Module Management Presentation

by *Gerrit Muller*   University of South-Eastern Norway-NISE

e-mail: `gaudisite@gmail.com`

`www.gaudisite.nl`

Abstract

This module addresses the presentation of architectural issues to higher management teams.

March 27, 2021
status: draft
version: 1.1

Simplistic Financial Computations for System Architects.

by *Gerrit Muller*   USN-SE

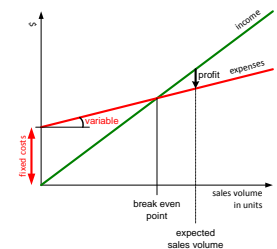e-mail: `gaudisite@gmail.com`

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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.
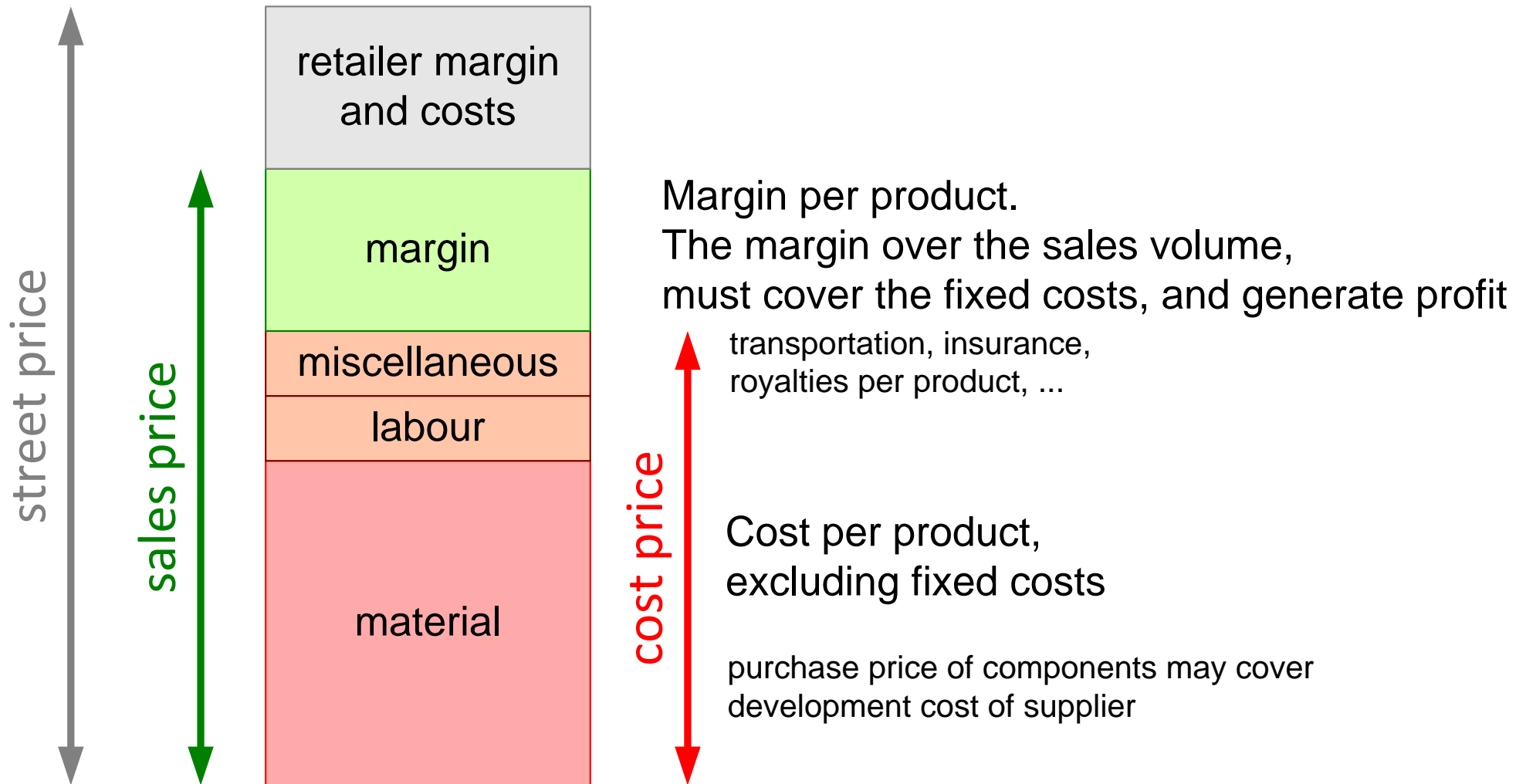
March 27, 2021
status: preliminary draft
version: 1.3

Product Margin = Sales Price - Cost

street price

sales price

retailer margin and costs

margin

miscellaneous

labour

material

cost price

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

Simplistic Financial Computations for System Architects.
3   Gerrit Muller

version: 1.3
March 27, 2021
SFCmargin

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Profit as function of sales volume

Investments, more than R&D

financing
marketing, sales
training sales&service
NRE: outsourcing, royalties
research and development

business dependent:
pharmaceutics 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

