Measuring Performance in A Knowledge Economy: Linking Subjective and Objective Measurement into a Vector-Based Approach for Performance Measurement

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Peter Bretscher, Ing. Büro für Wirtschaftsentwicklung, Eggersriet, Switzerland

Presentation prepared for the PMA Conference 2004 ("The 4th International Conference on Theory and Practice in Performance Measurement and Management") , 28-30 July 2004 in Edinburgh, UK

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The Speakers

Juergen H. Daum,

Chief Solution Architect,
Business Solutions Architects Group, SAP AG, Walldorf / D

Function in the Business Solution Architects Group:
CFO Relationships, advisory role in „Finance Transformation“ and „Enterprise Performance Management“ projects

- **Finance and management background** (was a CFO in a mid-sized German company before joining SAP in 1992)
- Spend **five years in SAP’s field organization in Germany and Europe** (sales, consulting, product management) with the focus on financials and enterprise management
- **6 years in development**: first as product manager for R/3 Enterprise Controlling and Strategic Enterprise Management (SEM), then as program manager for mySAP Financials
- **Since begin of 2002: advising senior executives, CFOs, corporate controllers** - with a current focus on finance transformation + enterprise performance management
- He is frequently publishing and speaking about enterprise performance management, finance and other management topics and he is the author of the book "Intangible Assets and Value Creation“ (Wiley 2002). E-Mail: juergen.daum@sap.com, Website: http://www.juergendaum.com/

The Speakers

Peter Bretscher,

Founder and owner,
Ing. Büro für Wirtschaftsentwicklung, Eggersriet / CH

Function in the Ing.Büro: Advisor to organizstions in the design of economic steering and management systems that integrate the intangible perspective

- **Engineering background** (worked 20 years in several functions along the whole value chain of an international R&D and manufacturing company based in Switzerland)
- Developed over the last 15 years **management concepts and methods that integrate the intangible perspective**
- In addition he is supporting companies, consultants, and other organizations **in innovation and project management, in intellectual property and patent management, and in setting up business plans and defining enterprise strategy**
- **He has initiated and is leading the "bengin" project.** Its mission is to facilitate the awareness for and further development of management concepts that enhance the traditional economic model
- Since 1994 he is teaching business engineering und business planning at the Hochschule für Wirtschaft, Technik und soziale Arbeit in St. Gallen, Switzerland.
  E-Mail: peter.bretscher@bengin.com, Website: https://bengin.net/bes/ and https://insede.org

Agenda

- **Implications of the knowledge economy for performance measurement and management: subjective measurement - why and how?**
- **The concept of Vector-Based Performance Measurement & Visualisation**
- **Practical application cases of the concept**
- **Conclusion & outlook**

Implications of the knowledge economy for performance measurement and management

Focus on internal Efficiency

Focus on external Effectiveness

Seller's Market
(until the 1970s)

industrial economy

(car production in the 1920s)

Customer focus:

- availability
- (absolute) price

Managerial focus:

- production capacity
- cost

Buyers's Market
(since the 1970s)

knowledge economy

(media production in the 2000s)

Customer focus:

- variety
- subjective customer value

Managerial focus:

- innovation
- customer realations

subjective values/effects

investments in intangibles

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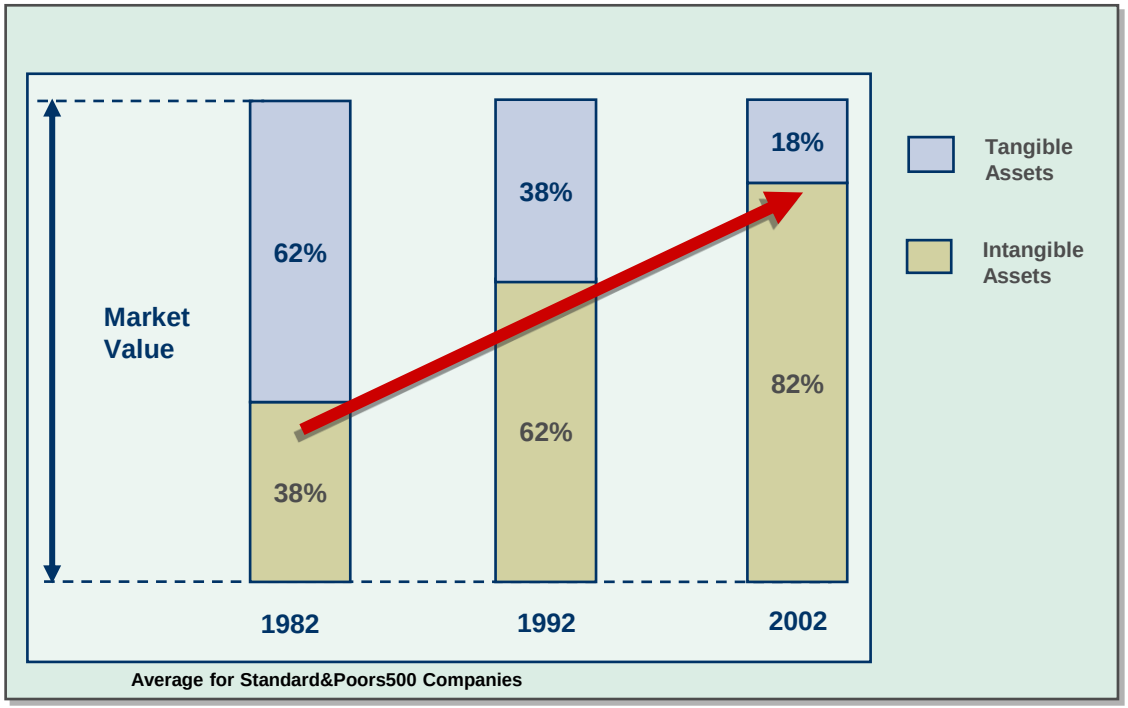
The consequence:
The transformation of the asset basis of corporations



Energy + Industrial Assets

- Machinery & equipment
- Physical Infrastructure
- Inventory

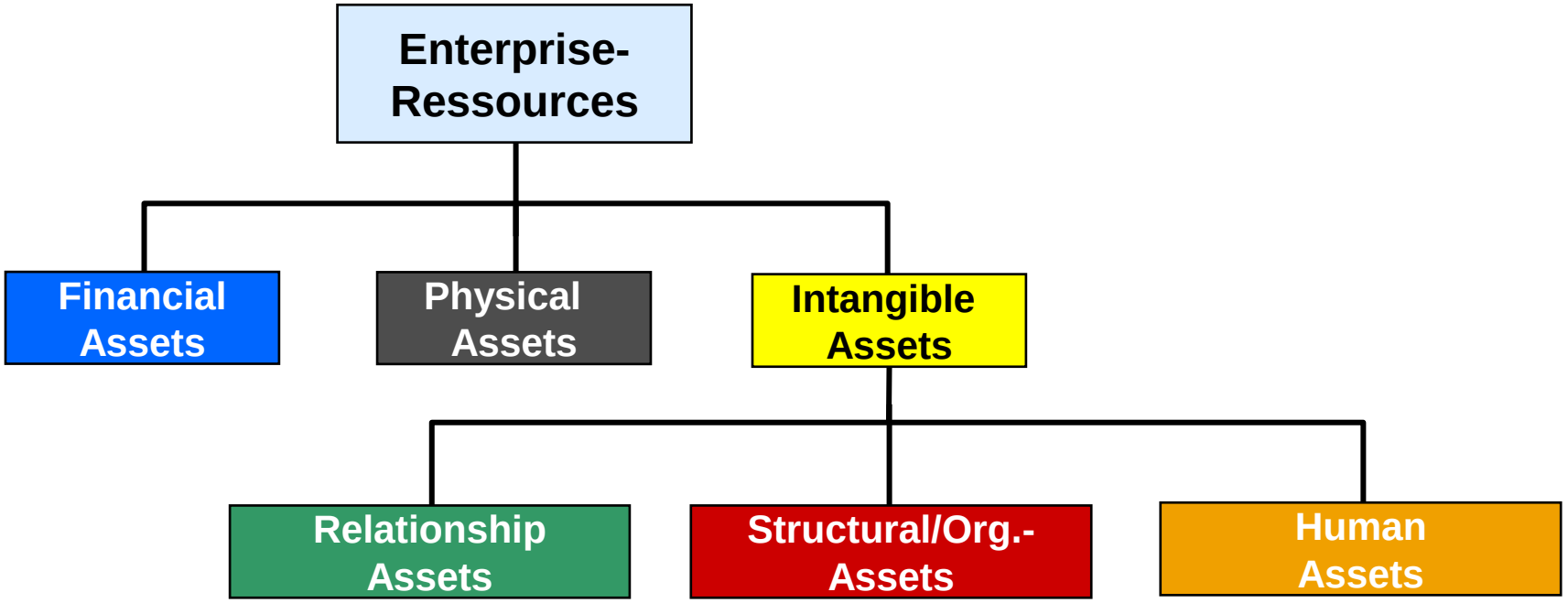
Knowledge + Intangible Assets

- Human + Intellectual Capital
- Innovation power / R&D pipeline
- Brands and Relationships

Efficient Production → **Intelligent Enterprise**

What are Intangible Assets?

