



Developing Effective Input Metrics to Assess the Innovation Process and the Relationship between Innovation Spending and Shareholder Value

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20 September 2011



DEVELOPMENT



DELIVERY



SUPPLY

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Presentation Outline

- Methods to analyzing and determining the health of your innovation enterprise
- Applying comprehensive metrics across the innovation initiative to communicate progress to shareholders
- Gathering the relevant data to assess the effectiveness of each stage of the innovation process
- Forecasting future returns from internal investments



What happens with no portfolio management

- Too many projects for available resources
- New projects added to "active" list with little appreciation to resource requirements and impact to other projects
- Projects end up in a queue
 - Logjam
 - Cycle times increase
 - Scramble
- Funnels turn to tunnels
- Resources end up "thrashing"
- No mechanism for evaluating and stopping weak projects
- No tough decision points and poor project selection



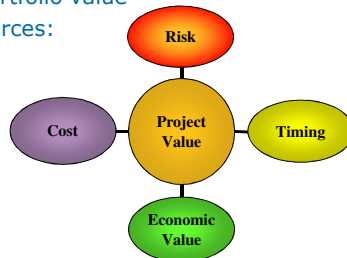
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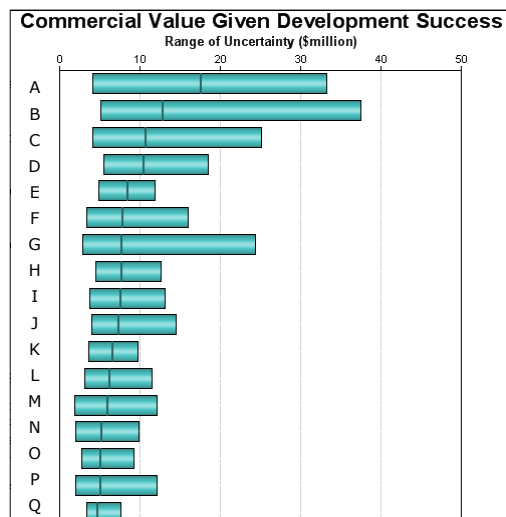
Why Product Portfolio Management

- PPM permits companies to align their product portfolios with business objectives
- Portfolio decisions are strategic to viability and success
- Effective portfolio management can improve both top-line performance and bottom-line profitability
- Selection and prioritization yield maximum portfolio value
- Effectively invest R&D plus new product resources:
 - Realize revenues at maximum rate
 - Capture opportunities
 - Realize value of products in the portfolio
 - Optimize customer value
 - **Assess risks**
 - **Understand uncertainties**
 - **Command predictability of their impact on product value**



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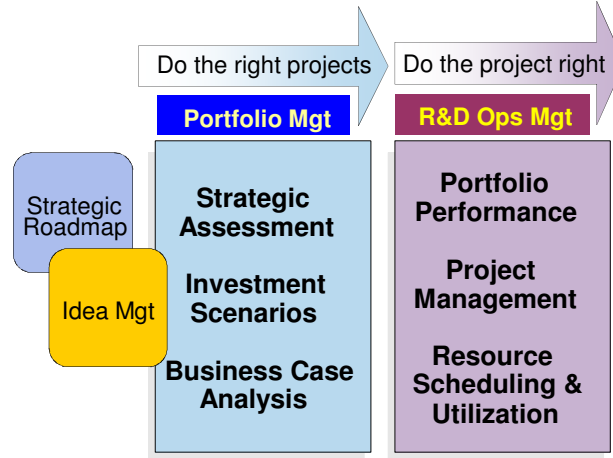
Range of Project Values based on Uncertainties



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Portfolio Management and R&D Operations Management

- Limited product development resources
- Optimize the value of product portfolios
- Manage them through a product development processes



