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PLM and Innovation Excellence

Learning Campus

Your partner for Business Learning

Siemens Core Learning Program

Understanding Business Strategy and Business Planning

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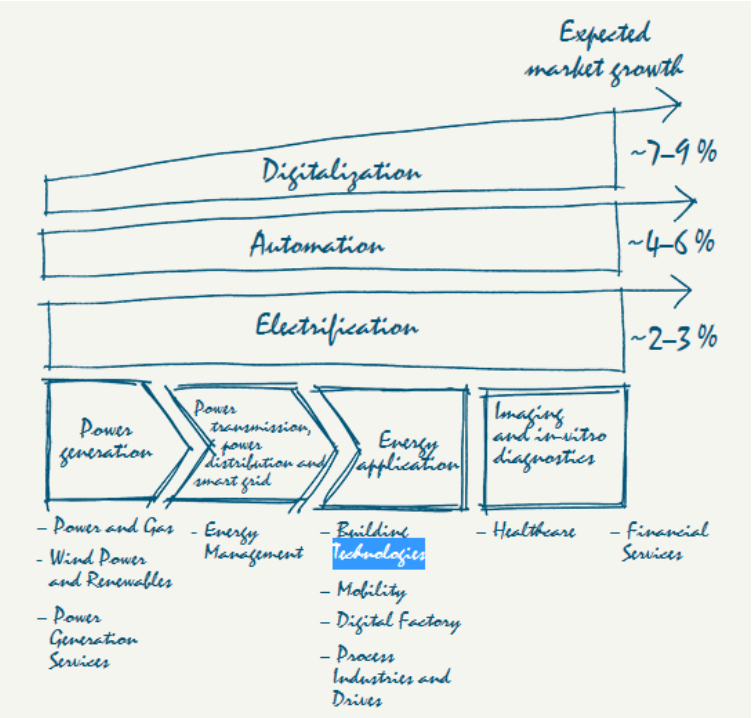
Strategic thinking

If there is no common sense
about the fundamentals,
then it doesn't make sense to
develop common plans.

[Chinese Saying]



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What is the (regular) output of your work?

Documents
Architecture Description

Decisions

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How digital Technologies will create new Business Opportunities out of Electrification & Automation?

Value for Siemens, by combining the physical and virtual world

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Siemens Vision 2020 builds on selected trends and growth areas for Siemens

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Global trends

Digital transformation
Networked world of complex and heterogeneous systems

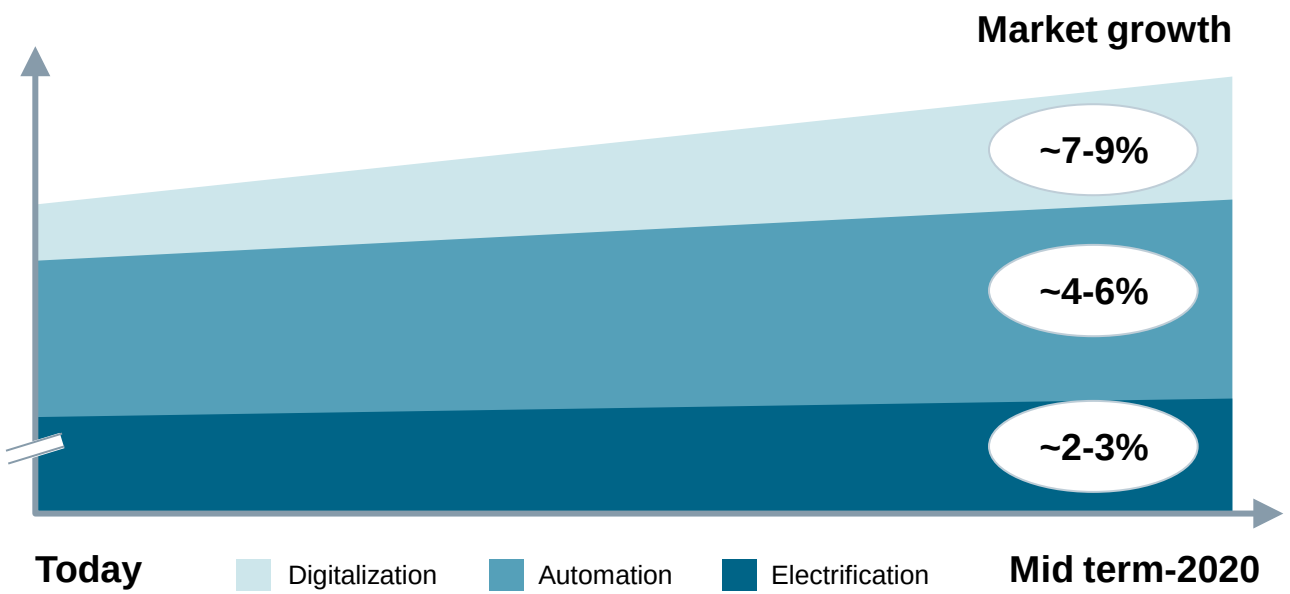
Globalization
Global competition driving productivity & localization

Urbanization
Infrastructure investment needs of urban agglomerations

Demographic change
Decentralized demand of a growing and aging population

Climate change
Higher resource efficiency in an all-electric world

Market development (illustrative)



Power generation

Power transmission, distribution & smart grid

Efficient energy application

Imaging and in-vitro diagnostics

Source: Siemens Vision 2020, May 2014

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Digitalization builds on Electrification and Automation the “Industry 4.0” logic

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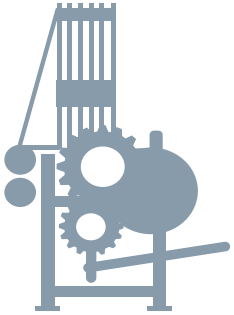
Degree of complexity

First Industrial Revolution

based on the introduction of **mechanical production** equipment driven by water and steam power



First mechanical loom, 1784

Second Industrial Revolution

based on **mass production** achieved by division of labor concept and the **use of electrical energy**

First conveyor belt, Cincinnati slaughterhouse, 1870

Third Industrial Revolution

based on the use of electronics and IT to further **automate production**

First programmable logic controller (PLC) Modicon 084, 1969

Fourth Industrial Revolution

based on the use of cyber-physical systems in dynamic production networks

First approaches of melting of virtual and real world of production

1800 1900 2000 Time

Mechanization	Electrification	Automation	Digitalization

Source: CT Business Excellence / top+

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Siemens leverages digitalization technologies to create new business opportunities

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Major digitalization technologies …

- Mobile and collaboration
- Connectivity and Internet of Things
- Cloud technologies
- Big data and analytics

… leveraged along our entire portfolio …

- Digitalization
- Auto-mation
- Electri-fication

… to create attractive business opportunities

Vertical software	Digital services
€2.4bn Revenue FY 2014	€0.5bn Revenue FY 2014
Profitability ++	Profitability +++
+9% Market growth	+15% Market growth
Enhanced automation	**Classic services**
€19bn Revenue FY 2014	€14bn Revenue FY 2014
Profitability ++	Profitability +++
+6% Market growth	+3% Market growth

Enhanced electrification (~€37bn)

Note: Figures Industrial Business
Source: Siemens Capital Market Day, December 2014

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Digitalization harnessing major value for Siemens, combining the physical and virtual world

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Vertical software

€2.4bn
Revenue FY 2014

+9%
Market growth

Largest offering among peers, continued M&A

UGS LMS CAMSTAR eMeter

Digital services

€0.5bn
Revenue FY 2014

+15%
Market growth

280k+ connected devices
~30 digital service offers

Enhanced Electrification & Automation

#1 Automation player in ...

