Sean took up employment with them.

Sean decided to realize his original intention and set up his own business, Edit 4U (E4U). Sean had good hopes of the business succeeding, because as mentioned above the Irish economy was experiencing a very rapid period of growth and many small business were successfully starting up. Sean would provide a magazine editing and layout service. Several competitors existed in this field, but demand was growing at a faster rate than supply. Sean thought that he would have a significant competitive advantage, for he had relatively low overhead costs and thus could offer competitive prices. Also to prevent over-reliance on the magazine market, he would take on any other suitable jobs, e.g. the production of promotional literature.

FOUNDING THE BUSINESS Sean is delighted to have his own business and has a regular stream of work. However, problems have begun to emerge. Sean is a very experienced journalist but a poor financial manager. He has great difficulty pricing jobs. He makes up prices as he goes along, basing prices on what he thinks other companies are charging, but he does not know how other companies arrive at their charges for similar jobs. Most of the business' costs are fixed overheads and it is difficult to arrive at a reasonable overhead absorption rate when predicting future demand is difficult.

Sean also has problems in supporting the business' working capital needs. He had difficulties in raising enough money to start the business. To set up E4U, Sean borrowed €6,452, to be repaid over ten years. The €6,452 loan was part of a mortgage raised on the family property. Sean wanted to borrow more than €6,452, but his wife (Sean had married shortly after moving to Ireland) was very reluctant to raise a large mortgage on her house. Sean's wife, Mary had inherited the family home from her father and hoped that the property, which was rapidly increasing in value, would provide a pension for her and Sean. The remainder of the mortgage was used to renovate the house. Sean also has the use of an overdraft facility with the bank, with an upper limit of €8,065.

To save money, Sean decided to work from home. He registered for VAT to recuperate part of the cost of buying computers and office equipment. Jim, a graphic artist, was employed to help Sean with the layout of magazines. Jim is a friend of Sean's wife and he is paid a low wage (€968 per month), but, within reason, is free to come and go as he pleases. In addition to his wages Jim receives a tax-free lump sum (€806), from time-to-time. Jim's Income Tax and National Insurance on his regular wages is paid by the business.

Shortly after the start of the business there were problems with cash flow. The business is under-capitalized and was not bringing in enough money to cover business and household expenses. Mary estimates that basic household running expenses are €3,220 per month. That amount includes debt repayments and some business expenses, e.g. the cost of telephones, but does not include extras, such as family holidays, school fees and replacing the family car. Sean has calculated that business expenses are in the order of about €1,600 (including an amount for estimated Income Tax and VAT), but Mary does not place much confidence in this figure and suspects that business expenses are more than this, in particular she feels that Income Tax is underestimated. In order for the business to break even with regard to household and business expenses, Mary thinks Sean must earn about €70,000 annually in turnover, but to date the average annual turnover has been between €46,000 and €56,000. The business has a small customer base: there are four contracts to produce magazines, two on a monthly basis and two on a bi-monthly basis. Income from regular customers is supplemented by ad hoc business.

Mary has a small income from part-time journalism, she also lets a room in the house to a student. Business debts have begun to build-up. There is no problem with collecting outstanding invoice payments. At any one time there is about €17,742 outstanding, most payments are made within 60 days, but under-capitalization makes supporting outstanding debts difficult. The business is constantly exceeding its overdraft limit by approximately €6,452. Sean has a good relationship with the bank. He is very friendly with the person who handles his account, but at times, the bank's patience runs out and they demand that any excess over the overdraft limit is reduced. To reduce his overdraft, Sean transfers money from the business's VAT and Income Tax bank accounts into the current business account. These amounts are rarely transferred back to the relevant accounts. As a result, VAT and Income Tax are not fully paid when they fall due and debts are increasing. The Sheriff from the County Courts has called at the house several times to enforce the VAT and Income Tax debts, about €19,355000. To get rid of the Sheriff, Sean borrows money from his mother. Again these amounts are rarely repaid to her.

Sean has said to Mary that they need to take out a second mortgage. The house is worth €725,806 and secured borrowing is only €48,387. Mary does not want to take out a second mortgage. They have enough equity to offer as security, but will they be able to afford the repayments? Also the bank is wary of lending to Sean, even with security, as long as he cannot effectively control his overdraft.

ACCOUNTING INFORMATION SYSTEMS: DESIGN AND USE Mary does most of the paper work and accounts for the business. She undertook a book-keeping course to improve her skills in this area. Despite Mary's efforts to keep the accounts in good order, problems have begun to arise. Sean does not keep the paper work in good order, so Mary finds it very difficult to maintain the accounts accurately. Also Sean insists on keeping his own set of books and his and Mary's books do not agree, with reconciliation proving difficult if not impossible. Sean has, on the advice of his accountant, purchased a computerized accounting system, but he has made little effort to understand the system and does not make use of it: 'he does not know how to use it and never asks for advice. Sean ignores all systems and even sets up duplicate systems. Whether I'm there or not makes very little difference. He is wasting my time. He never has work ready for me' (Mary).

Sean prefers to use his own accounting system, which is very simple. He uses a spreadsheet to list his invoices and expenses, and to note when invoices have been paid and when bills are due to be paid. Sean up-dates his spreadsheet on an ad hoc basis, usually when there is a cash flow crisis. Sean feels that he is well informed about the financial state of his business, 'I know what is going on', but Mary is worried that the VAT returns are not accurate and that trouble will ensue when they have a VAT inspection.