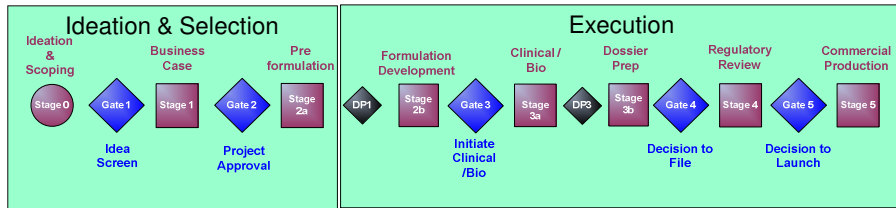
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Current v. Future State Systems & Processes

Current State	Future State
<ul style="list-style-type: none"> • Strategic goals and projects are not well aligned • Project valuation is inconsistent • PM standards can be better defined and practiced consistently • Need project prioritization across the enterprise 	<ul style="list-style-type: none"> • Projects clearly aligned with strategic goals • Consistent valuation methods across BUs/Divisions • Consistent PM standards and practices • Project portfolio prioritizes projects and aligns resources • Project reporting is adopted as part of the portfolio management process

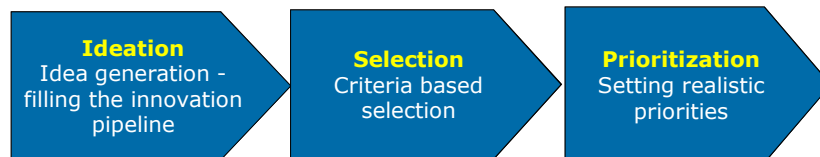
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Product Development Stage Gate Process



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Key Elements of Portfolio Management



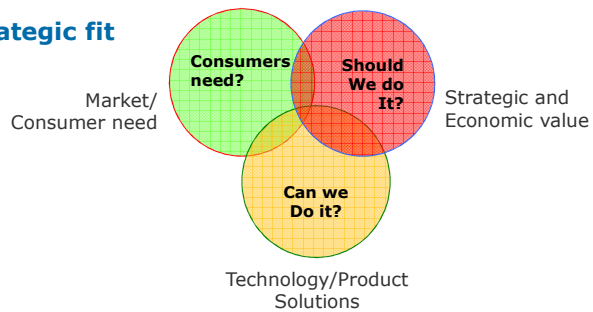
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Ideation & Scoping

Idea Generation – actively managed formal process

- Provides fuel of viable concepts to prime the pipeline
- Some resources allocated to do screening work and POC
- Sales & Marketing participation to bring “Voice of Customer”
- Test concept for commercial & technical feasibility

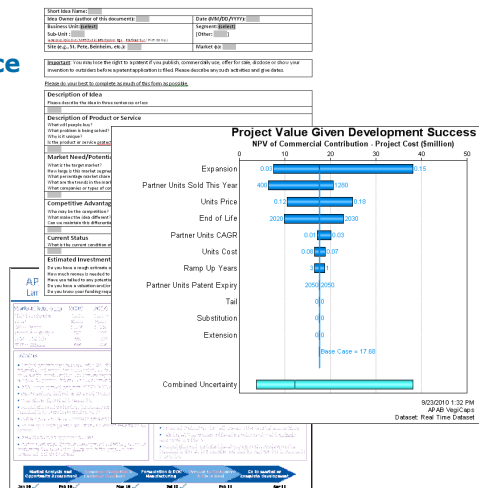
Ideas must have strategic fit



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Business Case Development

- Description of ideas
- Description of product/service
- Market need/potential
- Competitive advantage
- Current status
- Estimated investment
- Return expected
- Key risks
- Critical success factors
- Timing considerations



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Prioritization Best-practice Scorecard

