

# bengin

## Advanced Tools for Visualizing, Measuring and Managing Intangibles

5<sup>th</sup> European Institute for Advanced Studies in Management (EIASM), Workshop on

### Visualizing, Measuring and Managing Intangibles and Intellectual Capital

Dresden (Germany), 8-9 October 2009 – © 2009 peter.bretscher@bengin.com – www.bengin.net

## Speaker



### *Peter Bretscher,*

*Founder and owner,  
Engineering Office for Business Development  
Ingenieurbüro für Wirtschaftsentwicklung, Eggersriet / Switzerland*

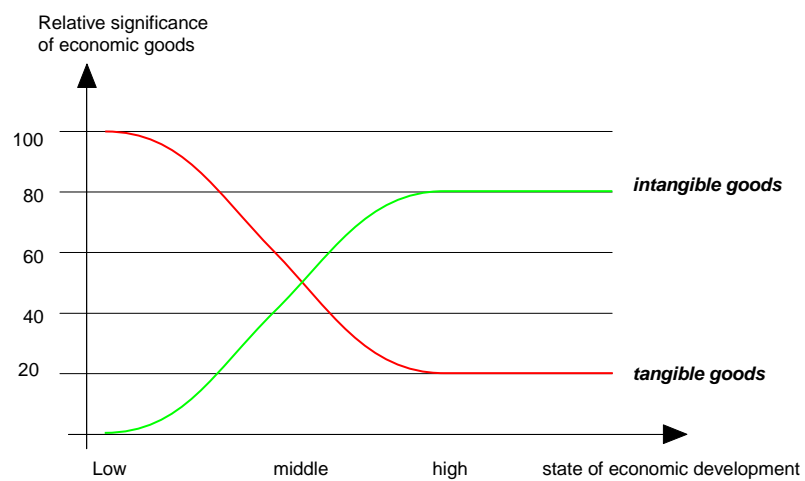
Function in the Ing.Büro: Advisor to organizations in the design of economic steering and management systems that integrate the intangible perspective

- 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 20 years the "Business Engineering System" (Tools for Business Administration) a MindSet and models for structuring and quantifying the tangible and intangible resources.
- 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 University of Applied Sciences in St. Gallen, Switzerland.  
E-Mail: [peter.bretscher@bengin.com](mailto:peter.bretscher@bengin.com),  
Website: <http://www.bengin.com/>, Blog: <http://www.bengin.net/wp/>, Twitter: <http://twitter.com/peterbretscher>

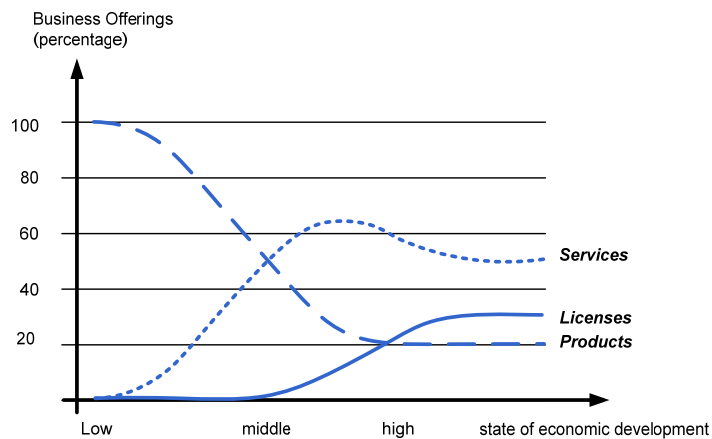
## Agenda

- *Development of Economy*
- *Innovation of Products  
- and Economic MindSet as a Product*
- *Two Outpaced Paradigms*
- *The Vector Solution*
- *Conclusion and Outlook*

## Development of economic assets



## Development of Business Offerings



## Summary

«Many of the patterns of nature we can discover only **after** they have been constructed by our mind.»

Friedrich von Hayek

This are two developments we see in the real reality.

**Intangibles** are (and will be) **more and more important**.

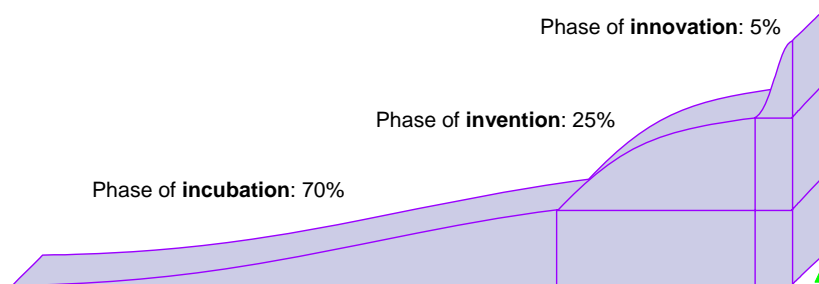
**Intangibles** in a form of **knowledge** (use-how, make-how, think-how)  
**and** in a form of **intellectual property rights**.

In order to enable a sustainable development we need an enhanced  
**theory that has the means for structuring and quantifying this (new) reality**.