... Industry
... Power plants
... Buildings
... Grid
... Rail

Differentiated by and basis for Digitalization

The trusted partner for critical processes

Large installed base and customer access

Deep vertical know-how

Source: Siemens Capital Market Day, December 2014

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Business Understanding

Learning objectives

- Understand the need for customer orientation
- Become familiar with the path from strategy to business success
- Understand 'Target Costing' and 'Design to Cost‘
- Understand non-conformance cost and how it can be influenced by testing

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Business Understanding

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Responsibilities

Strategy and Portfolio Decision

Customer- and Market Perspective

Product Lifecycle & Cost Perspective

Summary

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Most crucial is the interface between the customer side and the realization side

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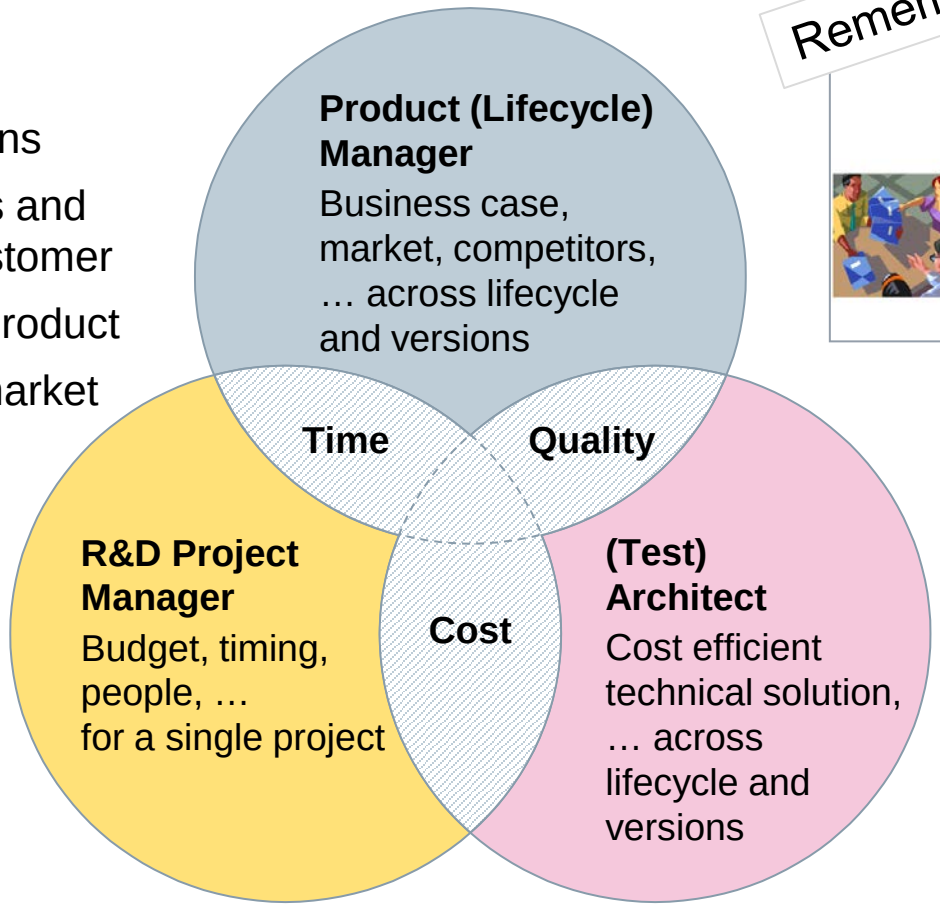
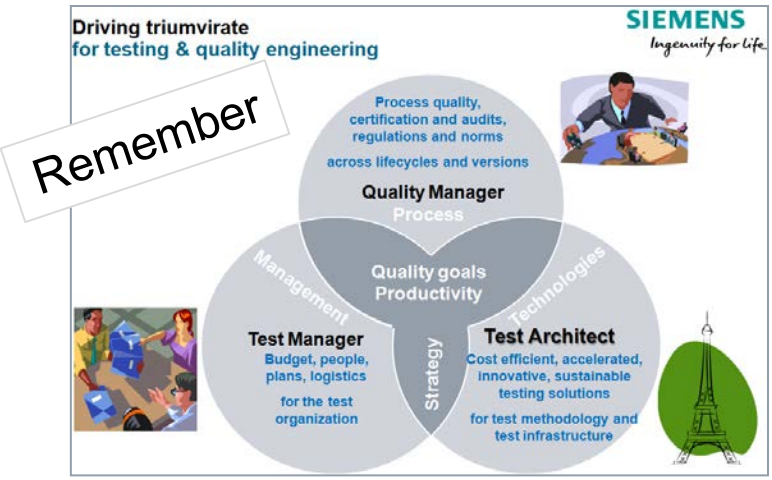
External view:

- Product strategy
- Business cases / plans
- Features / use cases and value add for the customer
- Price / cost level of product
- Roadmap / time to market





Internal view:

- Technology
- Competencies
- Resources

Test view:

- Customer needs, high level requirements
- Cost / benefit
- Partitioning vs. integration
- Acceptance test
- Communication with users and engineers

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The major precondition to develop a Business Strategy is “strategic thinking”

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Basic competencies:

Know the business system	Understand implications and interdependencies of actions in the chain of value creation
Stay focused	Be more determined and less distractible than rivals in the marketplace
Consider the time aspect	Keep history, present and future in mind at the same time
Work with hypotheses	Ensure an open minded view – be creative and critical at the same time; always look for answers and keep curious!
Use a smart opportunism	Be responsive to good opportunities

**A set of well known competencies –
they are not just good for strategy development**

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Hypotheses challenge out of the box thinking

Some business relevant hypotheses could be …

- Our markets will double within five years keeping us at a #2 position with a 25% market share and 15–20% EBIT range
- Our toughest competitor will loose innovation momentum due to their focus on cash cows
- We don’t need to change our R&D spending into xyz in order to ensure a constant flow of innovative products
- Disruptive technologies will not occur within the next three years. We are set with our current portfolio

But, beware the trapdoors …

“I know my business!”,
“I’ve got lot’s of experience”,
“I’m in the business for many years”, **…**

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Overconfidence – a trapdoor!

Please put in two numbers for each of the following questions:
Don't try to find a 100% perfect answer, be 90% sure!

"I am 90% sure that the right answer is between these two numbers"

---

1 **How many German companies are within the top 10 of Global Fortune 500 in 2012?**

_____ *and* _____

2 **What were Microsoft's revenues in fiscal 2003?**

_____ *and* _____

3 **How deep is the deepest point in any ocean on earth?**

_____ *and* _____

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People don’t look for answers when they think they already have the answers!

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Overconfidence
doesn’t simply lead to
believe incorrect answers.

It actually prevents from
seeking correct answers.

Does this sound familiar?