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Income, more than product sales only

other recurring income

services

options, accessories
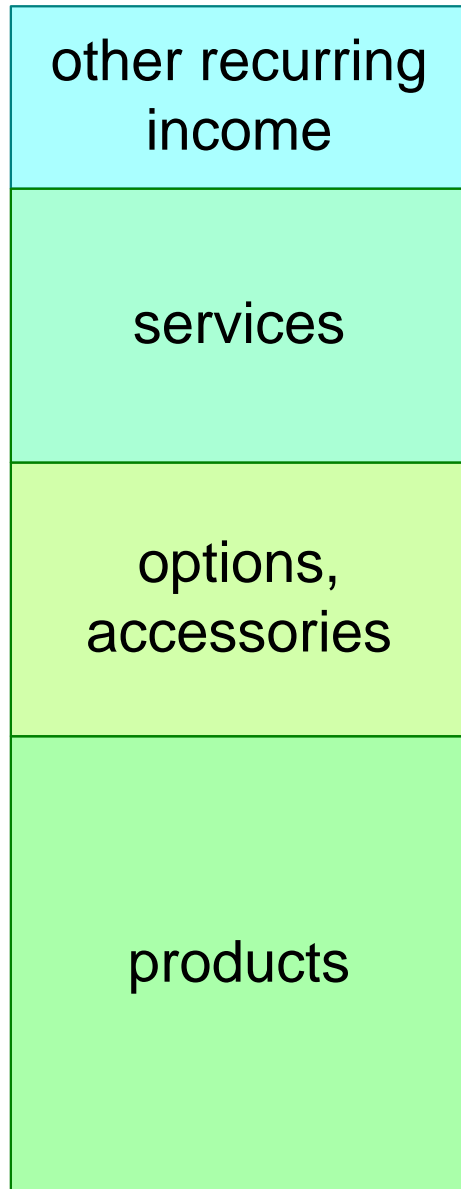
products

$$\sum_{services} income_{service}$$

$$\sum_{options} sales\ price_{option} * volume_{option}$$

$$sales\ price_{product} * volume_{product}$$

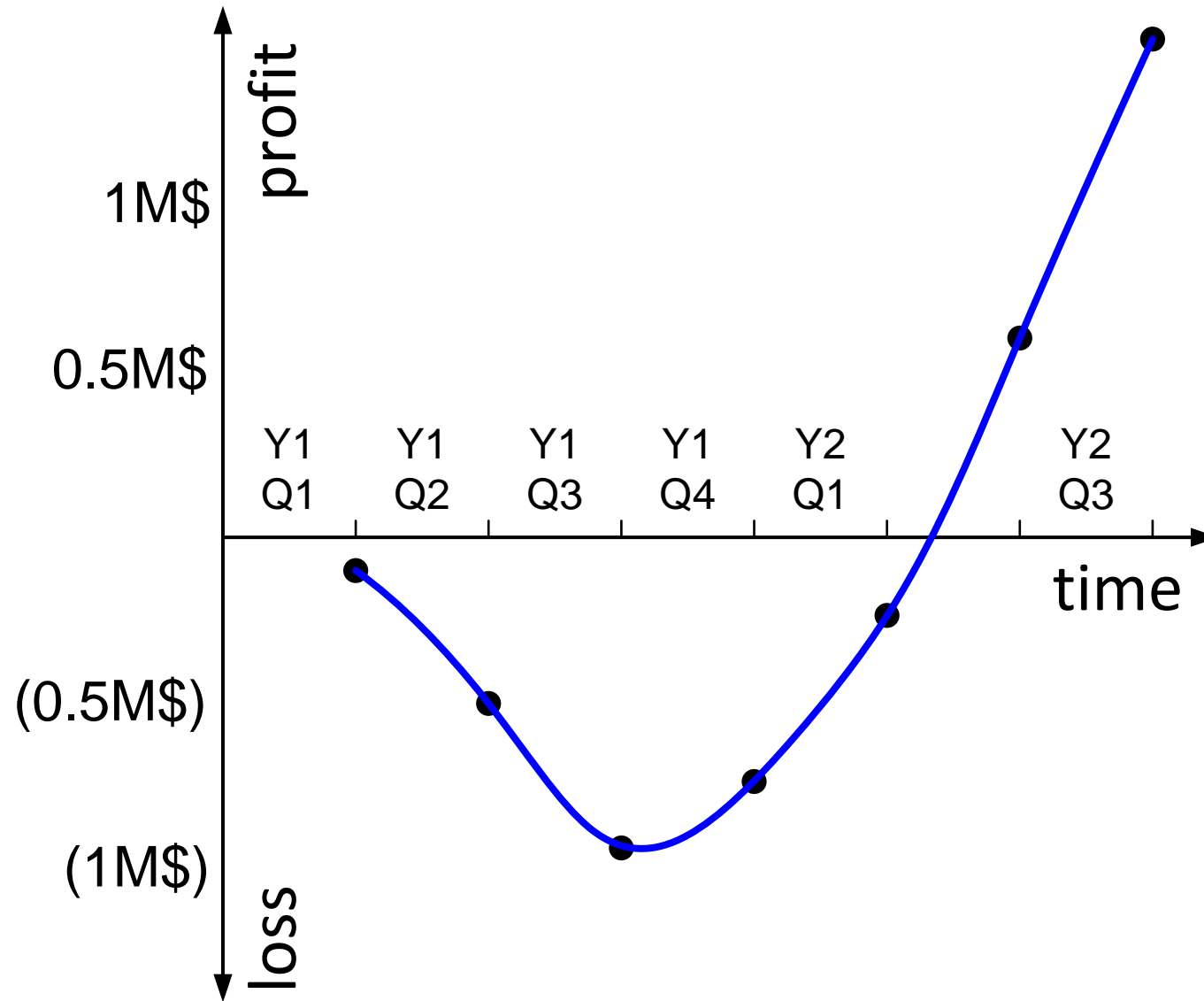license fees
pay per movie

content, portal
updates
maintenance

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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$

