P^3 Profitable Product Performance

Target Costing inside

Concept for Product Target Splitting at MD

Seidenschwarz & Comp.

SIEMENS

Introduction

- This paper introduces **Product Target Splitting** as one of the six core tools of the Target Costing methodology.
- Product Target Splitting defines a process which **translates a Target BOM into Target Cost corridors for modules**
- Three different methodologies are presented:
  - Product Target Splitting - Market view
    The market requirements are translated in a two step approach first into product functions and then into product modules.
  - Product Target Splitting - Internal view
    The historical cost information is scrutinised and used as cost input for the product development process
  - Product Target Splitting - Competitor/supplier view
    Competitor and supplier cost information is uses as a cost benchmark
- The paper is divided into 2 chapters:
  - The first chapter gives a **methodological overview** of Product Target Splitting.
  - The second chapter provides a view on **how to adapt** Product Target Splitting to the **specific situation at MD**.

Agenda

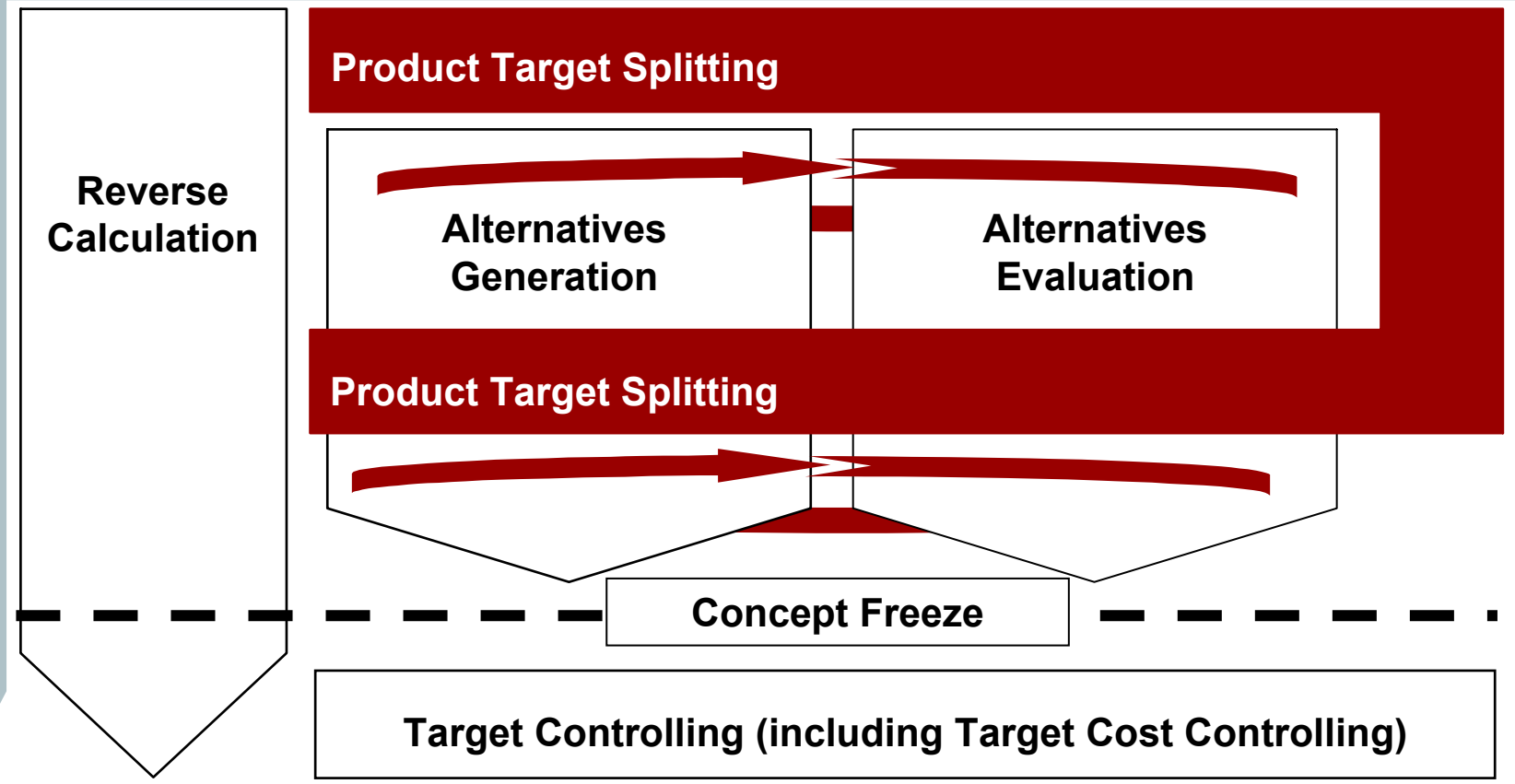
- **Methodology and benefits of Product Target Splitting**
- Product Target Splitting at Siemens MD

The Target Costing concept

Based on the results of Reverse Calculation and Enthusiasm Model, Product Target Splitting provides Target Cost corridors for all relevant product modules

Market Research

Window of Opportunity and Enthusiasm Model



Definition and benefits of the Product Target Splitting

The main objective of Product Target Splitting is to derive market-oriented Target Cost corridors for product modules

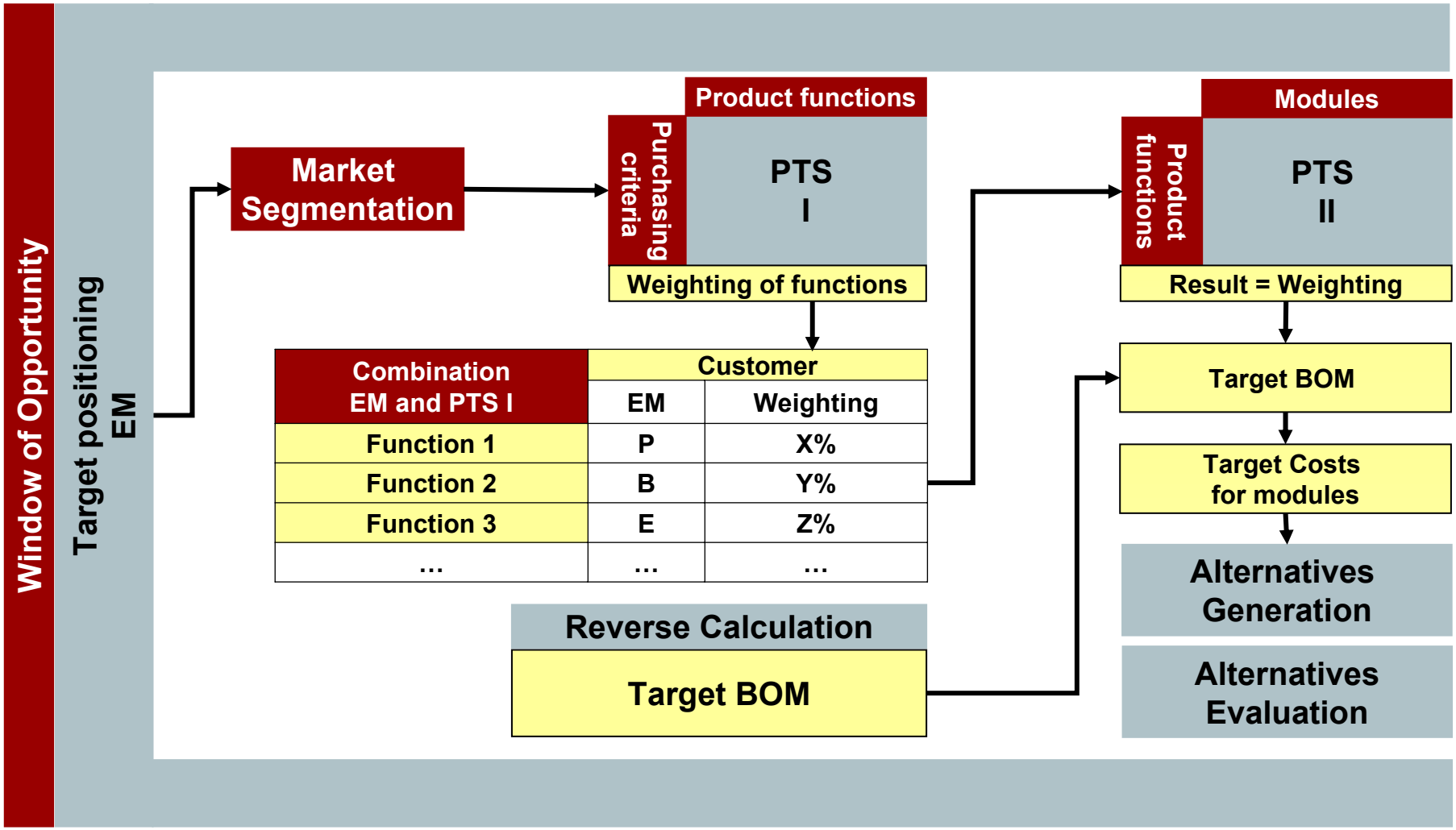
The Product Target Splitting provides a methodology to **break down a Target BOM for a product at a given Window of Opportunity** into **Target Cost corridors for product modules** according to **operator and end-user requirements.**

Benefits of the Product Target Splitting

- **Market-oriented Target Cost corridors for product modules** resulting in a market-oriented cost allocation (balanced products).
- Supports the **translation** of **unspecific end-user demands** into **quantifiable** attributes (Cost Target Values).
- Provision of a **communication tool** to incorporate market orientation into products on module level.
- Force the organization to **provide vital product & market information** at an **early stage** (potential product portfolio, technical trends, competitor information)
- **Increase the discussion** at an **early stage** of the product development process. This helps to reduce time and cost consuming changes at a later stage.