Strategic thinking means (also) to questioning assumptions and conclusions that are believed to be true

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Starting point for all strategies and plans is the customer

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Customers buy our products only when they see …

- A need for them
- A price, which makes their business case max. positive [1)]
- Siemens' products superior to competitors' products

That's fair enough!

But we still need to achieve some obvious no-brainers:

- our overall cost level must be lower than the price level
- we need to know which products we should go for the future

Let's see how we can bring this together …

1) Means: Our products create value add in the value chain of the customer. We need to know this value add for pricing.

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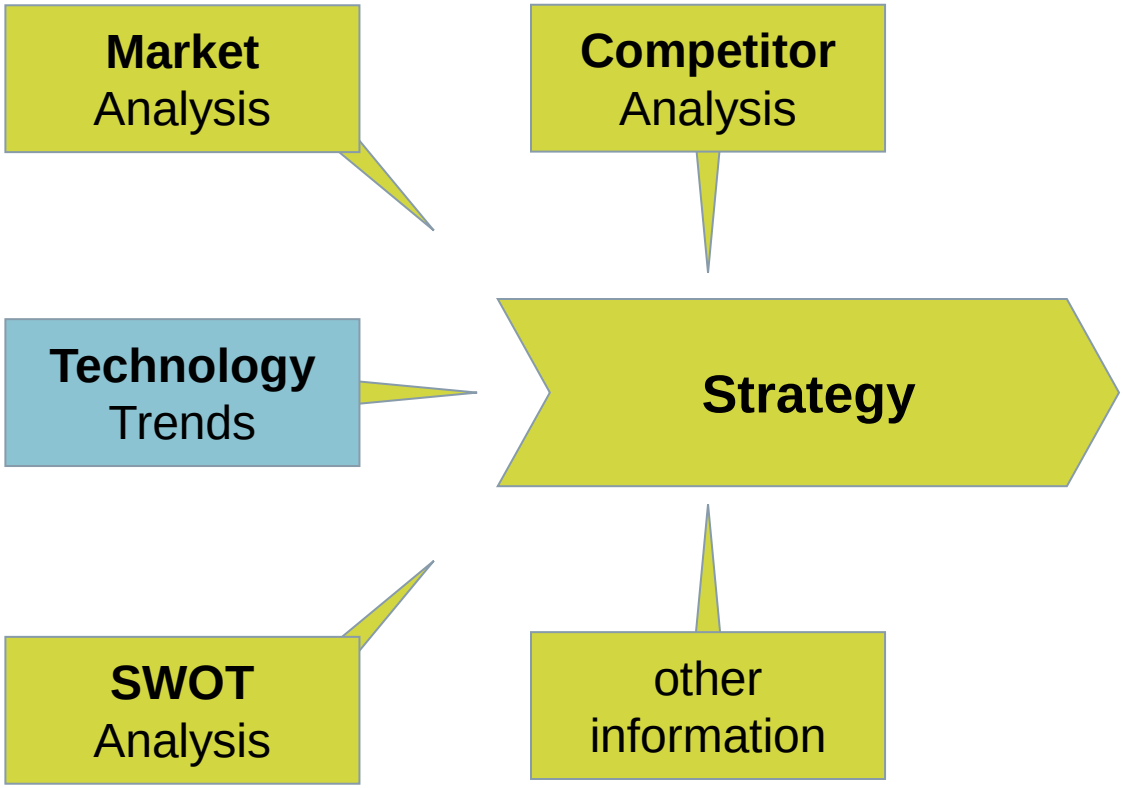
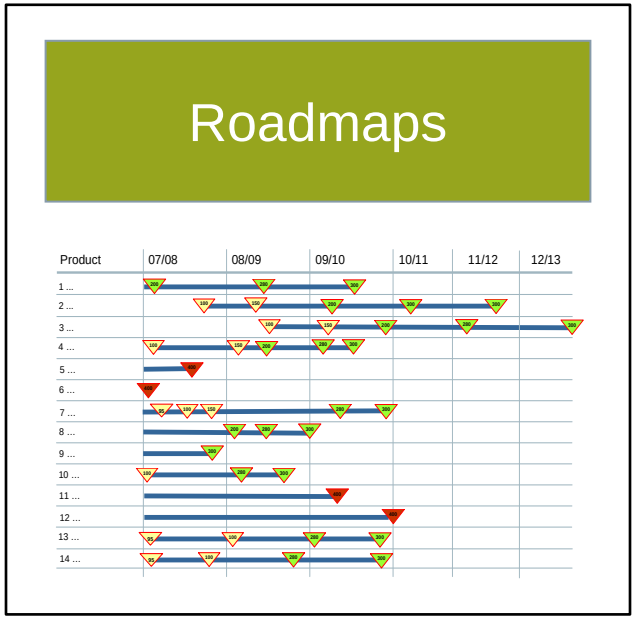
Elaborating Roadmaps





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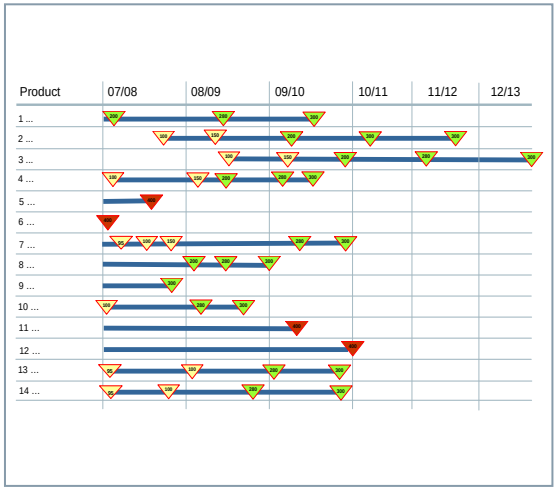
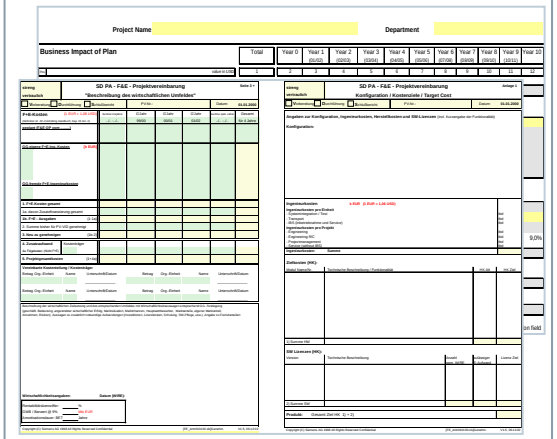
How Are Products Defined and Projects Started?

Product roadmap → **R&D planning** → **Project planning**



FY	09/10	10/11	11/12	12/13	13/14	14/15	Total 5 years	all years
Product 1	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Product 2	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Product 3	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Product 4	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Product 5	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Product 6	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Product 7	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Product 8	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Product 9	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Product 10	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Product 11	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Product 12	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Product 13	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Product 14	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Product 18	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
...	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
...	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1
Total Budget FY 09	0,1	0,1	0,1	0,1	0,1	0,1	0,1	0,1



P.M90 Sales plan, market developments, technologies etc. are input for product roadmap

P.M100 Product roadmap leads to R&D plan

P.M150 Detailed project planning is begun according to overall schedule of roadmap

P.M200 Development starts when necessary data is collected and economic benefit of project is proven

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Product Lifecycle: Revenue Side
Why do we always need new features?

