HARVARD | BUSINESS | SCHOOL

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The Super Project

In March 1967, Crosby Sanberg, manager-financial analysis at General Foods Corporation, told a casewriter, "What I learned about incremental analysis at the Business School doesn't always work." He was convinced that under some circumstances sunk costs were relevant to capital project evaluations. He was also concerned that financial and accounting systems did not provide an accurate estimate of incremental costs and revenues, and that this was one of the most difficult problems in measuring the value of capital investment proposals. Sanberg used the Super project[1] as an example.

Super was a new instant dessert, based on a flavored, water-soluble, agglomerated[2] powder. Although four flavors would be offered, it was estimated that chocolate would account for 80% of total sales.

General Foods was organized along product lines in the United States, with foreign operations under a separate division. Major U.S. product divisions included Post, Kool-Aid, Maxwell House, Jell-O, and Birds Eye. Financial data for General Foods are given in **Exhibits 1, 2,** and 3.

The $200,000 capital investment project request for Super involved $80,000 for building modifications and $120,000 for machinery and equipment. Modifications would be made to an existing building, where Jell-O was manufactured. Since available capacity of a Jell-O agglomerator would be used in the manufacture of Super, no cost for the key machine was included in the project. The $120,000 machinery and equipment item represented packaging machinery.

Table A Dessert Market, August–September 1966 Compared with August–September 1965

		Change From Aug.-Sept. 1965	
	Aug.-Sept.1966	Share Points	Volume (%)
Jell-O	19.0%	3.6	40.0
Tasty	4.0	4.0	(new)
Total powders	25.3	7.6	62.0
Pie fillings and cake mixes	32.0	-3.9	(no change)
Ice cream	42.7	-3.4	5.0
Total market	100.0%		13.0

[1]The name and nature of this new product have been disguised to avoid the disclosure of confidential information.

[2]Agglomeration is a process by which the processed powder is passed through a steam bath and then dried. This fluffs up the powder particles and increases solubility.

Lecturer Harold E. Wyman prepared this case as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation. This case was made possible by the cooperation of General Fods Corporation.

The Market

A Nielsen survey indicated that powdered desserts constituted a significant and growing segment of the total dessert market, as shown in **Table A**. On the basis of test market experience, General Foods expected Super to capture a 10% share of the total dessert market. Eighty percent of this expected Super volume would come from growth in total market share or growth in the powders segment, and 20% would come from erosion of Jell-O sales.

Production Facilities

Test market volume was packaged on an existing line, inadequate to handle long-run requirements. Filling and packaging equipment to be purchased had a capacity of 1.9 million units on a two-shift, five-day workweek basis. This represented considerable excess capacity, since 1968 requirements were expected to reach 1.1 million units, and the national potential was regarded as 1.6 million units. However, the extra capacity resulted from purchasing standard equipment, and a more economical alternative did not exist.

Capital Budgeting Procedure

The General Foods Accounting and Financial Manual identified four categories of capital investment project proposals: (1) safety and convenience; (2) quality; (3) increase profit; and (4) other. Proposal procedures and criteria for accepting projects varied according to category (see **Exhibit 4**). In discussing these criteria, Sanberg noted that the payback and return guidelines were not used as cut-off measures and added:

> Payback and return on investment are rarely the only measure of acceptability. Criteria vary significantly by type of project. A relatively high return might be required for a new product in a new business category. On the other hand, a much lower return might be acceptable for a new product entry which represented a continuing effort to maintain leadership in an existing business by, for example, filling out the product line.

Super fell into the third category, as a profit-increasing project. Estimates of payback and return on funds employed were required for each such project requiring $50,000 or more of new capital funds and expense before taxes. The payback period was the length of time required for the project to repay the investment from the date the project became operational. In calculating the repayment period, only incremental income and expenses related to the project were used.

Return on funds employed (ROFE) was calculated by dividing 10-year average profit before taxes by the 10-year average funds employed. Funds employed included incremental net fixed assets plus or minus related working capital. Start-up costs and any profits or losses incurred before the project became operational were included in the first profit and loss period in the financial evaluation calculation.

Capital Budgeting Atmosphere

A General Foods accounting executive commented on the atmosphere within which capital projects were reviewed:

> Our problem is not one of capital rationing. Our problem is to find enough good solid projects to employ capital at an attractive return on investment. Of course, the rate of capital inputs must be balanced against a steady growth in earnings per share. The short-term impact

of capital investments is usually an increase in the capital base without an immediate realization of profit potential. This is particularly true in the case of new products.

