

Invast PRECISION PRODUCTS

I. Decision Issues:

How should Invast Precision Products prioritize capital investment projects proposed by 3 divisions given that only \$1.2M retained earnings are available for capital investment?

- Which investments are to be given priority?
- Which financing options are to be recommended?

II. Brief Company History

Invast Processing Product – Mother Company

- Founded in 1965 by Webner Gruber
- Based on Houston, Texas
- Specialized in the investment casting process of ferrous and non-ferrous materials.

Complex Casting Corporation – Subsidiary

- Acquired by IPP (Invast Precision Products) in 1977 to improve the Company’s competitive advantage
- Specializes in the production of highly complex ferrous casting and intricate internal configurations.

IPP Financial Corporation

- Organized in 1977 to gain max leverage from the mother company’s strong cash position through short-term real estate investment.

III. Analysis of Requested Capital Investments

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Total Needed Investment Capital to Finance all Requested Projects: \$4,900

* all figures are in thousands (‘000)

Only the investment in Gnaw Bone Broach has resulted to a negative NPV. But the repair of this machinery is critical to continue operations for Invast.

IV. Proposed Investment Highlights

IPP MAIN PLANT PROJECTS	COMPLEX CASTING PROJECT	IPP FINANCIAL CORPORATION
<ul style="list-style-type: none"> • Mainly plant equipment upgrades and platform 	<ul style="list-style-type: none"> • Major renovation of plant facilities to 	<ul style="list-style-type: none"> • Purchase of the adjacent land would greatly

<p>construction</p> <ul style="list-style-type: none"> • All projects proposed are relevant to the efficient running of plant operations • They are interrelated and should be pursued collectively 	<p>address the huge \$5M backlog in production</p> <ul style="list-style-type: none"> • Renovation will solve production bottlenecks and speed output • Speed production up to 25% • Expected savings of 450K annually on labor, materials and energy 	<p>enhance value of present holding with an increase of at least 200K to the value of the present holding</p>
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V. The Following Assumptions are Maintained:

- a. That “casting industry” in the *primary industry* of the company.
- b. That IPP precision products will continually be in the “Casting Industry” for the next 15 years with forecasted industrial growth of 9% per annum
- c. For purposes of calculation, inflation will be presumed at 0%
- d. 10% cost of capital is adequate for most investment proposals
- e. All operating cash flow occurs at the end of the year.
- f. Decrease in industrial competitiveness is brought about by plant inefficiency in addressing production bottlenecks that results in production backlogs.

VI. Decision Model

Invast Main Plant Project	+	Complex Casting Project	+	IPP Financial Project	=	1.2M retained earnings	+	Additional Working Capital
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VII. Detailed Analysis

Table 1
INVEST PRECISION PRODUCTS
 NPV analysis of the Four Project Recommendations

Project	Investment	Cash flow (1 to 10 years)	NPV at 10%
Sandblaster	400	85	122.3
Platforms	200	50	107.2
Mixer	300	50	7.2
Broach	500	75	39.1
TOTAL	1400		275.8

* all figures are in thousands ('000)

Table 2

COMPLEX CASTING

NPV Analysis of Major Equipment Renovation Project

	Year = 0	1	2	3	4	5	6	7	8	9	10
1 Capital Expenditure Old Equipment	(2,000)										
2 (salvage value)	(200)										
3 Cash Inflow from Savings		450	450	450	450	450	450	450	450	450	450
4 Revenue		5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500	5,500
5 Depreciation		200	200	200	200	200	200	200	200	200	200
6 Interest		-	-	-	-	-	-	-	-	-	-
7 Income (9% on sales)		495	495	495	495	495	495	495	495	495	495
8 Total Income (3 + 9)		945	945	945	945	945	945	945	945	945	945
9 Income Net of Tax (52% tax rate)		454	454	454	454	454	454	454	454	454	454
10 Net Cash Flow (5 + 9)		654	654	654	654	654	654	654	654	654	654
11 Discount Factor (r = 10%)		0.909	0.826	0.751	0.683	0.621	0.564	0.513	0.467	0.424	0.386
12 NPV		594.18	540.17	491.06	446.42	405.83	368.94	335.40	304.91	277.19	251.99
13 Total Initial Outlay	(1,800)										
14 Net Present Value	2,216										

* all figures are in thousands ('000)

Table 3

IPP FINANCIAL CORPORATION

NPV Analysis of Hawaiian Acreage (100 acre) investment project

	1981	1982	1983
	Year = 0	1	2
1 Capital Expenditure	(1,500)		

2	Development Cost		(100)	
3	Revenue			2,200
4	Cash Flow		(100)	2,200
5	Discount Factor (r = 10%)		0.909	0.826
6	Total Cash outlay	-1500		
7	NPV	-	(90.91)	1,818.18
8	Net Present Value	227		

* all figures are in thousands ('000)

Table 4

IPP FINANCIAL CORPORATION

NPV Analysis of Hawaiian Acreage (473 acre) investment project

If property is sold in 1981 at 1979 selling price of \$3.5M

	1977	1978	1979	1980	1981
	Year = 0	1	2	3	4
1	Capital Expenditure	(2,700)			
2	Development Cost				
3	Revenue				3,500
4	Cash Flow				3,500
5	Discount Factor (r = 10%)				0.683
6	Total Cash outlay	-2700			
7	PV	-	-		2,390.55
8	Net Present Value	(309)			

* all figures are in thousands ('000)

Table 5

IPP FINANCIAL CORPORATION

NPV Analysis of Hawaiian Acreage (473 acre) investment project

If property is sold in 1981 at adjusted selling price (future value r=14%)

	1977	1978	1979	1980	1981
	Year = 0	1	2	3	4
1	Capital Expenditure				

2	Development Cost	(2,700)		
3	Revenue			4,560
4	Cash Flow			4,560
5	Discount Factor (r = 10%)			0.683
6	Total Cash outlay	-2700		
7	PV	-	-	-
8	Net Present Value	415		3,114.54

* all figures are in thousands ('000)

Table 6

IPP FINANCIAL CORPORATION

NPV Analysis Proposed Hawaiian Acreage Investment Project
considering the cash outlay of 2.7M back in 1977 as sunk cost

	1981	1982	1983	
	Year = 0	1	2	
1	Capital Expenditure	(1,500)		
2	Development Cost		(100)	
3	Revenue			5,900
4	Cash Flow			5,900
5	Discount Factor (r = 10%)		0.909	0.826
6	Total Cash outlay	1500.000	-	
7	PV	-	-	4,876.03
8	Net Present Value	3,376		

* all figures are in thousands ('000)

VIII. Decision Points

- It is mainly presumed that Invast Main and Complex Casting holds high priority for facilities upgrade. To decide not to upgrade their facilities would result to huge lost of income in the two casting companies. Requested up-grade by both casting companies will result to speed and efficiency of production that will immediately result in increase of revenues, savings in production cost, and leverage in the highly competitive nature of the casting business.
- IPP Financial Corporation will take second priority because the main purpose of the corporation's existence is to support the leverage needs of the casting companies.

IX. Recommendation

Sell the Hawaiian Acreage's 473 acre land at present market price of \$4.56M to help finance both IPP's and Complex Casting's investment requirement. But, still invest in the Hawaiian

Acreage's 100 acre land to continuously uphold the company's goal of gaining maximum leverage through short term real estate investments.

Invest Main Plant Project	+	Complex Casting Project	+	IPP Financial Project	=	1.2M retained earnings	+	Additional Working Capital
1400	+	1800	+	1500	=	1200	+	4560

The company will have a surplus of 1060K net working capital for other capital investment projects in future.