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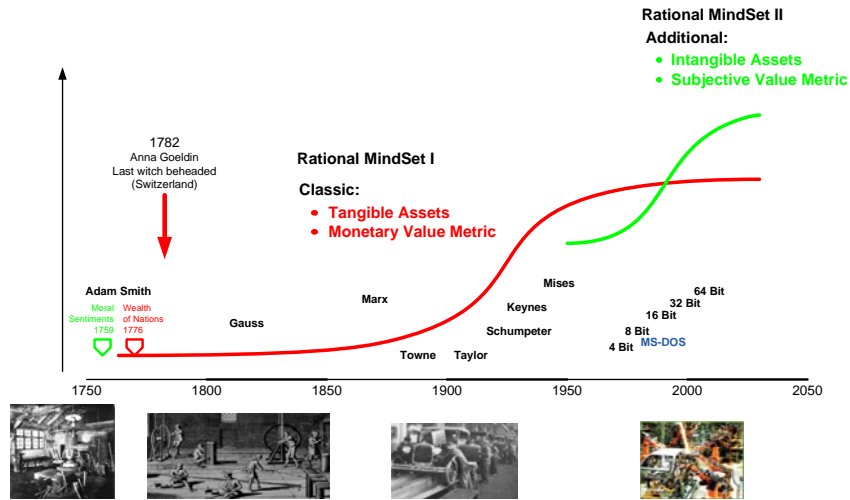
## Idea to Innovation



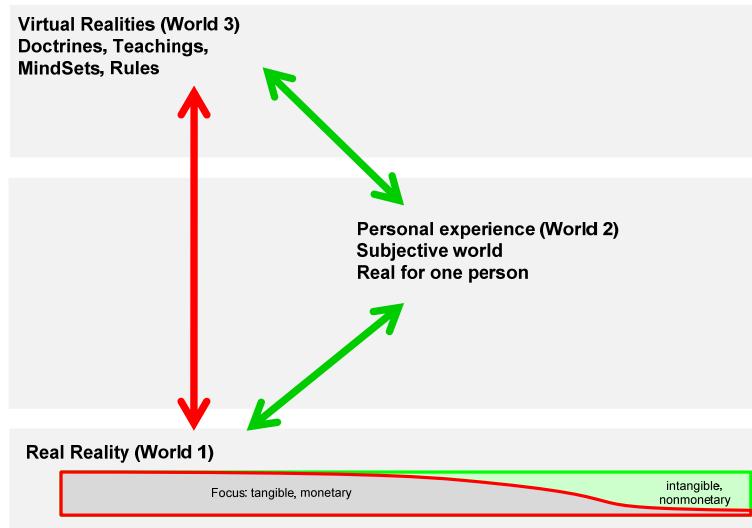
### Examples:

Concrete	40	28	20 years
Inforced concrete	22	7	18 years
Aluminium	29	53	26 years
Telephone	?	14	2 years
Radio	56	13	2 years
Radar	29	2	1 years
TV	22	22	8 years
Computer	115	9	5 years
ICs	40	2	3 years

## Development of Business Theory (S-Curve of Product Development)



## Three Worlds – trigger for invention?



## World 3: Six interdependent fields

### Virtual Realities (World 3) Doctrines, Teachings, MindSets, Rules

1776

2000

### Real Reality (World 1)

Focus: tangible, monetary

intangible,  
nonmonetary

## World 3: Six interdependent fields

### Virtual Realities (World 3) Doctrines, Teachings, MindSets, Rules

1776

2000

### Real Reality (World 1)

Focus: tangible, monetary

intangible,  
nonmonetary

3. Teachings to the Management  
Business Models  
Consultants

6. Chartered Accountants

5. Laws (legal, paralegal)

4. Bookkeeping

2. Business Economies, „Wealth of Enterprises“

1. Political Economies, „Wealth of Nations“, Ground – Work – Capital

## Summary

«Count what's countable.  
Measure what's measurable.  
Make measurable what's not measurable.»  
Galileo Galilei

Tools for mapping economy and the rules for planning and reasoning business objects are divided in **six interdependent specialized fields** of profession.

In order to have an reasonable impact all areas/fields have to work on solutions.

Even if a coordinator would be an idea....

I expect, that the **development will follow a „swarm behaviour“**.

The **direction** is driven by the need for:

- (i) a framework that structures the **intangibles** and
- (ii) a value-metric that allows calculation with **subjective values**.

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## Enhancing Paradigms

**Deeply ingrained assumptions, teaching programs, mental models, „taken as granted“. They determine how we are aware of the reality and influence our behaviour.**

At least 17 paradigms to be revised.

### 1. Ground, Work, Capital (as resources)

... to be substituted by a framework that is based on tangible and intangible resources.

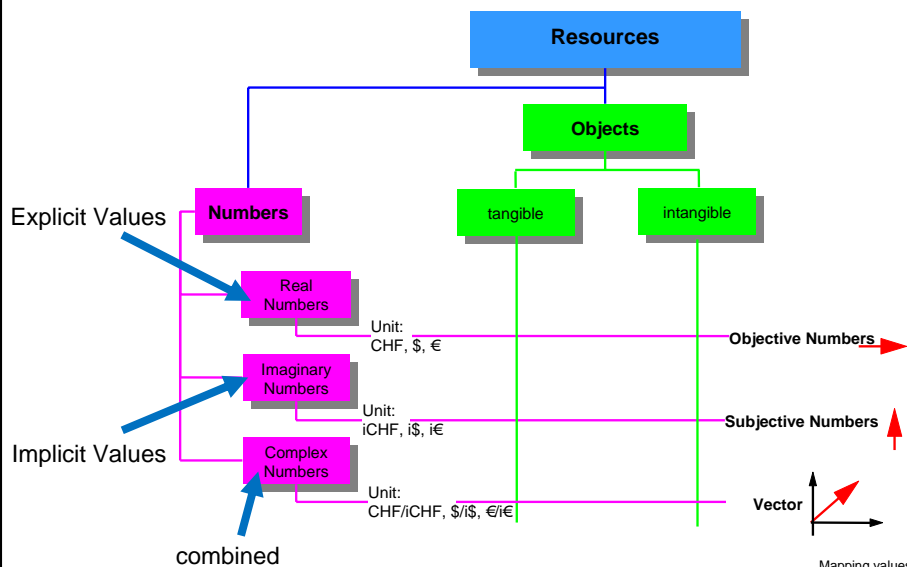
### 2. Value paradigm

Value – as a result of a valuation process – has objective AND subjective aspects / dimensions.