Intangible Assets are immaterial and non-financial resources (not physical or investment), which are of value to the company and its investors

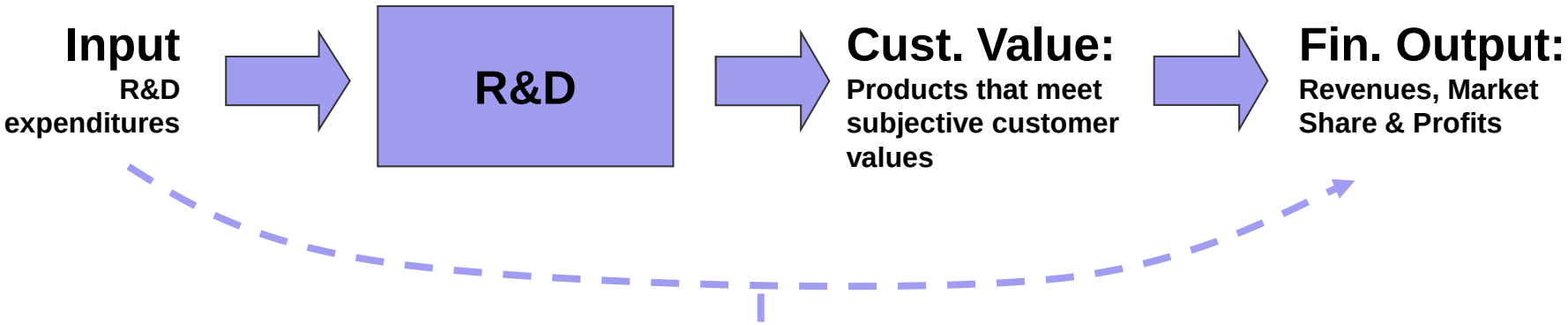


- Customer capital: brands, customer relations
- Partner capital: supplier network, dealer network

- Business infrastructure: work procedures, processes, information systems etc.
- Products / R&D capital
- Intellectual property: patents, copyrights, etc.

- Individual know-how, professional and social competence, innovation & adaption capabilities, - of employees and freelanccers

The challenge: value created is not a function of the amount of money that has been invested



Output in form of profit and shareholder value growth is not a direct function of financial input. Instead, output depends on the capability of the firm to create a positive effect from a subjective customer perspective (to create subjective customer value with new products)

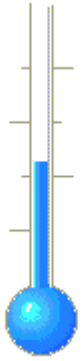
Organisations need performance measurement systems that are able to handle subjective, qualitative measures and to combine them with quantitative, financial information

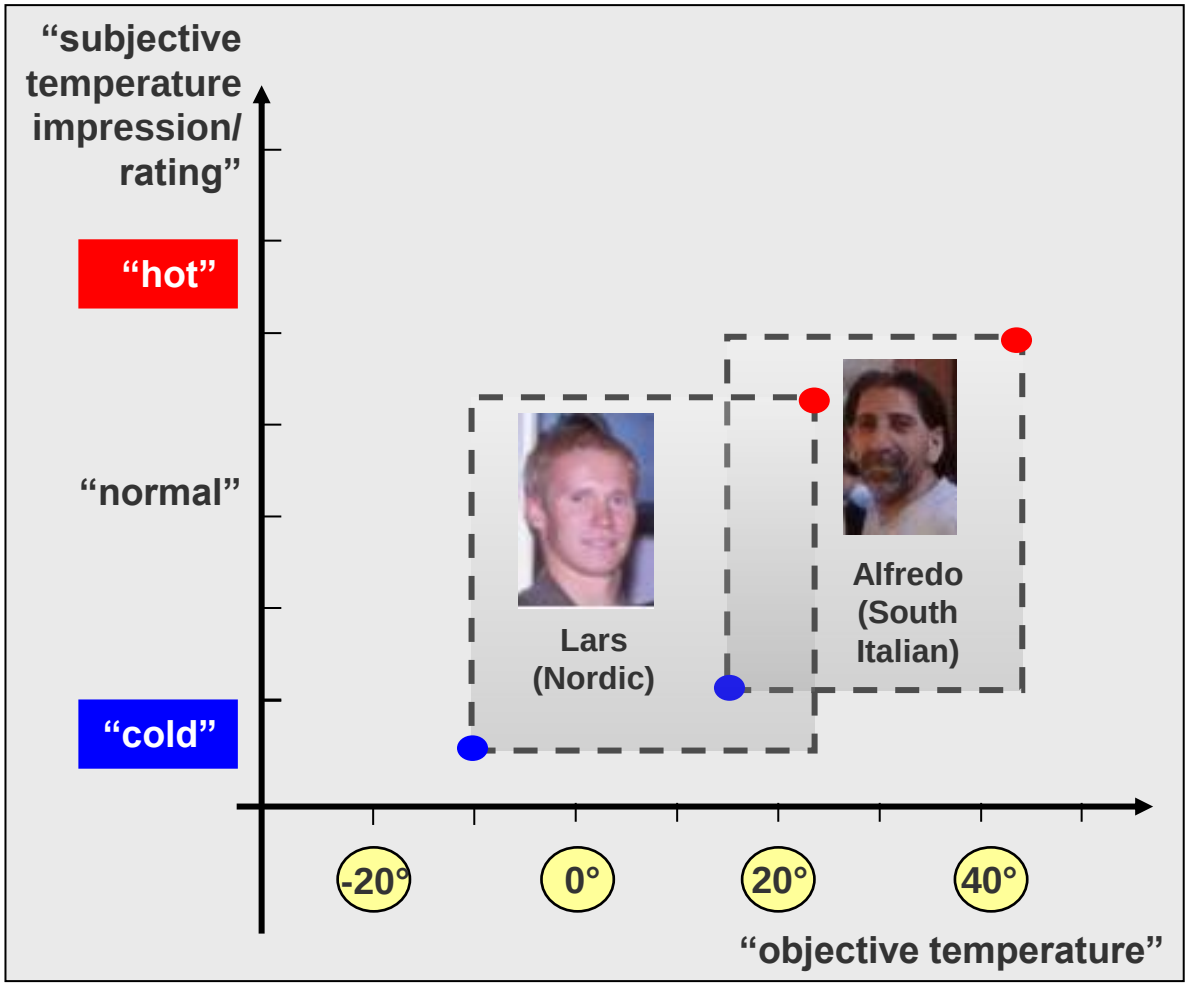
“Measurement” of subjective values – sounds unusual?

We are using subjective “measurement” all the time

Example 1: Temperature

(ask Alfredo and Lars what they regard as “normal” temperature)





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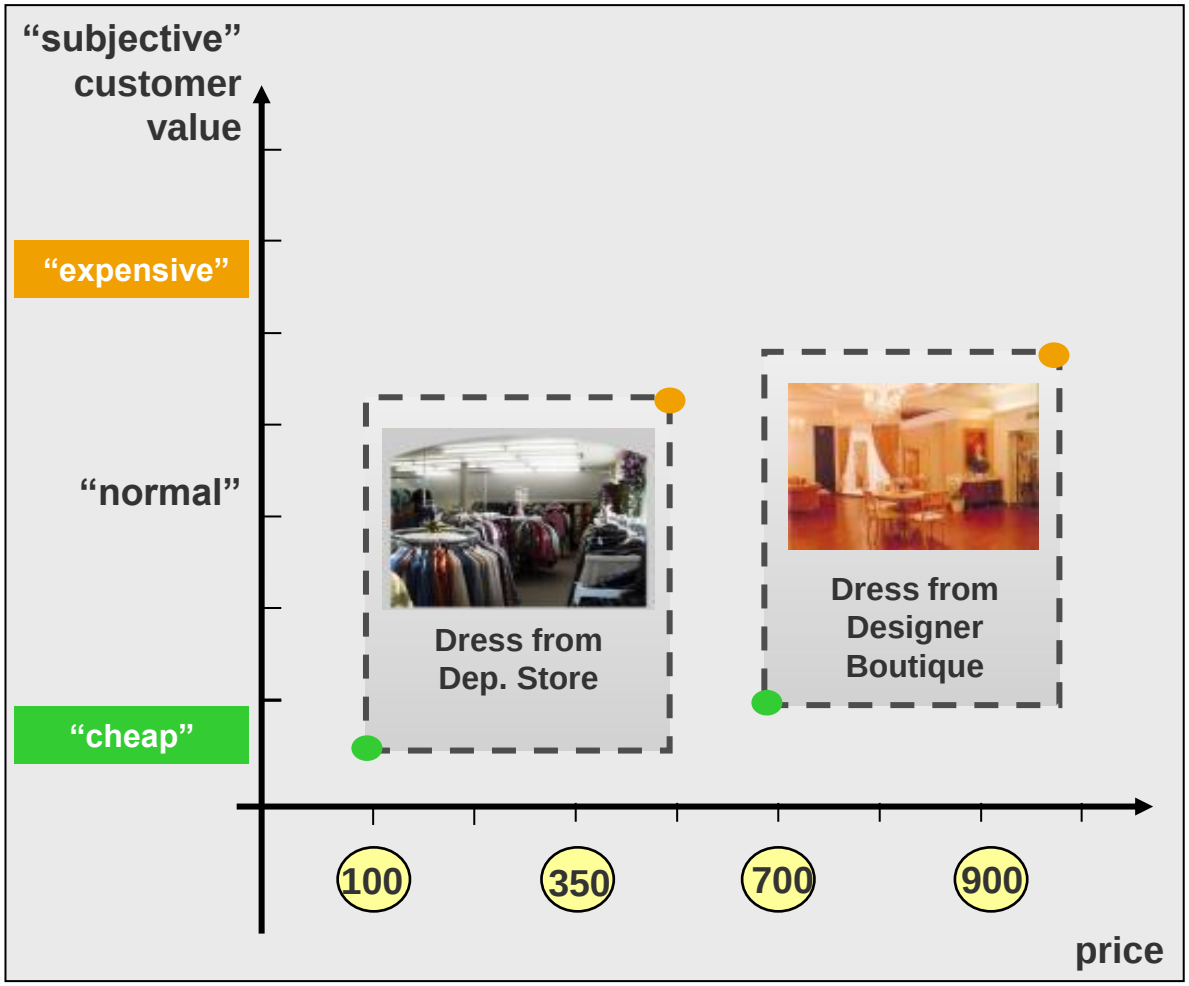
Example 2: Price

(How much is Mrs. Miller willing to pay for her new dress?)