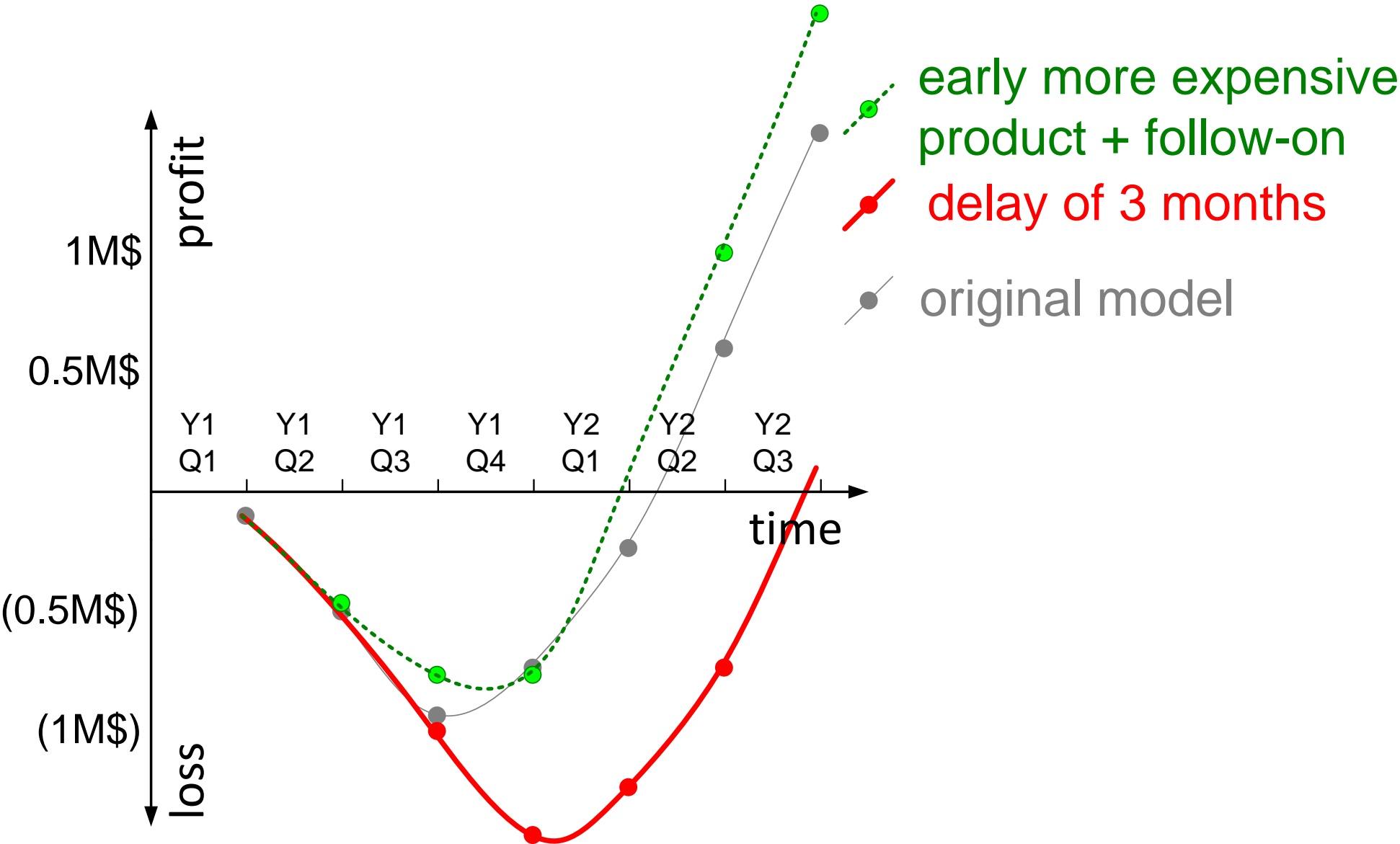*cost price / unit = 20k$*
sales price / unit = 50k$