Link between Target Costing tools

Product Target Splitting (PTS) requires input from the Enthusiasm Model (EM) and the Reverse Calculation (RC) and provides the cost corridors for the Alternatives Generation and Evaluation

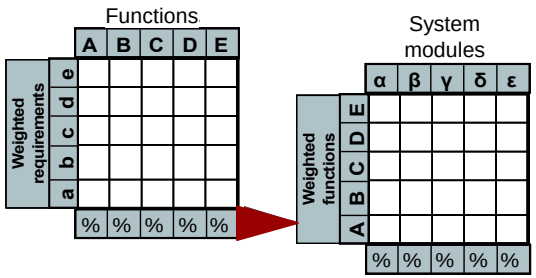


SIEMENS

Overall concept of Product Target Splitting

Three different methodologies compliment each other to derive detailed cost information for modules during the product and module definition process

Market view
(to support product definition)



Accepted Target Cost corridors for modules

Internal products view
(to support module definition)

- Cost structures for each product segment/class are derived from current product data and predicted into the future.

Competitor/supplier view
(to support module definition)

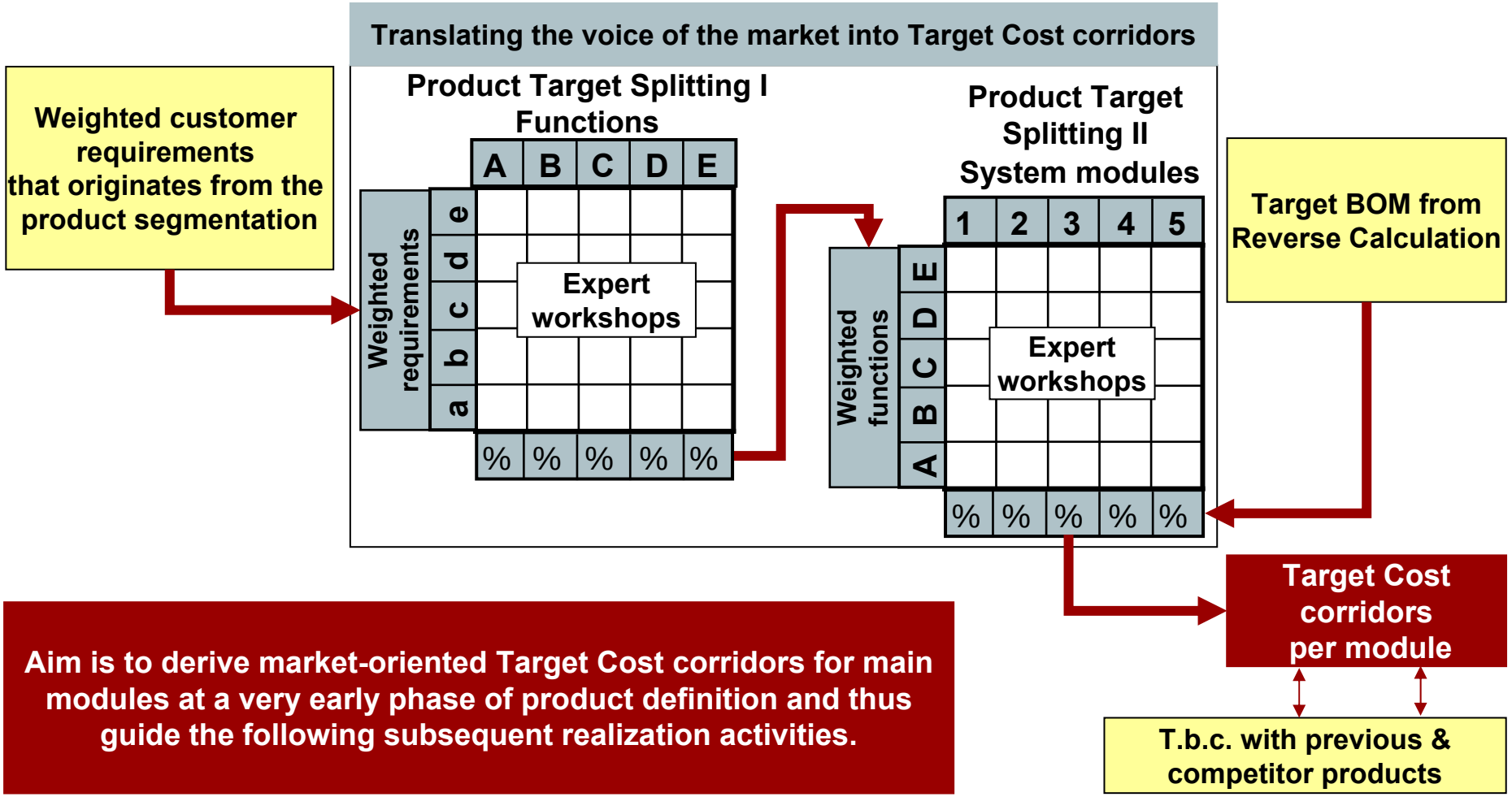
- Trend analysis and extrapolation derived from supplier information.
- Competitor cost structures derived from Product Reverse Engineering.

Internal and **competitor information supplement** the market-oriented view of Product Target Splitting and serves as **benchmark**. The internal and competitor/supplier view provide Target Costs for modules that have long development lead times when market information is not available.

SIEMENS

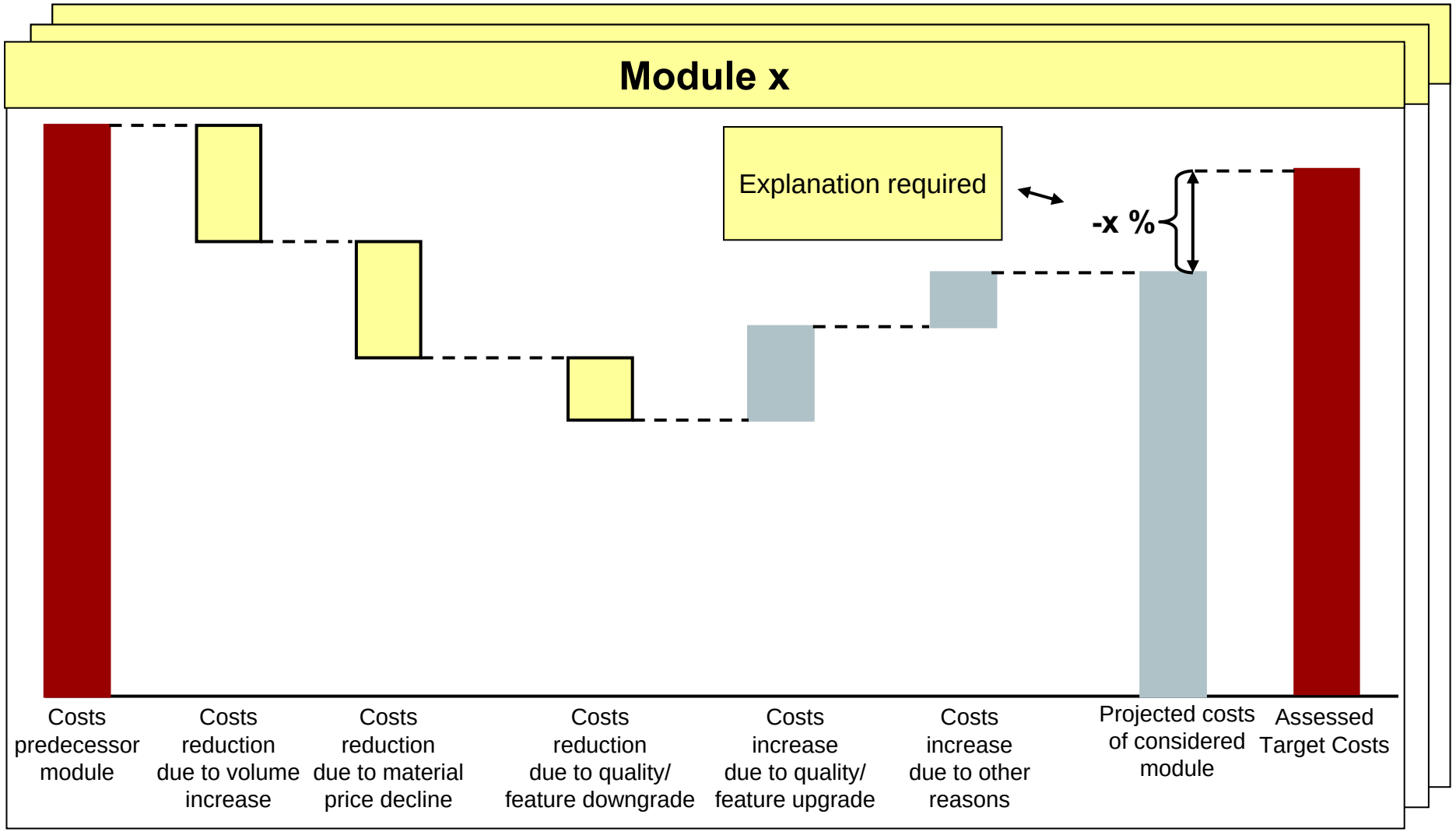
Visualization of Product Target Splitting (market view)

To calculate Target Cost corridors for modules the Product Target Splitting uses a two step approach