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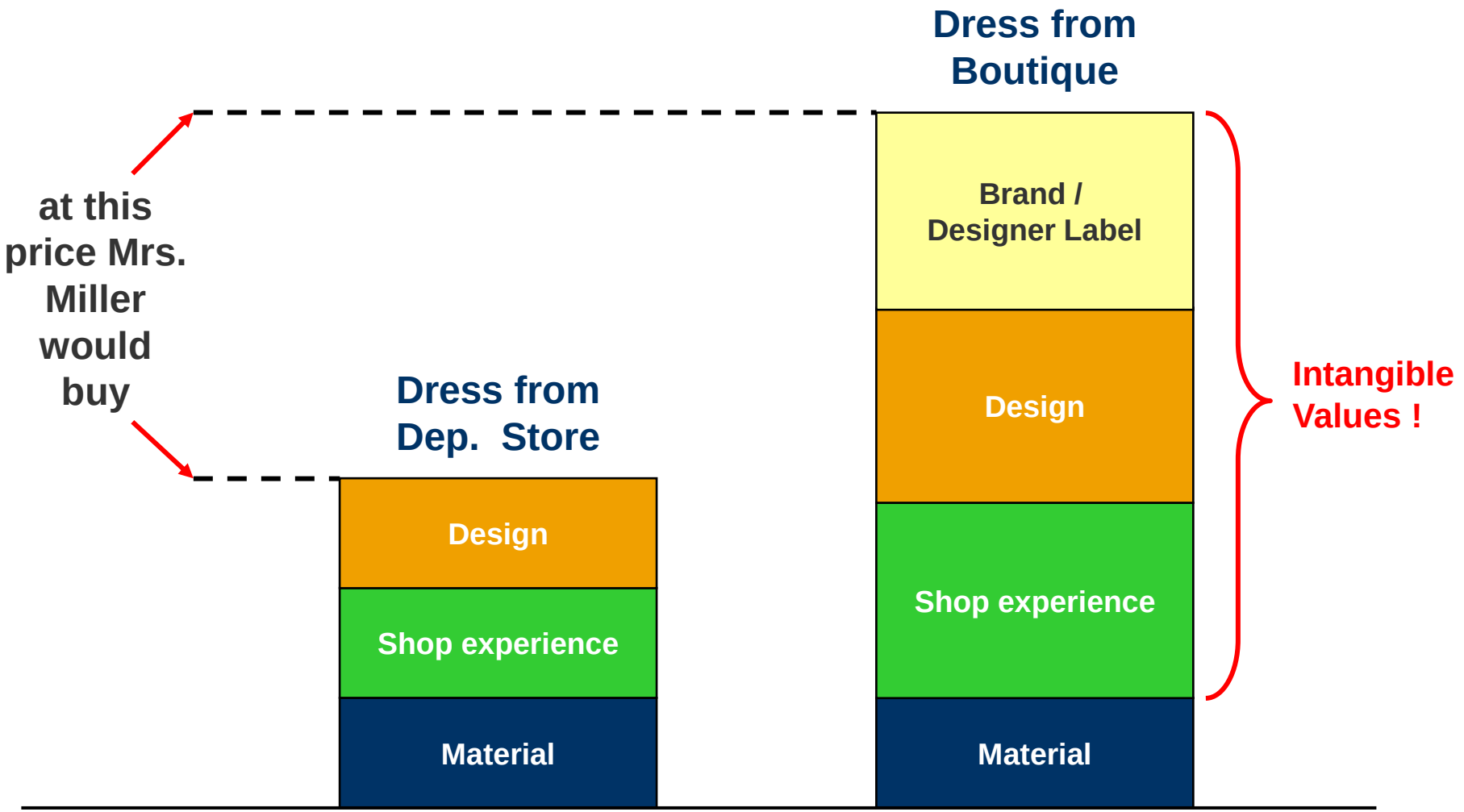
We are using subjective “measurement” all the time

Mrs. Miller’s product valuation



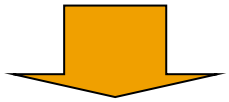
“Measurement” of subjective values – sounds unusual?

- Every customer is placing a (intangible) value on products or services according to subjective qualitative criteria.
- Organizations that provide services or products to customer have to consider this subjective, qualitative (intangible) dimension in managerial decision making throughout the entire value chain.
- Otherwise they would not be able to use their full potential to create value (for customers, shareholders and other stakeholders)

Organisations need performance measurement systems that value subjective, qualitative value through relative ratings and that combine them with quantitative, financial information

Consider the Credit Rating Services of S&P:

An example for of a qualitative measurement system is the rating of a company’s credit worthiness by Standard & Poor's (S&P) with ratings ranging from “AAA” to “D”. While S&P has probably internal rules and standard procedures governing how they rate a company, the rating results are nevertheless “subjective”: they are based on a S&P's -specific valuation/measurement system and on personal qualitative expert-judgments by the analysts in charge. Because no objective measurement scale for the credit worthiness of a company exists (at least not yet), the S&P rating cannot be compared directly with the ranking of e.g. another rating agency or with the rating of a company's housebank. Nevertheless, the S&P rating is widely accepted and provides useful information about a company for capital market participants or suppliers.

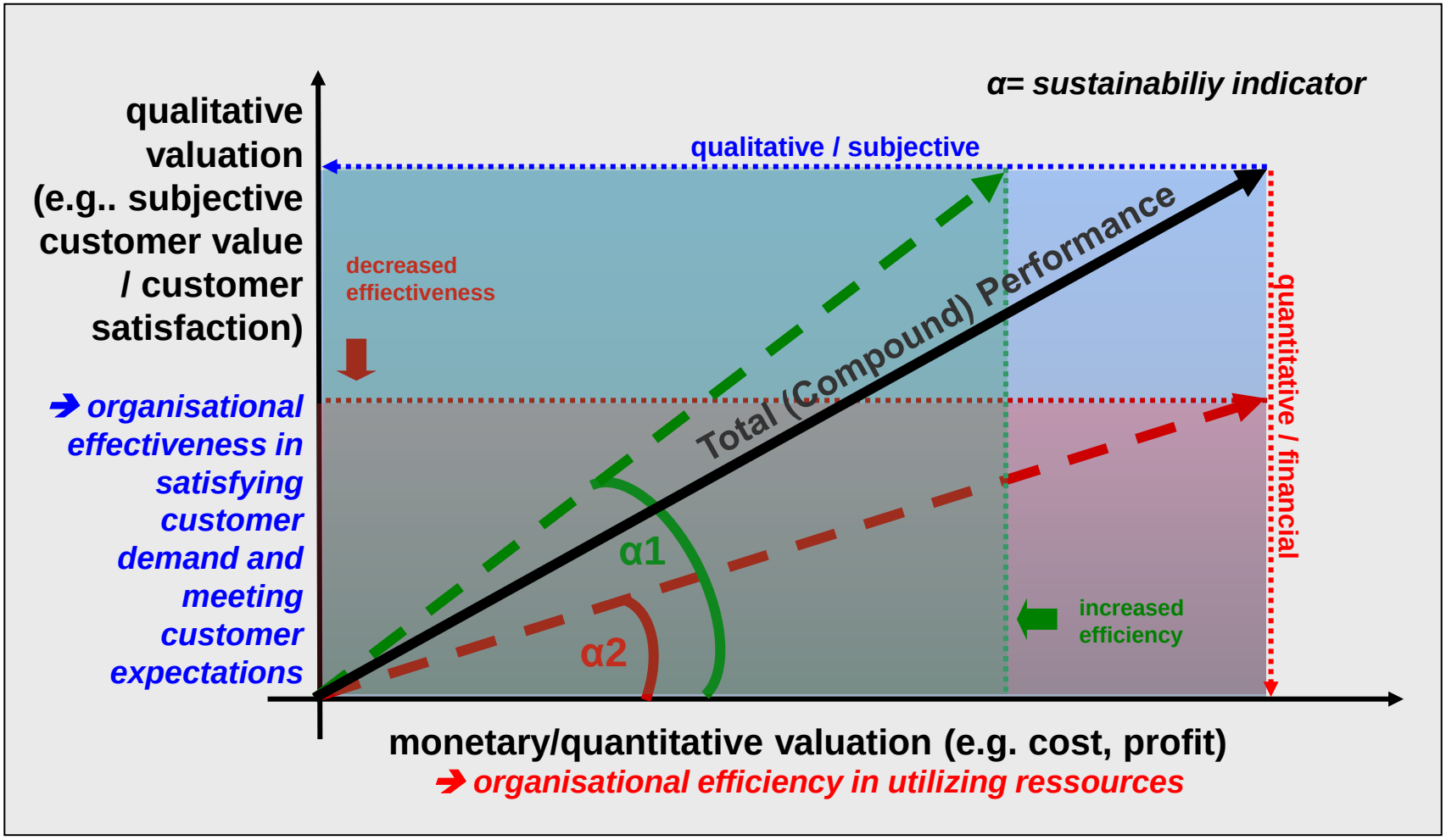


Measurement of subjective values: based e.g. on expert rating or by using relative measure scales (such as a 1-5 point system)