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

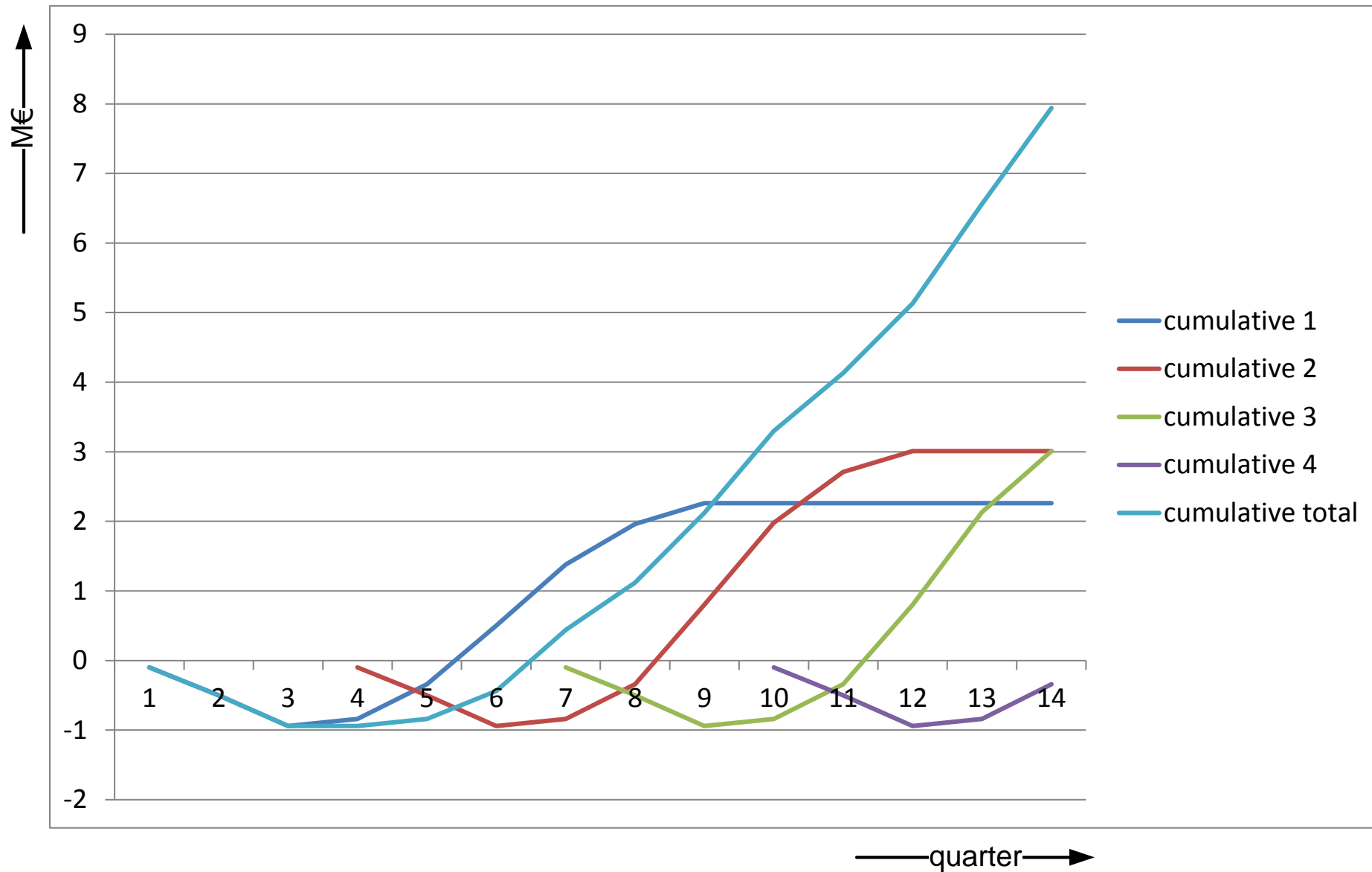USN ESI

The "Hockey" Stick

What if ...?

early more expensive
product + follow-on

delay of 3 months

original model

profit

loss

time

1M$

0.5M$

(0.5M$)

(1M$)

Y1
Q1

Y1
Q2

Y1
Q3

Y1
Q4

Y2
Q1

Y2
Q2

Y2
Q3

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Stacking Multiple Developments

Simplistic Financial Computations for System Architects.
Gerrit Muller

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

How to present architecture issues to higher management

by *Gerrit Muller*   USN-SE

e-mail: `gaudisite@gmail.com`

`www.gaudisite.nl`

Abstract

Architects struggle with their visibility at higher management echelons. The introvert nature of architects is a severe handicap. Participation of architects in management teams is important for balanced technical sound decisions and strategy. Improved managerial communication skills of architects are required. This article describes how to give a more effective presentation to higher management teams. Subjects discussed are the preparation, content and form, do and don't advise.
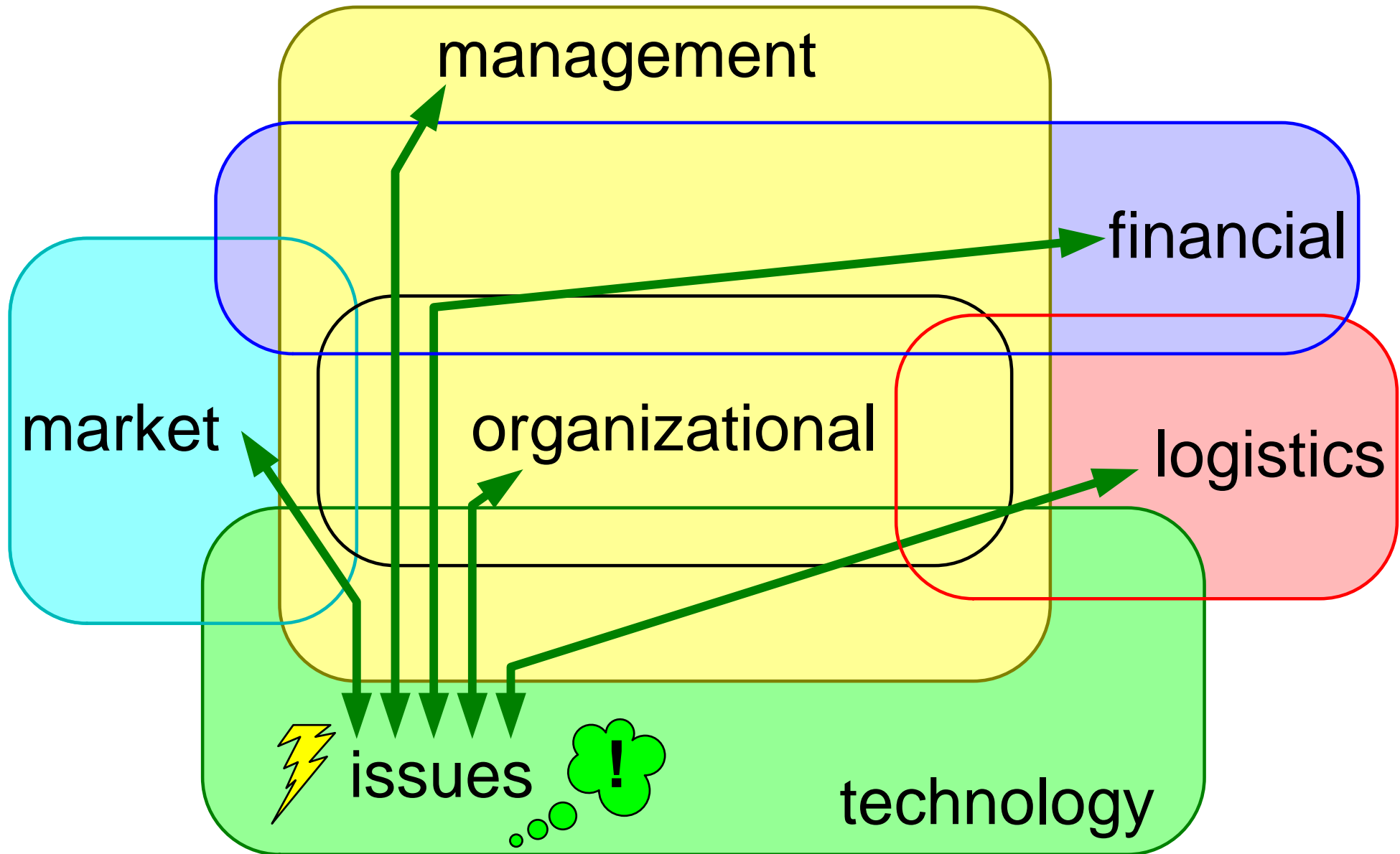
Distribution