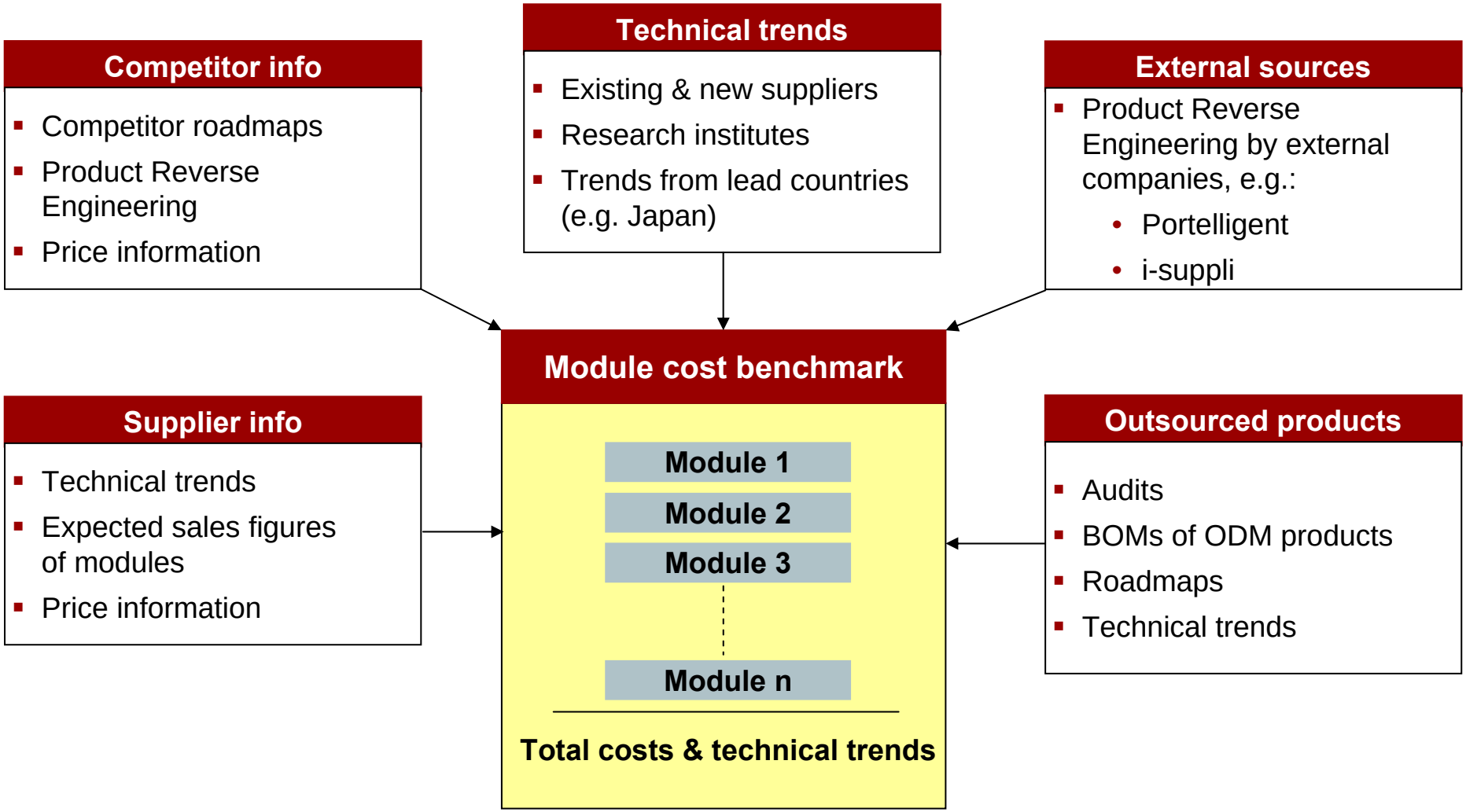
Visualization of Product Target Splitting (internal products view)

Internal benchmarks are derived by the projection of historical data of predecessor products



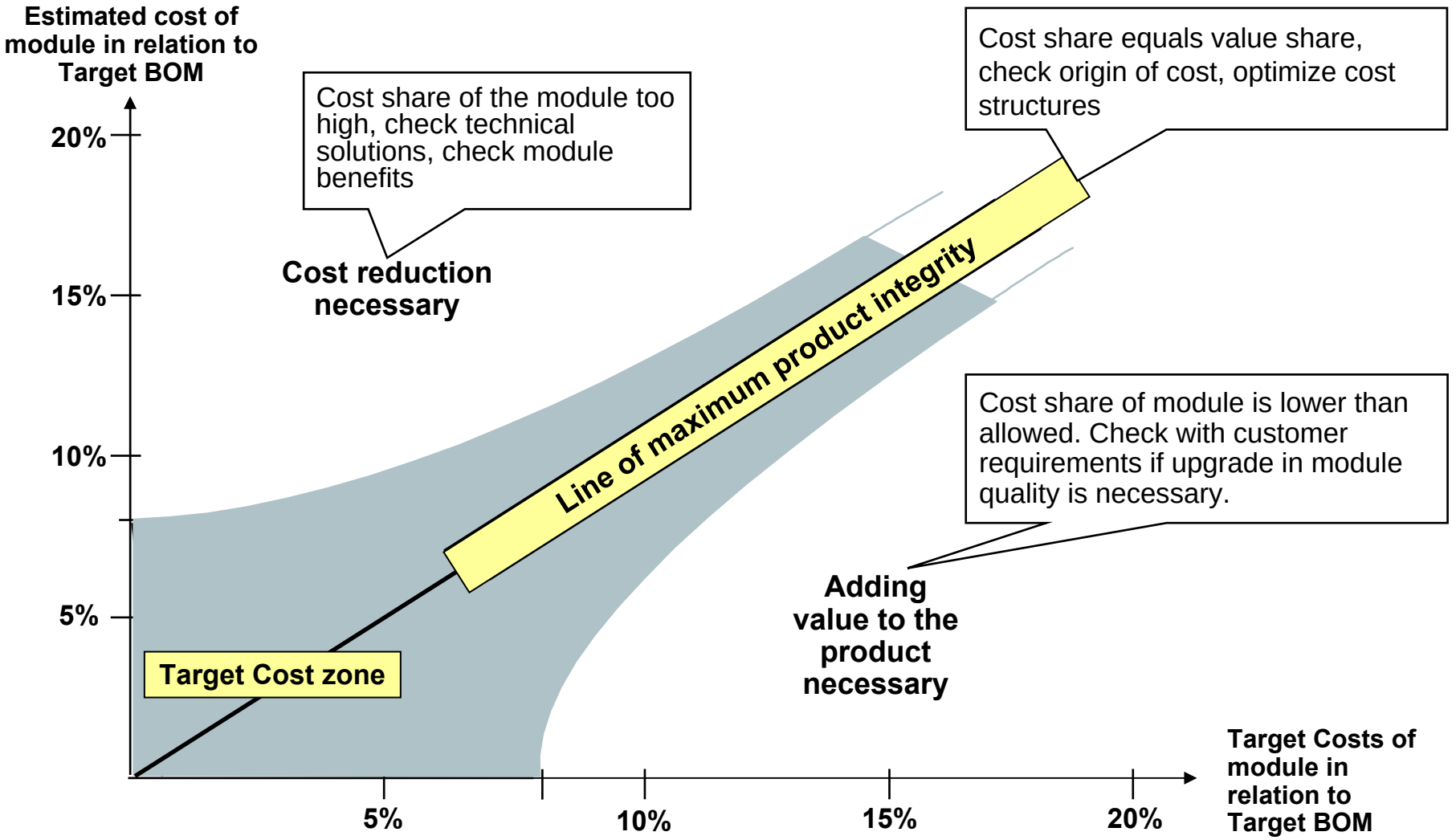
Visualization of Product Target Splitting

Another possibility to benchmark module prices is to use external information from e.g. competitors, suppliers or ODM partners



Results from Product Target Splitting

Target Costs from the Product Target Splitting define a cost corridor that limit the bandwidth of costs for modules



SIEMENS

Agenda

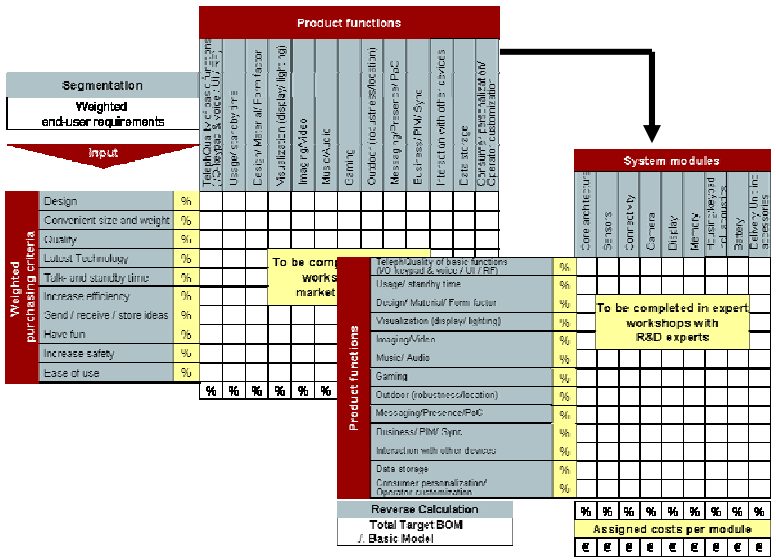
- Methodology and benefits of Product Target Splitting
- **Product Target Splitting at Siemens MD**

Two alternatives have been created to conduct the PTS market view at MD

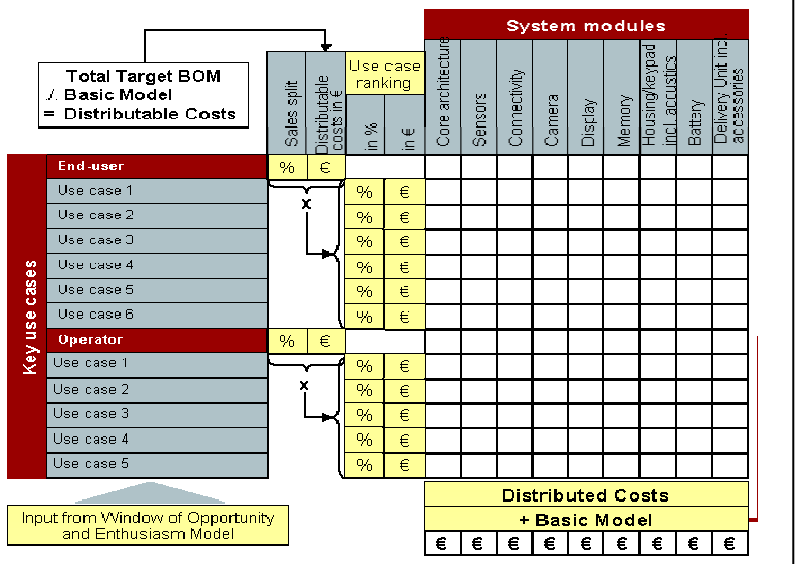
In case no PPA results (evaluation of purchasing criteria) is available, a use case approach offers an effective alternative calculation method