Agenda

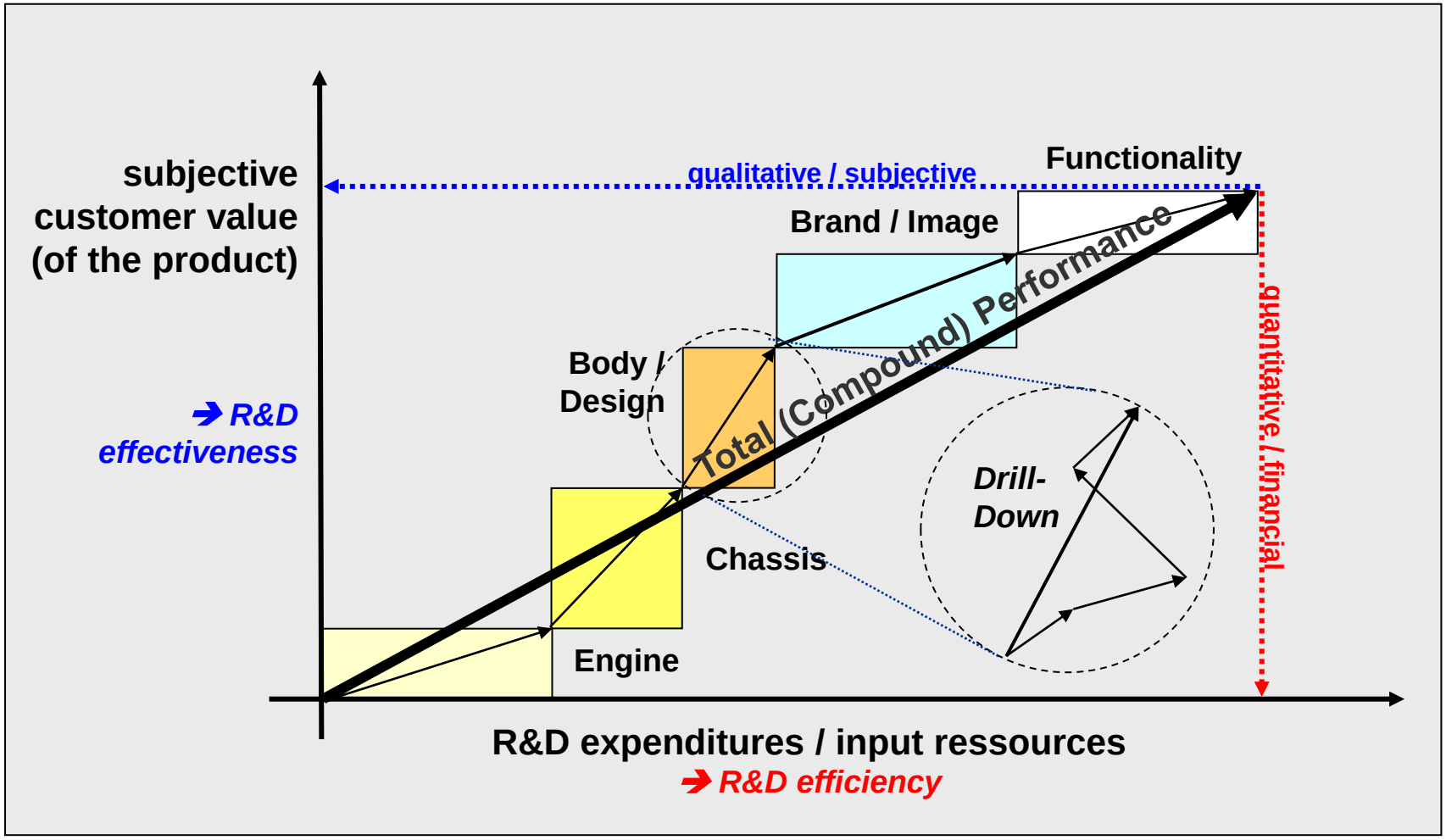
- Implications of the knowledge economy for performance measurement and management: subjective measurement - why and how?
- **The concept of Vector-Based Performance Measurement & Visualisation**
- Practical application cases of the concept
- Conclusion & outlook

The Basics of the Concept



The concept of Vector-Based Performance Measurement & Visualisation

Vector Aggregation and Drilldown Analysis
(Example: Automotive R&D)



Benefits of the Concept:

- Helps managers to keep taps on all relevant aspects (subjective and objective) of the decision making process
- Makes subjective and objective views comparable and communicable – independent of time and location (= increased transparency across the entire organisation)
- Due to its mathematical foundation, aggregations and de-aggregations are easily possible (linking the strategic overview with the operational view)
- Represents an efficient and effective management information management concept / it is easy to understand from a managerial perspective
- Assumptions behind the decisions and the history of the decision making process become transparent

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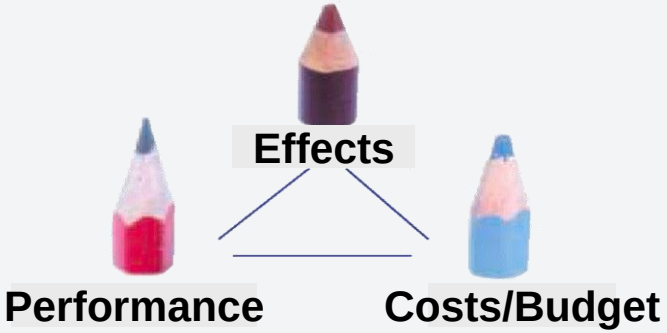
Application at Public Service Organisations

„New Public Management“ of the Kanton Basel-Stadt/CH



„New Public Management“ (NPM) – effect-oriented public service management:

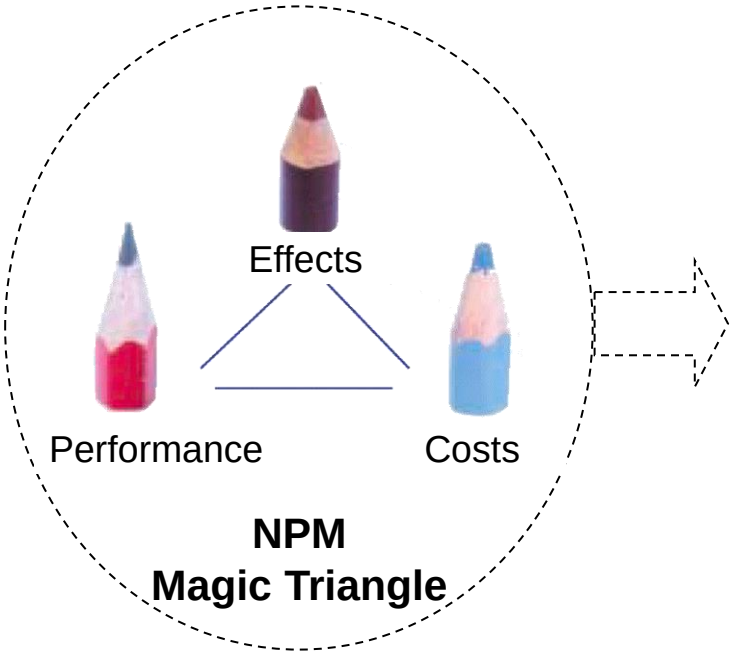
- How should our politics affect the citizens? (effects)
- What contribution/performance of the public service administration is required to achieve these effects? (activities and their performance)
- How much does it cost? (costs)