March 27, 2021
status: concept
version: 0.1
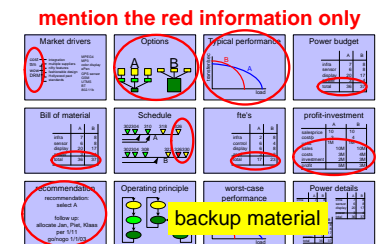
Characteristics of managers in higher management teams

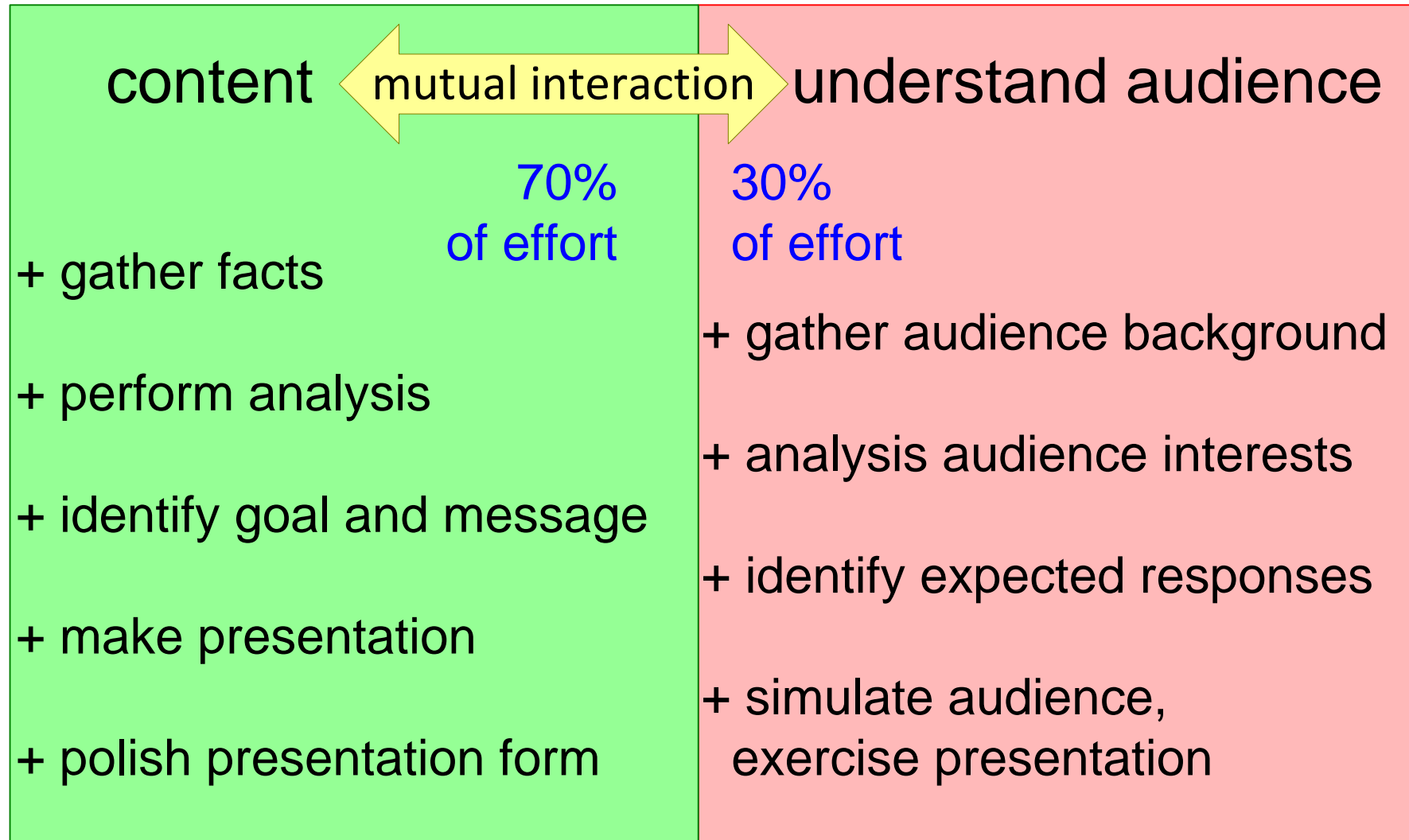*common characteristics*

+ action-oriented

+ solution rather than problem

+ impatient, busy

+ want facts not beliefs

+ operate in a political context

+ bottom-line oriented:
  profit, return on investment,
  market share, etc.
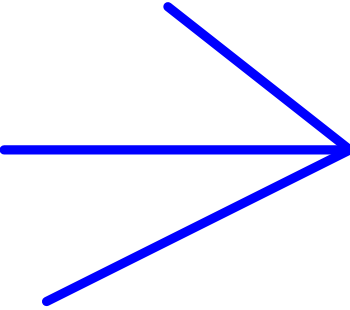
highly variable characteristics

? technology knowledge
  from extensive to shallow

? style from power play to
  inspirational leadership

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How to prepare

Always prepare with small team!

content ⟵ mutual interaction ⟶ **understand audience**

70%
of effort

30%
of effort

+ gather facts

+ perform analysis

+ identify goal and message

+ make presentation

+ polish presentation form

+ gather audience background

+ analysis audience interests

+ identify expected responses

+ simulate audience,
exercise presentation

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Recommended content

+ clear problem statement (what, why)

+ solution exploration (how)

supported by
facts and figures

+ options, recommendations

+ expected actions or decisions