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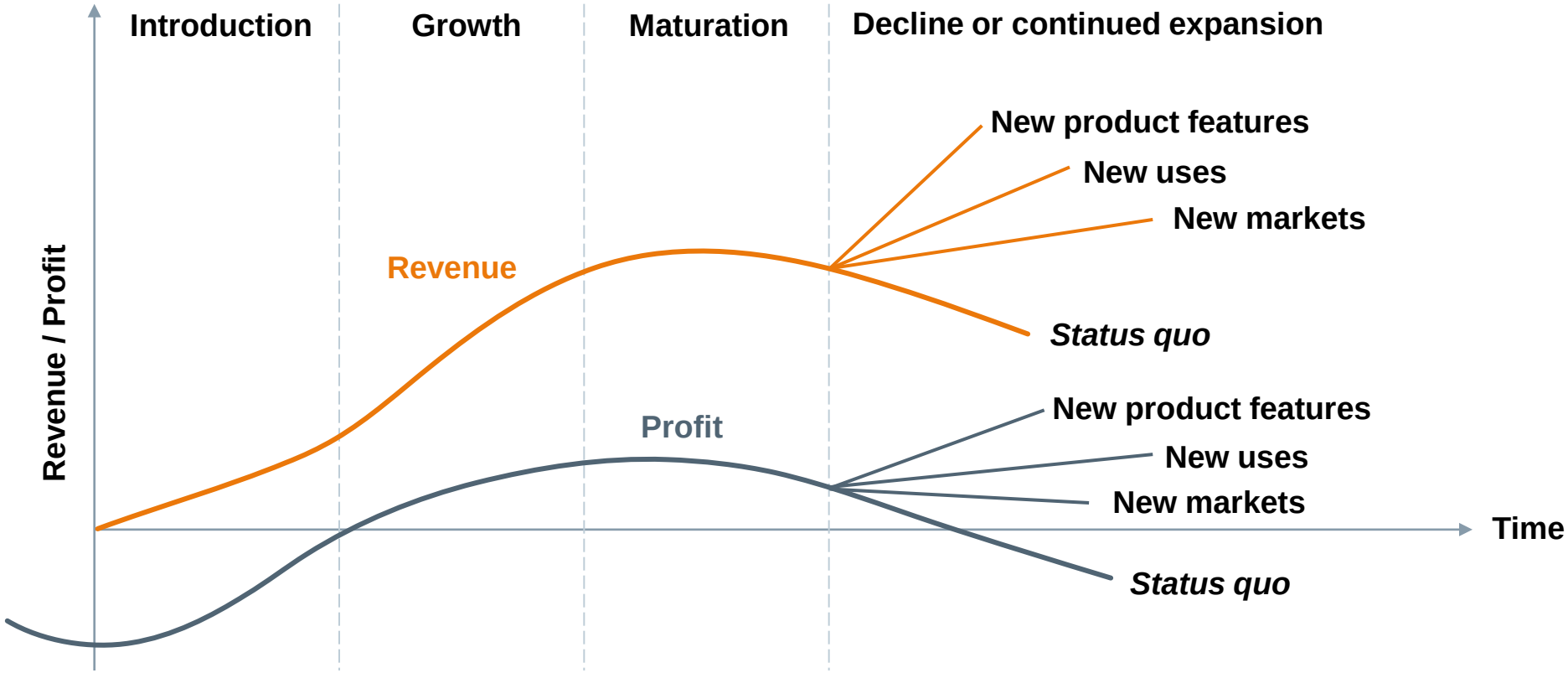

- Success depends on product features and use cases
- System architect contributes to original features and product enhancements
- Architecture must allow future enhancements

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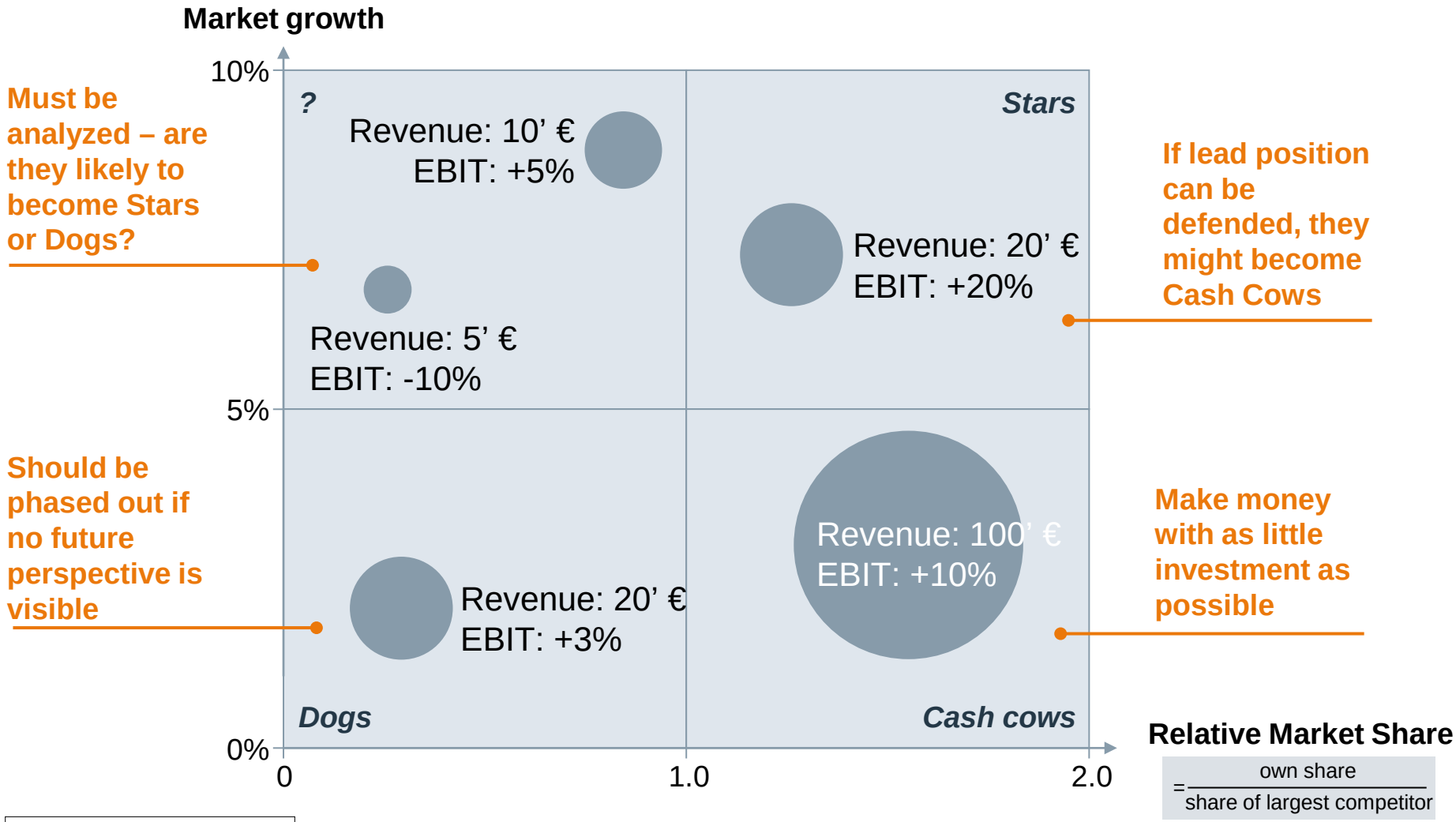
The BCG Matrix
Portfolio situation and decision support



Must be analyzed – are they likely to become Stars or Dogs?