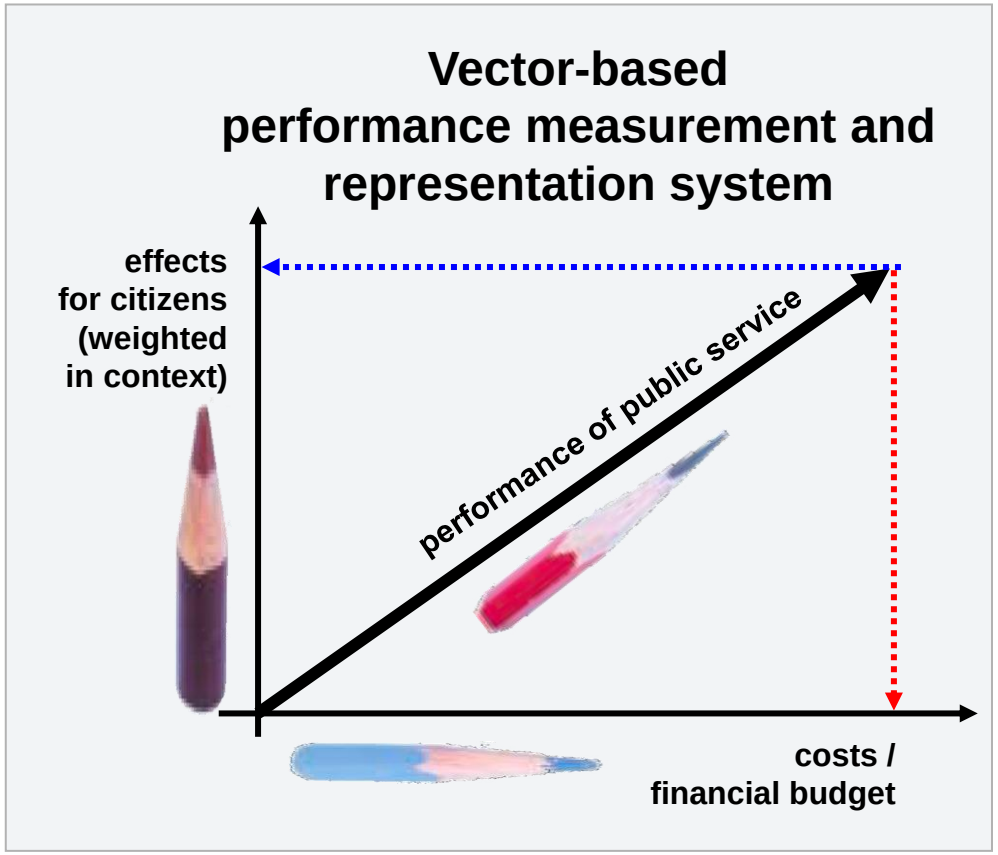
The basic assumption is, that optimal results will become possible when effects, activities, and their performance and costs are all taken into account together. If one of these three parameters is changed, the change will affect the entire system of the NPM’s “magic triangle”.

Source: Kanton Basel-Stadt, New Public Management im Kanton Basel-Stadt, 2002

„New Public Management“ of the Kanton Basel-Stadt/CH

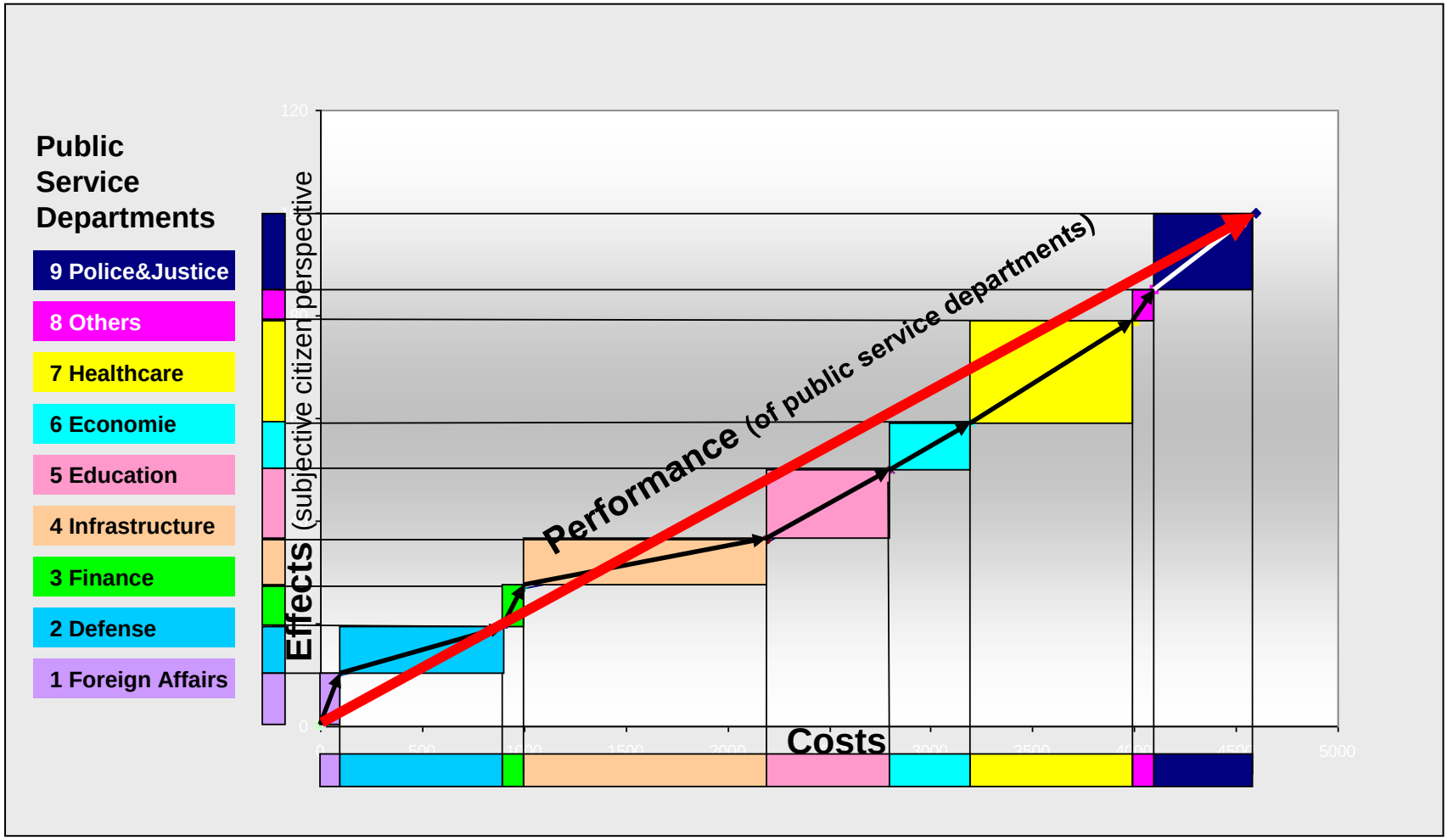
- Transformation: The Vector-Based Approach to Performance Measurement -





„New Public Management“ of the Kanton Basel-Stadt/CH

- Transformation: The Vector-Based Approach to Performance Measurement -



Benefits for a Kantonalverwaltung in applying the Concept Vector-Based Performance Measurement & Visualisation:

- Public service managers do not need to wade through 300-page budget documents (that is for instance the actual number of pages for the Kanton Basel-Stadt budget, including product and product group effect objectives and performance targets: 140 product groups, 1000 measures, 140 budgets). A few graphs/charts are enough to get an overview and to link strategy with operational management.
- The focus is set in the first place on value and performance (effects for citizens and performance of the public service) and then on financial budgets (on how to get and spend funds). This is alignsing the whole organization with the intended effect of its activities for society and is enabling management to make better trade-off decisions between tight budgets (efficient use of resources) and benefits (effects) from a citizen perspective.
- Budget adjustments (e.g. reduction by 10%) are now based on citizens valuations and not just on internal budget/departmental policies

Application at Car Manufacturers (OEMs)