I&G Project Prioritization Scorecard A = 43-60; B = 25-42; C = 0-24 *0* in any category is potential grounds for project KILL					
Project Name:	Rating Scale				
Criteria	0	4	7	10	Rating
1. Strategic Alignment & Importance > Strategic fit and importance > Fits our strategy > Important to do > High impact on our business	Product not in alignment with our business strategy; low impact; KILL	Somewhat supports business strategy; not too important; modest impact	Supports business strategy; important; good impact	Product aligns well with our business strategy; product very important to strategy; high impact	
2. Competitive Advantage > Unique customer benefits > Value for money > Customer feedback in stage 2	None, negative or neutral customer feedback; poor value	Limited; marginally superior; OK value; fairly neutral feedback	Some new benefits; somewhat superior; good value; positive feedback	Major new benefits; great value; very positive customer feedback	
3. Market Attractiveness > Market size & growth > Margins > Competitive situation	Small or non-existent market; low margins; tough competition; KILL	Modest market; limited growth; fair margins; competitive	Significant market; good growth; good margin; modest competition	Large, growing, attractive market; good margins; weaker competition	
4. Leverages Core Competencies > Technology > Production > Marketing & sales	No opportunity to leverage competencies; required skills/experience/resources strengths are weak; KILL	Some opportunities to leverage our competencies; our skills/experience/resources are modest	Considerable leverage possible; skills/experience needed are within Capabilities	Excellent leverage of our strengths & competencies; excellent fit between project needs and our skills/experience/resources	
5. Technical Feasibility > Small technical gap > Not too complex > Uses our in-house technology > Demonstrated technical feasibility	Low, big gap; new science; technology new to Calient; have not been able to demonstrate technical feasibility; KILL	Modest; fairly large gap; quite a few hurdles but doable; technology fairly new to company; limited evidence to support technical feasibility	Good; small gap; some hurdles, but achievable; have some evidence of technical feasibility	Straightforward; largely engineering repackaging; we have technology in house; have demonstrated technical feasibility	
6. Financial Reward vs. Risk > Sizeable, excellent opportunity > Payback: NPV & IRR OK > Certainty of estimates > Not too risky & difficult to do	Poor, limited opportunity; NPV negative; payback > 5 yrs; difficult to make money here; risky & tough to do; KILL	Modest opportunity; NPV positive; payback < 4 yrs; fairly difficult to make money; fairly risky & tough to do	Fairly good opportunity; NPV positive & good; payback < 2 yrs; probably can make money; modest risk & difficulty	Excellent opportunity; NPV positive & high; payback < 1 yr; not too risky & difficult to do	
Composite Rating					

Priority Criteria:

- Strategic alignment
- Competitive advantage
- Market attractiveness
- Leverages core competencies
- Technical feasibility
- Financial rewards vs. risk

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Selection and Prioritization

S Top 10% of A projects

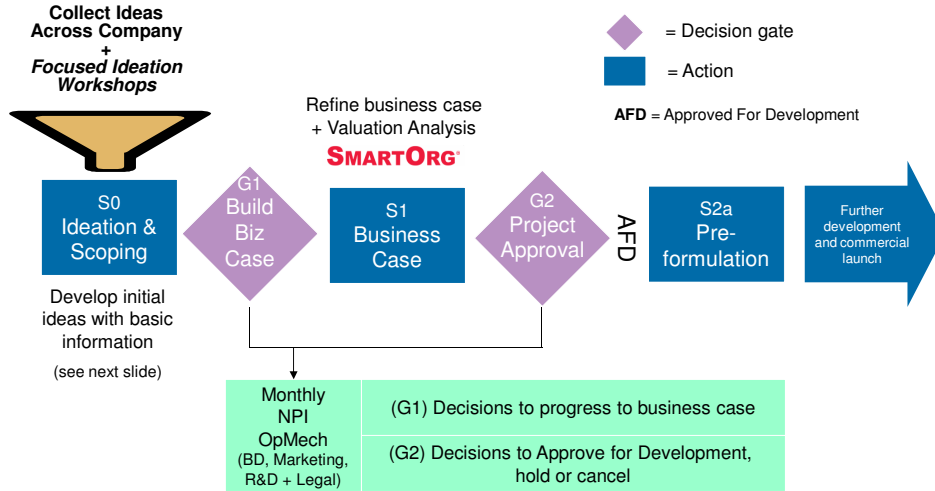
A Key projects – must succeed in order to meet business objectives