A scientifically correct value metric system has to reflect this necessity. Therefore it has to be multidimensional.

(Linear measure vaporises the essence.)

## Objects, Attributes, Value-Measures



## Summary

«It is the theory which determines  
what we can observe.»

Albert Einstein

Enhancing this two overhauled paradigms is possible.

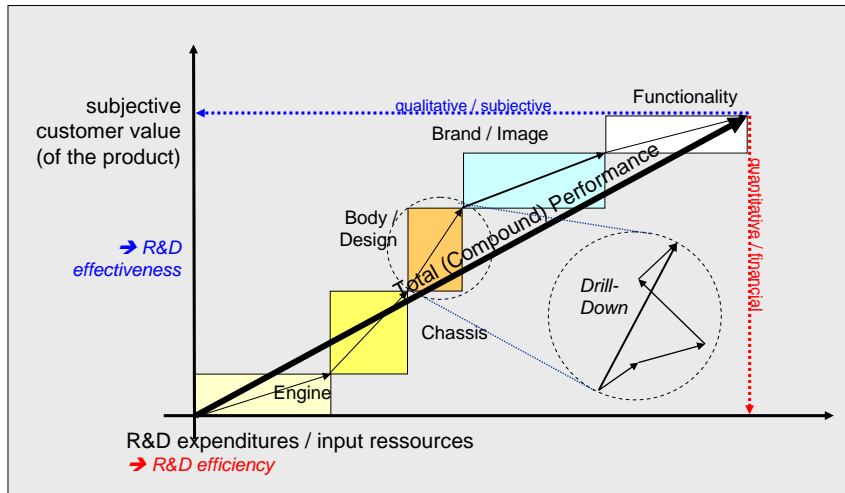
(Even if it takes some time.)

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## Vector Type 1 (Aggregation and Drilldown)

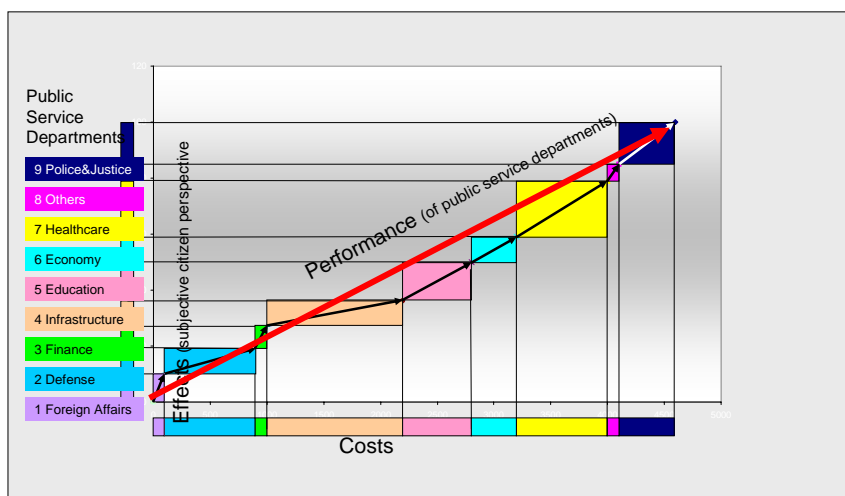


21

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## Vector Type 1 (Public Service Departments)



22

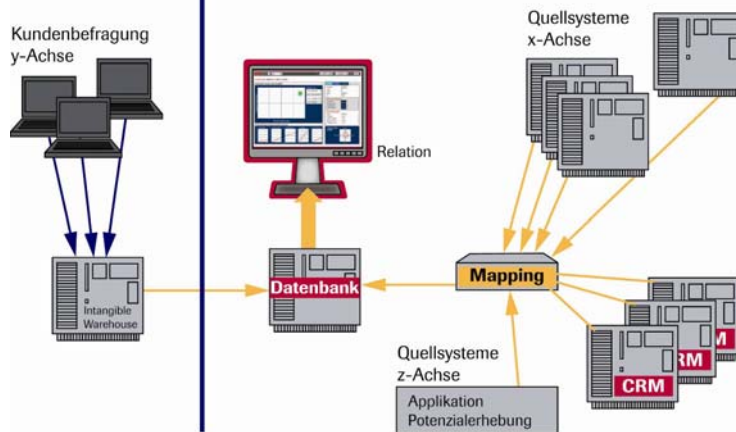
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## Vector Type 1 (practical application)

**Asking customer**  
(Internet)

**Decision cockpit**  
(links internal economic data with answers of customers)



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## Vector Type 2: Linking „objective“ with „subjective“ axis

subjective  
(intangible) view

intrinsic value

use value of  
investment for  
investor A

$$uv A = \sqrt{(p A)^2 - (bv)^2}$$

use value of  
investment for  
investor B

$$uv B = \sqrt{(p B)^2 - (bv)^2}$$

book value

price investor B  
is willing to pay

price investor A  
is willing to pay

objective (financial) view

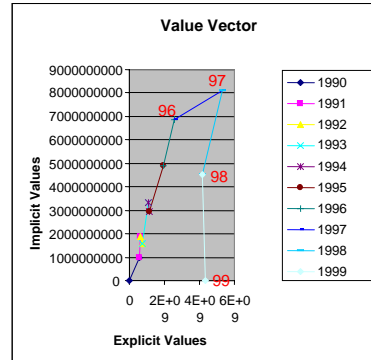
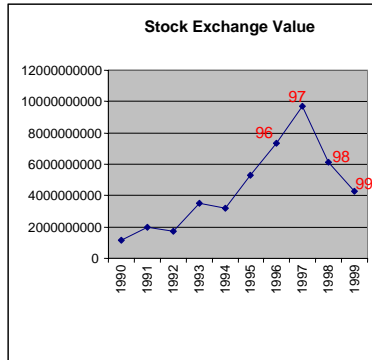
price