Product Target Splitting market view

Traditional two step approach

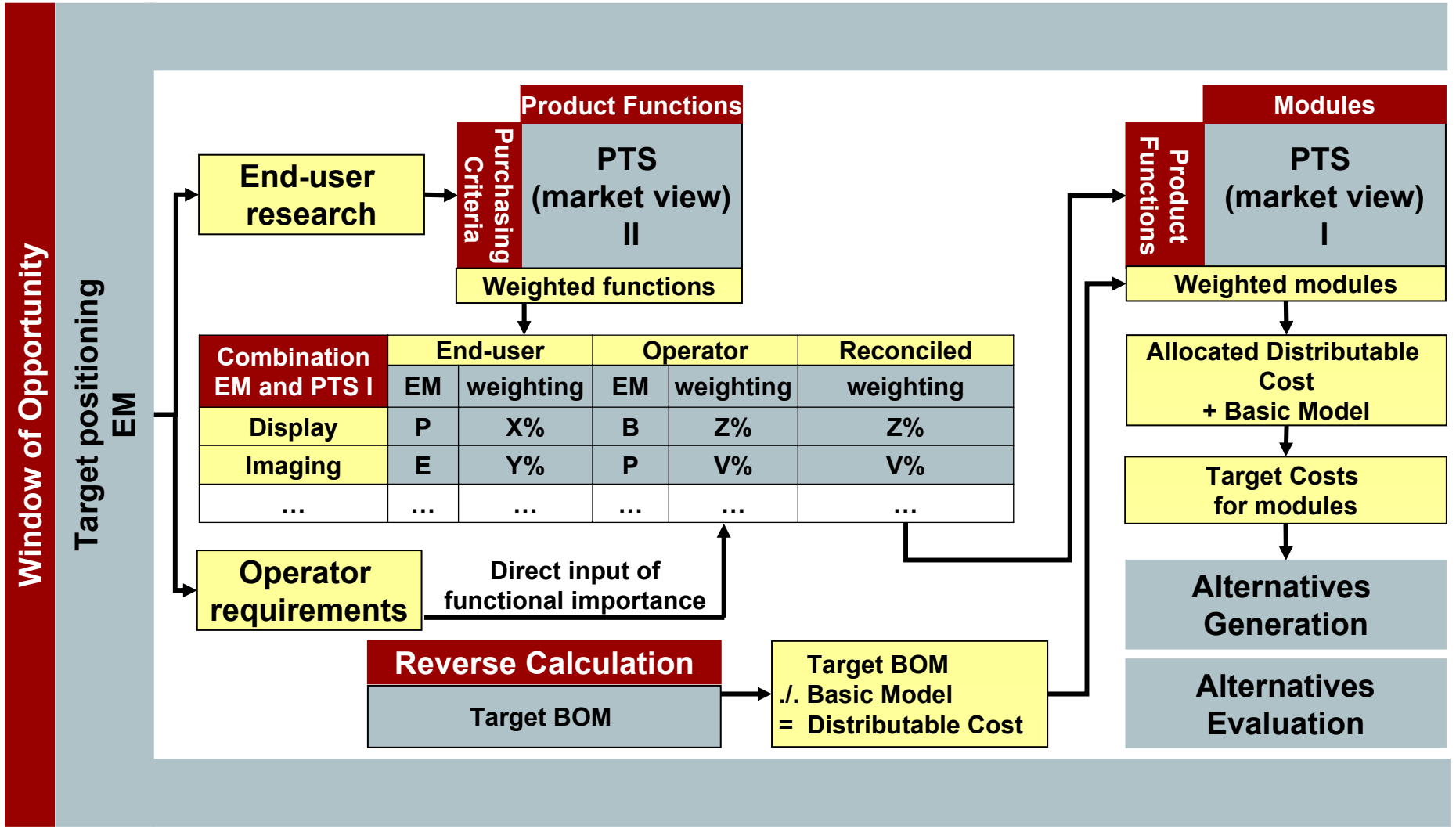


Adapted use case approach



Link between the Target Costing tools using the traditional approach

The generic Product Target Splitting concept has to be adapted for MD to consider the different demands of operators and end-users



Price Performance Analysis as input for the traditional PTS approach

The Price Performance Analysis delivers vital input for the end user evaluation of the traditional Product Target Splitting approach

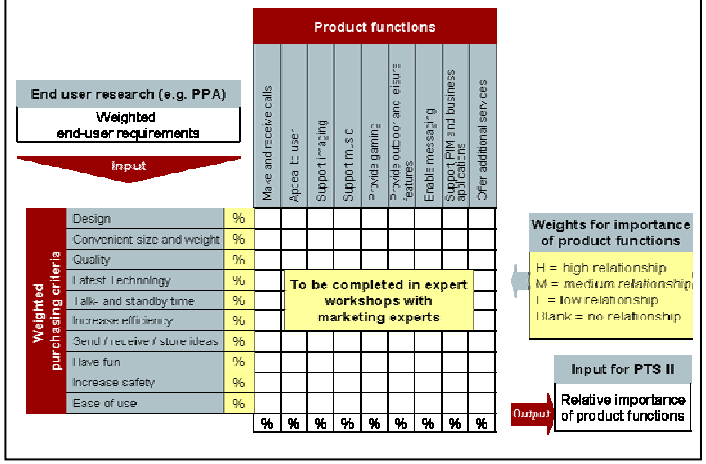
Price Performance Analysis

1. The PPA delivers weighted customer requirements per (sub-) segment and/or topic as direct input for the PTS

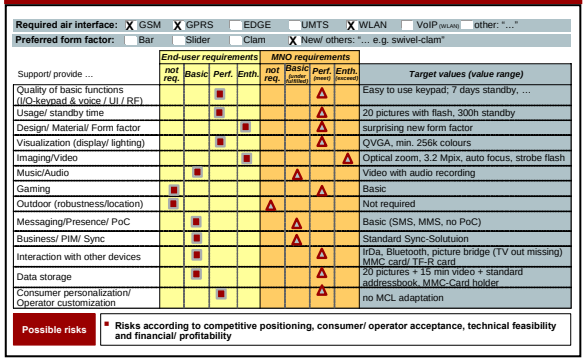
2. The PPA classifies selected key functionalities into Basic, Performance and Enthusiasm for the Product Target Profile and indicates a technical target value from an end user point of view

3. As the Target Profile is used as input for the PTS I, the second stream of PPA results is indirectly integrated into the PTS

Traditional PTS I



EM



Neu von JN

Seidenschwarz & Comp.

SIEMENS

Traditional Product Target Splitting (market view) I for end-users

The Product Target Splitting (market view) I for end-users translates the relative importance of purchasing criteria into the relative importance of product functions

End user research (e.g. PPA)

Weighted
end-user requirements

Input

Weighted purchasing criteria		Product functions: Make and receive calls	Appeal to user	Support imaging	Support music	Provide gaming	Provide outdoor and leisure features	Enable messaging	Support PIM and business applications	Offer additional services
Design	%									
Convenient size and weight	%									
Quality	%									
Latest Technology	%		**To be completed in expert workshops with marketing experts**							
Talk- and standby time	%									
Increase efficiency	%									
Send / receive / store ideas	%									
Have fun	%									
Increase safety	%									
Ease of use	%									
		%	%	%	%	%	%	%	%	%

Weights for importance of product functions

Percentages to be estimated

Output

Input for PTS II

Relative importance of product functions

Seidenschwarz & Comp.

SIEMENS

Traditional Product Target Splitting (market view) I for operators

As operators can evaluate the relative importance of product functions directly, the translation of purchasing criteria into product functions (PTS I) is not required for operators

Product Functions	Importance for Operators	Comment
Make and receive calls	k%	
Appeal to user	m%	
Support imaging/video	n%	
Support music/audio	l%	
Provide gaming	0%	
Provide outdoor/leisure features	n/a	
Enable messaging	y%	
Support business applications (incl. PIM/sync)	z%	
Provide additional services	n/a	
Sum Check	100%	

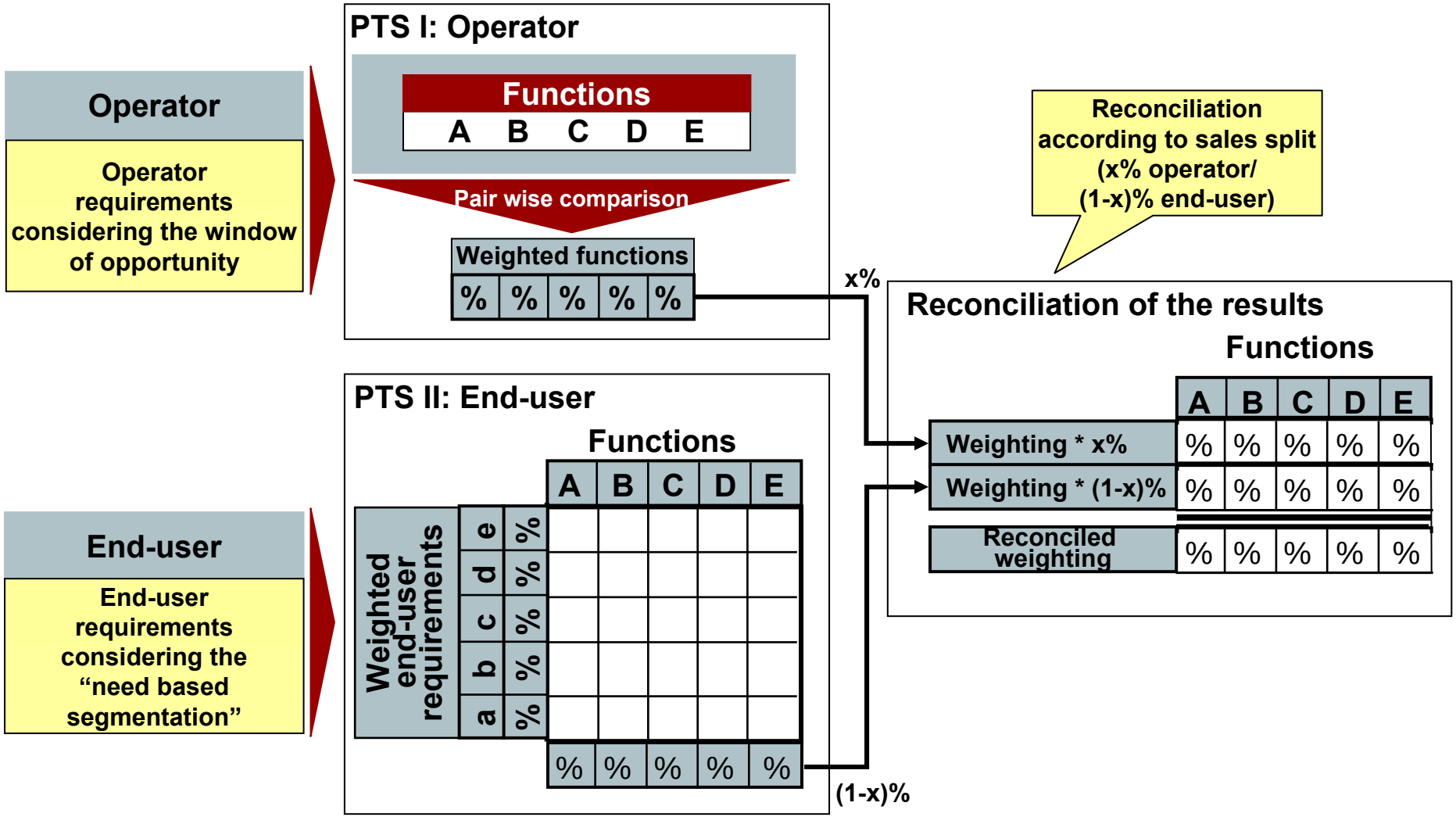
Results from the discussions shall be added in the comment field. These results are used in the Alternative Generation