If lead position can be defended, they might become Cash Cows

Should be phased out if no future perspective is visible

Make money with as little investment as possible

BCG: Boston Consulting Group

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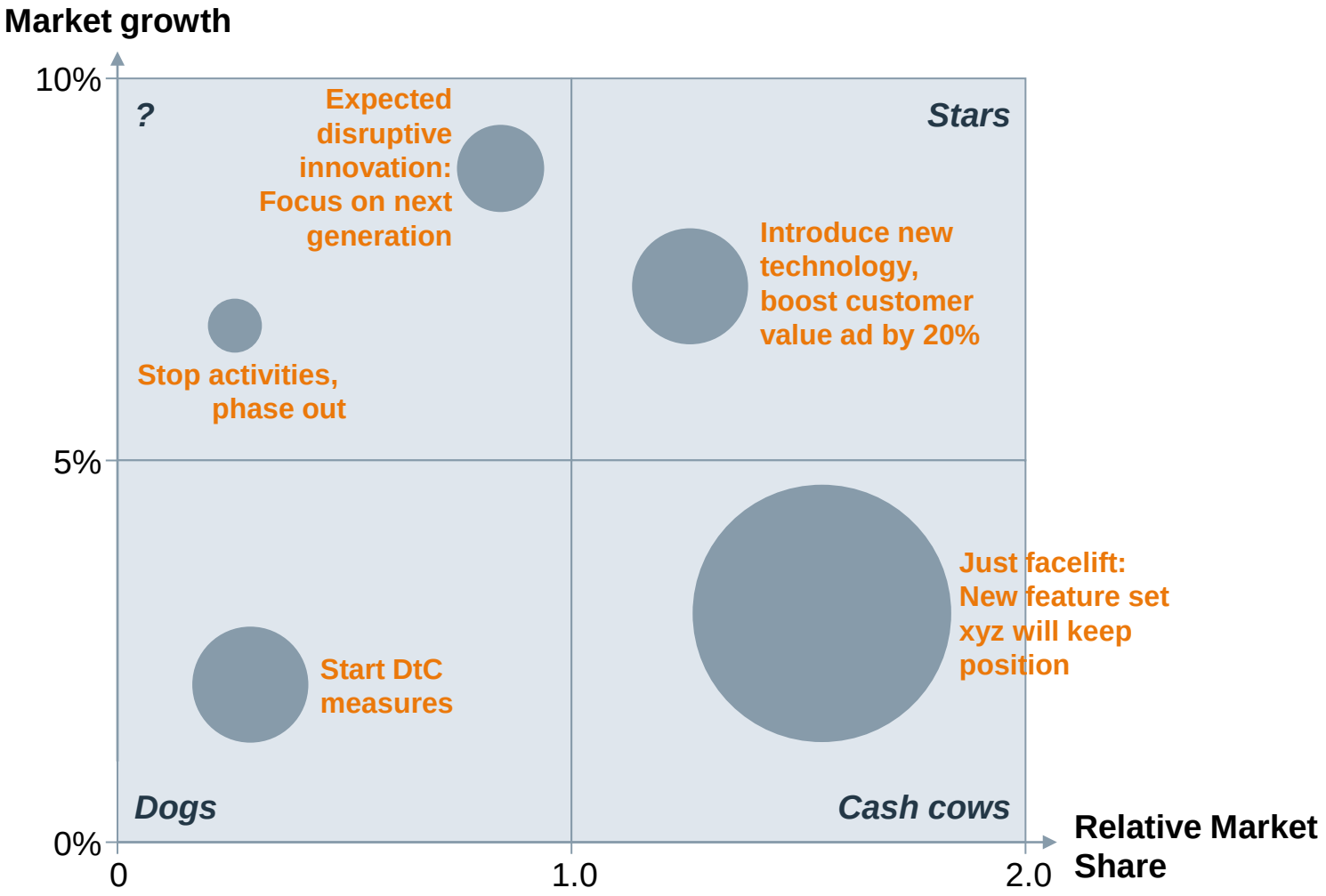
Portfolio decisions based on the BCG Matrix