The food industry should show a continuous growth. A cyclical industry can afford to let its profits vary. We want to expand faster than the gross national product. The key to our capital budgeting is to integrate the plans of our eight divisions into a balanced company plan which meets our overall growth objectives. Most new products show a loss in the first two or three years, but our divisions are big enough to introduce new products without showing a loss.

Documentation for the Super Project

Exhibits 5 and **6** document the financial evaluation of the Super project. **Exhibit 5** is the summary appropriation request prepared to justify the project to management and to secure management's authorization to expend funds on a capital project. **Exhibit 6** presents the backup detail. Cost of the market test was included as "Other" expense in the first period because a new product had to pay for its test market expense, even though this might be a sunk cost at the time capital funds were requested. The "Adjustments" item represented erosion of the Jell-O market and was calculated by multiplying the volume of erosion times a variable profit contribution. In the preparation of this financial evaluation form, costs of acquiring packaging machinery were included but no cost was attributed to Jell-O agglomerator capacity to be used for the Super project because the General Foods Accounting and Financial Manual specified that capital project requests be prepared on an incremental basis:

> The incremental concept requires that project requests, profit projections, and funds-employed statements include only items of income and expense and investment in assets which will be realized, incurred, or made directly as a result of, or are attributed to, the new project.

Exchange of Memos on the Super Project

After receiving the paperwork on the Super project, Sanberg studied the situation and wrote a memorandum arguing that the incremental approach advocated by the manual should not be applied to the Super project. His superior agreed with the memorandum and forwarded it to the corporate controller with the covering note contained in **Appendix A**. The controller's reply is given in **Appendix B**.

Exhibit 4 Criteria for Evaluating Projects by General Foods Corporation

The basic criteria to be applied in evaluating projects within each of the classifications are set forth in the following schedule:

following schedule:

Purpose of Project

a. Safety and Convenience:

1. Projects required for reasons of safety, sanitation, health, public convenience, or other over-riding reason with no reasonable alternatives. Examples: sprinkler systems, elevators, fire escapes, smoke control, waste disposal, treatment of water pollution, etc.
2. Additional nonproductive space requirements for which there are no financial criteria. Examples: office space, laboratories, service areas (kitchens, restrooms, etc.).

b. Quality:

Projects designed primarily to improve quality.

c. Increase Profit:

1. Projects that are justified primarily by reduced costs.
2. Projects that are designed primarily to increase production capacity for an existing product.
3. Projects designed to provide facilities to manufacture and distribute a new product or product line.

d. Other:

This category includes projects which by definition are excluded from the three preceding categories. Examples: standby facilities intended to insure uninterrupted production, additional equipment not expected to improve profits or product quality and not required for reasons of safety and convenience, equipment to satisfy marketing requirements, etc.

Payback and ROFE Criteria

Payback—return on funds projections not required but the request must clearly demonstrate the *immediate* need for the project and the lack or inadequacy of alternative solutions.

Requests for nonproductive facilities, such as warehouses, laboratories, and offices should indicate the advantages of owning rather than leasing, unless no possibility to lease exists. In those cases where the company owns a group of integrated facilities and wherein the introduction of rented or leased properties might complicate the long-range planning or development of the area, owning rather than leasing is recommended. If the project is designed to improve customer service (such as market-centered warehouses) this factor is to be noted on the project request.

If Payback and ROFE cannot be computed, it must be clearly demonstrated that the improvement is identifiable and desirable.

Projects with a Payback period *up to 10 years* and a 10-year return *on* funds *as low as 20%* PBT are considered worthy of consideration, provided (1) the end product involved is believed to be a reasonably permanent part of our line or (2) the facilities involved are so flexible that they may be usable for successor products.

Projects for a proven product where the risk of mortality is small, such as coffee, Jell-O Gelatin, and cereals, should assure a payback in *no more than 10 years* and 10-year PBT return on funds of *no less* than 20%.

Because of the greater risk involved, such projects should show a high potential return *on* funds (not less than a 10-year PBT return of 40%). Payback period, however, might be as much as *10 years* because of losses incurred during the market development period.[a]

While standards of return may be difficult to set, some calculations of financial benefits should be made where possible.