Expert workshop determines relative importance of functions based on:

- Pair wise comparison of operator requirements
- Product positioning
- Regional segmentation
- etc.

Reconciliation approach of the traditional Product Target Splitting

To consider the relative importance of operator and end-user weighting, the sales split determined in the Enthusiasm Model is used for reconciliation of the results



SIEMENS

Traditional Product Target Splitting (Market view) II

Based on the relative importance of functional groups Target Costs for modules are assessed in a second step

Input from reconciled PTS I

Product functions		System modules: Basic Necessary Parts	Sensors	Connectivity	Camera	Display	Memory	Housing/keypad incl. acoustics	Battery	Delivery Unit incl. accessories
Make and receive calls	%									
Appeal to user	%									
Support imaging	%		**To be completed in expert workshops with R&D experts**							
Support music	%									
Provide gaming	%									
Provide outdoor and leisure features	%									
Enable messaging	%									
Support PIM and business applications	%									
Offer additional services	%									
		%	%	%	%	%	%	%	%	%
Assigned costs per module		€	€	€	€	€	€	€	€	€

Reverse Calculation

Total Target BOM
./. **Basic Model**

Input

Definition system modules

Comprehensive list of the physical entities that constitute a mobile phone

Target Costs for modules

Assigned costs per module

\+ **Cost per module** of the **Basic Model** (pre-defined costs)

= Target Costs per module

Results from the Product Target Splitting

Later on the Target Costs for modules are determined by adding the costs of the Basic Model to the distributable costs

		Product Modules								
		Basic Necessary Parts	Sensors	Connectivity	Camera	Display	Memory	Housing / keypad incl. acoustics	Battery	Delivery unit
Relative importance	100 %	x%	x%	x%	x%	x%	x%	x%	x%	x%
Target BOM ./. Basic Model	x€	x€	x€	x€	x€	x€	x€	x€	x€	x€
Weighted distributable costs	x€	x€	x€	x€	x€	x€	x€	x€	x€	x€
Weighted distributable costs + Basic Model	x€	x€	x€	x€	x€	x€	x€	x€	x€	x€
BOM estimation from Reverse Calculation	x€	x€	x€	x€	x€	x€	x€	x€	x€	x€

Calculation algorithm

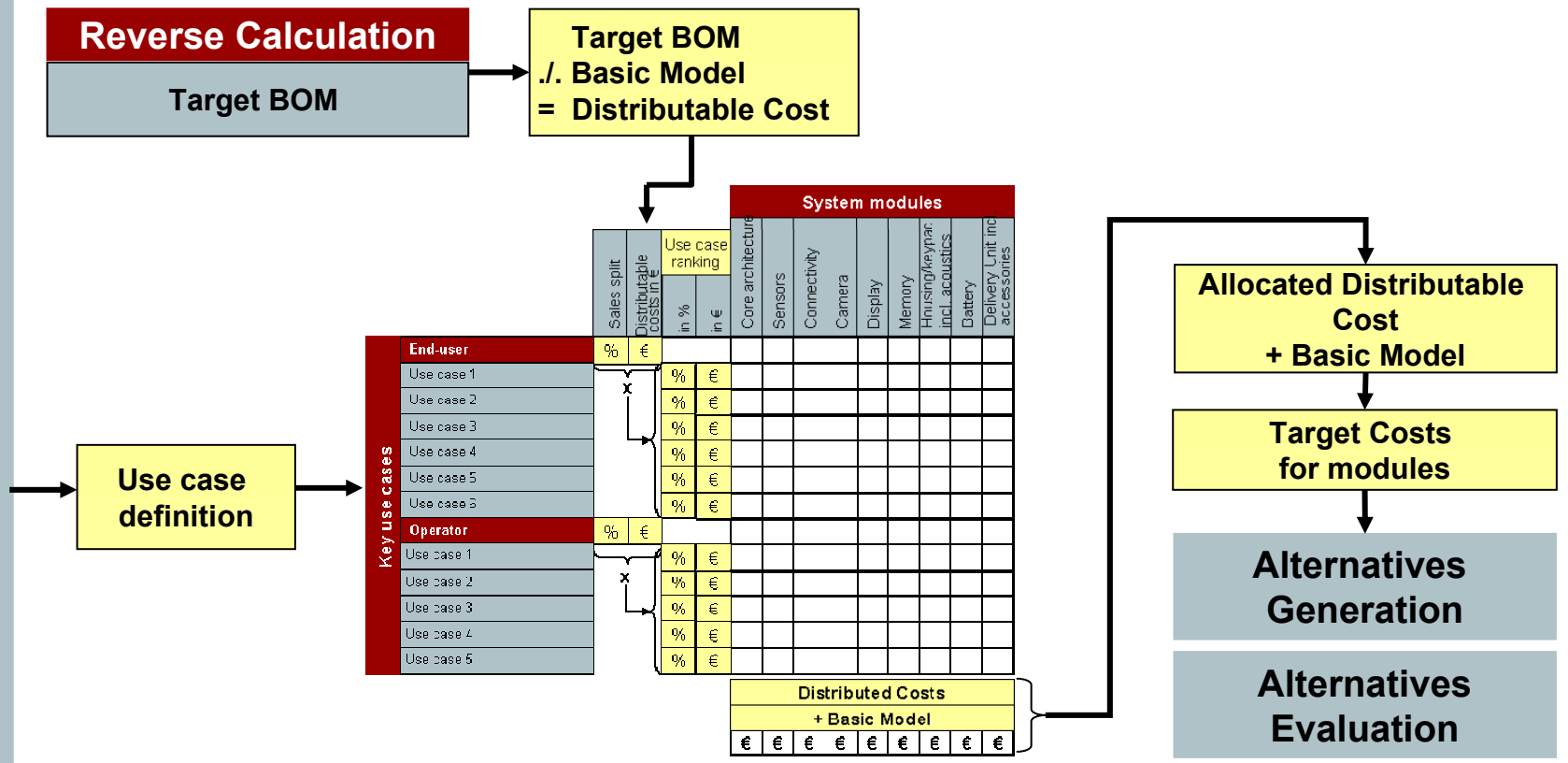
Target BOM
./. Basic Model
= Distributable Costs
* Relative importance
\+ Basic Model per module
= Target Costs for modules

Link between the Target Costing tools using the use case approach

The generic Product Target Splitting concept has been further adapted to enable MD's PDM's to conduct a PTS analysis even if no dedicated end user and operator weightings are available

