



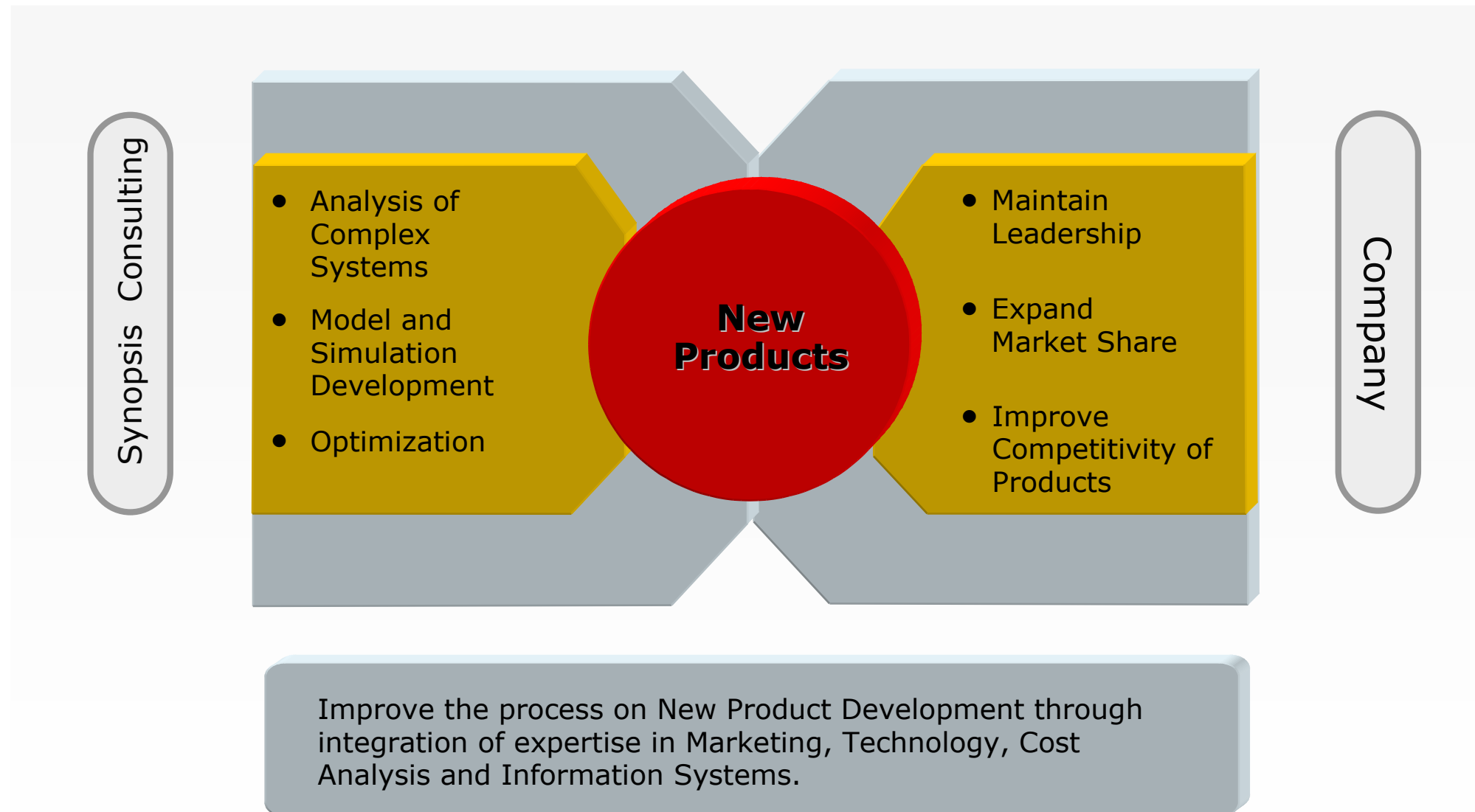
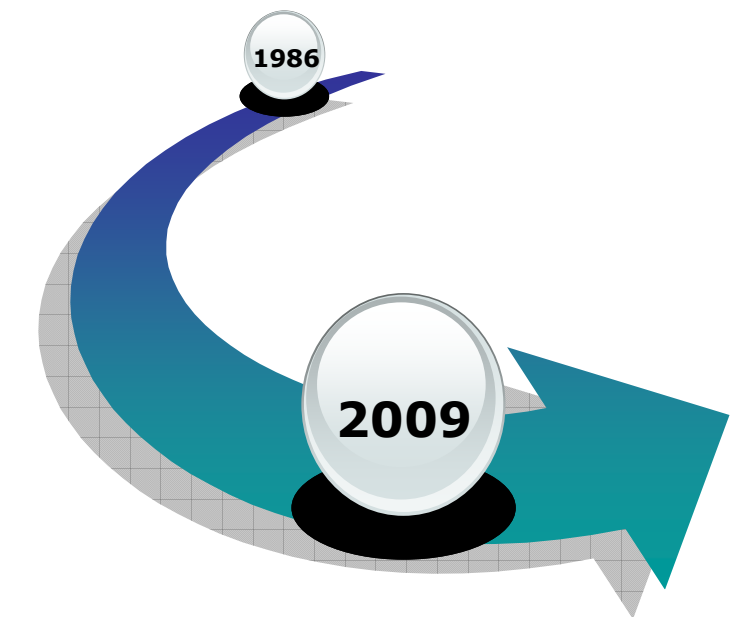
Synopsis
Consulting

Product Cost Tracking and Analysis

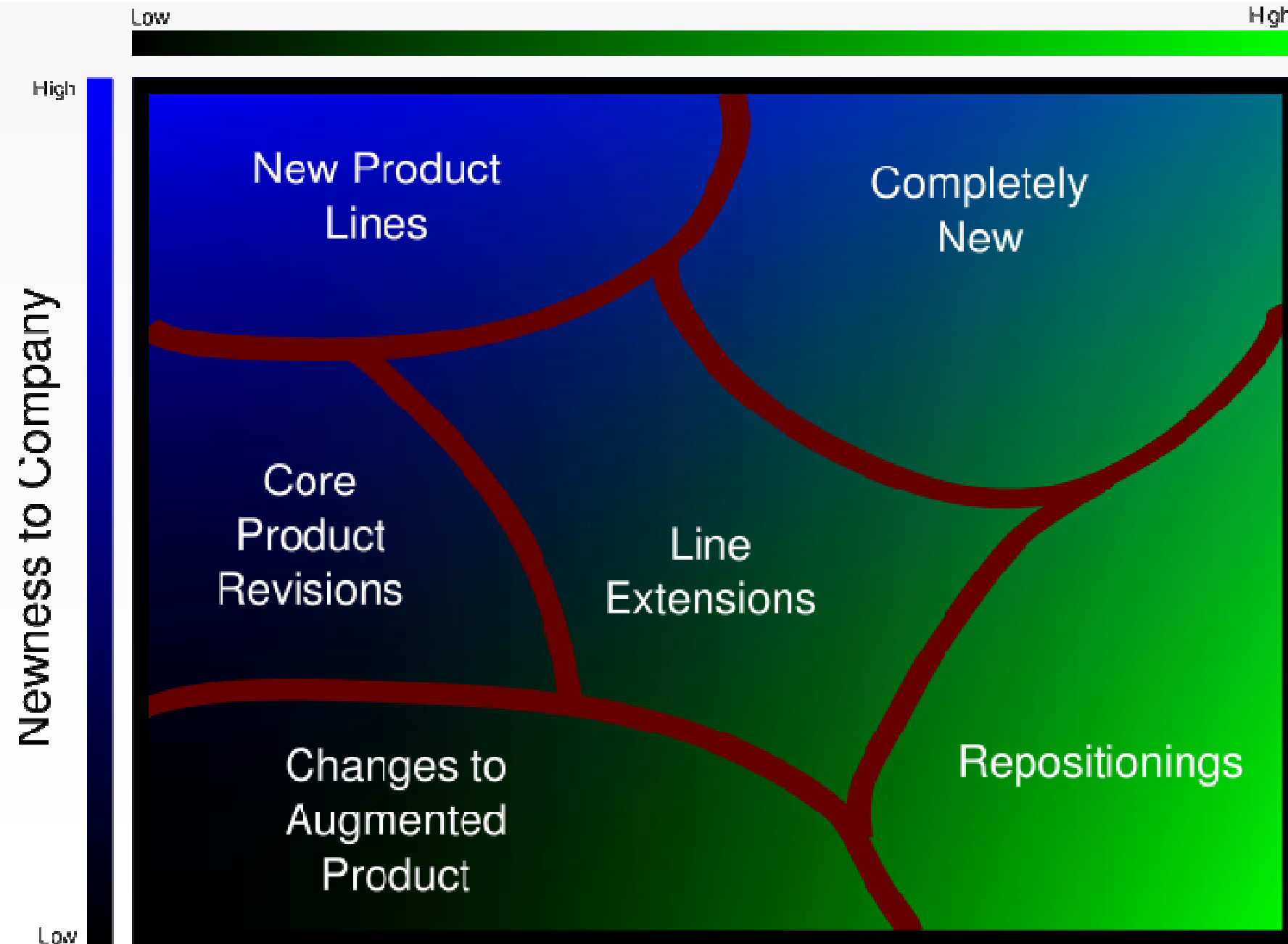
Ludwigsburg, November 4th 2009



The Process needs Knowledge, Management Tools and Actions.