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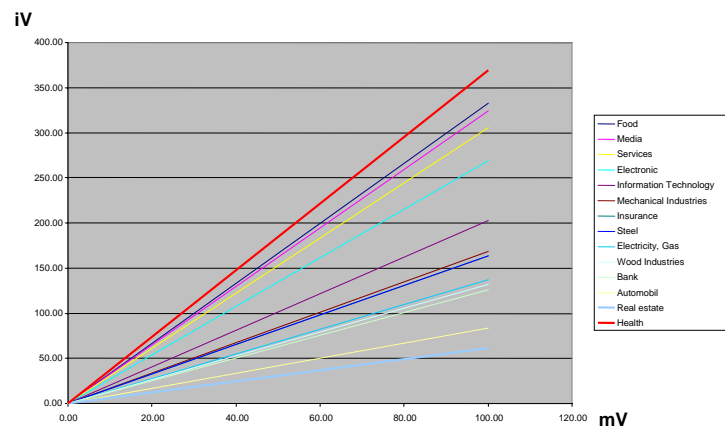
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## Overpriced Papers? Is the Vector a prognostic tool?

....a year before the downturn of the classic curve....  
 ...the Vector Map indicated a change of Coca Cola Amatil.....

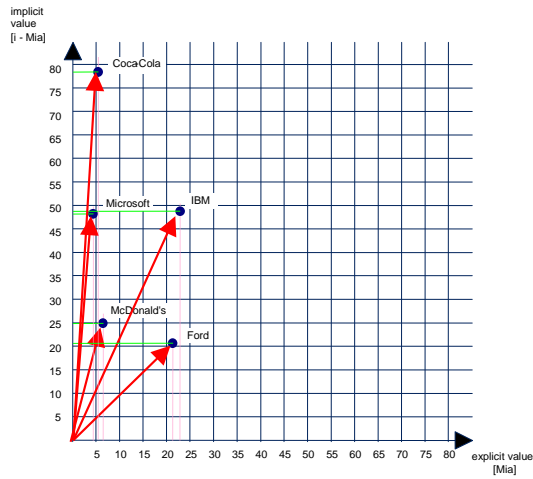


## 14 types of industry (Sveiby)



Source: Morgan & Stanley Capital International World Index; Cited in: Sveiby, Wissenskapital; Seite 23; Mi-Verlag 1998

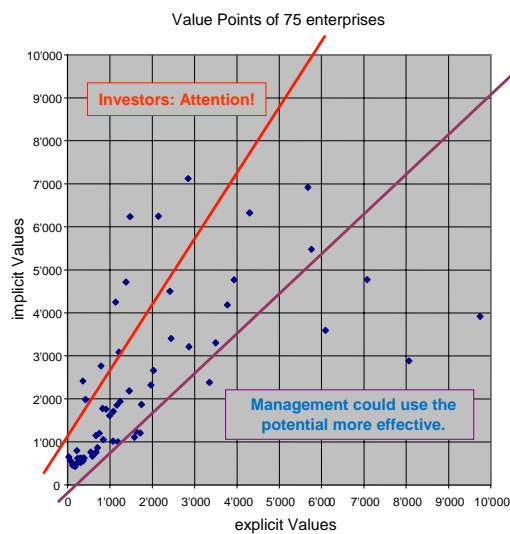
## Intangible Assets or Shareholders Profit Expectation?



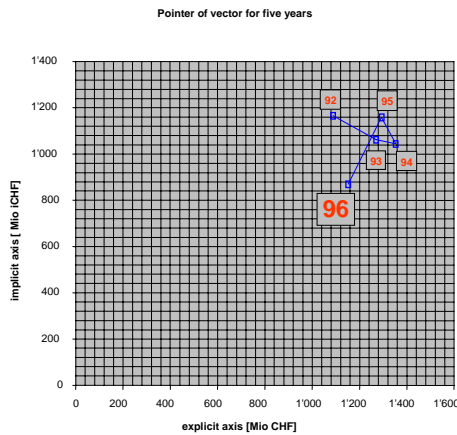
The explicit Value and the implicit Value together draw a complete picture about the company's value and its development.

The question remains:  
Is the implicit Value given by the real Value of the company?  
Is it given by some marketing tricks?  
Which part of it is made by the Shareholders Value Expectation?

## A better model for new decisions



## Tracking the development of an enterprise



Question:  
"What happened in the year 1996?"

Answer:  
Part of enterprise sold.

2<sup>nd</sup> Question:  
Is this loss of intangible values compensated by the price received for the sold part of enterprise.

Answer: ?

→ Ask Auditor – if he's still available....

## Summary

When you can measure what you are speaking about and express it in numbers, you know something about it; but when you cannot measure it, when you cannot express it in Numbers, your knowledge is of meagre and unsatisfactory kind.  
Lord Kelvin

With **Vector 1** it is possible to show any desired **values in context**.

With **Vector 2** it is possible to introduce a **standard for subjective values**.

After the **relativity of time** for the **physicists** 100 years ago, an analogical step can be made by **economists** with the **relativity of value**.

It will enable a more sustainable economy.

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«Many of the patterns of nature we can discover only **after** they have been constructed by our mind.»