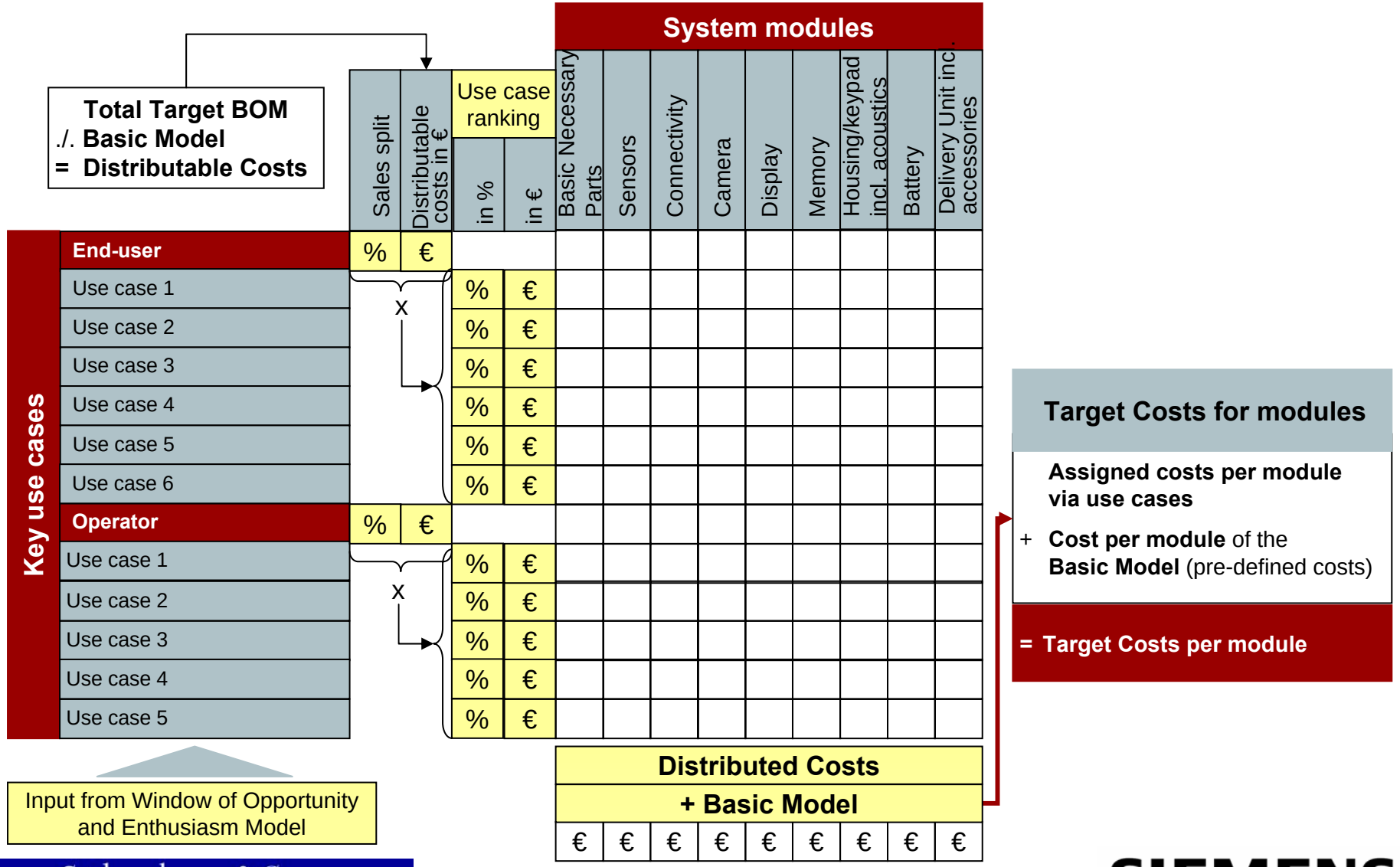
Window of Opportunity

Target positioning EM



Modified Product Target Splitting using a use case approach

Based on the identified use cases from the WoO, the distributable cost is assigned to the cost share of the Basic Model per module to determine the Target Costs for every single module



Seidenschwarz & Comp.

SIEMENS

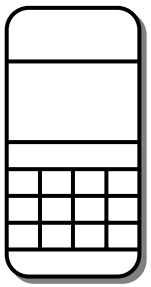
Basic Model for price points

To ensure accurate Target Costs, a Basic Model has to be defined for each price point

The **Basic Model** is a **virtual phone** that only satisfies **minimal requirements** and has the **minimum set of features** for a **given price point**. It **represents costs that can not be influenced.**

Basic Models change over time:

What is being considered basic **changes over time** as the expectations of the market change. (e.g. GPRS was once considered as being an Enthusiasm Feature…)
Thus the **Basic Model** needs to be **revised on a regular basis**.



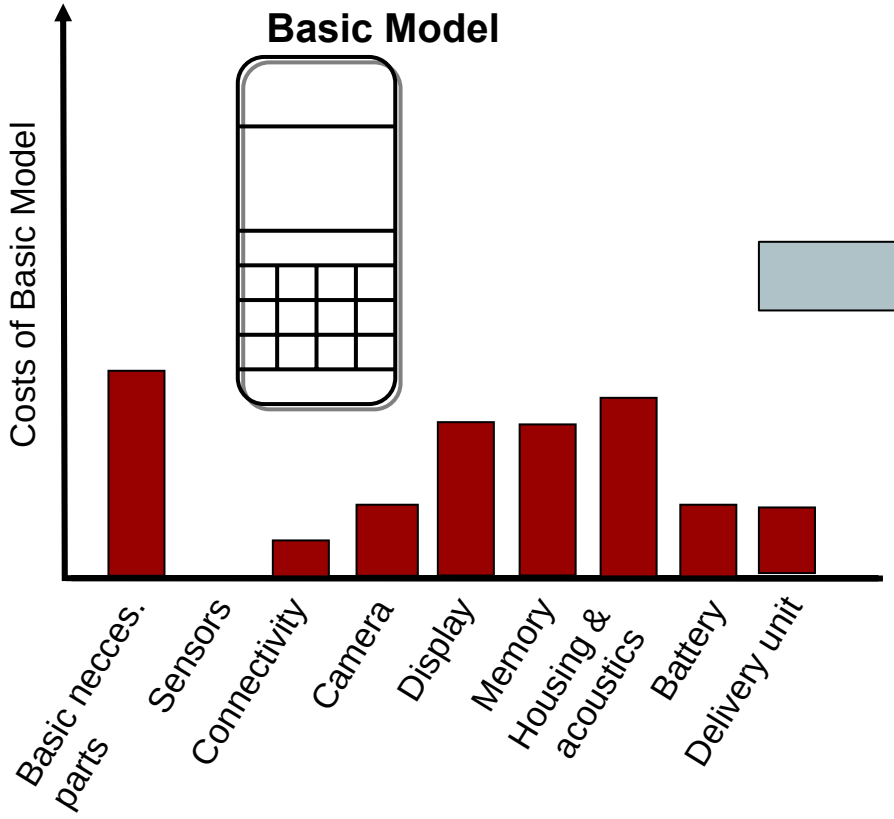
Basic Models are price dependant:

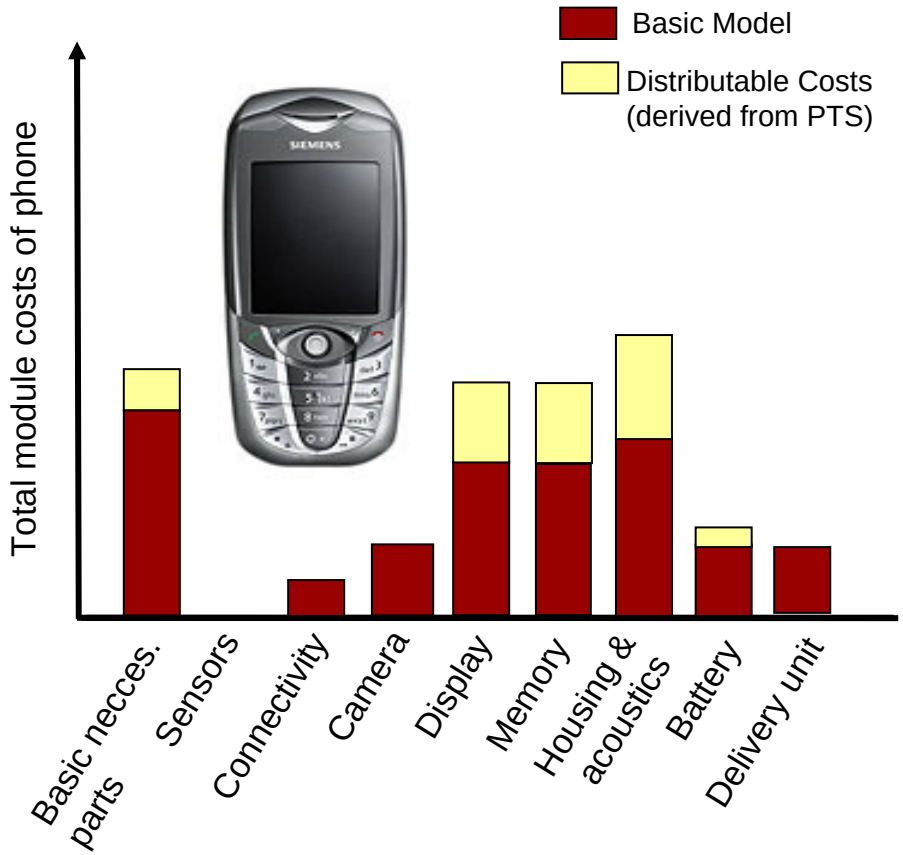
The **set of features** that are considered to be basic **depends on the price** of the mobile device. For this reason Basic Models for the various price points have to be defined.

The Basic Model should include all features that are basic in its price class, but shall not include any extras

From Basic Model to customer specific product

Additional expenditures have to be conducted to support Performance and Enthusiasm Features





As the Basic Model only satisfies minimal requirements, the costs for the used modules should be constantly decreased (cost-down approach)

As the distributable cost is used to obtain models for differentiation, the value for those parts should be constantly increased (value-up approach)

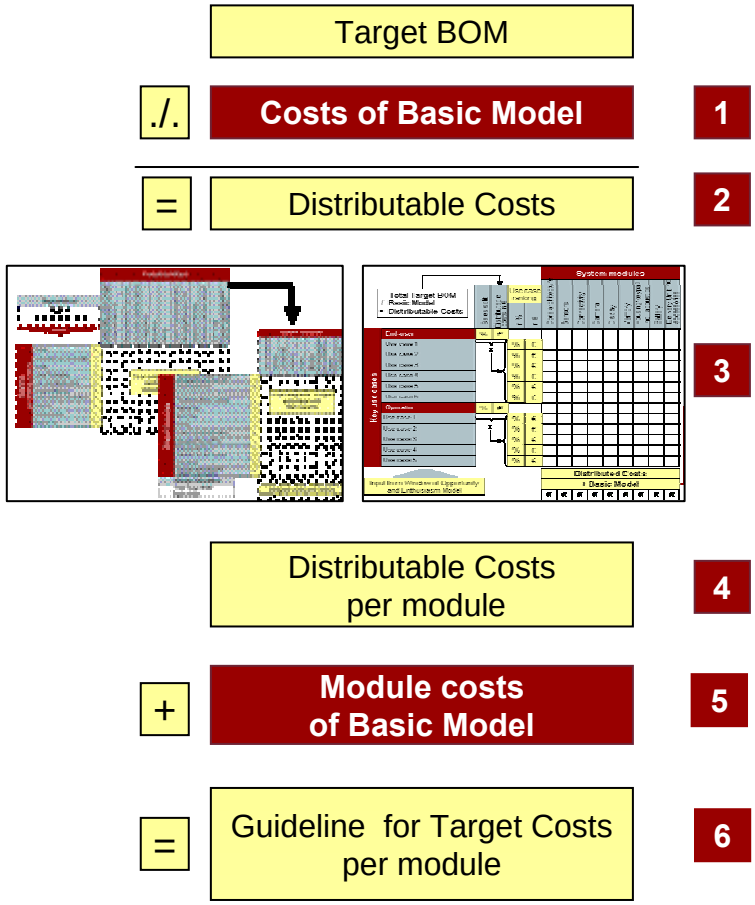
The Basic Model and Product Target Splitting

The costs for the Basic Model are subtracted from the Target BOM before the distributable costs per module can be determined

Various functionalities and features are seen by the customer to be **basic** and hence **not weighted** by the methods of market research. As these functionalities are not weighted, they need to be **subtracted** before the Product Target Splitting is performed.