BCG: Boston Consulting Group

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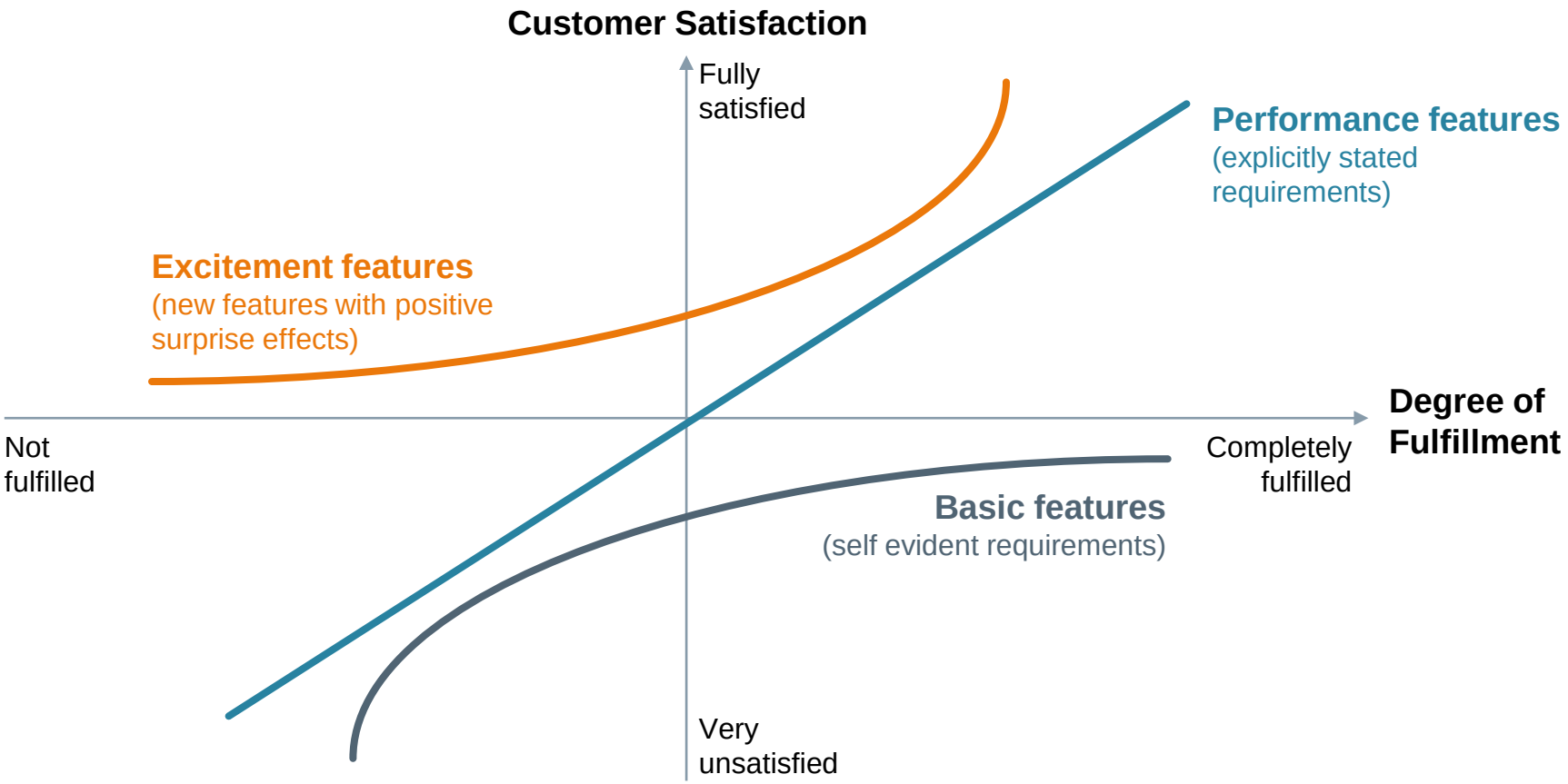
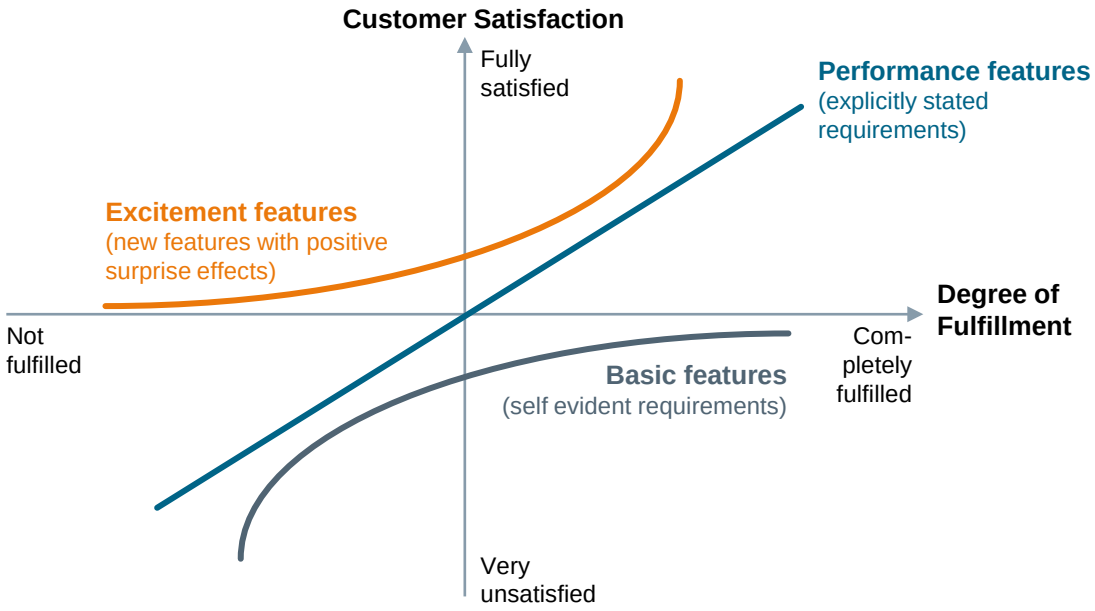
The KANO Model



Beat the competitor by adding more value for the customer

What's important?
Understanding the Customer / The KANO Model



Delighter	Latent Need → **Differentiator**
Satisfier	More is better → **Competitive**
Dissatisfier	Must have's → **Cost of Entry**

For the Product Manager KANO is a tool to find the right mix between the different feature types

For the Test Architect KANO is a help to identify risks.

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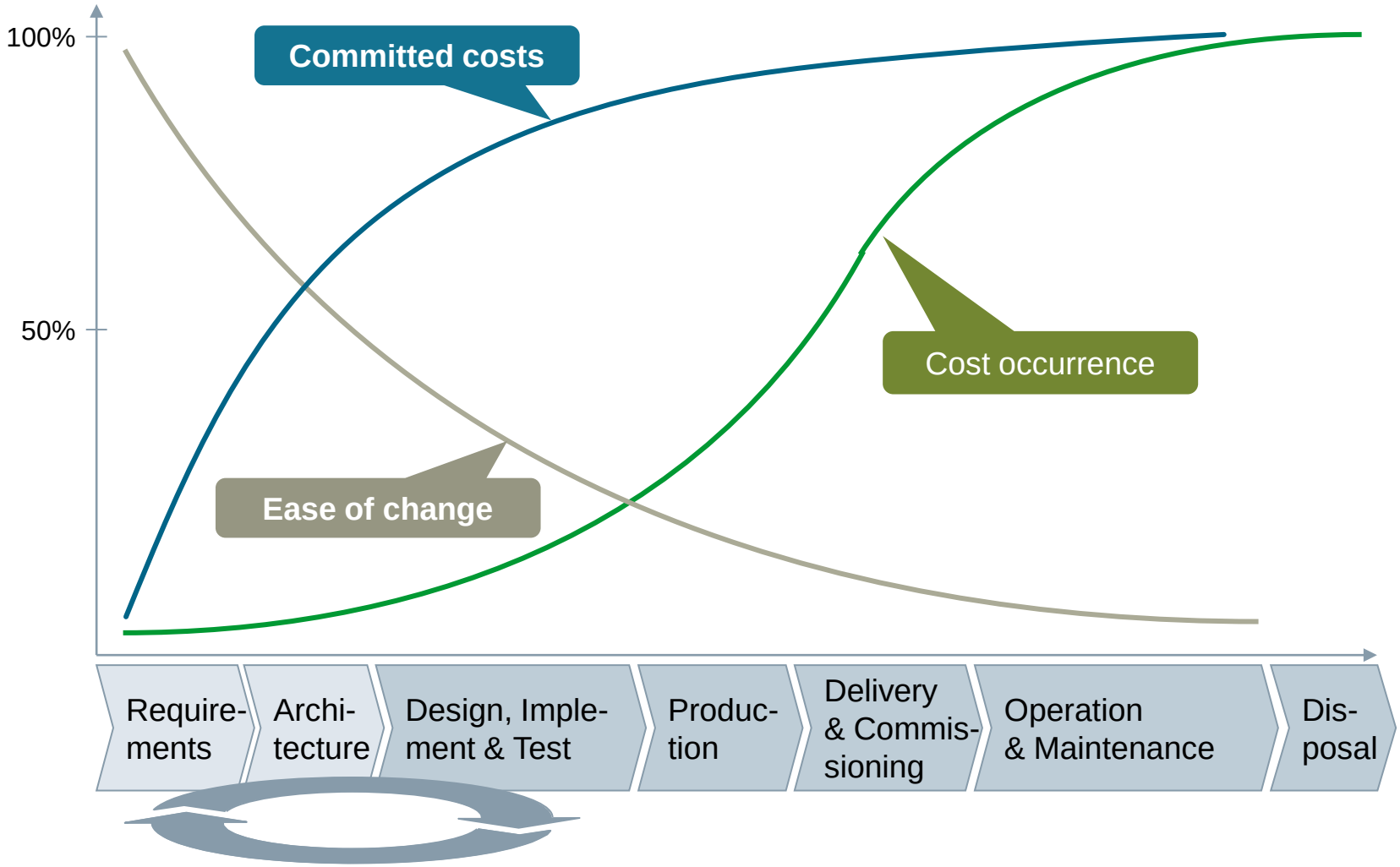
Product Life Cycle Cost
Committed costs versus realized costs