Friedrich von Hayek

I am very **optimistic**, that the economic theory will reach a higher level of applicability.

An **enhanced economic paradigm** (in that intangibles and subjective values will count) will **improve the reasoning and decision process** and in it's consequences will **enable a new dimension of wealth**.

Tree samples of influence we see at that time:

## Four Main Points

### 1. Structure of Enterprise

3 Offerings  
7 Processes  
6 Primary-Resources

### 2. Measures and Metrics

Enhanced System of Measures  
that Integrates Intangibles  
and Subjective Metrics

### 3. Strategy of Enterprise

Outside-In  
and  
Inside-Out

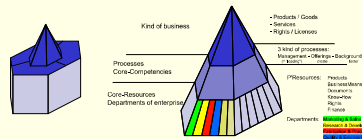
### 4. Optimizing Value Net

From  
supplier of supplier  
to  
customer of customer

## Four Main Points

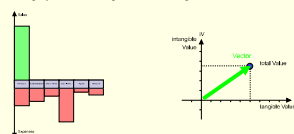
### 1. Structuring the Elements of a Corporation

Three levels: Offerings, Processes, Prerequisites



### 2. Quantifying means (numbers and indicators)

- from P&L account to the P&L profile  
- Numbering system for tangible and intangible values



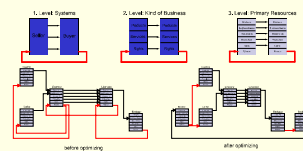
### 3. Development of enterprise (Strategies, options...)

- Market-oriented (outside-in) and offerings-oriented (inside-out)

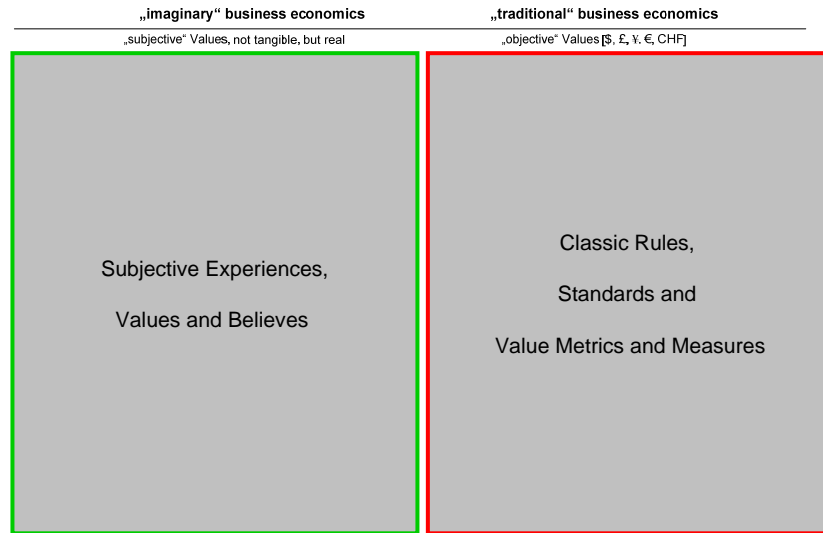


### 4. Closed Loop Business Relations

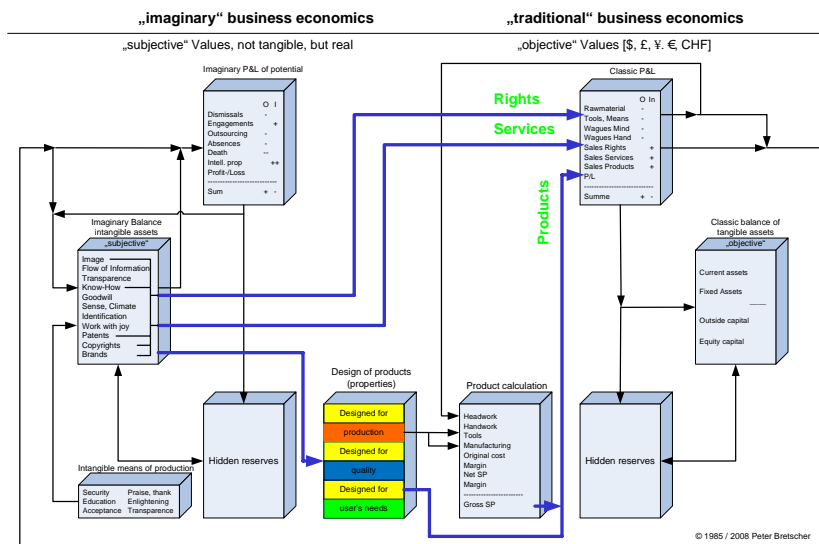
- planning, design, optimize Value Adding Net [VAN]  
- from the supplier of the supplier to the customer of the customer



## Back- and Frontside of the Economics MindSet



## Back- and Frontside of the Economics MindSet



# Pricing Values?

## Economic Value Architecture & Engineering

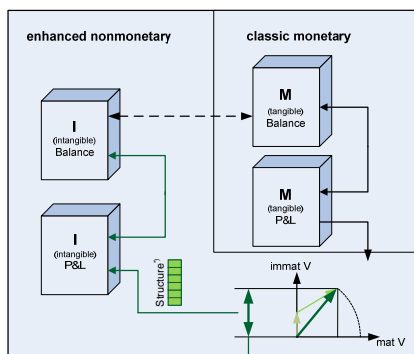
Tangible and intangible  
**assets** of an enterprise,  
**potential** of an enterprise,  
**values** of an enterprise

Market for **Papers**  
 (Stock-Exchange)

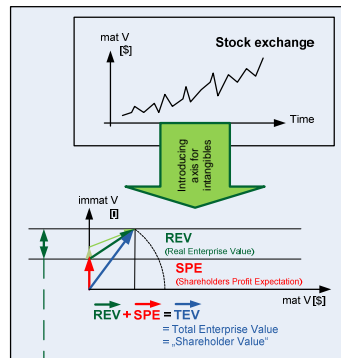
How to determine „fair value“ (price) for a paper?