Newness to Market

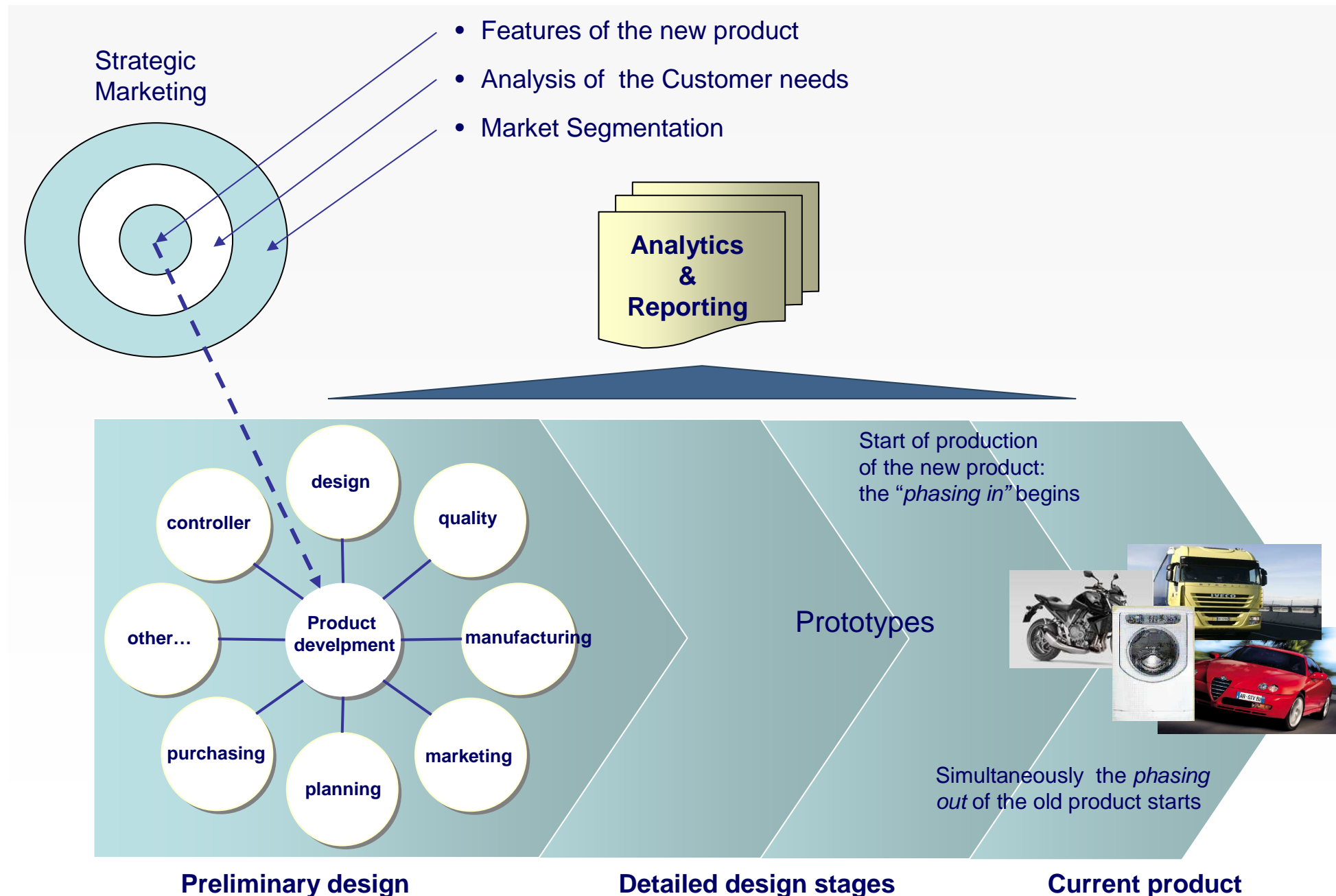


INTRODUCTION

- The innovating skill and the capability to meet quickly Customer needs in different markets are more and more key factors because of the global dimensions and of the quickness required nowadays in the competitive context.
- The dynamics tied to the above factors have strongly influenced the best practices of the development process and release of the new products.
- One of the most tricky aspect is the management of product cost, all the lifecycle long, from the conceptual design to its maintenance phase.



The process of product development and involved “actors”



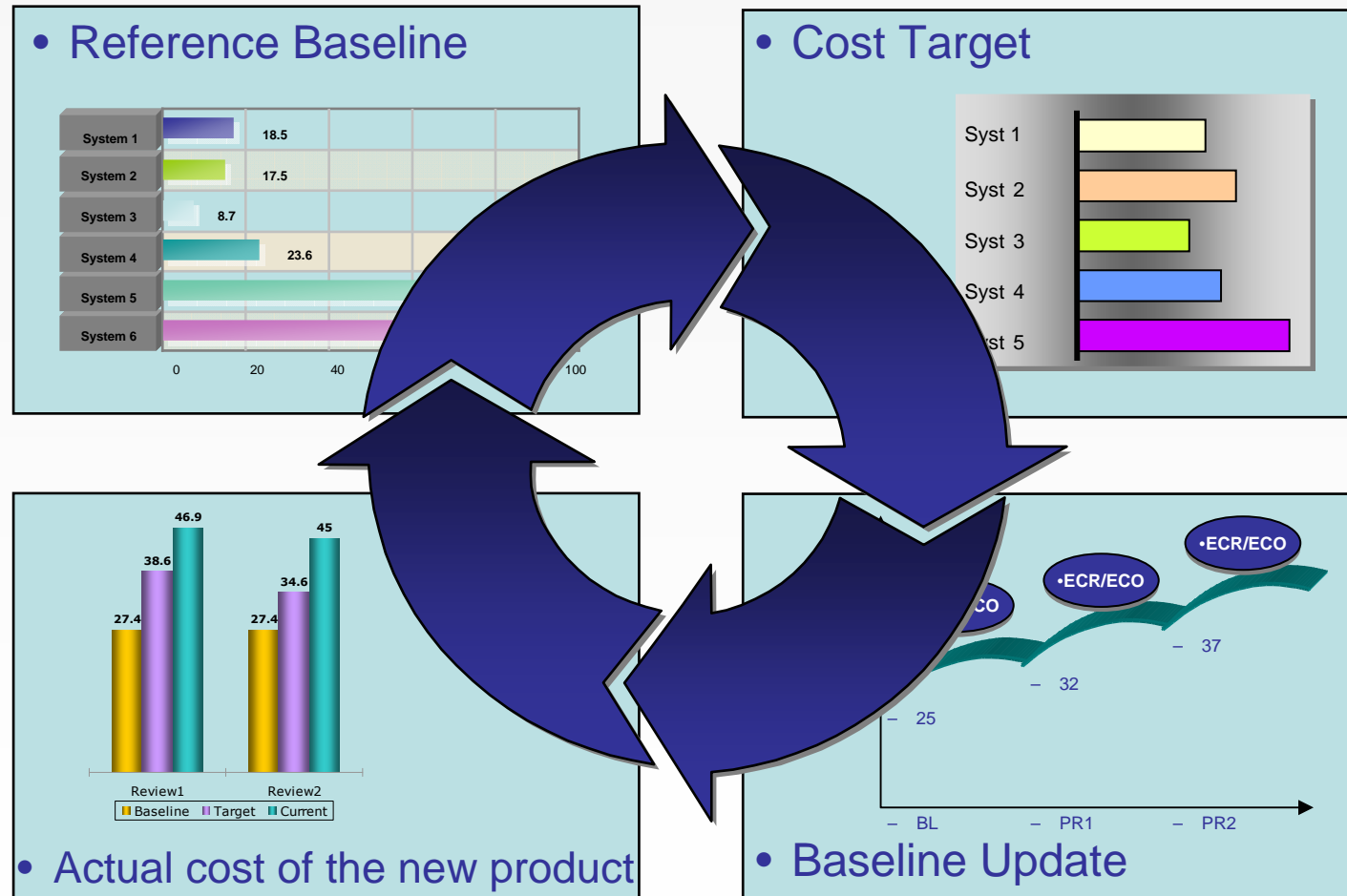
- The complexity of the new product development process, the multiplicity of basic processes, the participation of many different professional skills and of the involved company units require, since the launch of the activity, the adoption of shared information systems for the management of contents, features and *economics* of the initiative.