Source: The General Foods Accounting and Financial Manual.

[a]These criteria apply to the United States and Canada only. Profit-increasing capital projects in other areas in categories c1 and c2 should offer at least a 10-year PBT return of 24% to compensate for the greater risk involved. Likewise, foreign operation projects in the c3 category should offer a 10-year PBT return of at least 48%.

Exhibit 5 Capital Project Request Form of General Foods Corporation

NY1292-A 12-63
PTD. In U.S.A.

"Super" Facilities 66-42
Project Title & Number

December 23, 1966
Date

Jell-O Division — St. Louis
Division & Location

New Request [x] Supplement [ ]

Expansion-New Product [x] A
Purpose [ ] B

Project Description
To provide facilities for production of Super, chocolate dessert. This project included finishing a packing room in addition to filling and packaging equipment.

Summary of Investment	
New Capital Funds Required	$200M
Expense Before Taxes	--
Less: Trade-in or Salvage, If Any	--
Total This Request	$200M
Previously Appropriated	--
Total Project Cost	$200M

Financial Justification	
ROFE (PBT Basis) - 10 Yr. Average	62.9
Payback Period April, F'68 (From) Feb. F'75 (To)	6.83 Yrs.
Not Required	[ ]
* Based on Total Project Cost and Working Fund of	$510M

Estimated Expenditure Rate		
Quarter Ending Mar.	F19 67	$160M
Quarter Ending June	F19 68	40M
Quarter Ending	F19	
Quarter Ending	F 19	
Remainder		

Other Information	
Major [ ] Specific Ordinary [ ] Blanket [ ]	
Included in Annual program Yes [ ] No [ ]	
Per cent of Engineering Completed	80%
Estimated Start-Up Cost	$15M
Estimated Start-Up Date	April

Level of Approval Required

[ ] Board [ ] Chairman [ ] Exec. V.P. [ ] Gen. Mgr.

For Division Use—Signatures	
Name & Title	Date

Signatures		Date
Director Corp. Eng.		
Director B&A		
General Manager		
Exec. Vice President		
President		
Chairman		

Exhibit 5 (continued) Instructions for Capital Project Request Form NY 1292-A

The purpose of this form is to secure management's authorization to commit or expend funds on a capital project. Refer to Accounting and Financial Manual Statement No. 19 for information regarding projects to which this form applies.

New Request—Supplement Check the appropriate box.

Purpose Identify the primary purpose of the project in accordance with the classifications established in Accounting and Financial Statement No. 19, i.e., Sanitation, Health and Public Convenience, Nonproductive Space, Safety, Quality, Reduce Cost, Expansion—Existing Products, Expansion—New Products, Other (specify). Also indicate in the appropriate box whether the equipment represents an addition or a replacement.

Project Description Comments should be in sufficient detail to enable Corporate Management to appraise the benefits of the project. Where necessary, supplemental data should be attached to provide complete background for project evaluation.

Summary of Investment

New Capital Funds Required Show gross cost of assets to be acquired.

Expense Before Taxes Show incremental expense resulting from project.

Trade-in or Salvage Show the amount expected to be realized on trade-in or sale of a replaced asset.

Previously Appropriated When requesting a supplement to an approved project, show the amount previously appropriated even though authorization was given in a prior year.

Financial Justification

ROFE Show the return on funds employed (PBT basis) as calculated on Financial Evaluation Form NY 1292-C or 1292-F. The appropriate Financial Evaluation Form is to be attached to this form.

Not Required Where financial benefits are not applicable or required or are not expected, check the box provided. The nonfinancial benefits should be explained in the comments.

In the space provided, show the sum of the Total Project Cost plus Total Working Funds (line 20, Form NY 1292-C or line 5, Form NY 1292-F) in either of the first three periods, whichever is higher.

Estimated Expenditure Rate Expenditures are to be reported in accordance with accounting treatment of the asset and related expense portion of the project. Insert estimated quarterly expenditures beginning with the quarter in which the first expenditure will be made. The balance of authorized funds unspent after the fourth quarter should be reported in total.

Other Information Check whether the project is a major, specific ordinary, or blanket, and whether or not the project was included in the Annual Program. Show estimated percentage of engineering completed; this is intended to give management an indication of the degree of reliability of the funds requested. Indicate the estimated start-up costs as shown on line 32 of Financial Evaluation Form NY 1292-C. Insert anticipated start-up date for the project; if start-up is to be staggered, explain in the comments.