# Pricing Values?

## Economic Value Architecture & Engineering



<sup>7</sup> As for example:  
 BSC, EVA, BIG, UPR, B'E...



And now?

A long journey begins with just one step.

Chinese

You are welcome and invited to take part of that journey.

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39

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Beyond Limits of Classic Business Paradigms

# Thank You

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Twitter <http://twitter.com/peterbretscher>  
Special Website <http://www.bengin.net/dresden/>

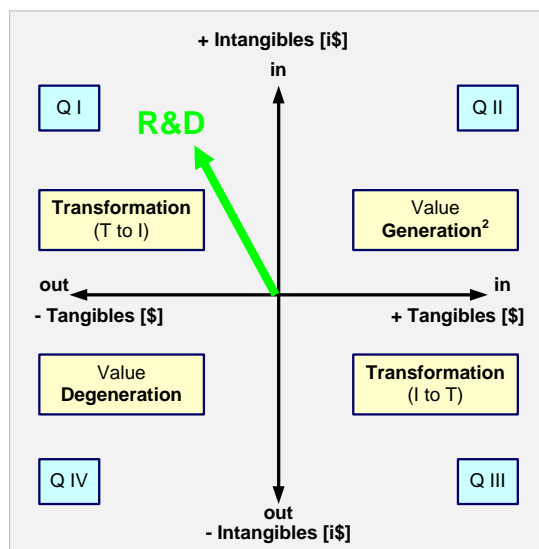
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# backing slides

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## The four Quadrants of Value generation



### Q I: Transform -T/+I

- New projects
- Revisions of offerings
- Insourcing/merging
- ....

### Q II: Generation +T/+I

- Daily business
- Selling, dispatch
- (Re)Production
- ....

### Q III: Transform -I/+T

- Outsourcing
- Leaner production
- ....

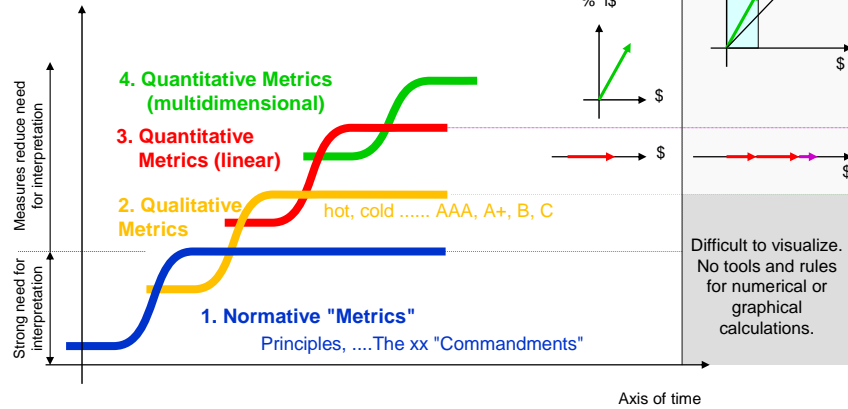
### Q IV: Degeneration -I/-T

- Graveyard
- ....

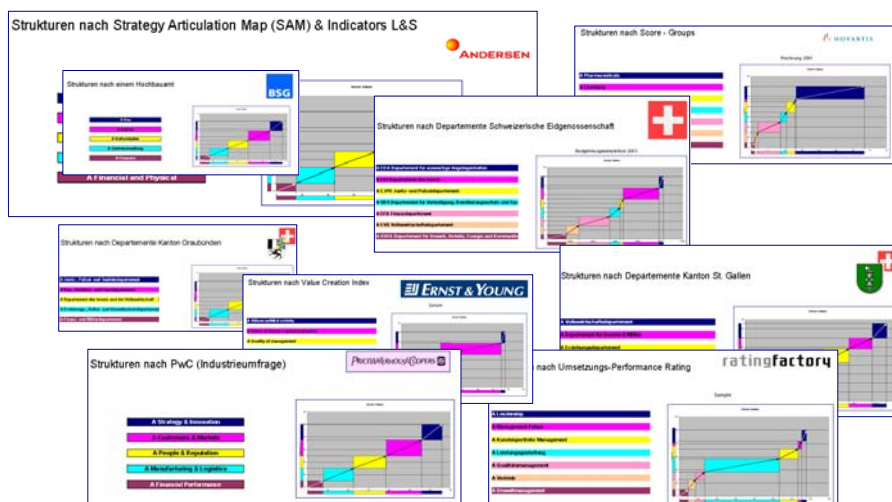
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## Development of (economic) Value-Metrics (Compound Value-Metric System with the subjective, implicit Value axis)

