

Gardner, Samantha  
Graham, Anders  
Laptev, Nikolay  
Tang, Lingli  
Zhong, Xiaoyin

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University Of California Santa Barbara  
Department of Economics

# **Analysis of Super Project Case**

*Quandaries of incremental analysis*

## Quick Overview

In 1966-67, General Foods Corporation was considering introducing a new product called Super, "a new instant dessert based on a flavored, water-soluble, agglomerated powder," to U.S. and foreign markets. The proposed capital investment for the project was \$200,000, and its production would take place in an existing building in which Jell-O was manufactured using the available capacity of a pre-existing Jell-O agglomerator. Once introduced into the market, Super was expected to capture a 10% market share, 8% of which would come from growth in the dessert market and 2% of which would come from the erosion of Jell-O sales.

In evaluating whether Super would be a good investment or not, the problem of evaluating projects based on only incremental cash flows was brought up. Crosby Sanberg, a manager of financial analysis at General Foods presented three different ways of evaluating the return on Super. The first was an incremental basis that was regularly used by General Foods in evaluating projects. It projected that Super would have an attractive return of 63%. The second was a facilities-used basis, which took into account the opportunity cost of using available, pre-existing Jell-O equipment. This method projected that Super would have a return of 34%. The last approach was a fully allocated basis that included the opportunity cost and overhead costs. This method projected that Super would have a return of 25%, just barely meeting the minimum required return of 24% for a project of its risk. The dilemma for General Foods was to decide what the best method for evaluating the Super project was since each method produced drastically different returns.

## Relevant cash flows analysis

The relatively well posed project with promises of great future pay offs must be examined closely nevertheless to determine its true profitability. As such, the Super Project's NPV must be calculated, however before we proceed we must acknowledge the relevant cash flows. The project incurred an **expense of testing the market**. This expense, however, must not be included in our cash flow analysis because it can be considered a sunk cost. This expense is required for 'taking a temperature' of the market and will not be recovered. Other sources of cash flow include:

- a) Overhead expenses
  - a. This must undoubtedly be included in our cash flow analysis. The estimated expansion of the Super Project to capture 80% of the market will require extra capital and extra labor force to sustain the increasing demand for the product.
- b) The erosion of Jell-O Sales
  - a. This also must be included in our cash flow analysis. An economics hit that Jell-O sales will receive due to erosion will be significant. Erosion might occur naturally due to competition, but judging by Table A in HBS Super Project Description we can deduce that erosion due to competition is irrelevant and assumes a very low likelihood. However, based on prognosis

Super Project will eat into the Jell-O Sales and this must be taken as a cost for the project when making the final decision.

- c) Super project's share (\$453K) of the building and agglomerator capacity
- a. Unlike the previous two cash flows where we considered them based on the direct impact they bring, the super project's share of the building and agglomerator capacity must not be considered in our cash flow for the following reasons:
    - i. The expense of the building was already included when estimating costs for Jell-O project and thus this incurred cost must not be counted twice.
    - ii. Yes it might be true that the unused physical space in the factory might be better utilized for Jell-O to increase its profits, however we are considering that in cash flow (b).
    - iii. => We will not count Super Project's share of the building and agglomerator capacity in our cash flow calculations.

Note: Overhead expenses are calculated from information provided on page 17 where we subtract profit for Facilities Used Basis approach from Fully allocated approach and account for the 6 year average that we need.

Thus,

$$Overhead_{expense} = \frac{(211-157) \times 10}{6} = \frac{90}{year}$$

Salvation value was computed by simply discounting our new investment and including the taxes (52%)

## Net Present Value

We will use 10% discount rate when valuing the net present value of the after-tax cash flows. Also, we will use the tax rate of 52% in our calculations.

- We know that in year (0) we will incur costs of \$200M (due to the needed modification of production facilities)
- Note:: Numbers are in *Thousands*
- Note (2): Total cash flow is:

$$\sum_{n=0}^{10} [(Net\ Project\ Cost) + Tax\ Shield + Income\ After\ Tax + Erosion\ of\ Jell - O\ sales\ after\ tax + New\ Working\ Capital + Investment\ Credit + Salvage\ Value]$$

<b>Cash Flows</b>	<b>Yr 0</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>
Net Project Cost	-200										
Deduct Depreciation		-19	-18	-17	-16	-15	-13	-12	-11	-10	-9
Tax Shield (@52%)		9.88	9.36	8.84	8.32	7.8	6.76	6.24	5.72	5.2	4.68
Net Sales		2112	2304	2496	2688	2880	2880	3072	3072	3264	3264
Cost of Goods sold		-1100	-1200	-1300	-1400	-1500	-1500	-1600	-1600	-1700	-1700
Overhead Expense						-90	-90	-90	-90	-90	-90
Advertising expense		-1100	-1050	-1000	-900	-700	-700	-730	-730	-750	-750
Start-Up Costs		-15									
<b>Income After Tax</b>		-49.44	25.92	94.08	186.24	283.2	283.2	312.96	312.96	347.52	347.52
Erosion of Jell-O Sales		-180	-200	-210	-220	-230	-230	-240	-240	-250	-250
<b>Erosion After Tax</b>		-86.4	-96	-100.8	-105.6	-110.4	-110.4	-115.2	-115.2	-120	-120
<b>New Working Funds</b>		-329	55	3	7	23	-1	-13	0	-12	0
<b>Investment Credit</b>		1	1	1	1	1	1	1	1		
Salvage Value											37.008
Total Cash Flow (After-Tax)	-200	-453.96	-4.72	6.12	96.92	204.6	179.56	192	204.48	220.72	269.21

Based on the above cash flows, we can calculate our NPV (as well as pay-off period and IRR):

<b>Year -&gt;</b>	<b>Yr 0</b>	<b>Yr 1</b>	<b>Yr 2</b>	<b>Yr 3</b>	<b>Yr 4</b>	<b>Yr 5</b>	<b>Yr 6</b>	<b>Yr 7</b>	<b>Yr 8</b>	<b>Yr 9</b>	<b>Yr 10</b>
PV of Cash Flows @ 10%	-200	-412.69	-3.9	4.59	66.197	127.04	101.35	98.52	95.39	93.60	103.79
NPV	73.887										
Pay-off	10 Yrs										
IRR	11.99%										

## Decision

This is a classic example of where both the pay-off period and IRR are misleading indicators. We clearly see that NPV is positive, thus there is no question that we must accept the project. We took into account all of the opportunity costs and overhead costs associated with us taking on this venture, and we can conclude that indeed we have a positive NPV which indicates we are making profit given a 10 Yr horizon.