mention the red information only

Market drivers

cost — integration
ttm — multiple suppliers
wow — nifty features
DRM — fashionable design
— Hollywood pact
— standards

MPEG4
MP3
color display
ePen
GPS sensor
GSM
UTMS
BT
802.11b

Options

A   B

Typical performance

B
transfer/sec   A
load
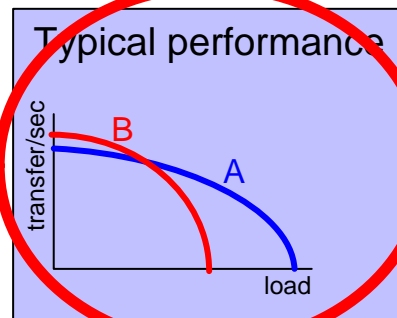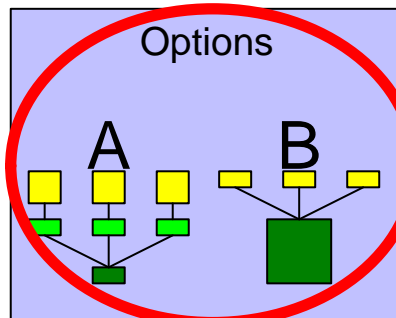
Power budget

	A	B
infra	7	8
sensor	6	8
display	20	17
power	3	4
total	36	37

Bill of material

	A	B
infra	7	8
sensor	6	8
display	20	17
power	3	4
total	36	37

Schedule

302 304 310   318   326
A

302 304 308   322 326 330
B
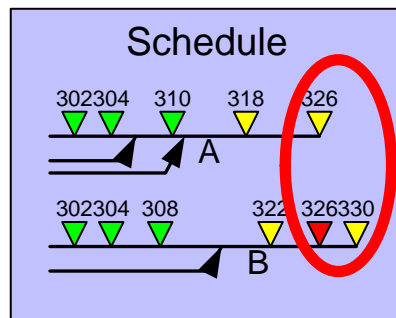
fte's

	A	B
infra	2	8
control	6	4
display	6	8
app	3	3
total	17	23

profit-investment

	A	B
salesprice	10	10
cost/p	3	4
units	1M	1M
sales	10M	10M
costs	3M	4M
investment	2M	3M
profit	5M	3M

recommendation

recommendation:
select A

follow up:
allocate Jan, Piet, Klaas
per 1/11
go/nogo 1/1/03

Operating principle

worst-case performance

load

Power details

	A	B			A	B
infra	7	8		infra	7	8
				sensor	6	8
				display	20	17
				power	3	4
				total	36	37

	B
	8
	8
	17
power	3	4
total	36	37

backup material
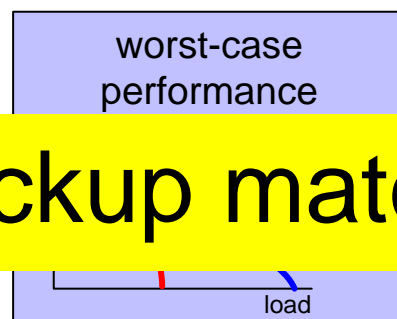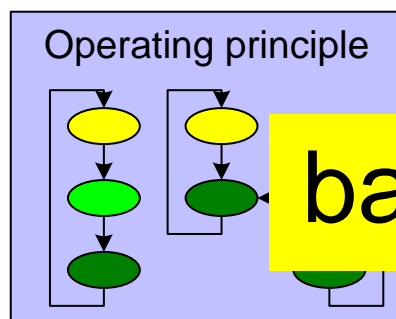
Form is important

