Simplistic Financial Computations for System Architects.

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Abstract

This document explains how simple financial estimates can be made by system architects. These simplistic estimates are useful for an architect to perform sanity checks on proposals and to obtain understanding of the financial impact of proposals. Note that architects will never have full fledged financial controller know how and skills. These estimates are zero order models, but real business decisions will have to be founded on more substantial financial proposals.

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retailer margin and costs Margin per product. The margin over the sales volume, margin street price must cover the fixed costs, and generate profit transportation, insurance, miscellaneous price royalties per product, ... labour cost price sales Cost per product, excluding fixed costs material purchase price of components may cover development cost of supplier

version: 1.3 March 27, 2021 SFCmargin



Profit as function of sales volume





financing				
marketing, sales	business dependent: pharmaceutics industry sales cost >> R&D cost			
training sales&service				
NRE: outsourcing, royalties	strategic choice: NRE or per product			
research and development	including: staff, training, tools, housing materials, prototypes overhead certification often a standard staffing rate is used that covers most costs above: R&D investment = Effort * rate			



Income, more than product sales only



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The Time Dimension

	Y1 Q1	Y1 Q2	Y1 Q3	Y1 Q4	Y2 Q1	Y2 Q2	Y2 Q3
investments	100k\$	400k\$	500k\$	100k\$	100k\$	60k\$	20k\$
sales volume (units)	-	-	2	10	20	30	30
material & labour costs	-	-	40k\$	200k\$	400k\$	600k\$	600k\$
income	-	-	100k\$	500k\$	1000k\$	1500k\$	1500k\$
quarter profit (loss)	(100k\$)	(400k\$)	(440k\$)	200k\$	500k\$	840k\$	880k\$
cumulative profit	(100k\$)	(500k\$)	(940k\$)	(740k\$)	(240k\$)	600k\$	1480k\$

cost price / unit = 20k\$
sales price / unit = 50k\$

variable cost = sales volume * cost price / unit income = sales volume * sales price / unit quarter profit = income - (investments + variable costs)





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What if ...?





Stacking Multiple Developments





Return On Investments (ROI)

Net Present Value

Return On Net Assets (RONA) leasing reduces assets, improves RONA

turnover / fte outsourcing reduces headcount, improves this ratio

market ranking (share, growth) "only numbers 1, 2 and 3 will be profitable"

R&D investment / sales in high tech segments 10% or more

cash-flow fast growing companies combine profits with negative cash-flow, risk of bankruptcy