Level of Approval Required Check the appropriate box.

Source: General Foods

Exhibit 6 Financial Evaluation Form of General Foods Corporation ($ in thousands)

NY 1292-C 10-64
PTD. in U.S.A.

Jell-O	St. Louis	The Super Project	67-89	______
Division	*Location*	*Project Title*	*Project No.*	*Date*
				Supplement No.

Project Request Detail	1st Per.	2nd Per.	__ Per.	__ Per.	__ Per.
1. Land	$				
2. Buildings	80				
3. Machinery & Equipment	120				
4. Engineering					
5. Other (Explain)					
6. Expense Portion (Before Tax)					
7. Sub Total	$200				
8. Less: Salvage Value (Old Asset)					
9. Total Project Cost*	$200				
10. Less: Taxes on Exp. Portion					
11. Net Project Cost	$200				

*Same as Project Request

Return on New Funds Employed—10-Yr. Avg.	PAT (C ÷ A)	PBT (B ÷ A)
A - New Funds Employed (Line 21)	$380	$380
B - Profit Before Taxes (Line 35)		$239
C - Net Profit (Line 37)	$115	
D - Calculated Return	30.2%	62.0%

PayBack Years From Operational Date	
Part Year Calculation for First Period	- Yrs.
Number of Full Years to Pay Back	6.00 Yrs.
Part Year Calculation for Last Period	0.83 Yrs.
Total Years to Pay Back	6.83 Yrs.

Funds Employed	1st Per. F 68	2nd Per. F 69	3rd Per. F 70	4th Per. F 71	5th Per. F 72	6th Per. F 73	7th Per. F 74	8th Per. F 75	9th Per. F 76	10th Per. F 77	11th. Per. ___	10-Yr. Avg.
12. Net Project Cost (Line 11)	$200	200	200	200	200	200	200	200	200	200		
13. Deduct Depreciation (Cum.)	19	37	54	70	85	98	110	121	131	140		
14. Capital Funds Employed	$181	163	146	130	115	102	90	79	69	60		113
15. Cash												
16. Receivables	124	134	142	157	160	160	169	169	178	178		157
17. Inventories	207	222	237	251	266	266	281	281	296	296		260
18. Prepaid & Deferred Exp.												
19. Less Current Liabilities	(2)	(82)	(108)	(138)	(185)	(184)	(195)	(195)	(207)	(207)		(150)
20. Total Working Funds (15 Thru 19)	329	274	271	264	241	242	255	255	267	267		267
21. Total New Funds Employed (14 + 20)	$510	437	417	394	356	344	345	334	336	327		380
Profit And Loss												
22. Unit Volume (in thousands)	1100	1200	1300	1400	1500	1500	1600	1600	1700	1700		1460
23. Gross Sales	$2200	2400	2600	2800	3000	3000	3200	3200	3400	3400		2920
24. Deductions	88	96	104	112	120	120	128	128	136	136		117
25. Net Sales	2112	2304	2496	2688	2880	2880	3072	3072	3264	3264		2803
26. Cost of Goods Sold	1100	1200	1300	1400	1500	1500	1600	1600	1700	1700		1460
27. Gross Profit	1012	1104	1196	1288	1380	1380	1472	1472	1564	1564		1343
Gross Profit % Net Sales												
28. Advertising Expense	1100	1050	1000	900	700	700	730	730	750	750		841
29. Selling Expense												
30. Gen. and Admin. Cost												
31. Research Expense												
32. Start-Up Costs	15											2
33. Other (Explain) Test Mkt.	360											36
34. Adjustments (Explain) Erosion	180	200	210	220	230	230	240	240	250	250		225
35. Profit Before Taxes	$(643)	(146)	(14)	168	450	450	502	502	564	564		239
36. Taxes	(334)	(76)	(7)	87	234	234	261	261	293	293		125
36A. Add: Investment Credit	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	-	-		(1)
37. Net Profit	(308)	(69)	(6)	82	217	217	242	242	271	271		115
38. Cumulative Net Profit	$(308)	(377)	(383)	(301)	(84)	133	375	617	888	1159		
39. New Funds to Repay (21 Less 38)	$818	814	800	695	440	211	(30)	(283)	(552)	(832)		

See Accounting & Financial Manual Policy No. 19 for Instructions.