PRODUCT COST MANAGEMENT



Cost Control through the Development phase

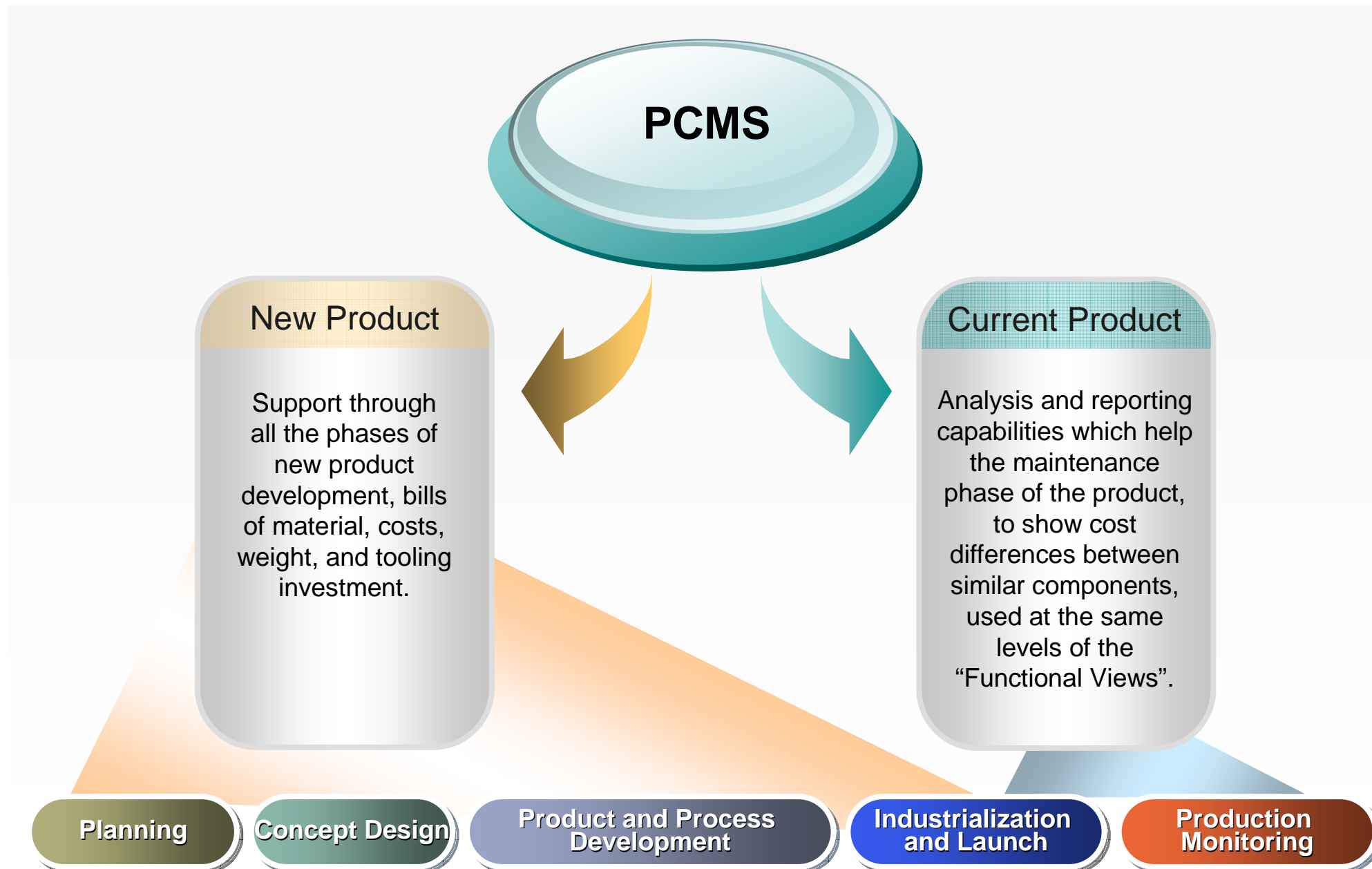
THE CONTEXT “AS-IS”



- The development of a new product requires the reference to the current production, referring to which it defines the required specifications in terms of structures and costs.
- This baseline changes in time, both in terms of structure and costs, because of the actions for improvements and cost reduction.
- The management wants to compare costs and volumes of the old product in the *phase-out* (taken as reference for the initiative), against the corresponding values of the new product in the *phase-in*.
- The features and the costs of the reference product, “frozen” at the start of the initiative, offer a realistic base for the target definition of the new product.

Product Cost Management

PCMS PROPOSAL



- **Product Cost Management System (PCMS)** is a complete set of tools to get the **Product Cost Management** in a very effective way.

- **PCMS** supports all the phases of the Product Development, providing advanced and distinctive functionalities for the management of:

– **TARGET SETTING**



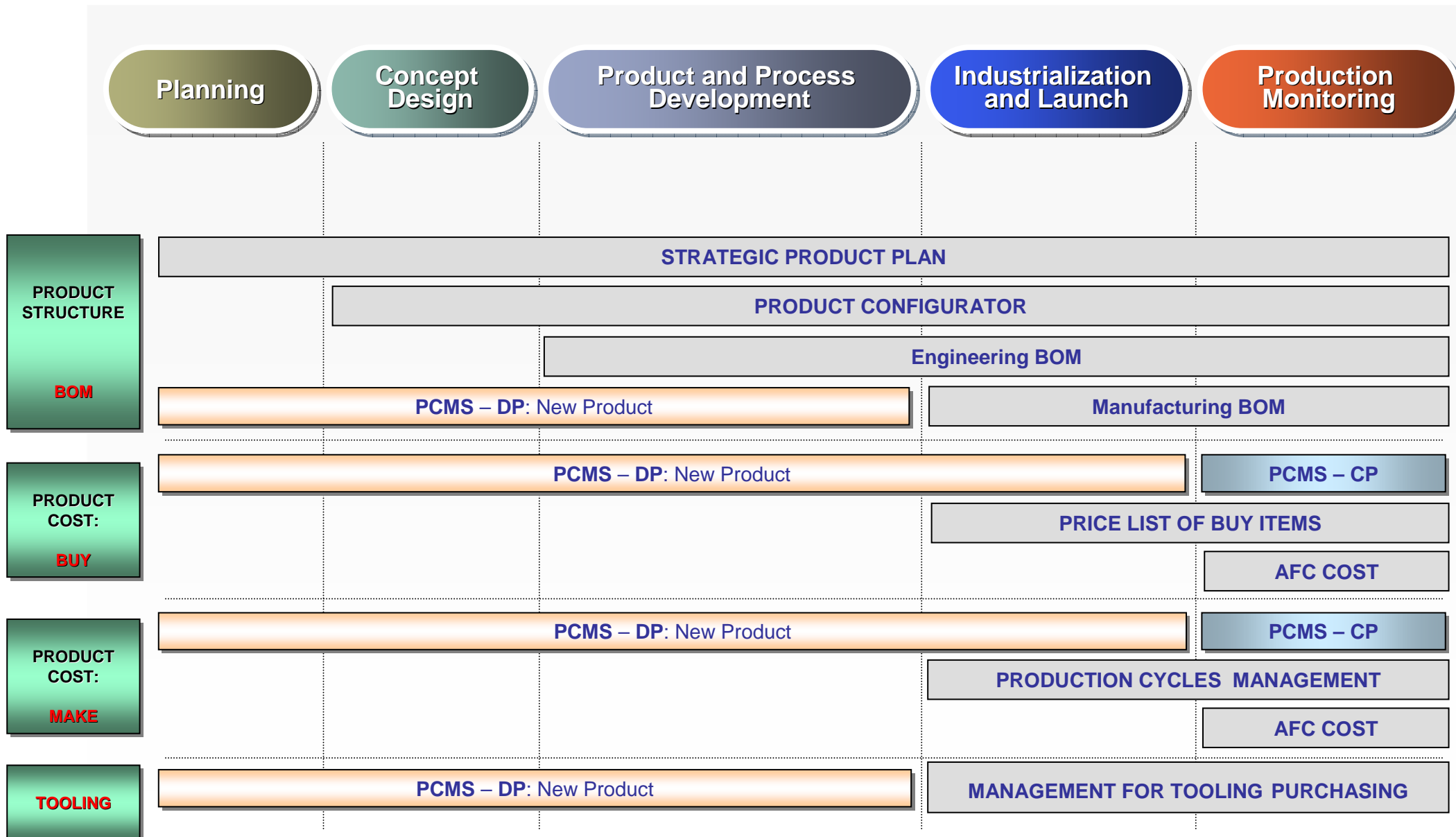
– **COST TRACKING**



– **COST REDUCTION**

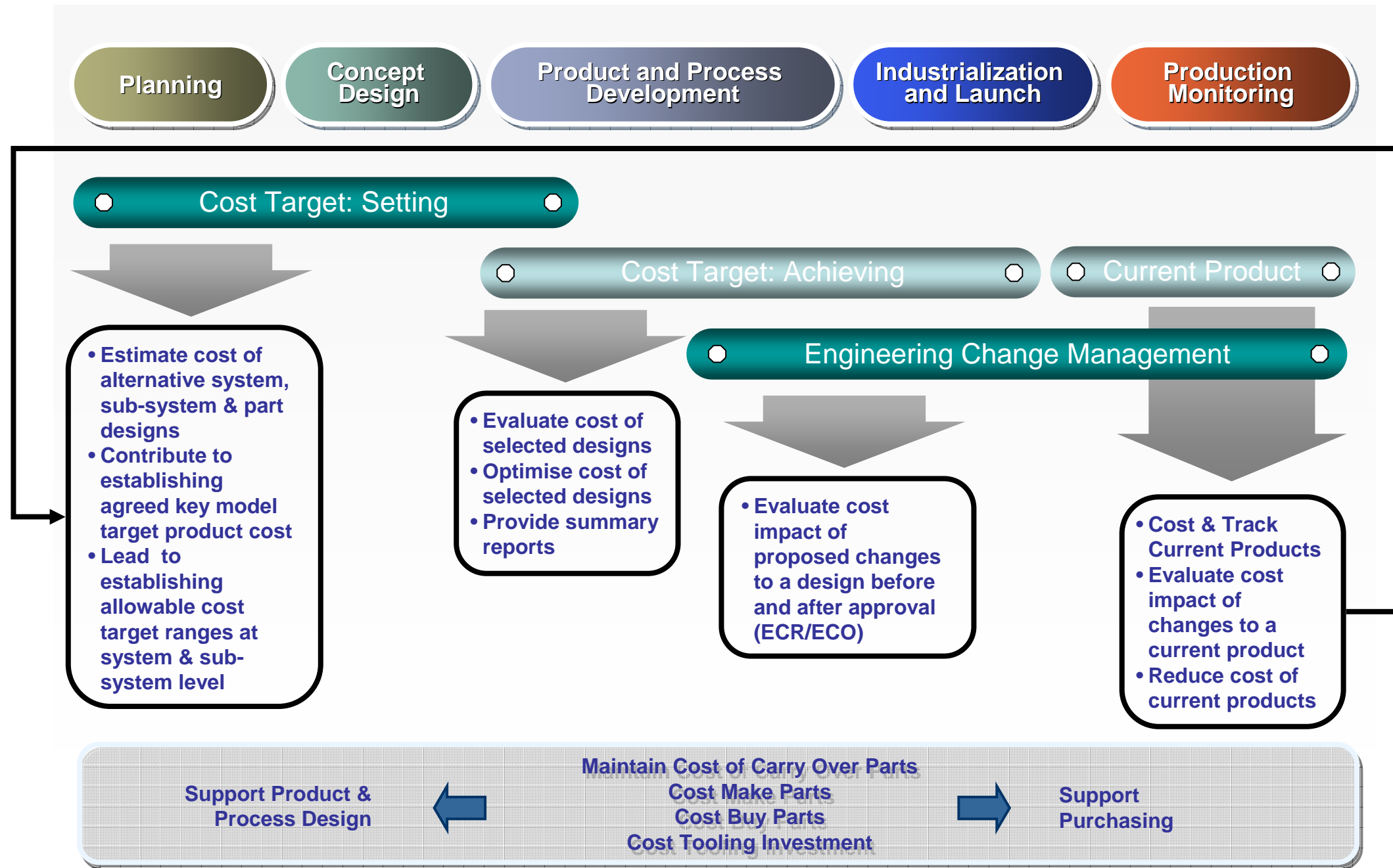


PCMS in the Product Development



- The approach of **Product Cost Management**, by **PCMS**, supplies a common and integrated environment for the **management** and the **monitoring** of the **product cost**, since the very first phases of the product development.
- One of its characteristic functionalities is the capability to get available to the cross-product development platform team, product configurations with costs and weights; these will be presented not by the classic accounting view (that “builds” the costs of each manufacturing module through the assembling line), but accordingly to a view coherent with the process of management of the requirements, the specifications and the engineering activity, i.e. the product **Functional View**, similar to the logic workflow for the product value proposition and estimation.

PCMS: tools for Product Cost Management

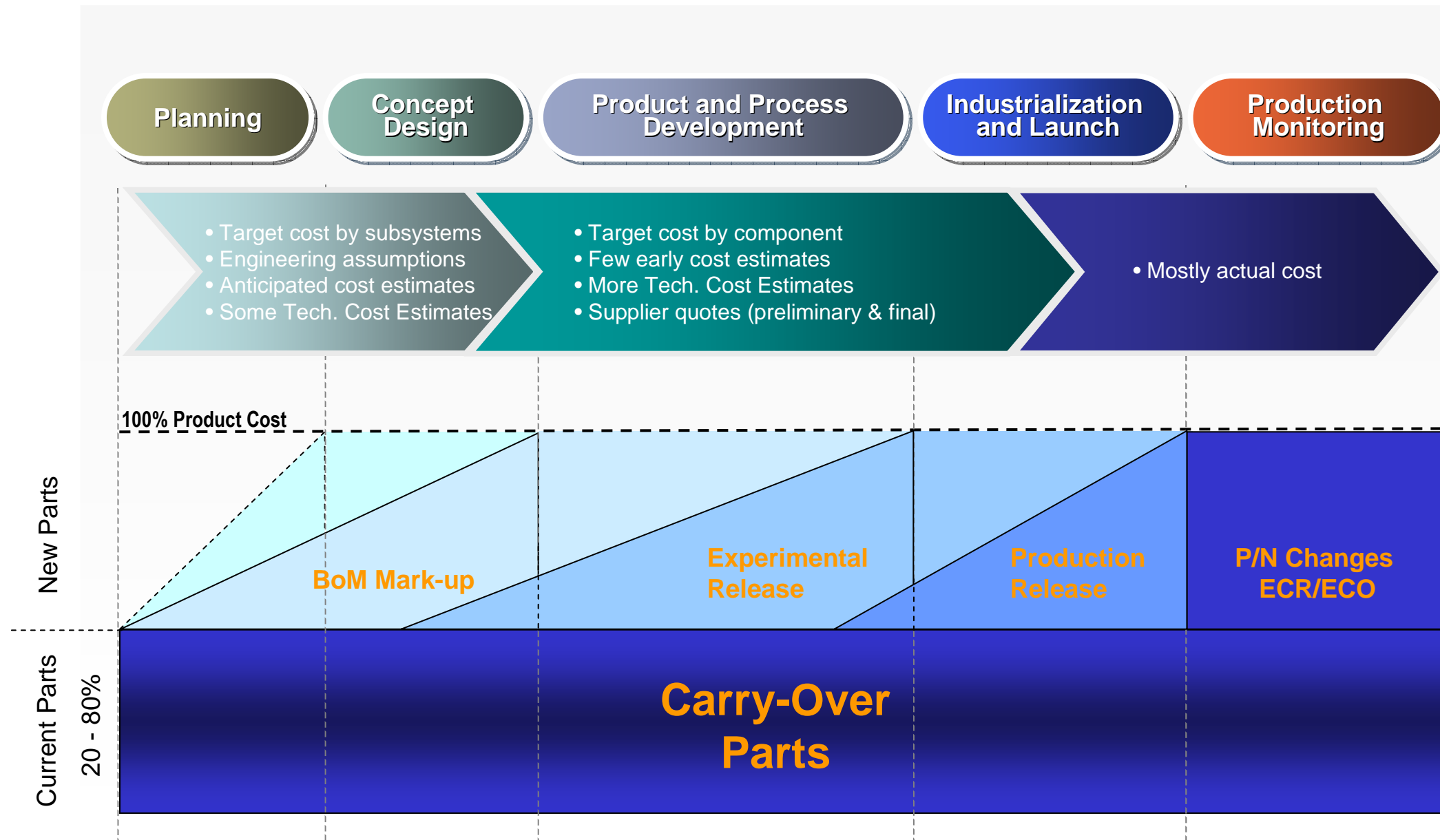


- Top management needs to evaluate economic results of every new product initiative; in order to permit this we need to manage during all product development phases:

- structures of new product as a results of requirements deployment;
- technical description of the new parts and new tooling;
- cost estimations for both buy and make parts, weight, tooling parts;
- cost target setting and continuous comparison with current cost of new products;
- estimation of logistic and warranty cost.