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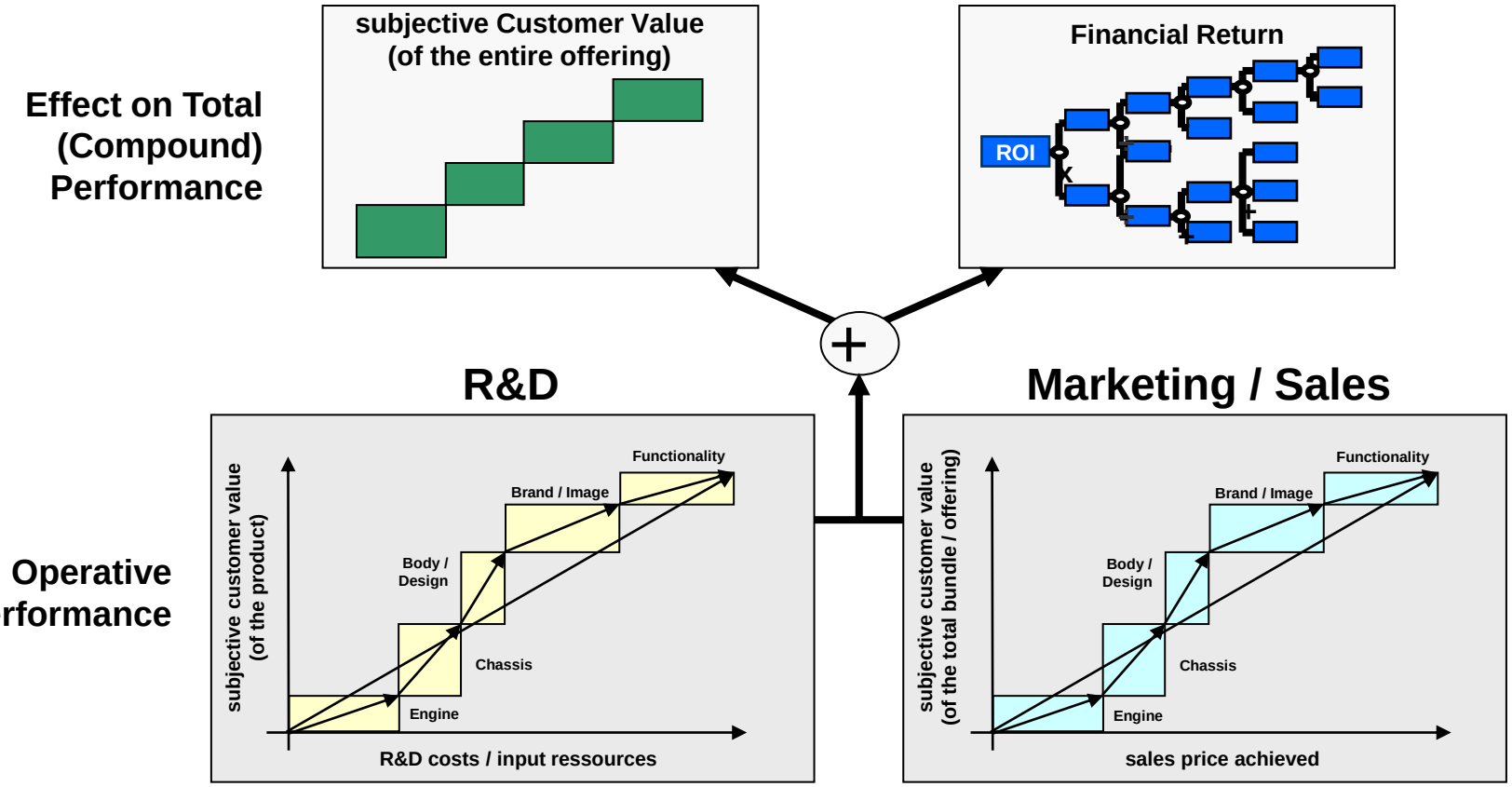
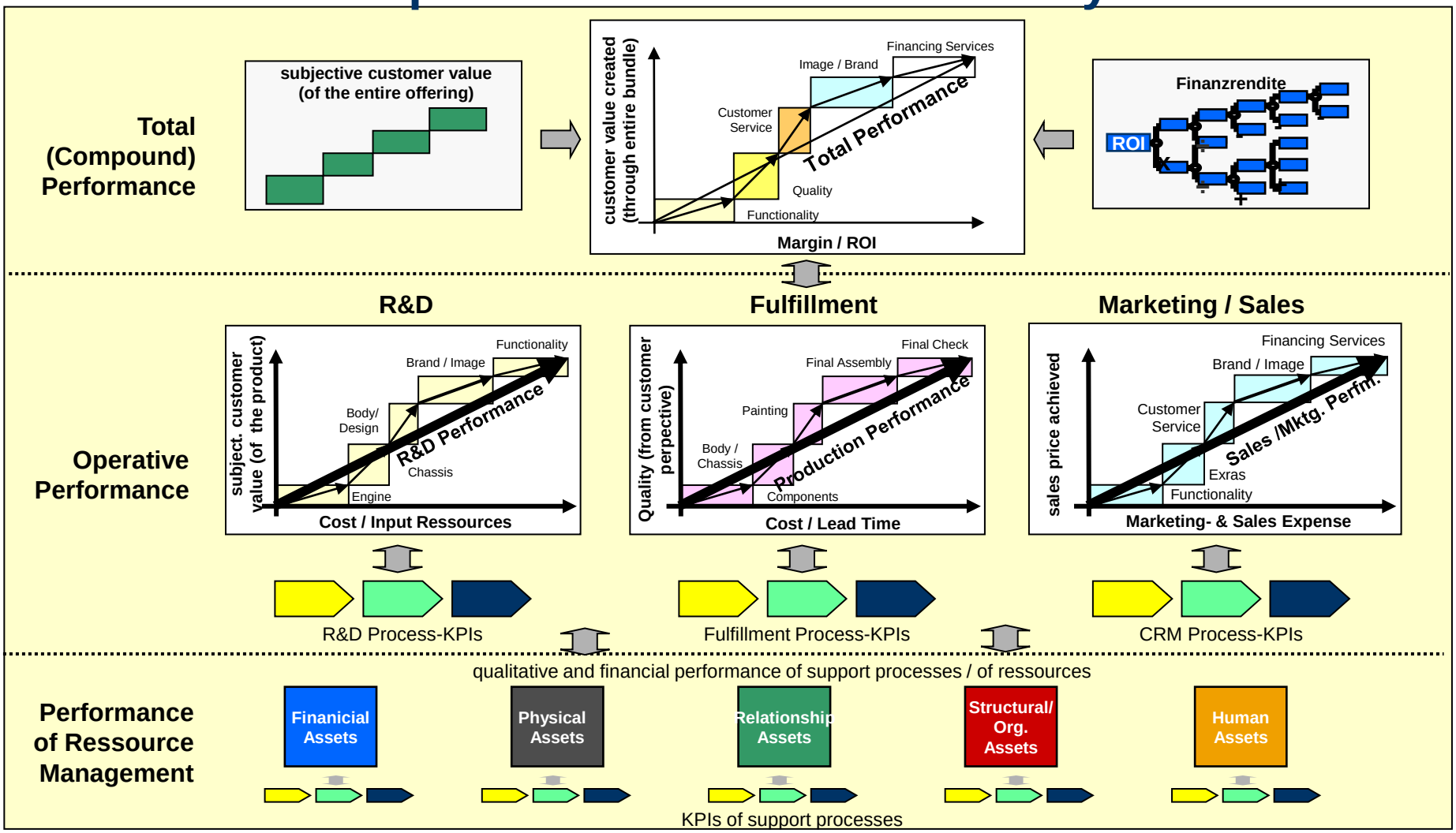
Vektor-Based Performance Measurement
- Example: Value Contribution Analysis -



Source: Daum, J.H.: Intangible Assets und die wertorientierte Steuerung von Netzwerken in der Automobilindustrie-Teil 1, in: Forschungsbericht des Arbeitskreises „Netzwerksteuerung/Network Value Added in der Automobilindustrie“

Application at Car Manufacturers (OEMs)

Vektor-Based Performance Measurement - Example: Value Contribution Analysis -



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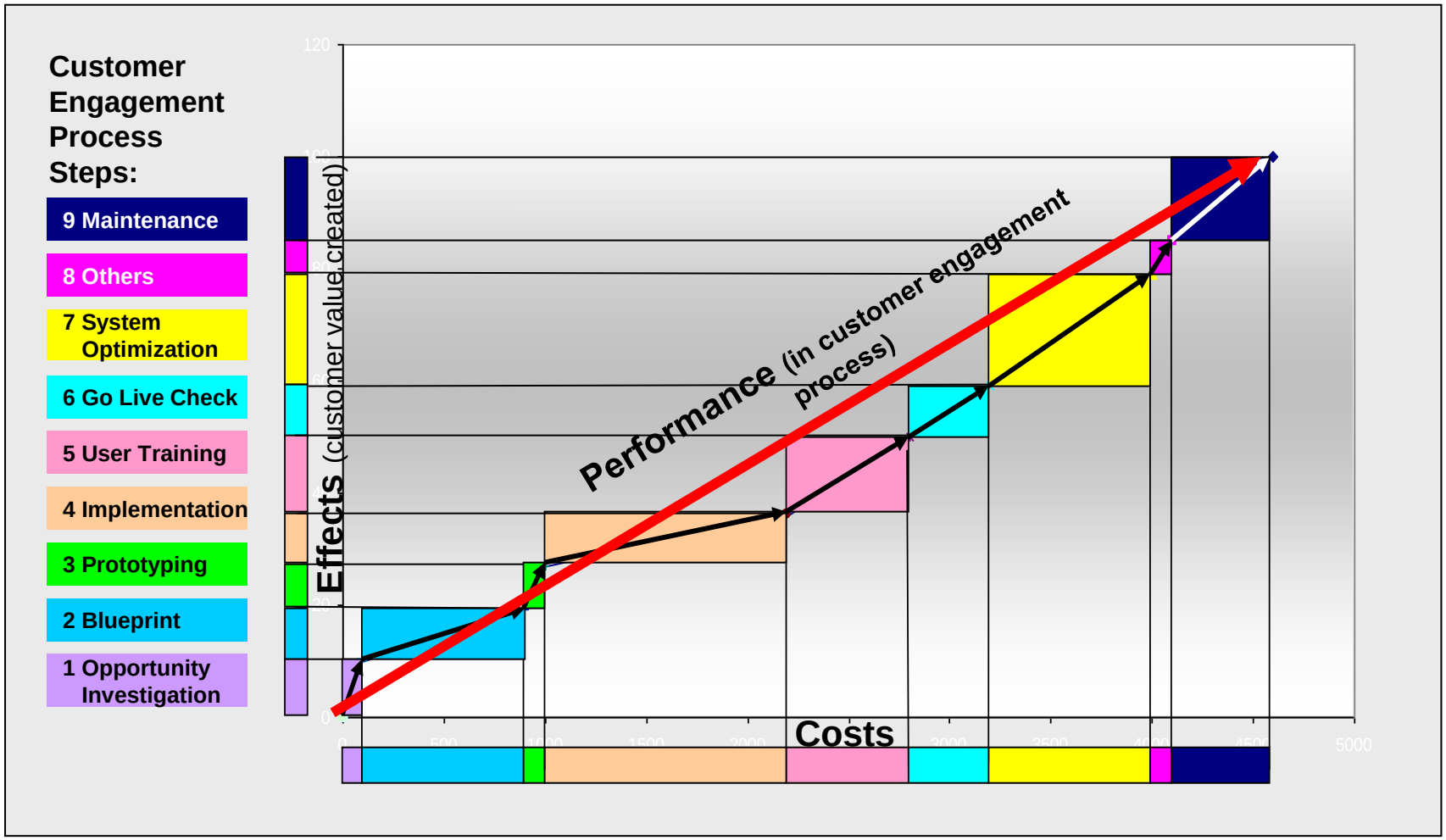
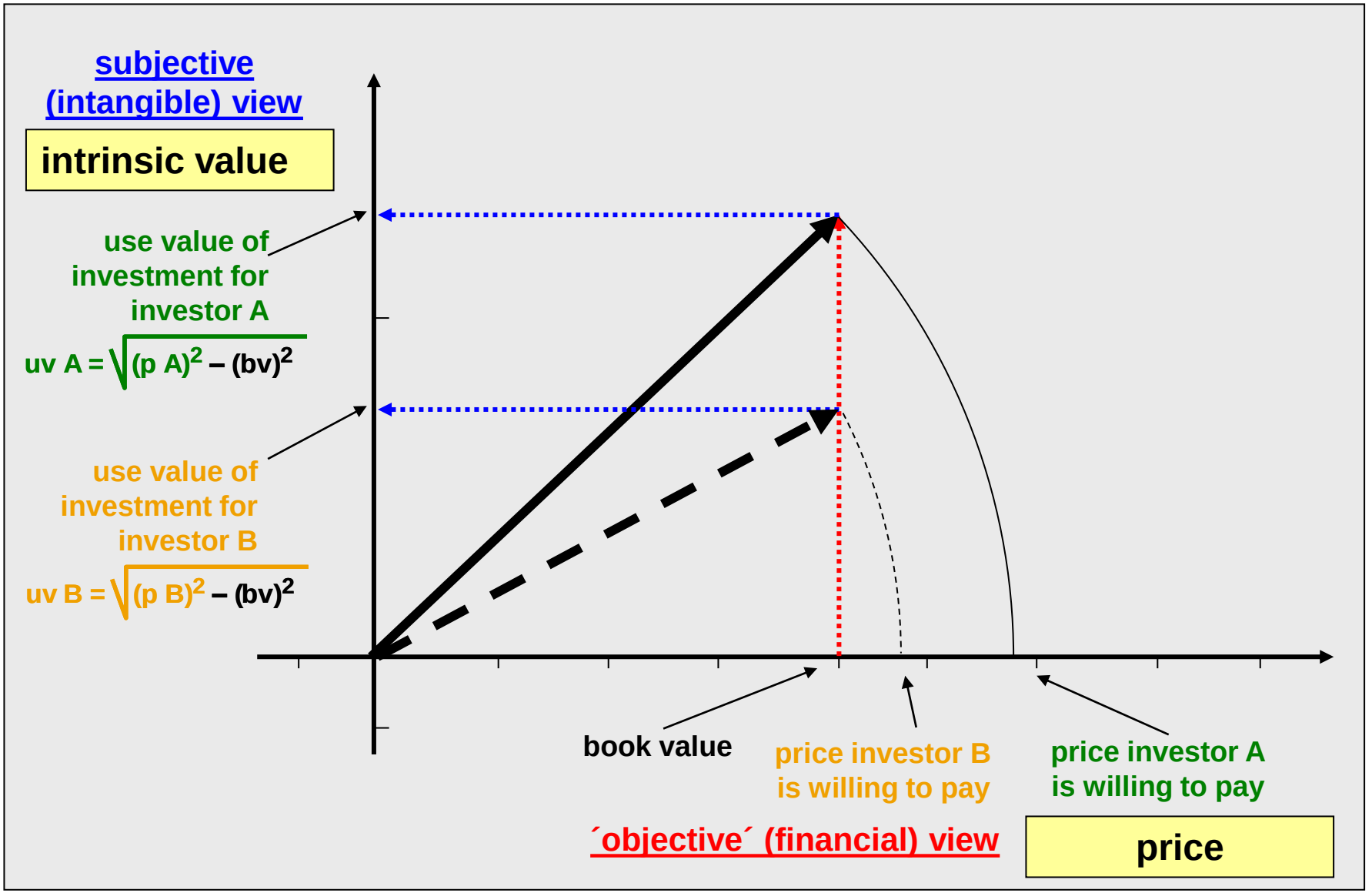
Application at Software Companies