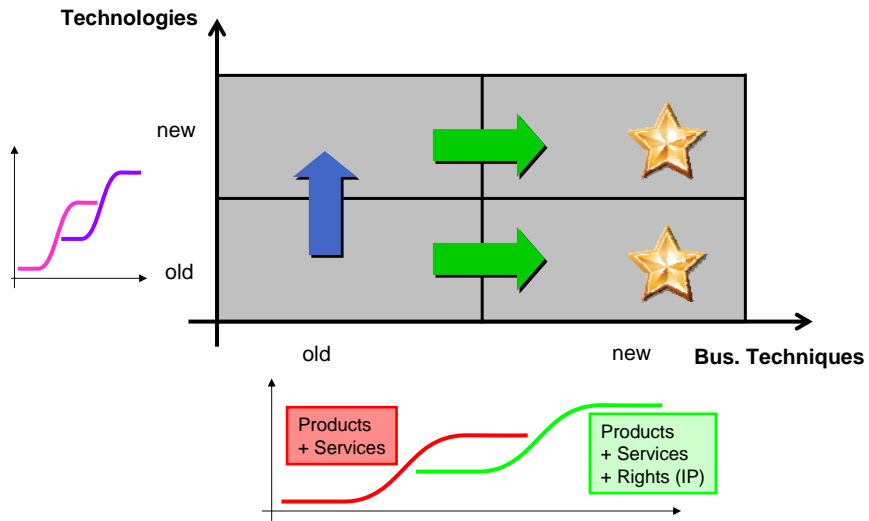
Why Metrics?  
 - comparing, comprehensible, reproducible  
 - Making rationale (and indirect) communication easier.



## Von verschiedenen Organisationen in verschiedenen Projekten



## Innovating Business Models



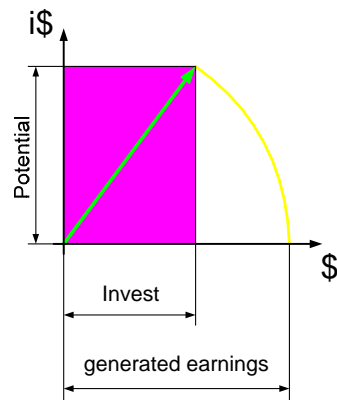
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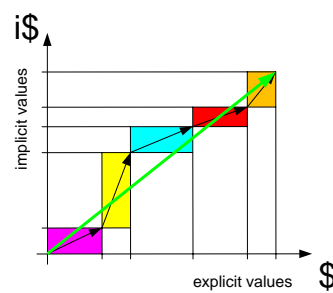
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## Measuring performance

### Creating Values



### Counting Values



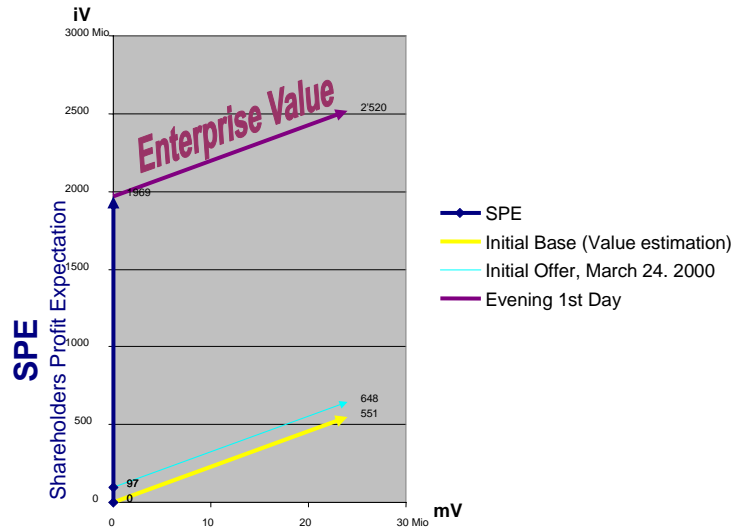
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<http://www.performanceprofile.com>  
<http://www.balancedscoremap.com>

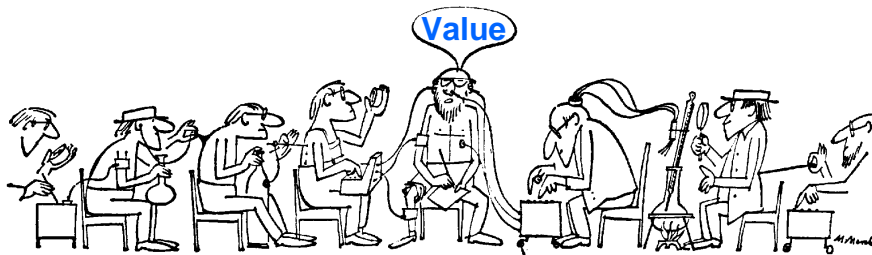
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46