B Projects contributing to the ability for meeting business objectives

C Projects with marginal or no contribution to business objectives

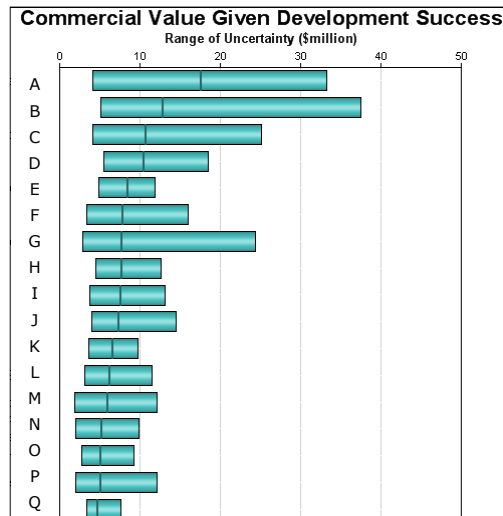
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Ideation and New Product Identification Process



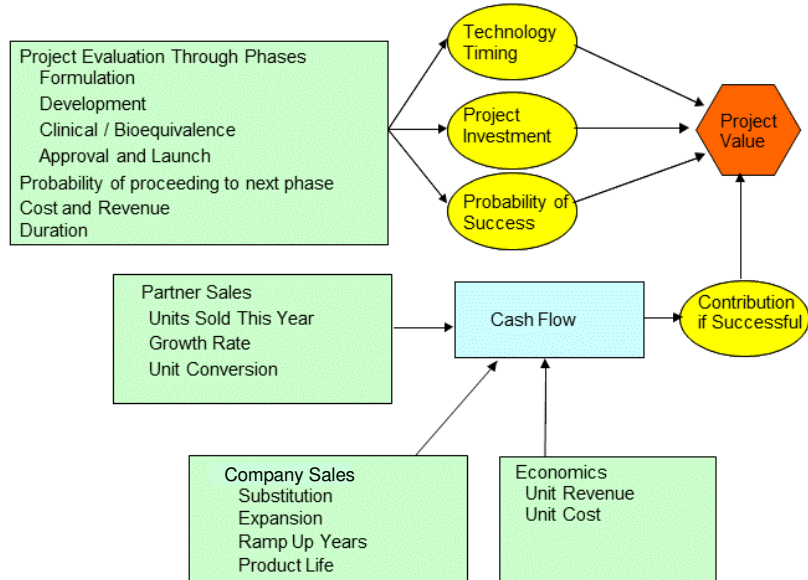
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Range of Project Values based on Uncertainties



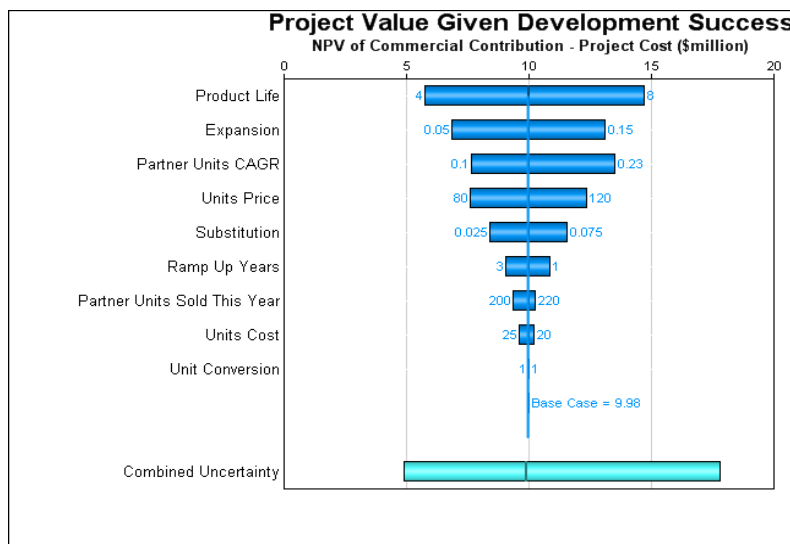
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Influence Diagram – Value Map