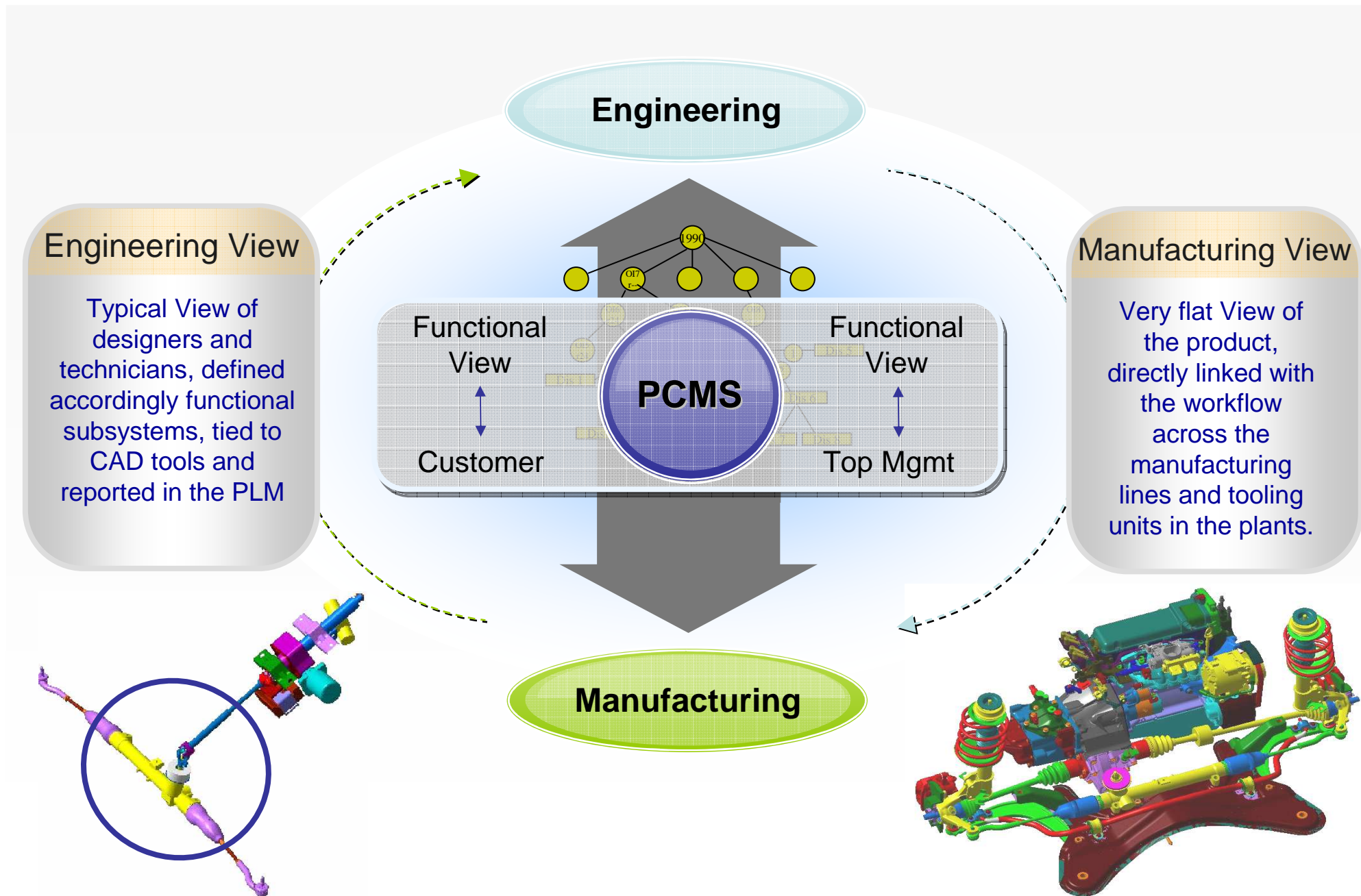


Carry-over and new parts management along product development



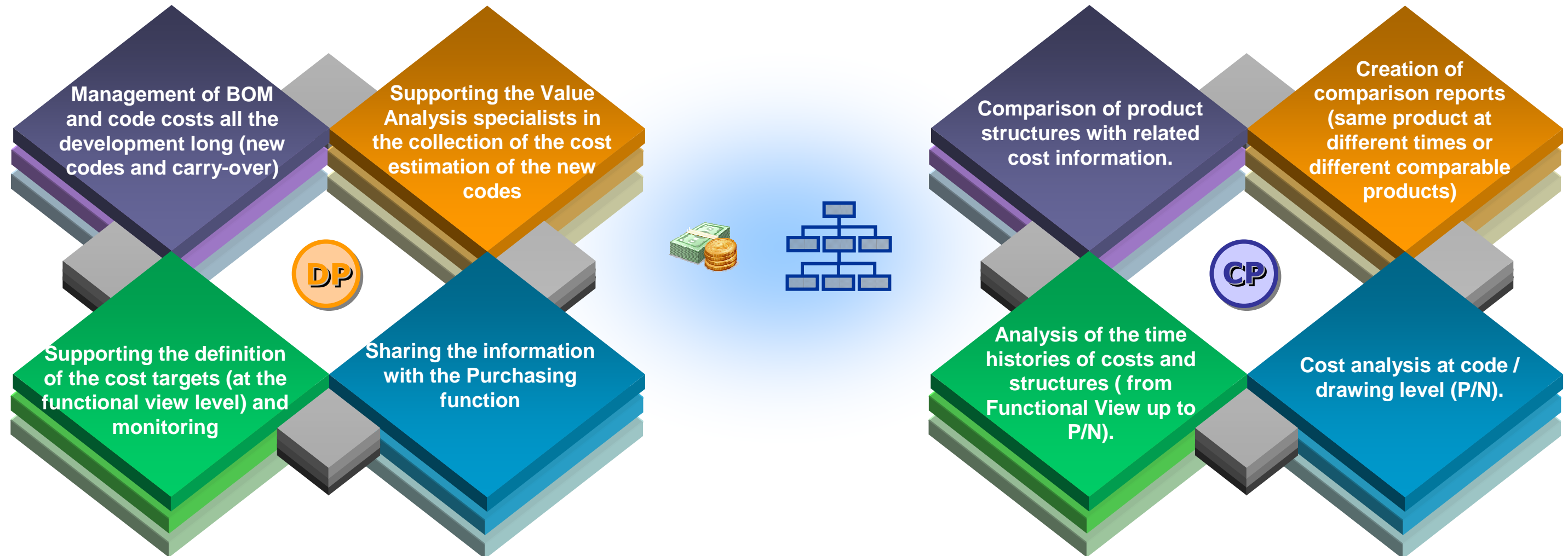
- One of the most important aspect of the new product development process is related to the identification of carry-over and new specific parts.
- We need to know the BOM structure of both them: regarded to carry-over we have to understand their changes over time due to ECR/ECO.
- New specific parts need to be described in order to perform early cost estimations and evaluate targets.

PCMS' distinguishing mark: the Functional View of the Product



- The “view” is a representation of the product composition, where all the components are managed and grouped into different hierarchical levels accordingly to aggregation rules.
- Each product can be represented according different logics and rules, corresponding to different typology of structures.
- The functional structure is a unifying element between the different views of all the experts involved in the development process, and frequently corresponds to the vision of the *top management*.

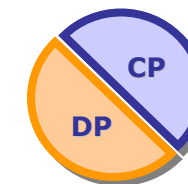
PCMS: basic features of the modules



The screenshot displays the PCMS web application in a Windows Internet Explorer browser. The top navigation bar includes the title "Product Development Cost System : Login" and the "Synopsis Consulting" logo. The left sidebar contains a menu with icons for "Prodotto Corrente", "Prodotto in Sviluppo", "Catalogo Componenti", "Modelli di Costo", "Logistica", and "Dashboard di Controllo". The main content area shows the "Product Cost Management System : Prodotto Corrente" page. Below this, there is a "Reportistica" section with a table of vehicle data. The table has columns for "Codice BAO", "Codice Sincom", "Data", "Descrizione", and "Codice AFP". The table lists various vehicle models and their associated codes. At the bottom of the page, there is a status bar indicating "Internet | Modalità protetta: disattivata" and a zoom level of "100%".

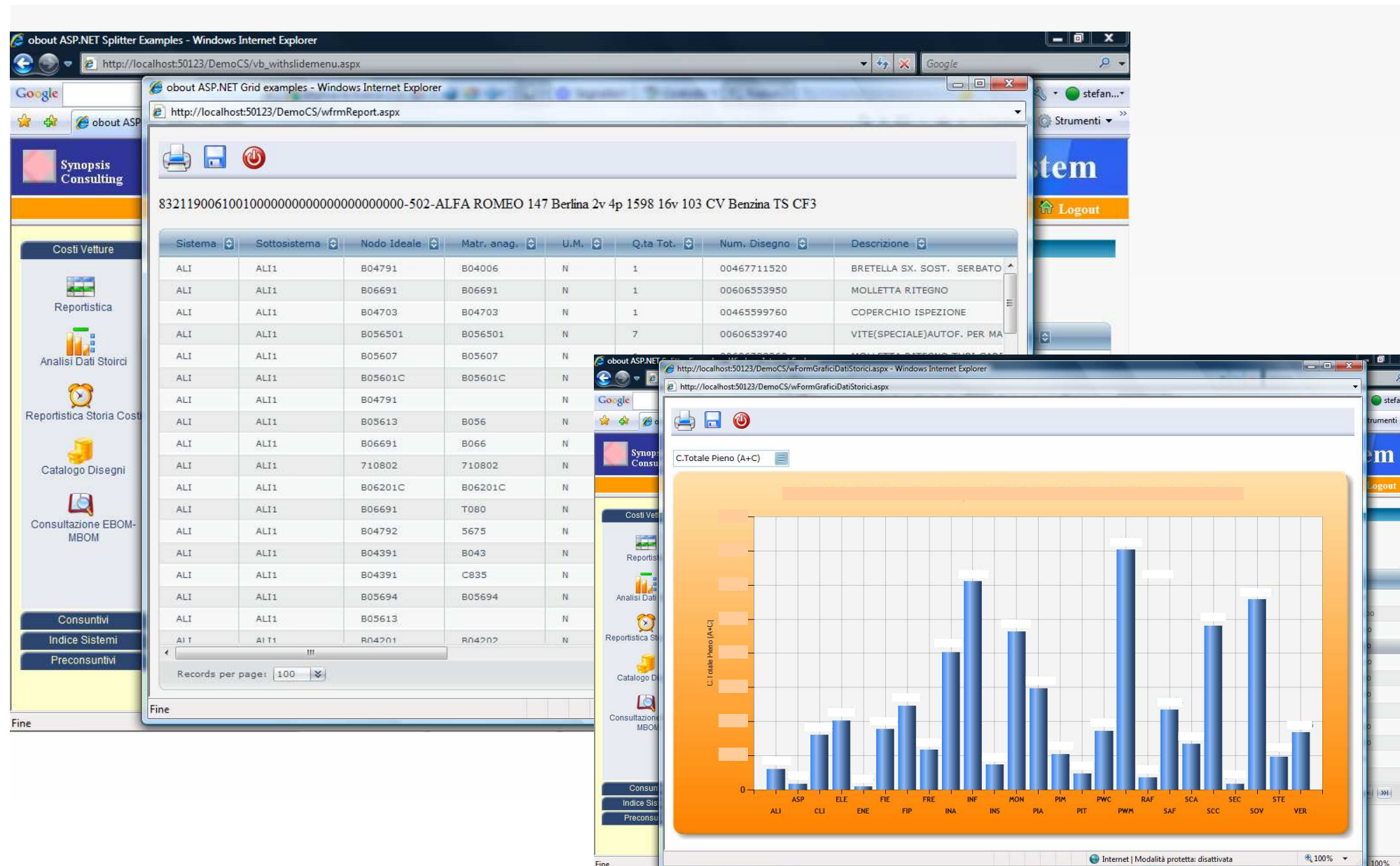
Codice BAO	Codice Sincom	Data	Descrizione	Codice AFP
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B	0020186941001000000000000000000000	602	FIAT Multipla Monovolume 4p 1596 16v 103 CV GPL CF3	1911W.30AA.01.00
B	8321190041001000000000000000000000	502	ALFA ROMEO 147 Berlina 2v 2p 1598 16v 103 CV Benzina TS CF3	937AE.0NC.000.00
B	8321190061001000000000000000000000	502	ALFA ROMEO 147 Berlina 2v 4p 1598 16v 103 CV Benzina TS CF3	937AE.0NA.000.00
B	00041923Q7001000000000000000000000	502	FIAT Stilo Berlina 2v 2p 1910 8v 79 CV Sovralimentato Gasolio CF3	1920E.9ABC.01.00
B	00041925Q7001000000000000000000000	502	FIAT Stilo Berlina 2v 4p 1910 8v 79 CV Sovralimentato Gasolio CF3	1920E.9ABA.01.00
C	1690E.04BA.01.00	502	FIAT 169 Berlina 2v 4p 1242 8v 60 CV Benzina CF4	1690E.04BA.01.00
C	1920F.3AA.01.00	702	FIAT Stilo SW 4p 1596 16v 102 CV Benzina CF4	1920F.3AA.01.00
C	1690E.04BA.01.00	702	FIAT 169 Berlina 2v 4p 1242 8v 60 CV Benzina CF4	1690E.04BA.01.00
C	1690E.03AA.01.00	702	FIAT 169 Berlina 2v 4p 1100 8v 55 CV Benzina CF4	1690E.03AA.01.00
C	1881E.2CA.01.00	702	FIAT Punto FL Berlina 2v 4p 1242 16v 80 CV Benzina CF3	1881E.2CA.01.00
F	20020506113546.67220	702	FIAT 199 Berlina 2v 4p 1242 8v 60 CV Benzina CF4	-
F	20020620124930.82951	702	FIAT 199 Berlina 2v 4p 1300 16v 70 CV Sovralimentato Gasolio CF4	-
B	0038188240001000000000000000000000	602	FIAT Punto Berlina 2v 4p 1242 8v 60 CV Benzina CF3	1880E.1CA.01.00
B	0004192711001000000000000000000000	602	FIAT Stilo MW 4p 1596 16v 102 CV Benzina CF4	1920F.3AA.01.00
C	841AB.4CA.000.00	702	LANCIA THESIS Berlina 2v 4p 2400 10v 150 CV Sovralimentato Gasolio CF3 6M	841AB.4CA.000.00