## Value (Price) Development of Paper (Shareholders view)

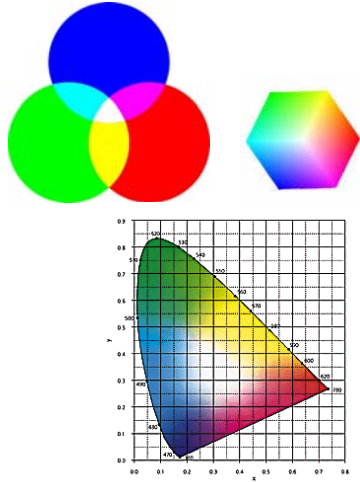


## Explained world

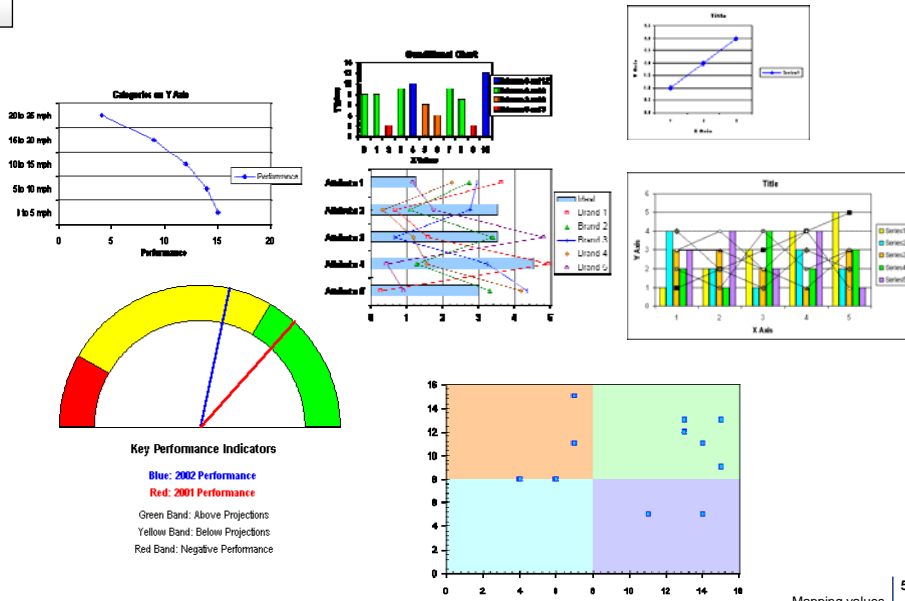


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Manager Magazin 3/85

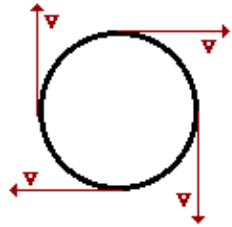
## Color measures



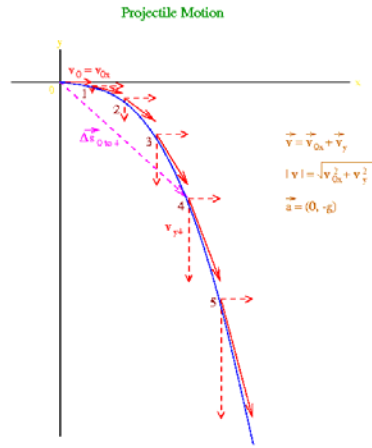
## 1D – 2D rulers, metrics



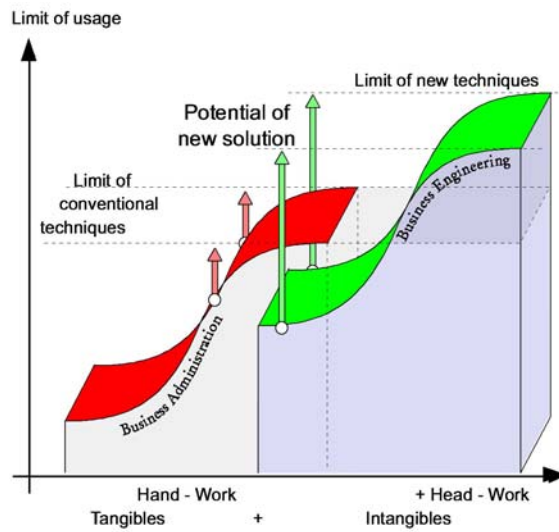
## Vector: Velocity



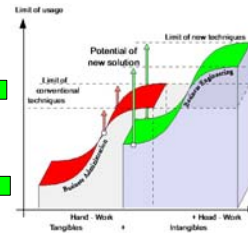
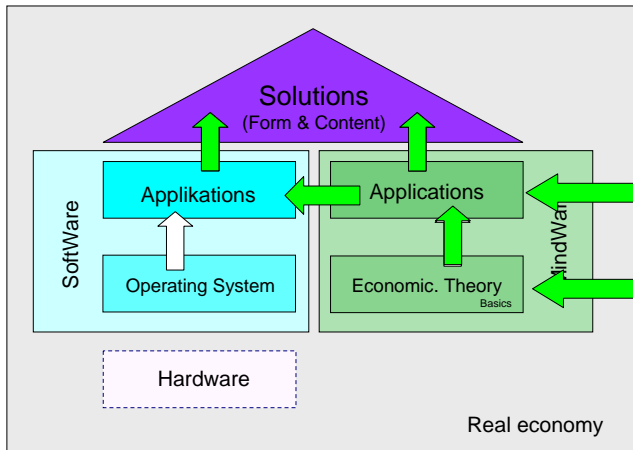
The direction of the velocity vector at every instant is in a direction tangent to the circle.



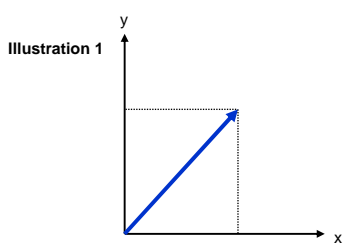
## Next step: Focus on economic MindSetting / Paradigms



New MindWare & SoftWare → quantum leap in the simulation and planning of today's economy.

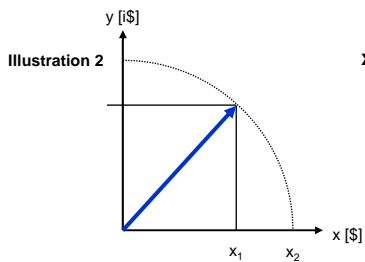


## Basics of 2D-Value-Vector



$x, y =$  two arbitrary properties of an object

x	y	x	y
Cost	Price	Turnover	Volume [m <sup>3</sup> ]
Transports initialized	Transports finished	Cost	Deckungsbeitrag
Budget	Rechnung	Price	Retouren
Medical Properties	Subjective condition	Turnover	Mitarbeiterzufriedenheit
Turnover	Sparten gewichtet	Retouren	Kundenzufriedenheit



$x, y =$  explicite ("objective") and implicite ("subjective") Value-Properties as a Multi-Value-Compound.

$x_1$	$x_2$	Samples
Sum of balance	Sum of Share Price	Shareholder Value
Wagues	Turnover	Weighted added Value
Price VW	Price Porsche	Subjective Added Value