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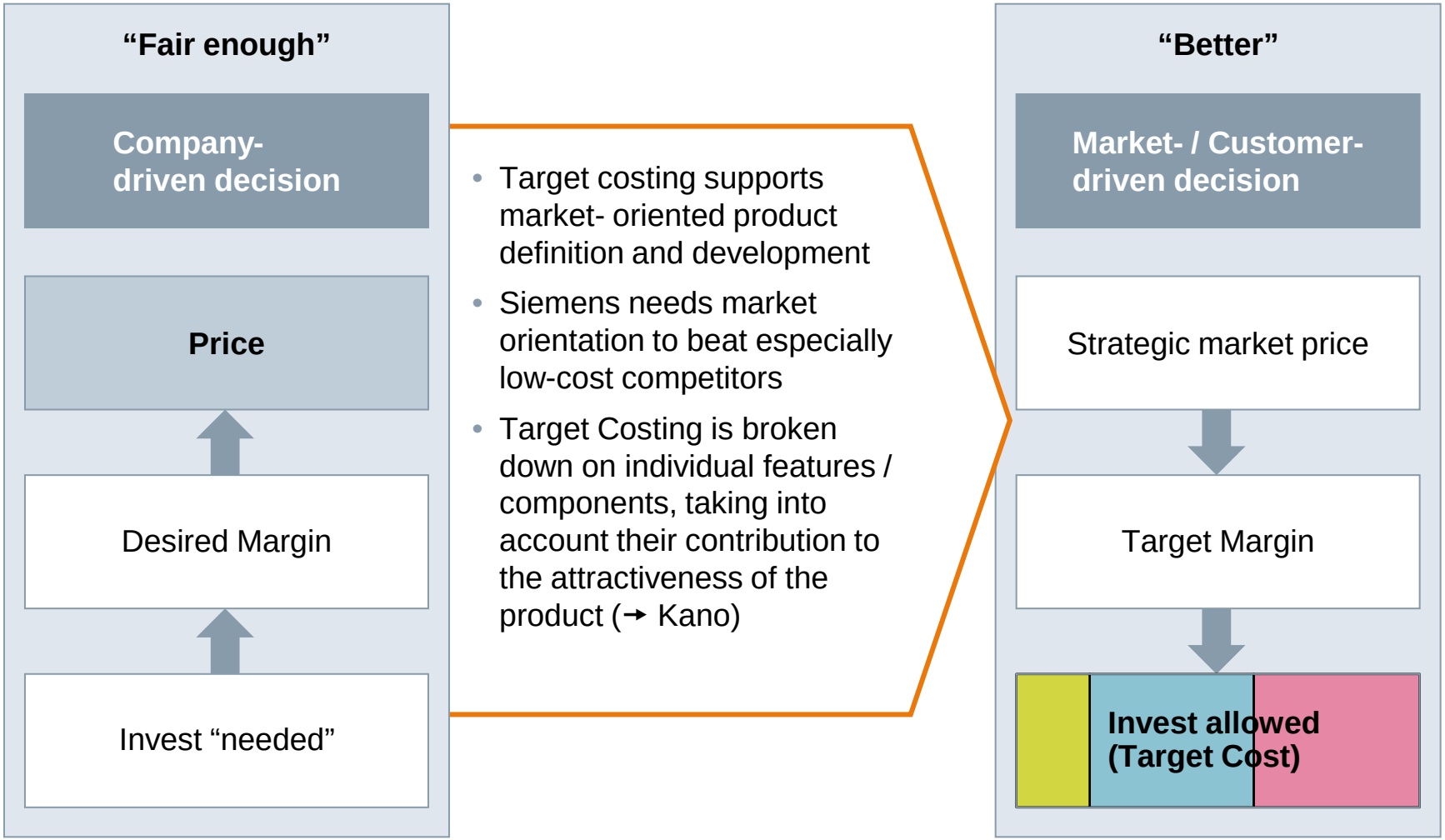
What is the customer willing to pay? Target Costing – Company-driven vs. Market-driven Pricing



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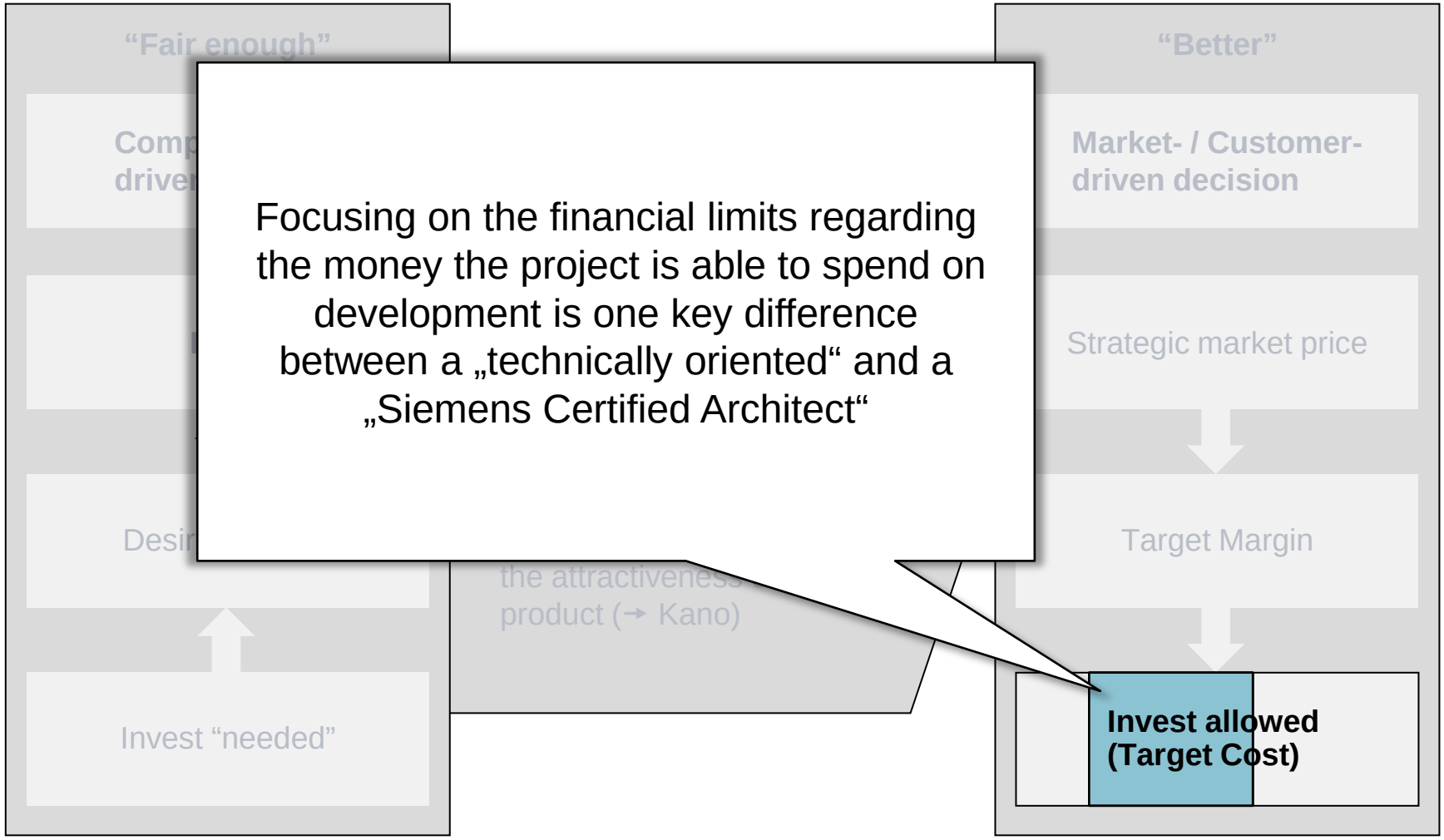
Important to know / punch line