- The PCMS tool is the result of significant experiences on complex systems, working with several platforms for data management and user interface software design.
- The web version (here represented) has been implemented on Microsoft .NET and on Oracle Database Management System.



Product Costs on the functional view

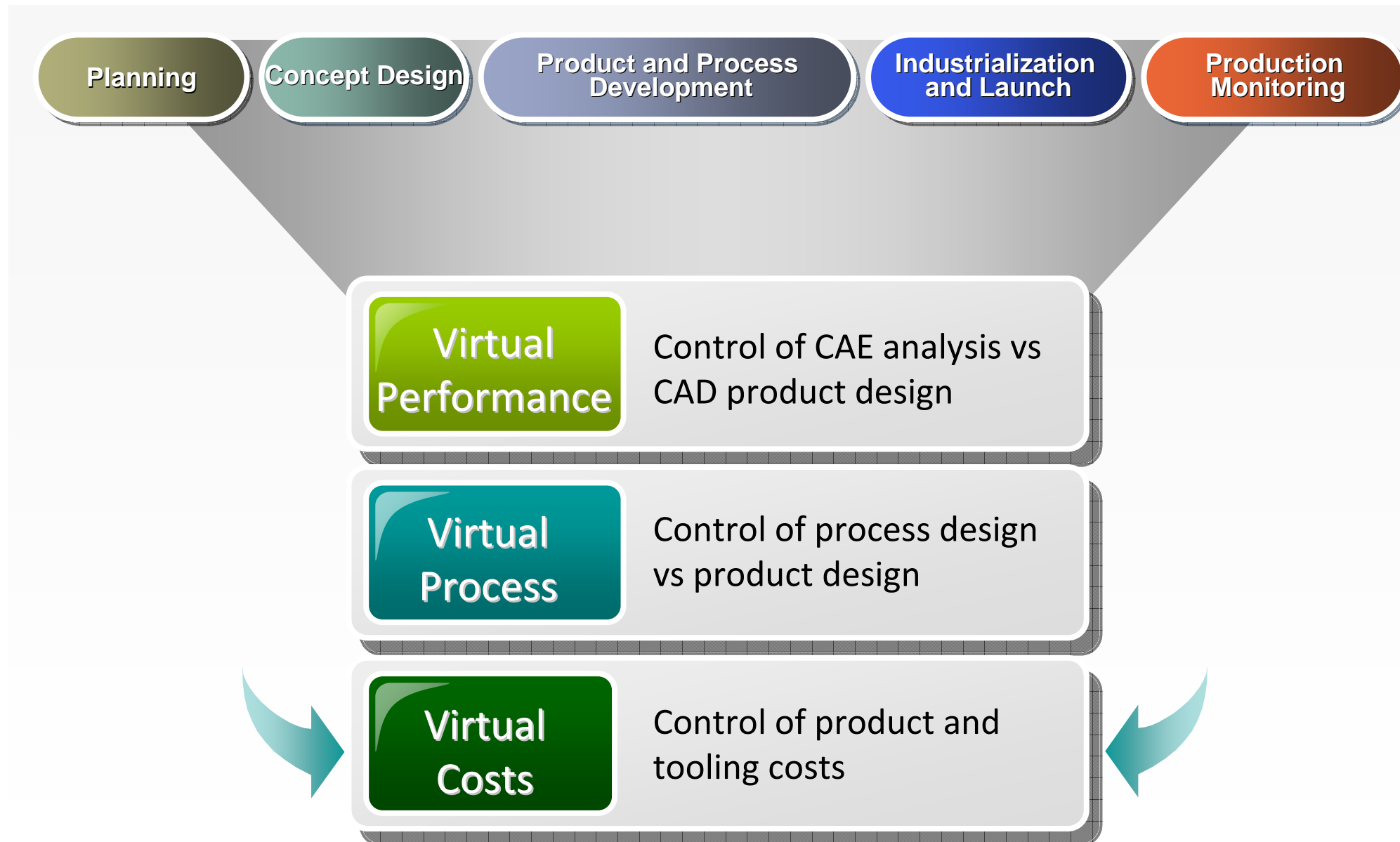
PCMS DEMO



- Economics of current products are available into the system with the aid of the functional view.
- We have the capability to perform product structure and costs analysis, to compare BOMs on different plants and different times, in order to identify opportunities of cost reductions.
- Specialists from different company departments may share cost and investments details on products of interest, all over the development at any level of Bill Of Materials.



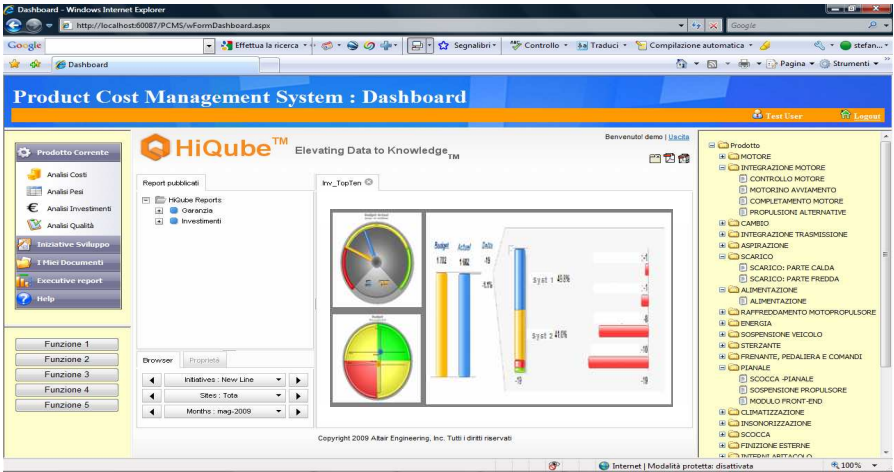
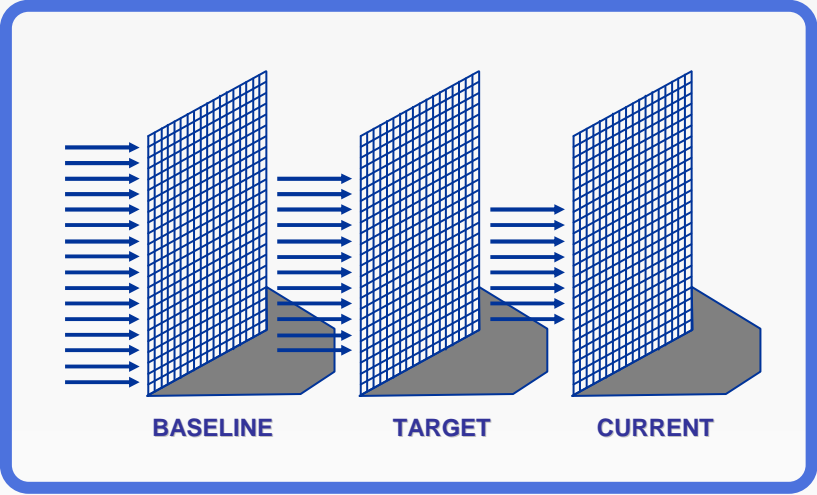
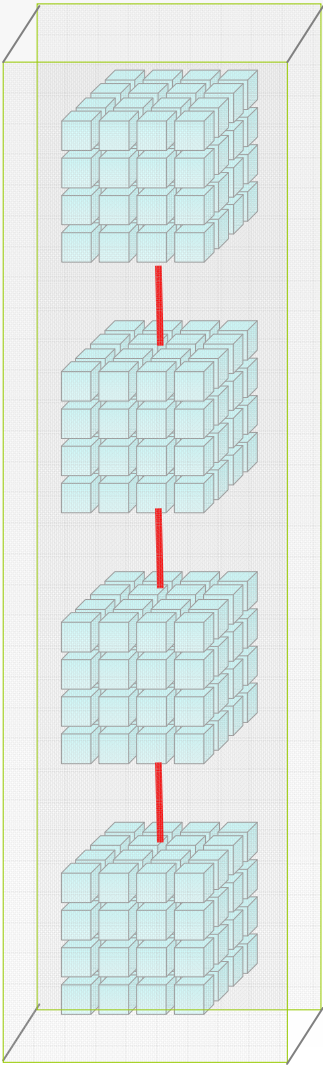
Virtual Product Dashboarding and Analytics



- Business Intelligence tools permit to apply their potentiality to the product and process development.
- Different contents of the process may be clustered into different modules:
 - *Virtual Performance*, to connect CAD revisions of models to the results of CAE analysis, revise specific engineering KPI's and decide on modifications and loops;
 - *Virtual Process*, to connect revisions of product design from the previous stage to the contents of process design;
 - *Virtual Costs*, to evaluate impact of changes of product and tooling on costs.