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Tornado Diagram – Sensitivity Analysis



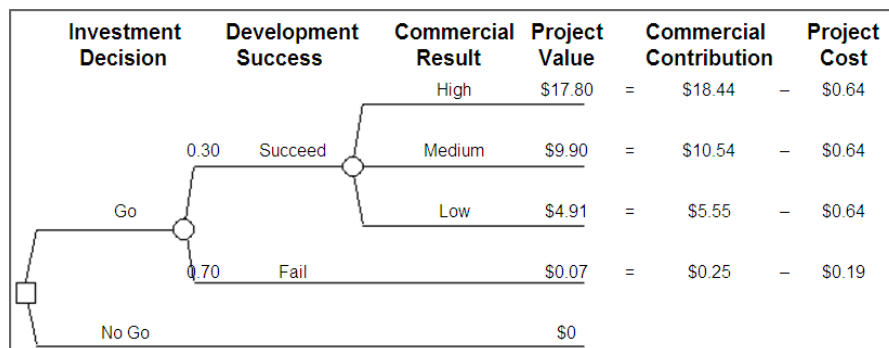
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Probability of Project Success

Phase	Probability of Success	Description
Pre-Formulation	0.60	Ideation, Scoping, Selection, Feasibility, Proof of Concept, Partner selection (if appropriate)
Development	0.80	Pre-Clinical Development, Partner selection (if appropriate)
Clinical/Bioequivalence	0.70	Clinical or Bioequivalence Trials, Partner selection (if appropriate)
Approval and Launch	0.90	Regulatory Approval, Pre-Launch, Partner selection (if appropriate)
Probability of Development Success	0.30	

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Decision Tree Valuation



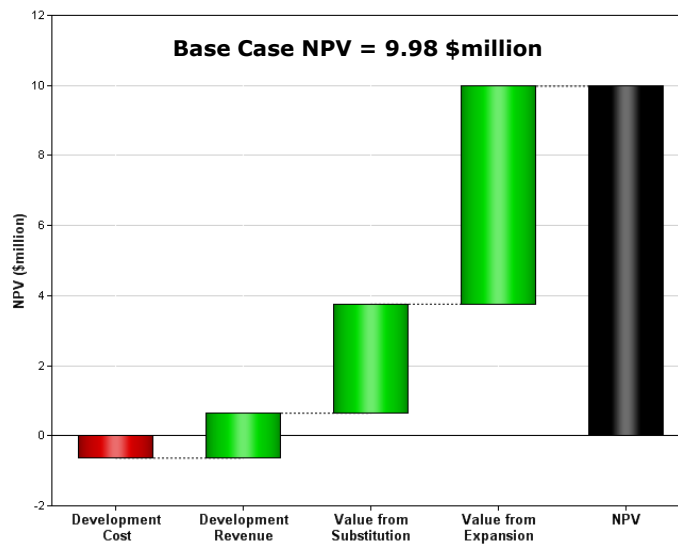
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Expected Project Value & Investment Productivity

Expected Project Value	\$3.20
Project Cost Given Development Success	\$0.64
Expected Project Cost	\$0.32
Probability of Development Success	0.30
Commercial Contribution Given Success:	
High	\$18.44
Medium	\$10.54
Low	\$5.55
Expected	\$11.08
Investment Productivity	9.88