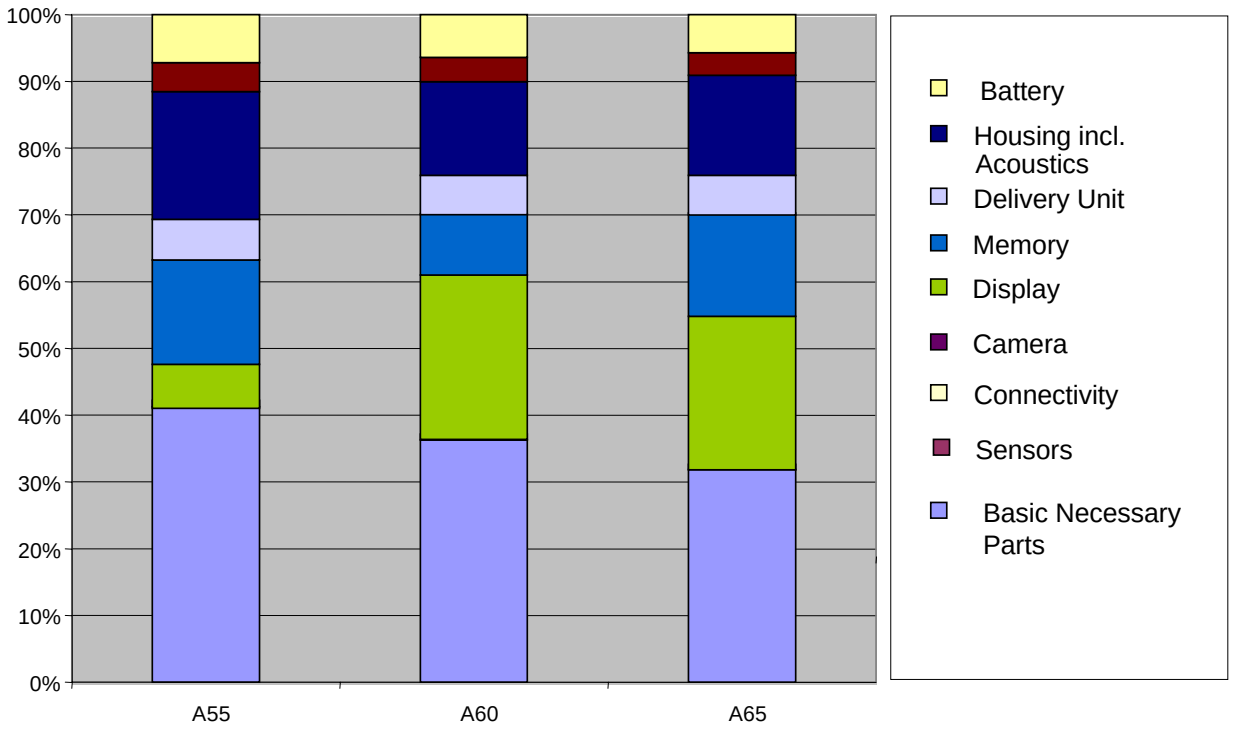
The Basic Model is integrated into the calculation through the following means:

1. A Basic Model is defined and the costs for the modules established (predefined costs)
2. The total costs for the Basic Model is subtracted from the Target BOM leading to Distributable Costs that is fed into Product Target Splitting.
3. Product Target Splitting weighs the Distributable Costs according customer requirements.
4. The module costs of the Basic Model are added to the Distributed Costs.
5. The result is the guideline for the Target Costs per module.



Internal products view

Projected cost shares from historical data of internal products are used to check the assessed Target Costs for modules

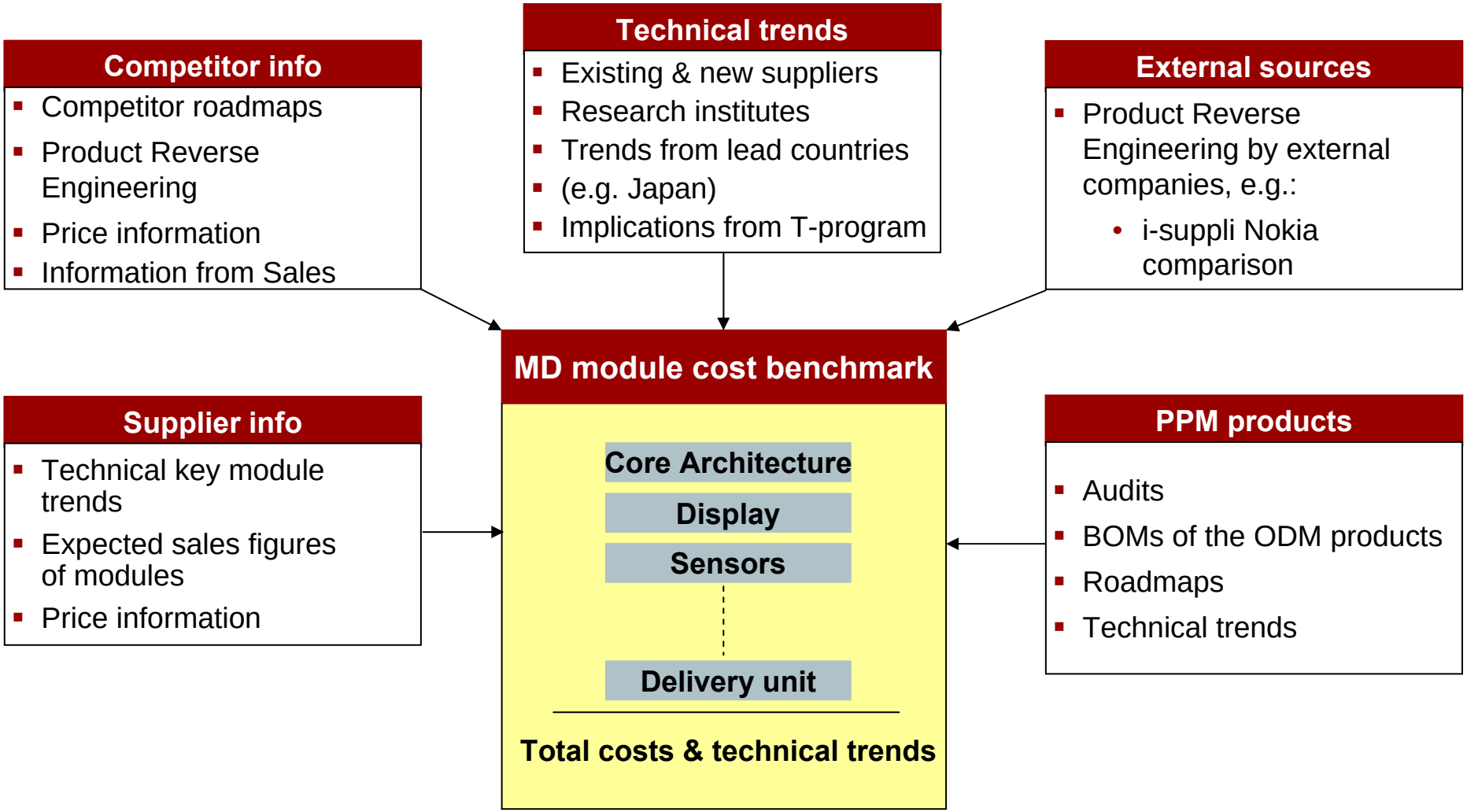


Analysis of historic data

Historic relative cost shares of main modules are **analyzed over the past product classes** and thus future cost shares are predicted.