Vektor-Based Performance Measurement
Example: Effectiveness & Efficiency of a Software Business



Application in Enterprise Valuation

Application in Enterprise Valuation



Practical Application of the Concept

Implementation Steps:

- **Awareness & Scope Workshop:** Broaden the understanding of the concept, determine project scope, define project team
- **Object definition:** Define objects of performance measurement and the relationship between them ("what are the elements / what is the whole picture?")
- **Definition of measures, metrics, and visualisation:** define measures and metrics for qualitative, quantitative and compound measurement
- **Parametrisation:** Define rules for quantifying qualitative measures (e.g. by defining scales)
- **Clustering:** Define clusters / groups of objects
- **Weighting:** define weights for each object group / cluster
- **Define charts / visuals:** define charts & visuals for each application area on the various levels of the organisation
- **Test and revision:** test the new measurement and visualisation system and revise where necessary

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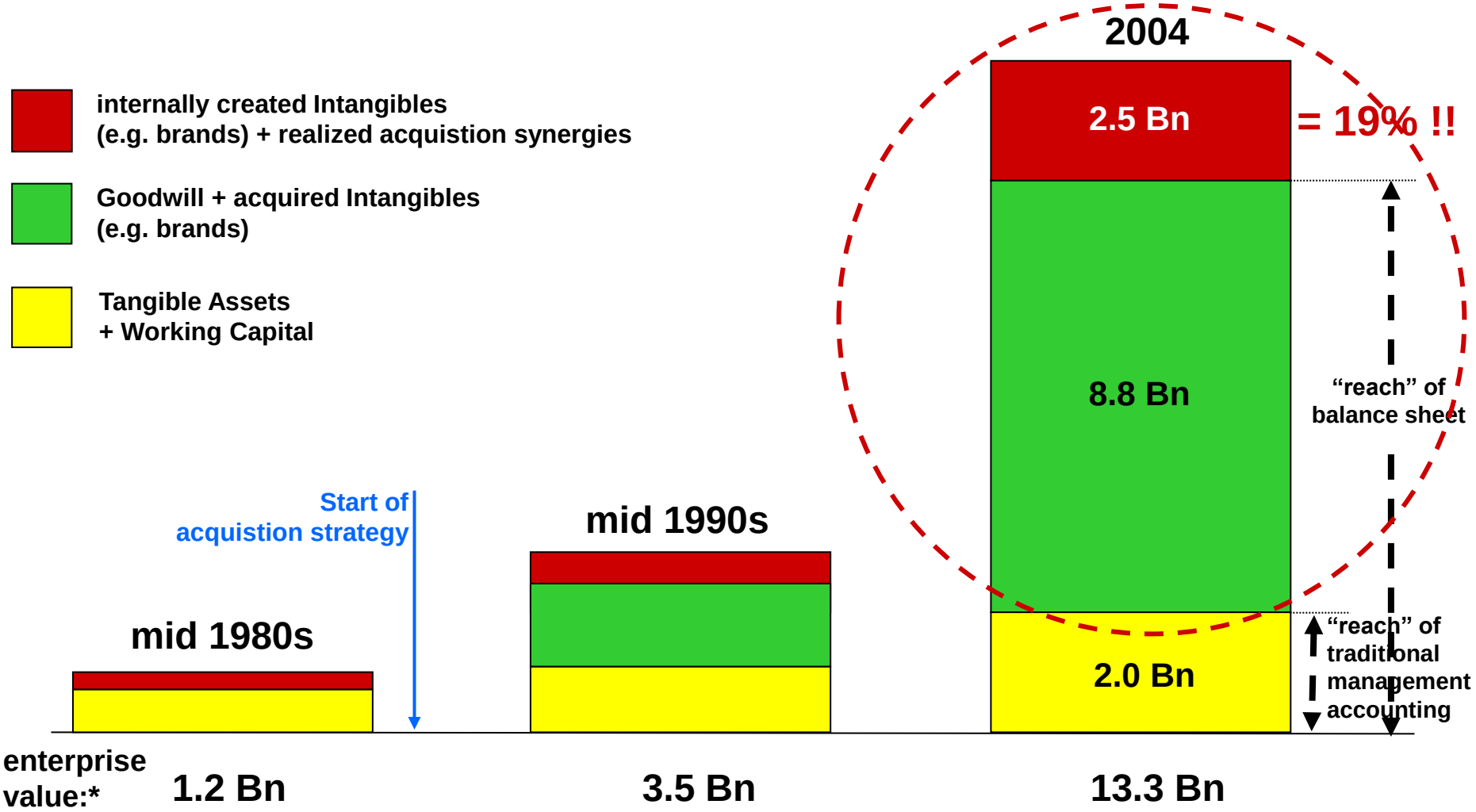
Conclusion & outlook

Example of a Consumer Products Company



*enterprise value = market capitalisation (market value of equity) + long-term depth + minority interest