Sean does employ an accountant to produce statutory accounts for Income Tax and VAT purposes. Sean's interest in producing statutory accounts is to reduce his tax bill; he is not overly concerned about the accuracy of the information that he gives his accountant. The accountant finds it very difficult to get paperwork and information from Sean, e.g. Sean very rarely opens 'brown' envelopes and as a result of this regularly has his telephone cut off. Sean's reluctance to supply accurate documentation to his accountant means that the accuracy of the statutory accounts is open to question. The relationship between Sean and his accountant is friendly, but he does not want to get involved in financial matters. Mary is reluctant to contact the accountant, because his fees are never paid in full. Unless she can pay him some money on account, she does not want to talk to him.

THE NEW BUSINESS VENTURE Sean knows that the business has to expand, has to increase turnover. Fergus, who owns a publishing company and other businesses has approached Sean to see if he is interested in a joint business venture. The nature of the venture is to produce a monthly magazine for one of Ireland's leading supermarkets. The supermarket will receive the magazine's cover price of €2. Fergus will be in charge of selling advertising space, printing and distributing the magazine. Sean will be editor of the magazine and will also be responsible for its design and layout. Fergus will receive the advertising revenues, from which he is expected to pay Sean's fee, the journalists who contribute to the magazine, and printing and distribution of the magazine. Sean will receive a fee of €9,677 per issue (€116,124 per annum), paid one month in arrears, though initially Fergus will not be able to pay Sean's first fee for at least two months. If Sean or his wife write articles for the magazine they will receive a fee for each article. Sean will pay for all office expenses: €806 per month (to be paid in arrears every two months) and the cost of photography: €3,226 per issue (approximately); photography will be paid for as it is incurred. Fergus has asked Sean to lend him half of the printing and distribution costs; these costs will have to be paid before printing and distribution can commence. Fergus needs the money immediately and will repay the loan when he receives the first advertising revenues. Fergus assures Sean that the venture should be in profit within the year. Fergus is expecting to sell at least 50,000 magazines per issue.

Sean is very enthusiastic about the venture: cash flow will no longer be a problem and he will have enough time to pursue other business interests. Sean expects that the magazine will take about two weeks per month, leaving him plenty of time to get other business. Mary is not so enthusiastic about the proposed deal. Fergus is very reluctant to forecast how much advertising revenue the magazine will generate and appears to want to employ a large sales team. The magazine may take some time to attract advertising revenue and Mary thinks that the print run is over optimistic. Mary is worried and decides to produce, from conversations with Sean and Fergus, a rough note of costs:

- Printing and distribution will have to be paid for up-front because the printers will not extend credit to Fergus: €32,258 per issue.
- Sale team salaries of €14,516 will be paid monthly in arrears.
- Journalists' fees will amount to about €8,065 per issue and will be paid in arrears every three months.
- Advertising revenue should be in the order of €83,871 per issue and payment terms are expected to be about 60 days.

Fergus expects advertising revenue to increase to €104,839, towards the end of the first year of the venture. The magazine is, after all, to be sold in Ireland's best supermarket! Also he hopes to reduce printing costs in the near future as a friend of his may be able to do the job.

Mary is very doubtful about Fergus' estimation of advertising revenue. She thinks the first two issues of the magazine will earn about €32,258–€48,387 in advertising revenue. Also she is concerned that advertisers will take up to 120 days to pay and that there will be an amount of bad debts.

To provide the working capital for the venture Sean will have to increase his current level of borrowing. Mary does not want to re-mortgage her property again. The property market in Dublin is starting to show signs of weakening and the property is supposed to fund their pension. She is also suspicious that Fergus, though an established businessman, cannot get any credit.

Mary would like to take things more slowly and find out more about Fergus. Sean thinks that Mary is worrying too much and does not know enough about the magazine business. This venture is the very thing that Sean has been looking for and he is not prepared to let it slip out of his grasp. In fact Sean has already rented new offices – he never liked working from home – on a two-year lease at a cost of €968 per month and a €1,935 deposit, both costs to be paid in advance. Sean has also ordered lots of new equipment at a cost of €11,290; he paid for the equipment using his credit card. He is also thinking of employing another person part-time to help with the extra design work. Sean thinks he is, probably, well over his overdraft limit, but he is not worried as the venture will start to produce money very quickly.

Mary shows Sean her note about costs and revenues and suggests that Sean's fee should be increased as she thinks that the magazine will take up far more of Sean's time than he thinks. Also, Mary is concerned that they are over their overdraft limit. She reminds Sean that the bank is concerned about the recent drop in business (Sean has been so taken-up with the venture that he has not been looking for new business) and that the overdraft interest rate has increased to 13 per cent. Sean tells her not to worry, he will use his credit card.

Mary is very concerned. She is worried that the venture could destroy their business if it is not successful. She contacts a family friend, Tom, who is a management consultant specializing in small business development. She hopes Tom, and some of his business colleagues, might be able to advise them as to the viability of the venture and to give them general advice about improving their existing business. She also sends Tom the notes she has made detailing the costs of the proposed venture. Mary invites Tom and his business colleagues to Sunday lunch.

REQUIRED

As Tom, and his business colleagues, please advise Sean and Mary.