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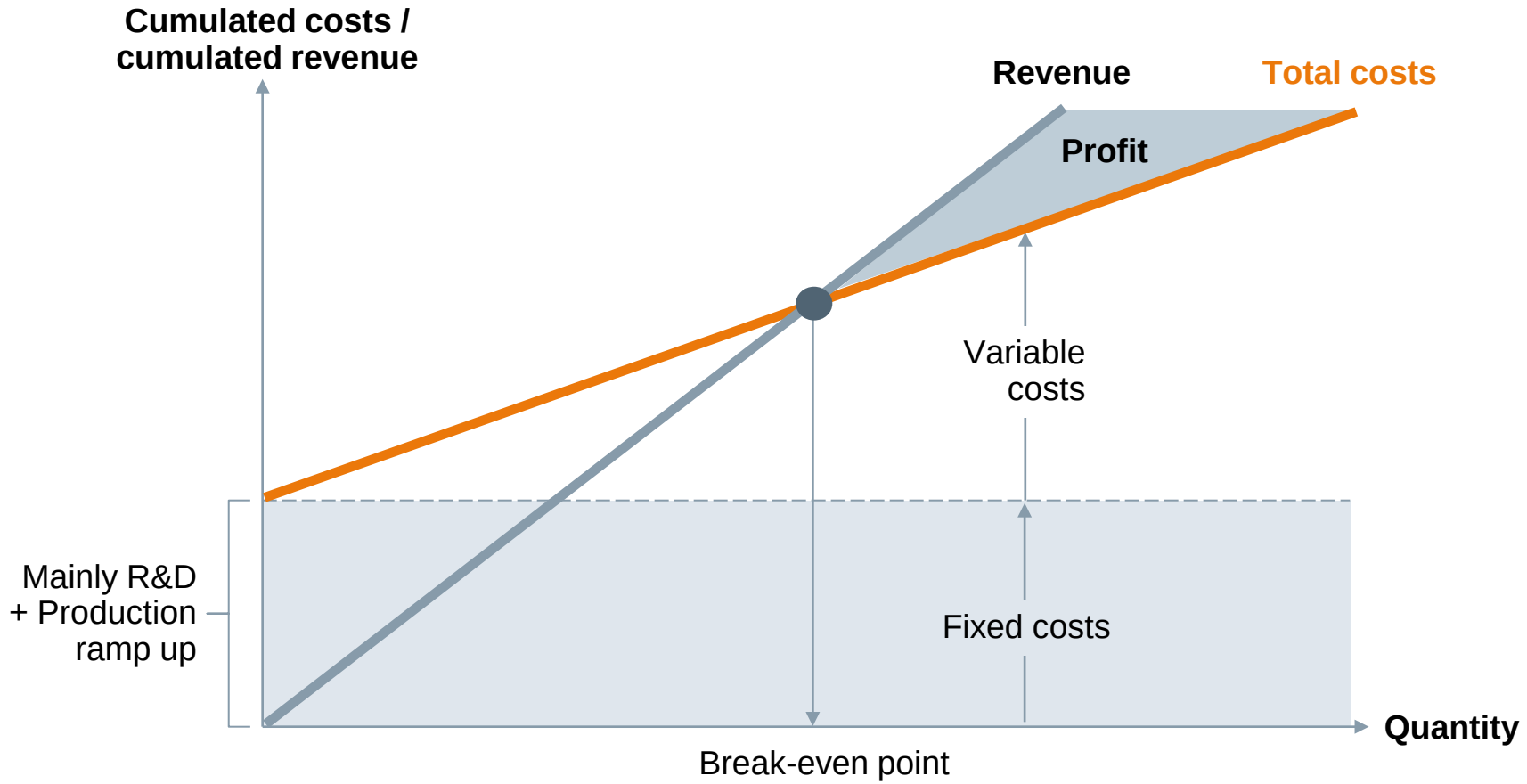
Where does the Money come from?
Break-even Analysis



Total Revenue = Sales Revenue + Service Revenue

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Return on investment on decisions

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Every project decision can be viewed as a form of investment (=cost!)	=>	Measurement of the success of the investment is by return on invest => ROI

Example.: More reviews => Less errors in testing

Quantification:

Before: 10h/week for testing

Now: Invest 4h/week in reviews

Therefore reduce the 10h testing to 2h, saving = 8h

=> 8h saved / 4h invested => 200% ROI

Note: Not everything needs to directly translate in monetary gains, but your investments should result in added value! Examples might be risk mitigation, reduced error costs or time savings.

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A general approach to make a strong business case for your decisions

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1. Establish value-proposition (german: „Nutzenversprechen“)
   Compare your approach with existing solutions or alternatives
   Focus on capability to increase productivity / efficiency of the business (not: „Brilliant technologies“)
2. Build metrics to quantify
3. Link back to traditional business measures (Euro, Dollars)
4. Prepare a roadmap with milestones tied to business values
   Let stakeholders decide, where to stop
5. Find the right timing
   Urgency for a change is high in a crisis project situation

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"From Strategy to Customer" – Architect's Role

You,
the Test Architect, ...

- … know about Siemens as a global player and the different levels of strategy
- … understand the path from product roadmap to operative planning and finally to project planning
- … are aware of the balance between importance of a feature, development costs and life-cycle costs and his consulting role for product management
- … understand the correlation between architecture and success in the market
- … can argument with business oriented people in their language

Only an architecture that takes market and market development into account is a good architecture!

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Further readings

Use the SSA Wiki :
https://wiki.ct.siemens.de/x/fReTBQ

and check the “Reading recommendations”:
https://wiki.ct.siemens.de/x/-pRgBg

- Architect's Resources:
  - Competence related content
  - Technology related content
  - Design Essays
  - Collection of How-To articles
  - Tools and Templates
  - Reading recommendations
  - Job Profiles for architects
  - External Trainings
  - ... more resources

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