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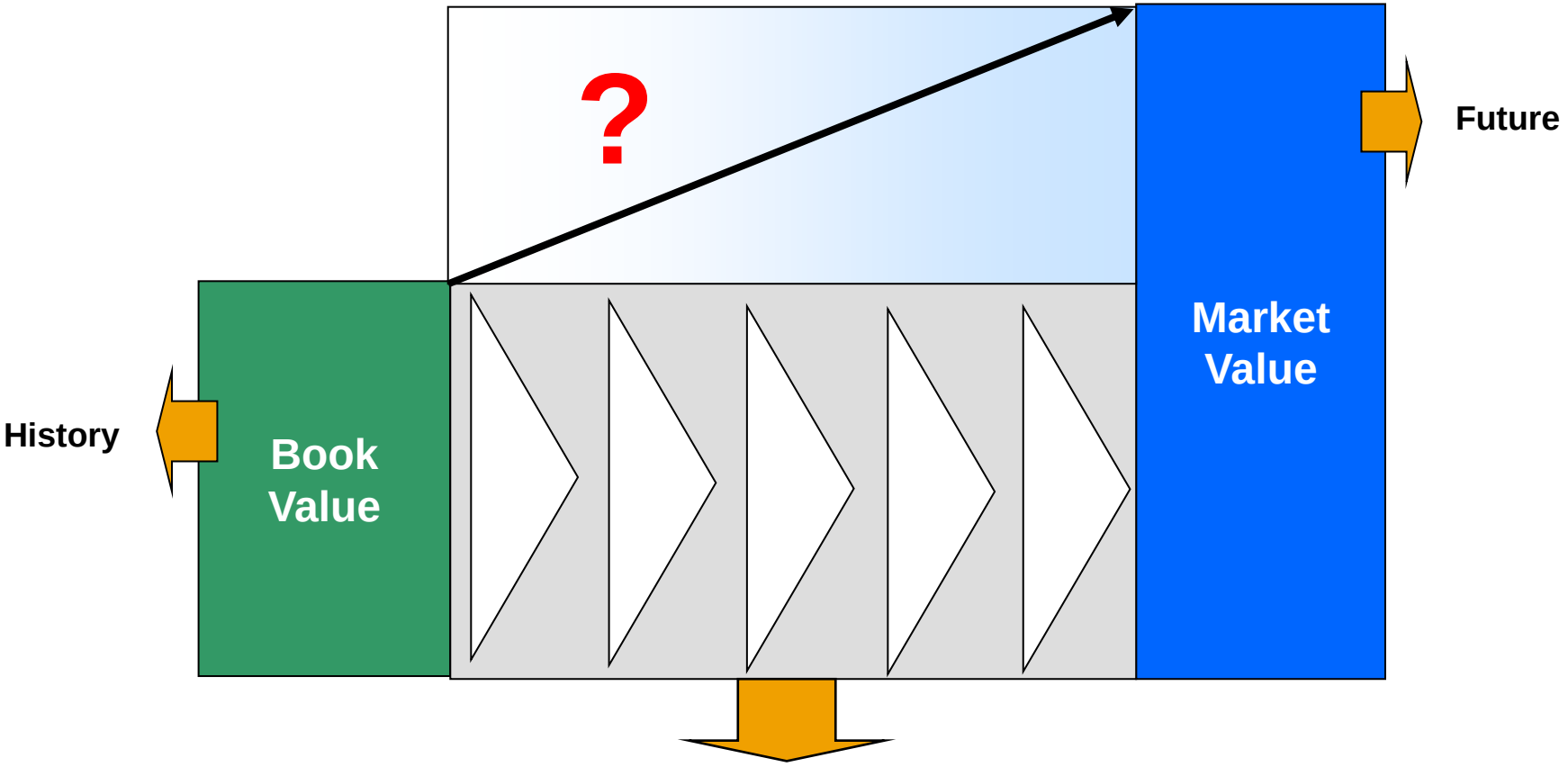
Conclusion & outlook

Book Values reflect only the historic (objective) costs of assets – not the (subjective) value created

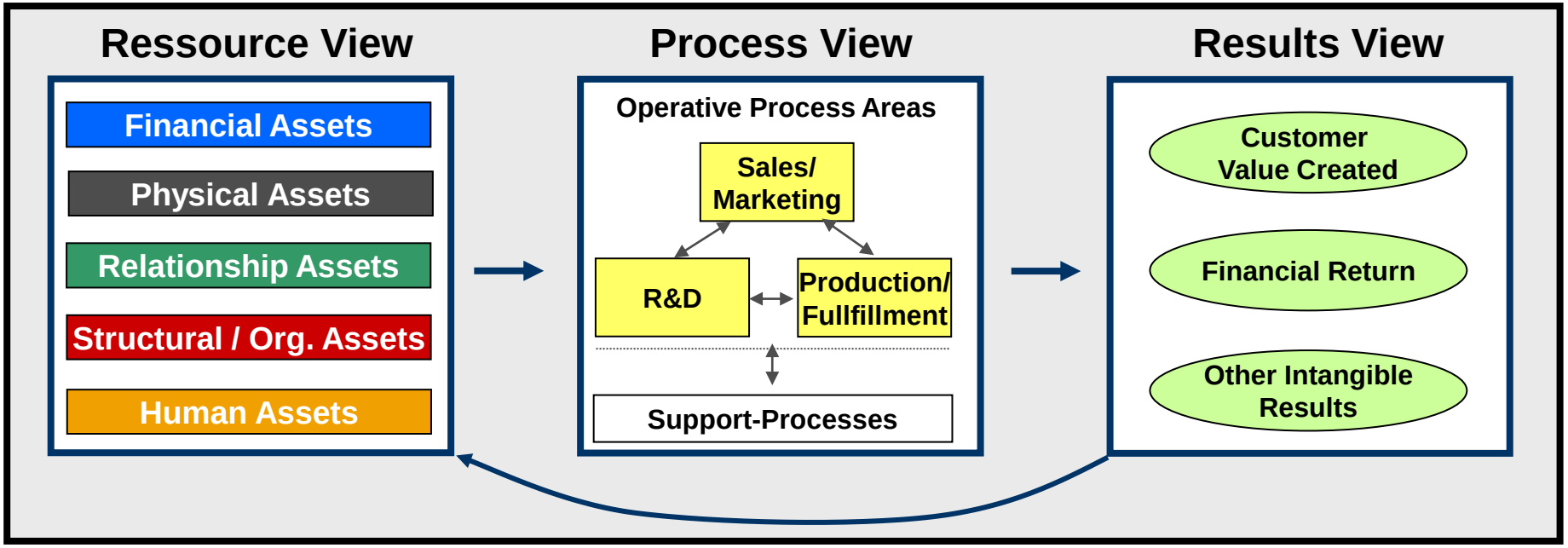


Required: Performance Measurment Systems that provide insight into the (intangible) value creation process

Conclusion & outlook

Organisations need today performance measurement systems that:

- are based on a comprehensive ressource model (incl. intangibles)
- are integrating the process perspective (value creating processes)
- are presenting results in a multidimensional way (subjective, qualitative & objective, quantitative/financial)



Conclusion & outlook

- Organisation will need and use in the future instruments that can handle intangible, qualitative, subjective values in a similar way that financial accounting and financial statements can handle today's financial information.
- The concept of Vector-Based Performance Measurement & Visualisation brings an unprecedented degree of rigor and discipline into the rating, measurement and handling of qualitative performance measurement in organisation.
- The Concept of Vector-Based Performance Measurement is providing the tools to measure performance of every aspect of the Value Chain of a modern organisation (Ressource, Process and Results) by taking in each area subjective, qualitative and objective, quantitative/financial information into account.
- This is important because intangible, qualitative assets can only create value when they are combined to the physical, tangible, and financial world of our economies.

Thank You!

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Personal Website: http://www.juergendaum.com

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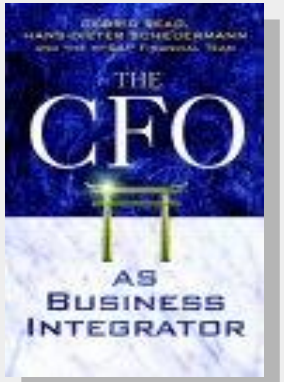
Book references

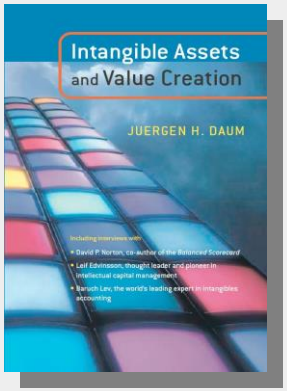


The CFO as Business Integrator

by Cedric Read, Dieter Scheuermann and the mySAP Financials Team

John Wiley & Sons, Chichester, 2003
ISBN 047085149X

(Juergen Daum contributed to the whole concept of the book and espcially to the chapter on intangibles, which is short version of his book on Intangible Assets)



Intangible Assets and Value Creation

by Juergen H. Daum

John Wiley & Sons, Chichester, 2002
ISBN 04708455120

More information at:
http://www.juergendaum.com/mybook.htm

Further WEB-Links

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  The project that realizes the «New/Next Economic Model»

- **INSEDE**
  Clever solutions for the smart real world

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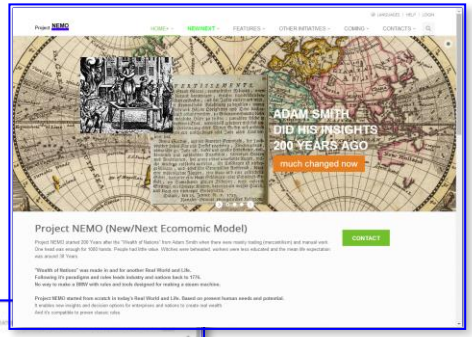
  Modular, new options beyond old systemic traps



Project Nemo
(New/Next Economic Model)
http://project-nemo.org

INSEDE (Institute for Sustainable Economic Development)
https://insede.org

Business Engineering Systems
(Tools for decisions in a smart economy)
https://bengin.net/bes/

Business Engineering Timeline
(History of development incl. links to further sites and papers)
https://bengin.net/permalink/werkstueck_und_werkzeug_d.pdf

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