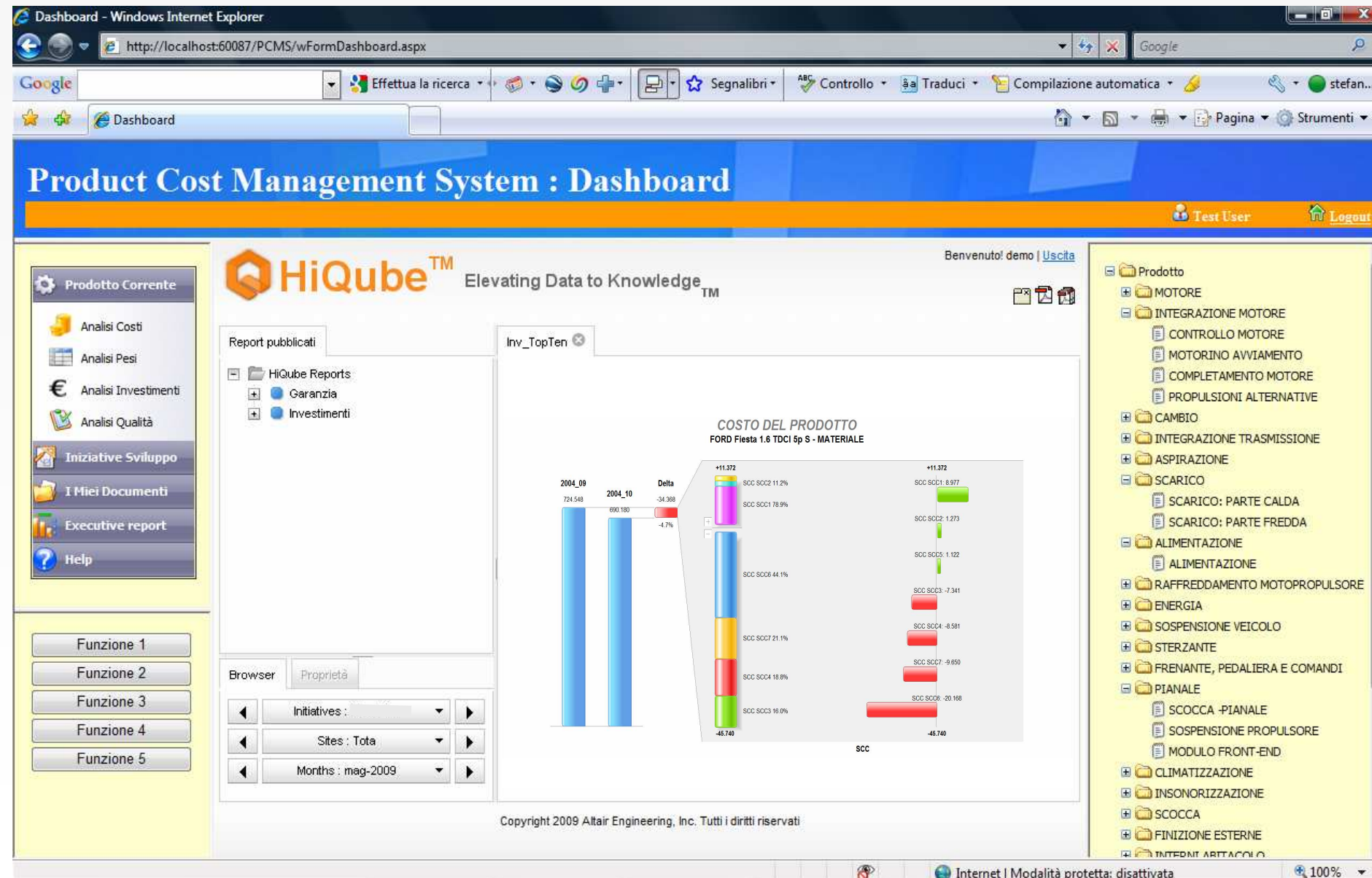
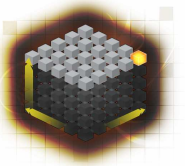
PCMS: Reporting and Dashboard module

Modeling Multi-Dimensional Space



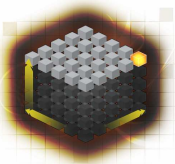
- Company's specialists involved on new product development find in PCMS system and database data and functionalities to manage all the phases of the development process.
- Based on it's complex database, a multidimensional Business Intelligence tool was used to build an application with the objective to support management on costs and investments control.

PCMS: Reporting and Dashboard module

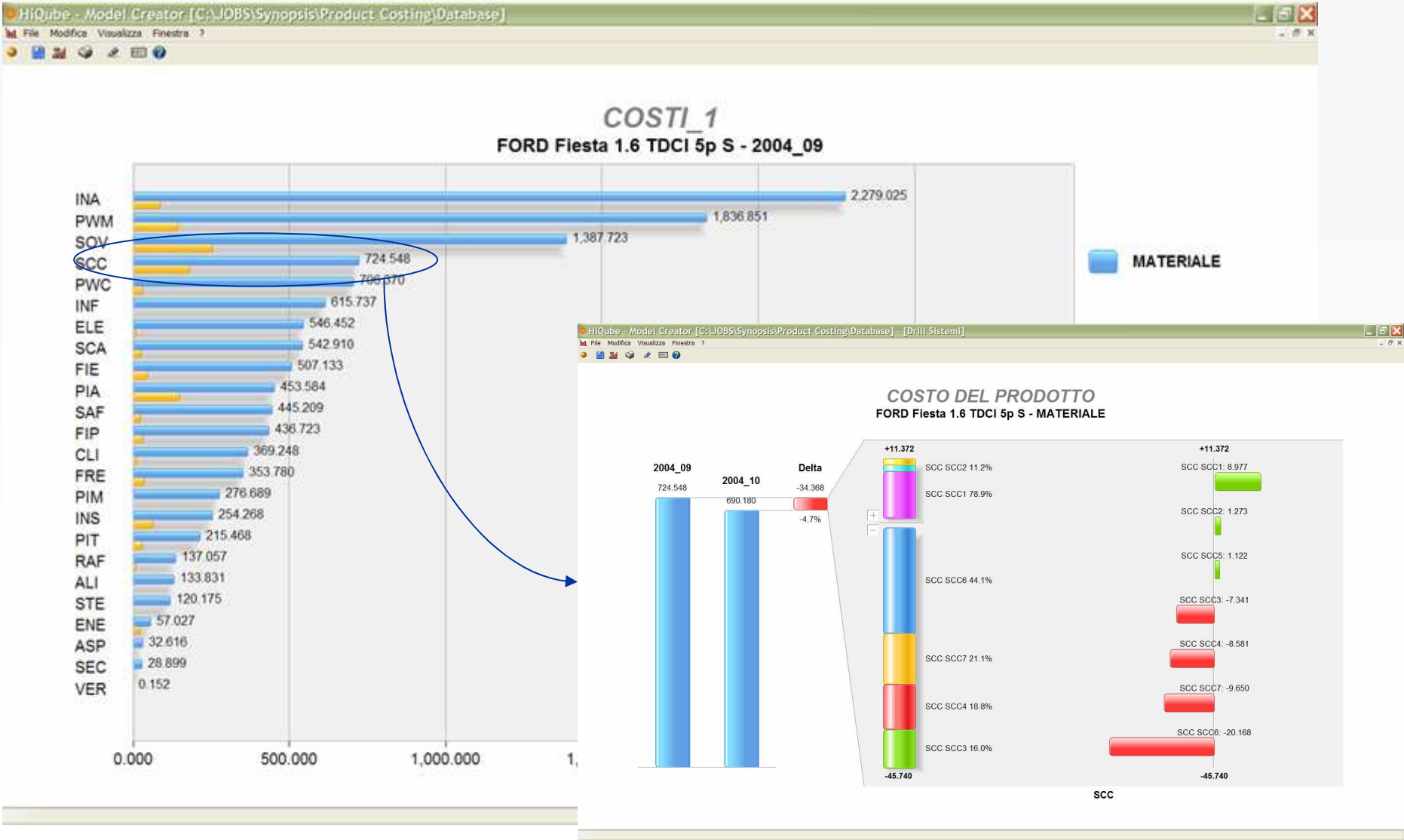


- Analytics on control of costs and weights for the products into the maintenance phase, with the aid of the functional view.
- Deep capability on drilling into informations till the maximum level of BOM's detail, both on plants and time basis.
- Higher control on new product initiatives:
 - baseline and targets vs current development;
 - support to project reviews for monitoring projected costs of new products;
 - integrate view on quality and warranty costs;
 - management of development KPI's.