poor form can easily distract from purpose and content

presentation material

+ professional

+ moderate use of
  color and animations

+ readable

+ use demos and show artifacts

presenter's appearance

+ well dressed

+ self confident but open

but   stay yourself,
        stay authentic

Don't force your opinion, understand the audience

do not

- preach beliefs

- underestimate technology knowledge of managers

- tell them what they did wrong

- oversell

do

+ quantify, show figures and facts

+ create faith in your knowledge

+ focus on objectives

+ manage expectations

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How to cope with managerial dominance

do not

- let one of the managers hijack the meeting

- build up tensions by withholding facts or solutions

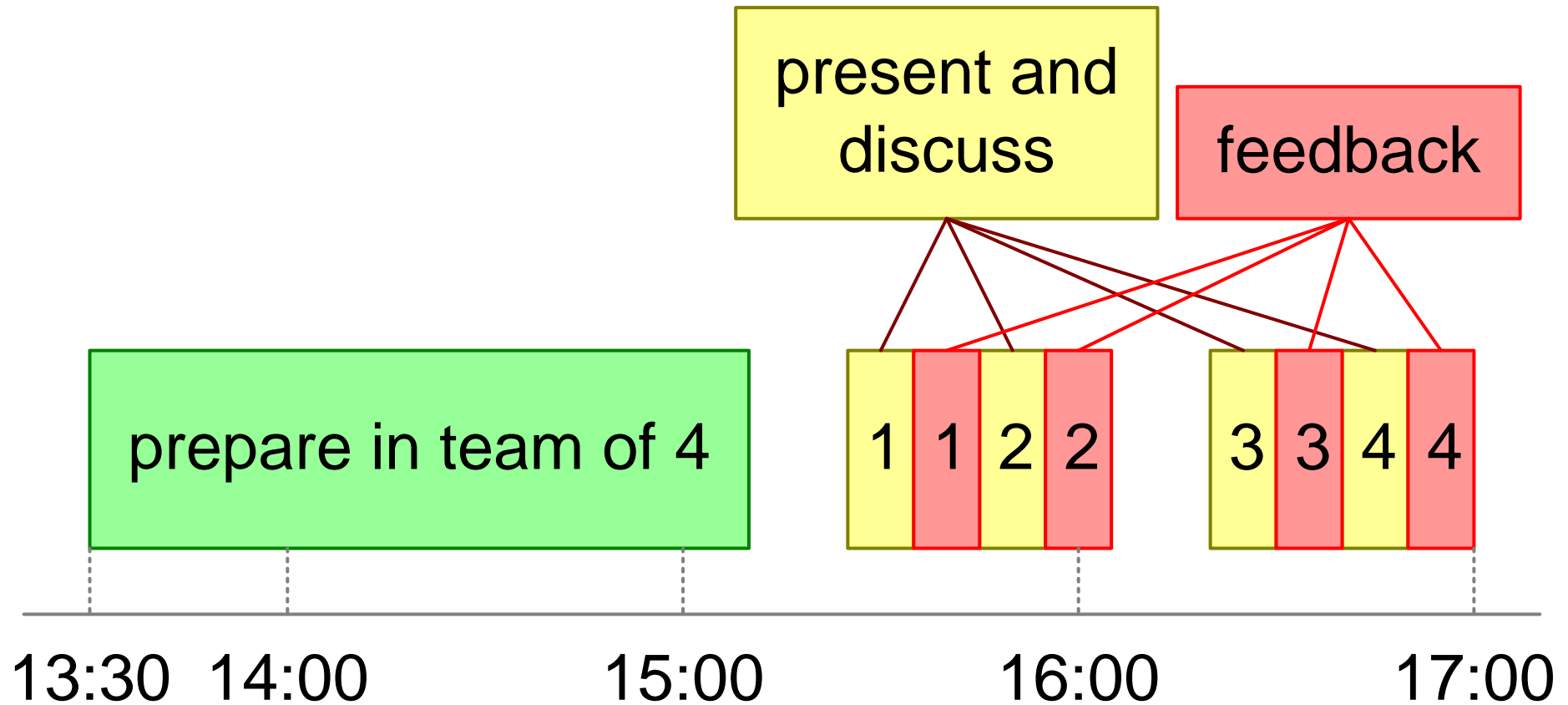- be lost or panic at unexpected inputs or alternatives

do

+ maintain the lead

+ be to the point and direct

+ acknowledge input, indicate consequences (facts based)
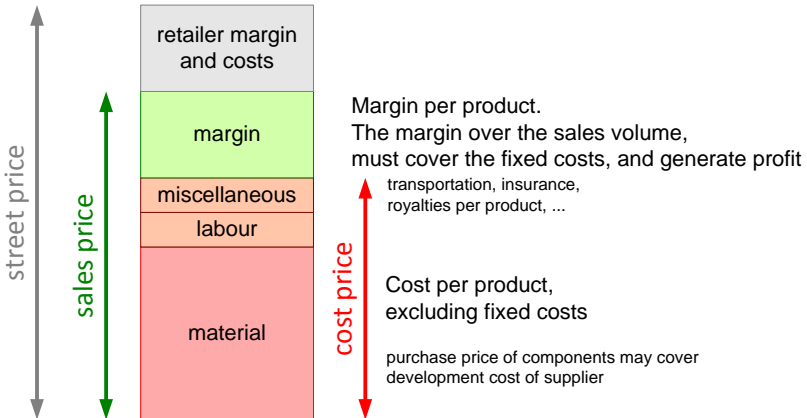
Exercise presentation to higher management

+ Bring a clear architecture message to

+ a Management team at least 2 hierarchical levels higher

+ with 10 minutes for presentation including discussion
   (no limitation on number of slides)