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Waterfall Value Diagram



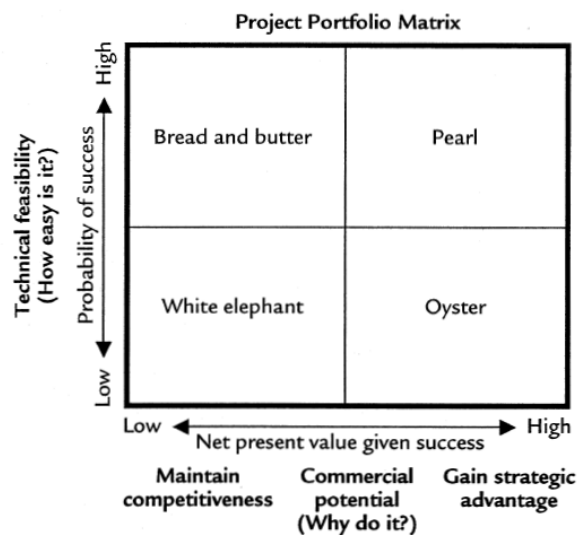
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Major Milestone Report (MMR)

The image displays a Major Milestone Report (MMR) as a Gantt chart. It features a horizontal timeline at the top with various colored bars (red, yellow, blue, green) representing different project phases or milestones. Below the timeline is a grid of tasks, each with a unique ID (e.g., 200, 201, 202) and a name. The tasks are organized into columns representing time periods. The right side of the chart is filled with a dense pattern of colored cells, likely representing resource allocation or task completion status. The overall layout is highly structured and detailed.

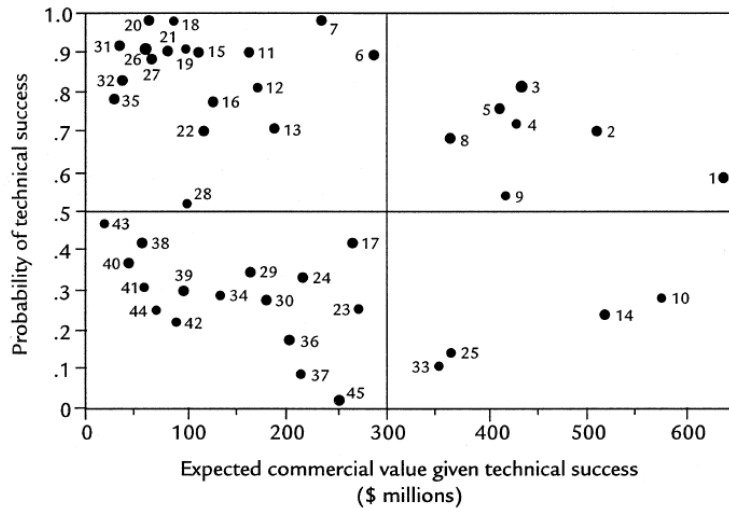
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Understanding Project Differences: The R&D Grid



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What's Wrong with This Picture?



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Summary Financial Statements

Statement Type: Expected Financial Statement Show Individual Sub Portfolios

Expected Financial Statement
 Potential Financial Statement

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Revenue	0.00	195.92	287.86	499.22	655.27	883.72	1,054.18	1,198.69	1,277.56	1,481.07	1,557.14
Cost	0.00	97.85	141.32	259.73	332.04	424.54	497.11	573.55	603.53	669.77	648.56
Profit	0.00	98.06	146.54	239.49	323.22	459.18	557.07	625.15	674.03	811.30	908.57
Development Cost	180.13	166.93	177.10	143.70	133.90	69.50	43.50	43.50	37.50	0.00	0.00
Launch C&M Cost	0.00	31.47	10.39	37.38	13.15	18.76	4.80	0.00	0.78	22.45	0.00
Launch M&S Expenses	0.00	26.78	10.46	19.17	7.97	25.19	4.80	0.00	1.95	22.45	0.00
Cannibalization	0.00	36.32	44.57	65.24	64.42	78.89	94.35	110.65	112.32	112.91	52.77
Operating Cash Flow	(180.13)	(163.44)	(95.98)	(26.00)	103.78	266.85	409.62	471.00	521.48	653.49	855.80
Tax	(63.05)	(57.20)	(33.59)	(9.10)	36.32	93.40	143.37	164.85	182.52	228.72	299.53
Net Cash Flow	(117.08)	(106.23)	(62.39)	(16.90)	67.46	173.45	266.25	306.15	338.96	424.77	556.27

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