PCMS: Reporting and Dashboard module

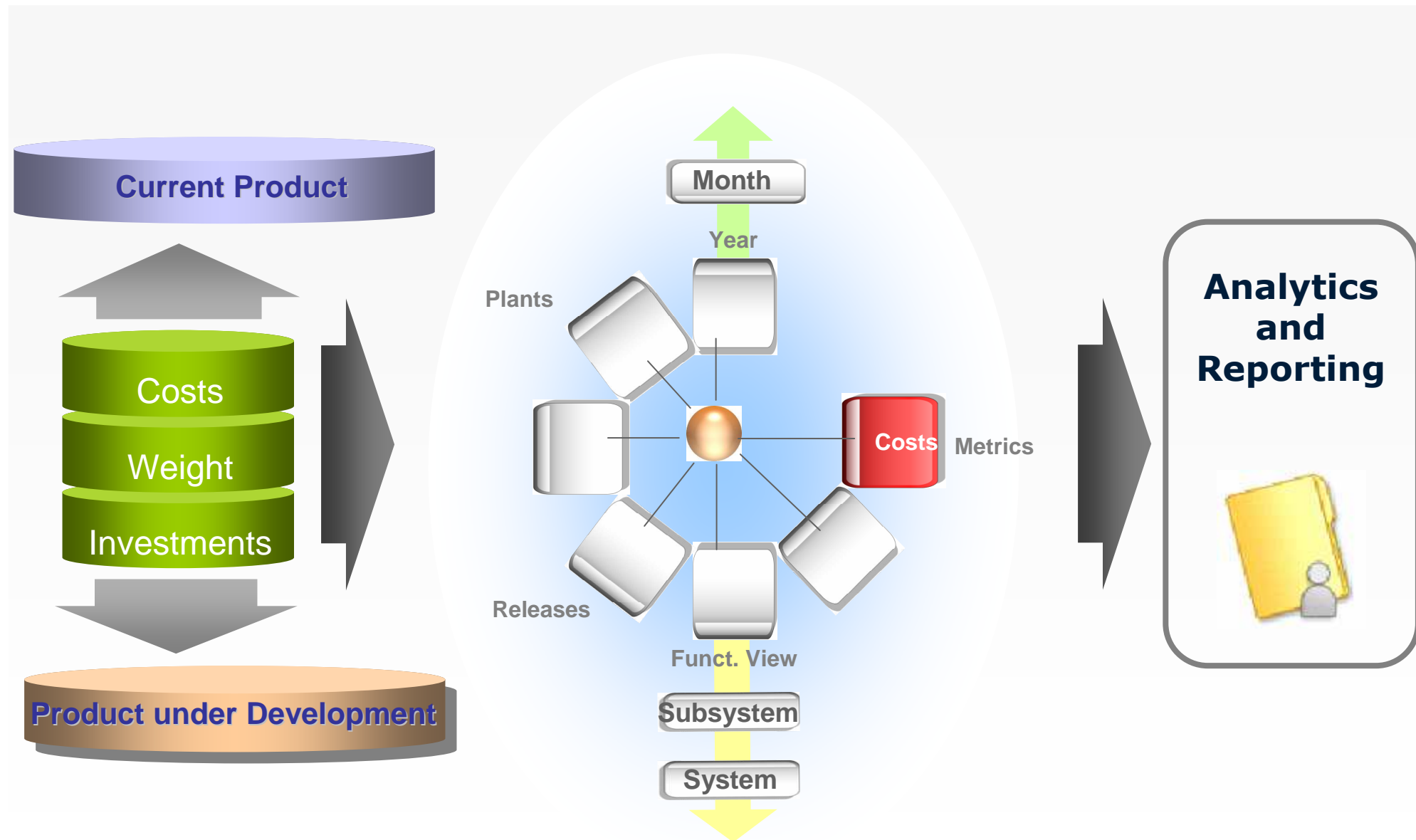


- You can manage the complexity of product BOM's, through plants and different times with the aid of the functional view.
- Comparison and drills on data are based on the usual functionalities of business intelligence tools.



Data based on random way, casual reference to existing products.

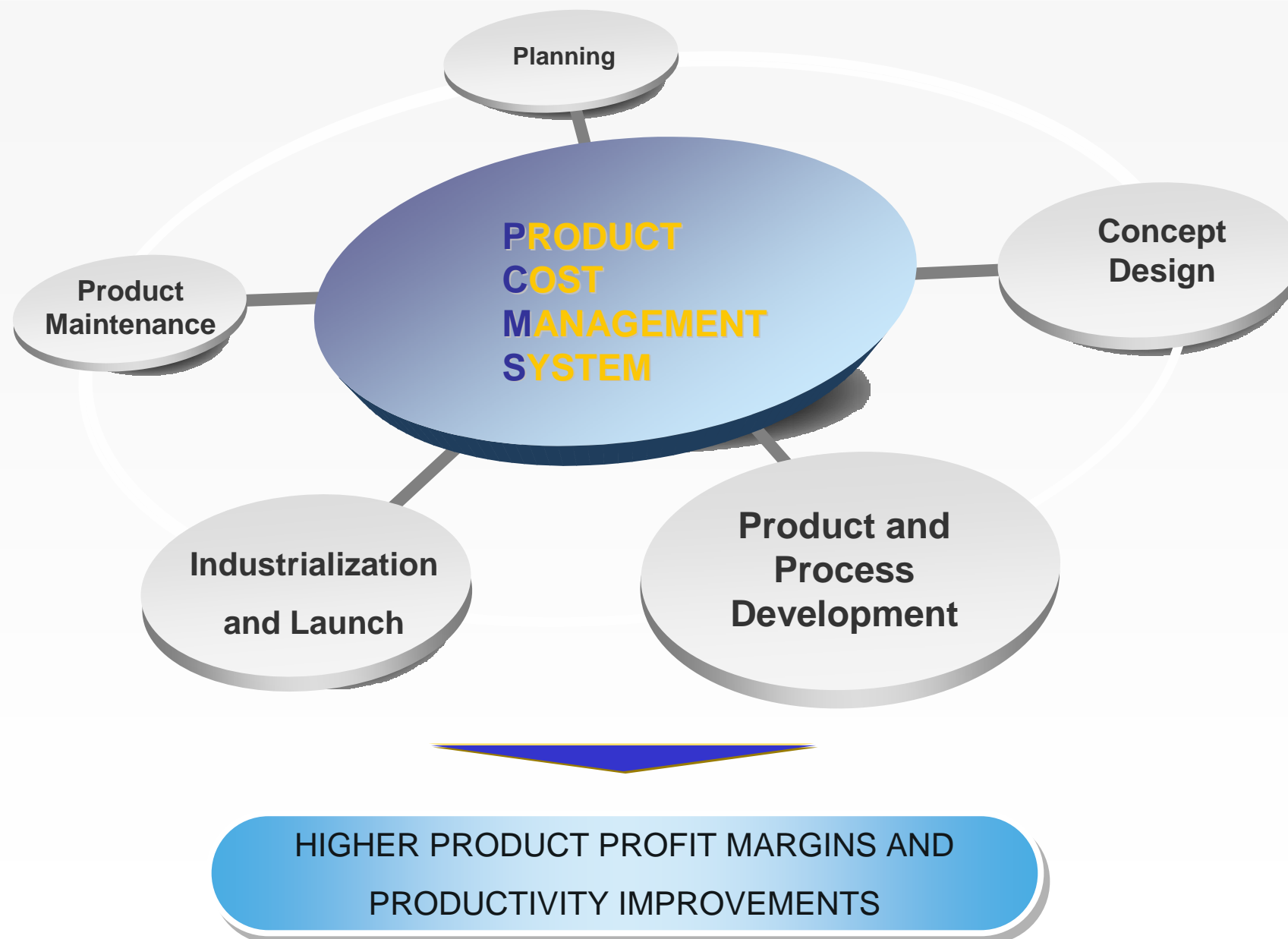
PCMS: Reporting and Dashboard module architecture



- Analytics and Dashboard** module has the objective to supply specific reports and to give the managers the possibility to supervise the process of the *Product Cost Management* by suitable dashboards:

- costs of current products;
- cost and structure comparison, by time and by plants;
- synoptic outlook about the business performances and about the progress of the new product initiative or of the actions for modifications.

PCMS Benefits



- Cost management by a top-down visualization and aggregation (from functional view levels down to the more detailed level of the component part, and by *rollup* bottom-up visualization in order to illustrate the possibility for any cost reduction and/or facilitating the target matching.
- Impact analysis on the product modifications since the very first phase of the activity.
- Cost and margin analysis of the product structure in any time of the development process with a shared and unique tool.
- What-if analysis for evaluation of alternative products, Make or Buy definition, purchasing prices.
- Overall and synoptic outlook of the control *dashboard* for the product initiatives.

PCMS features to support some critical phases



AREA	ACTIVITIES	CRITICALITY
PRODUCT FAMILY	TARGET SETTING BY MODEL	<ul style="list-style-type: none"> Descriptive BOM with Carry Over management to support cost quotations. Management of Product change (ECR/ECO) for Carry Over. Management of simultaneous Product Views (e.g. Functional, System View, etc.).
PRODUCT DEFINITION	BOM MANAGEMENT	<ul style="list-style-type: none"> EBOM and MBOM alignment. Management of Product change (ECR/ECO) and their costs. Costs of the Carry Over and new components. BOM comparison: common part and differences. Spare part / BOM alignment..
PROTOTYPE MANAGEMENT	OUTFITTING DESCRIPTION	<ul style="list-style-type: none"> “Prototype BOM” management with Make/Buy, with support to Carry Over. Cost management of the “Prototype BOM”, with support of the P/N <i>versioning</i>. List management of Purchasing Requests and Order registration.
AFTER SALES	SPARE PARTS LIST PRICE	<ul style="list-style-type: none"> Reliability of the costs in the spare part <i>pricing</i>. Problems managing the Engineering changes and the evaluation of the tooling costs.

- PCMS features allow to overcome some critical states typically emerging during the product development, when integrated systems for product BOM and for the initiative *economics* management are generally not available.



Thank You