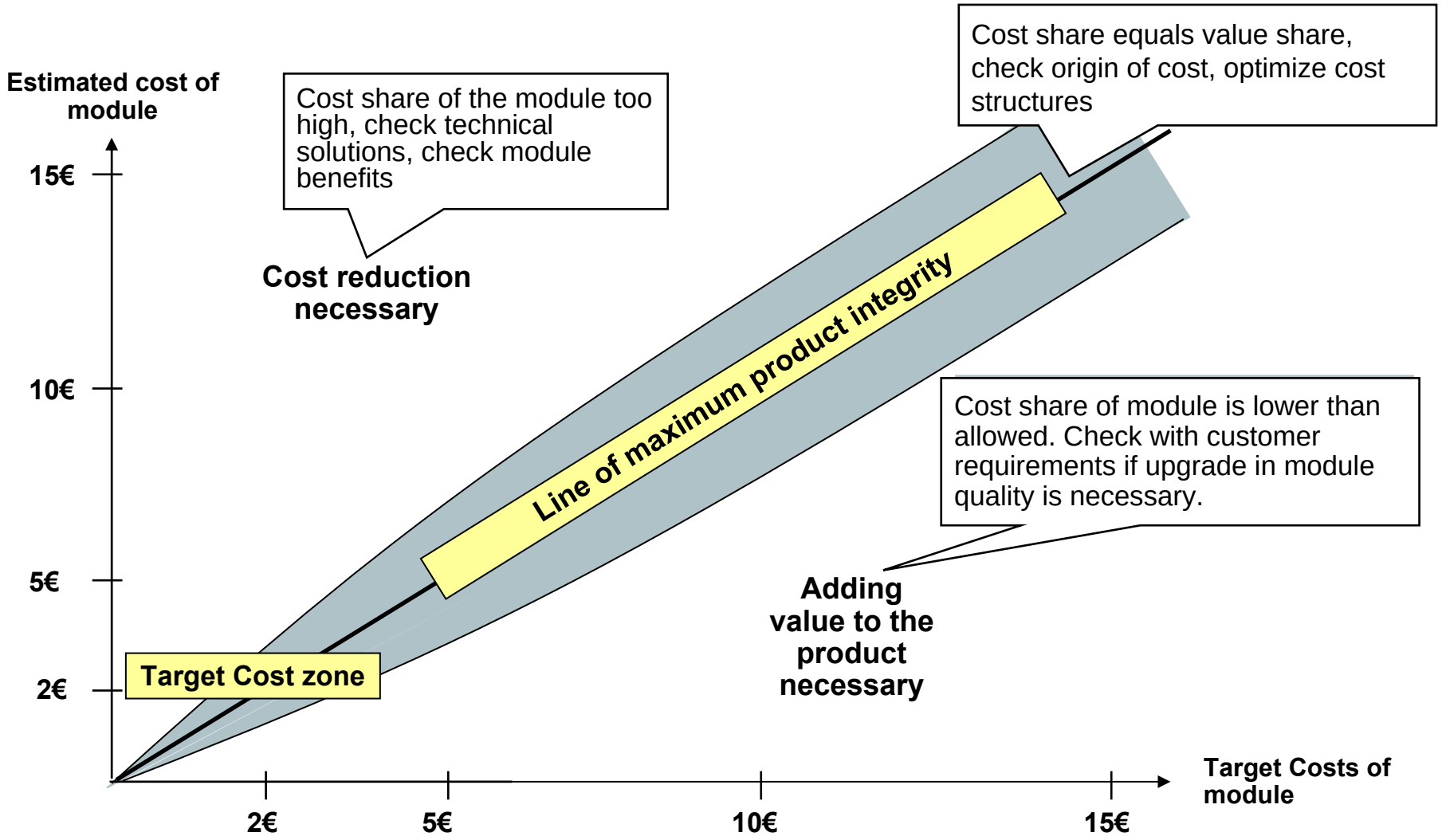
Competitor view

Additionally external information is used to conduct benchmarking on module prices



Results from the Product Target Splitting

Target Costs from the Product Target Splitting define a cost corridor that limit the bandwidth of costs for modules



Key purchasing criteria of a mobile device

Aggregated description of key purchasing criteria

- **Design**
  - Heptics
  - Colors
  - Materials
  - Special effects / elements
- **Convenient size and weight**
  - Size
  - Weight
  - Form factor
- **Quality**
  - Durability
  - Water and dust resistance
  - SW-stability
  - Low need of service
- **Latest technology**
  - Perceived to be latest by that point of time (e.g. color display, 1 Mpix camera, WLAN)
- **Talk- and standby time**
  - Talk time
  - Standby time
  - Usage time – play "games", see videos etc

- **Increase efficiency**
  - Fast connection / download (UMTS, EDGE..)
  - Organization and synchronization of PIM
  - Easy transfer (Bluetooth, IrDA…)
  - Access corporate mail, servers etc
- **Send -/ Receive -/ Store ideas**
  - SMS, MMS, Video conference…
  - E-mails, Instant messaging, Blogging…
  - Size and Flexibility (exchangeable) memory
- **Have fun**
  - Play music, videos,
  - Play games
  - Listen to radio, see TV
- **Increase safety**
  - To be located, or to locate persons
  - To find a location
  - To have coverage, and to contact persons
- **Ease of use**
  - Intuition driven
  - Minimum of key strokes (for key functions)
  - Time to enter/ start application

Functions of a mobile device

Aggregated description of main functions

- **Make and receive calls**
  - Provide connections using various standards
  - Provide ring tones
  - Display menu, telephone book, calling party, …
  - Store telephone numbers
  - Usage & standby time for telephony
- **Appeal to user**
  - Attractive design
  - Adequate size
  - Qualitative material
- **Support imaging**
  - Make photo / video
  - Download / stream / show video
  - Display images
  - Store images
  - Usage time for imaging
- **Support music**
  - Download / play music
  - Store music
  - Listen to radio
  - Sound quality
  - Usage time for music
- **Provide gaming**
  - Download games
  - Multi playing games
  - Display games
  - Store games
  - Usage time for gaming
- **Provide outdoor/leisure features**
  - Protect from environmental impact
  - Innovative /outdoor and leisure features
- **Enable messaging**
  - Various messaging standards (e.g. SMS, MMS, IM, POC,…)
  - Various protocols (e.g. IP, SIP,..)
  - View & Store messages
- **Support business applications**
  - PDA functionality
  - PIM
  - Document viewing and editing
  - View & Store business applications
- **Offer additional services**
  - New innovative services/features
  - E.g. Location Based services

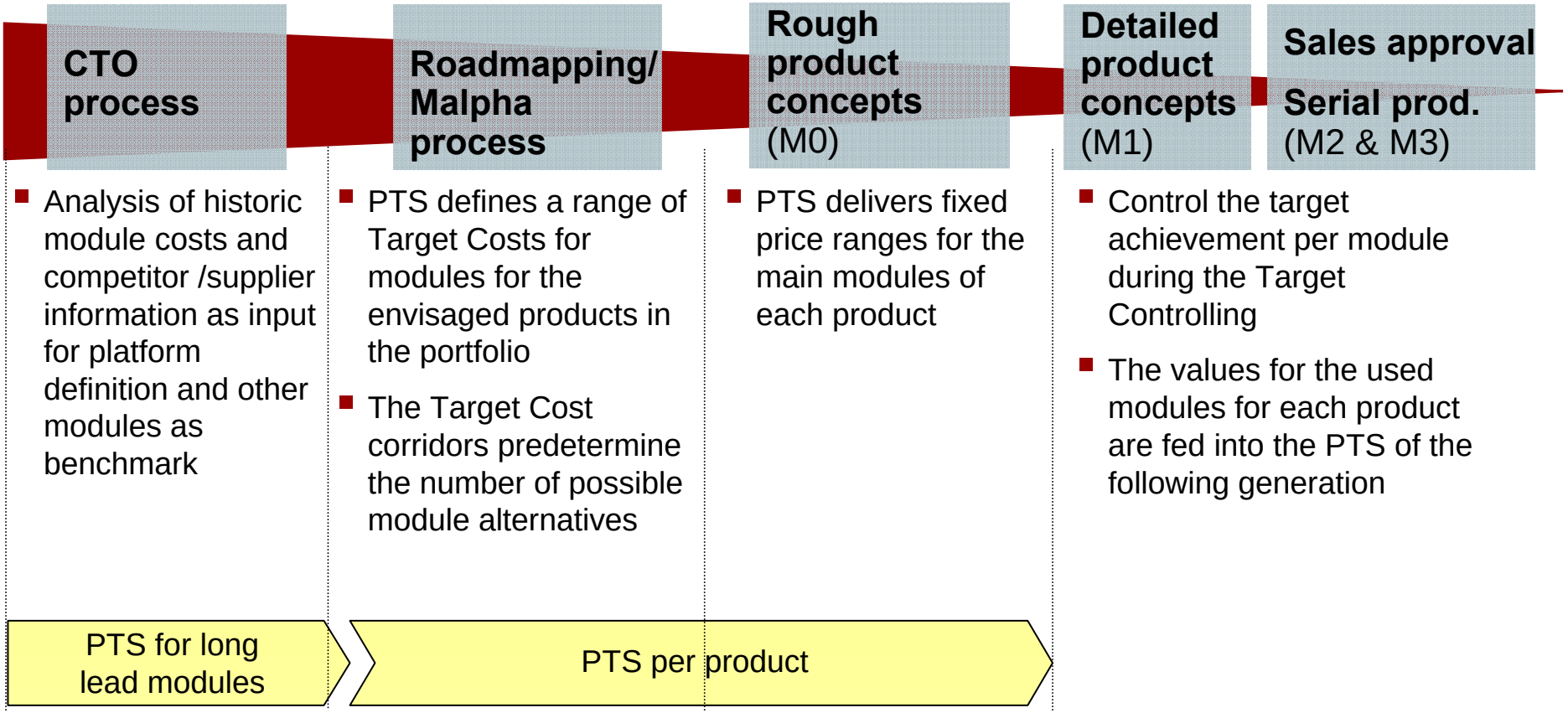
Modules of a mobile device

Aggregated description of modules

- **Basic Necessary Parts (BNP)**
  - BSF (Base Band, RF, Power Management,…)
  - PCB
  - PS Connector (Lumberg)
  - Connecting Parts to other modules
  - Shielding
  - B-Components
  - Application processor
- **Sensors**
  - Various sensors (e.g. temperature, tilt, acceleration, heart, altimeter, barometer, compass, proximity, …)
- **Connectivity**
  - IrDA
  - BT
  - WLAN
  - AGPS
  - FMRADIO
  - TV
- **Camera**
  - Camera Module
  - Flash
- **Display Module**
- **Memory**
  - Flash
  - RAM
  - MMC card holder or equivalent
  - MMC card or equivalent
- **Housing. Keypad, acoustics**
  - Upper & Lower case
  - Mounting frame
  - Key pad including lighting
  - Microphone
  - Loudspeaker
  - Antenna
- **Battery**
- **Delivery unit and accessories**
  - Packaging
  - User Manual
  - CD
  - Added accessories

The Product Target Splitting in the product development process

The Product Target Splitting supports the overall MD product development process



Success factors for the Product Target Splitting

Delivery reliability and a high quality of input information is crucial for the success of the Product Target Splitting

- Product portfolio prior to Malpha must be available **in various degrees of detail:**
  - **Rough product portfolio** with **performance** and **cost driving modules** prior to Malpha Basis System Framework and Malpha Platform
  - **Agreed** and **detailed** product **portfolio prior** to product Malpha
- **Assure input of** reliable and valid weighted operator / end-user demands **prior to Malpha.**
- Based on this input a **reliable product definition considering the Window of Opportunity** has to be ensured.
- **Provide** comprehensive and aligned **weighted operator/end-user** requirements structure**.**
- **Ensure** high quality of expert workshops **to work out Product Target Splitting (market view) I & II.**
- **Assure** full commitment **of** all relevant decision makers **to the results of the Product Target Splitting.**