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.
Product Margin = Sales Price - Cost

Margin per product. The margin over the sales volume, must cover the fixed costs, and generate profit:
- transportation, insurance, royalties per product, ...

Cost per product, excluding fixed costs:
- purchase price of components may cover development cost of supplier

Cost price

material
labour
miscellaneous
margin
retailer margin and costs

street price
sales price

sales price
cost price

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SFCmargin
Profit as function of sales volume

- Income
- Expenses
- Break even point
- Profit
- Expected sales volume
- Fixed costs
- Variable costs
- Sales volume in units

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SFCprofitAndSalesVolume
Investments, more than R&D

<table>
<thead>
<tr>
<th>financing</th>
</tr>
</thead>
<tbody>
<tr>
<td>marketing, sales</td>
</tr>
<tr>
<td>training sales&amp;service</td>
</tr>
<tr>
<td>NRE: outsourcing, royalties</td>
</tr>
<tr>
<td>research and development</td>
</tr>
</tbody>
</table>

business dependent: pharmaeutics industry
sales cost >> R&D cost

strategic choice: NRE or per product

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

\[ \sum_{\text{services}} \text{income}_{\text{service}} \]

\[ \sum_{\text{options}} \text{sales price}_{\text{option}} \times \text{volume}_{\text{option}} \]

\[ \text{sales price}_{\text{product}} \times \text{volume}_{\text{product}} \]

license fees
pay per movie
content, portal
updates
maintenance

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SFCincome
## The Time Dimension

<table>
<thead>
<tr>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
<th>Q4</th>
<th>Q1</th>
<th>Q2</th>
<th>Q3</th>
</tr>
</thead>
<tbody>
<tr>
<td>investments</td>
<td>100k$</td>
<td>400k$</td>
<td>500k$</td>
<td>100k$</td>
<td>100k$</td>
<td>60k$</td>
</tr>
<tr>
<td>sales volume (units)</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>10</td>
<td>20</td>
<td>30</td>
</tr>
<tr>
<td>material &amp; labour costs</td>
<td>-</td>
<td>-</td>
<td>40k$</td>
<td>200k$</td>
<td>400k$</td>
<td>600k$</td>
</tr>
<tr>
<td>income</td>
<td>-</td>
<td>-</td>
<td>100k$</td>
<td>500k$</td>
<td>1000k$</td>
<td>1500k$</td>
</tr>
<tr>
<td>quarter profit (loss)</td>
<td>(100k$)</td>
<td>(400k$)</td>
<td>(440k$)</td>
<td>200k$</td>
<td>500k$</td>
<td>840k$</td>
</tr>
<tr>
<td>cumulative profit</td>
<td>(100k$)</td>
<td>(500k$)</td>
<td>(940k$)</td>
<td>(740k$)</td>
<td>(240k$)</td>
<td>600k$</td>
</tr>
</tbody>
</table>

**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)
The “Hockey” Stick

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SFChockeyStick
What if ...?

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SFChockeyStickWhatIf
Stacking Multiple Developments

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Gerrit Muller

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SFCmultipleDevelopments
Fashionable financial yardsticks

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