* architecture message =
   technology options in relation with market/product

* address the concerns of the management stakeholders:
   translation required from technology issues into
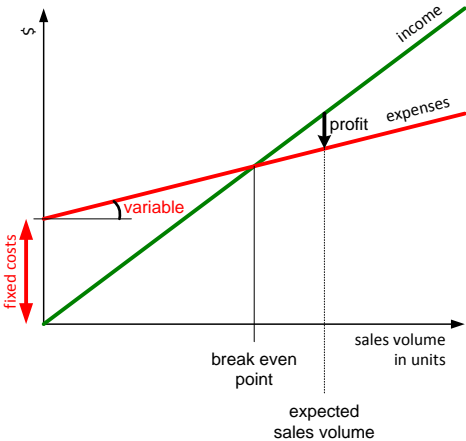   business consequences (months, fte's, turnover, profit, investments)

Exercise schedule
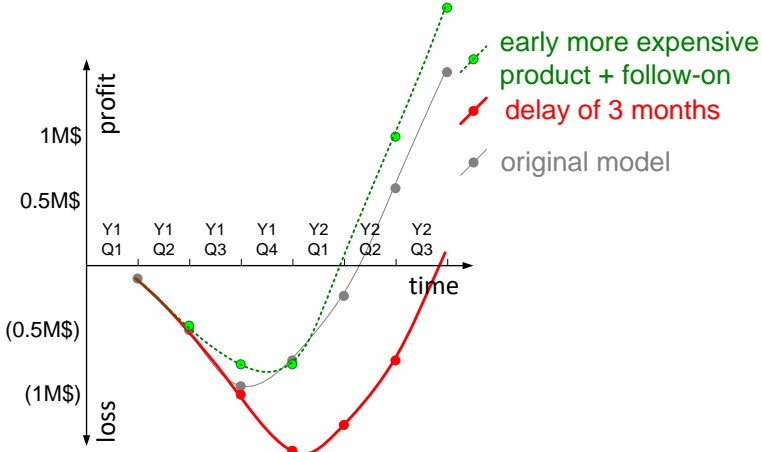
Simplistic Financial Computations

Product Margin = Sales Price - Cost

street price | sales price | cost price

- retailer margin and costs
- margin
- miscellaneous
- labour
- material

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

Profit as function of sales volume

$

income

expenses

profit

variable

fixed costs

break even
point

sales volume
in units

expected
sales volume

Hockey stick and scenarios

profit

1M$

0.5M$

| Y1 Q1 | Y1 Q2 | Y1 Q3 | Y1 Q4 | Y2 Q1 | Y2 Q2 | Y2 Q3 |

time

(0.5M$)

(1M$)

loss

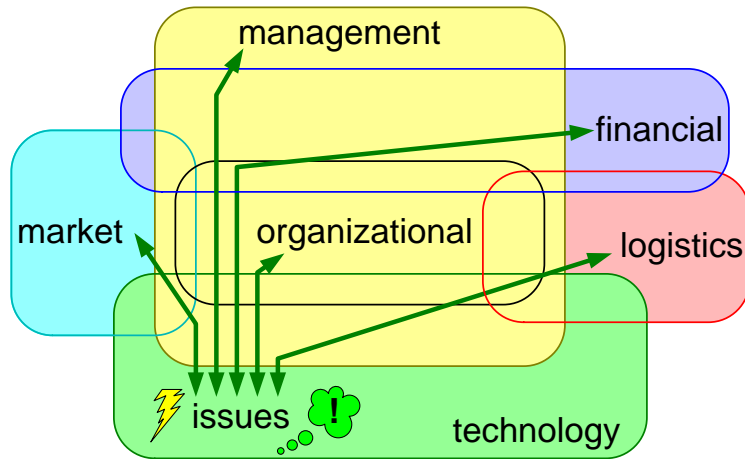- early more expensive product + follow-on
- delay of 3 months
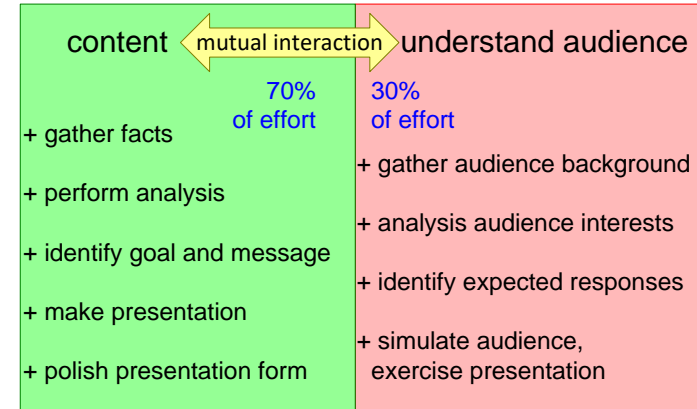- original model

intentionally left blank

Presentation to Management

Managerial Viewpoints

Prepare Content, Understand Audience

Always prepare with small team!

content ⟷ mutual interaction ⟷ understand audience

70% of effort | 30% of effort

content	understand audience
+ gather facts	+ gather audience background
+ perform analysis	+ analysis audience interests
+ identify goal and message	+ identify expected responses
+ make presentation	+ simulate audience, exercise presentation
+ polish presentation form	

Show underlying info

mention the red information only

backup material

Form, do and do not

poor form can easily distract from purpose and content

presentation material	presenter's appearance
+ professional	+ well dressed
+ moderate use of color and animations	+ self confident but open
+ readable	
+ use demos and show artifacts	

but   stay yourself, stay authentic