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Advanced Tools for Visualizing, Measuring and Managing Intangibles

5th 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.
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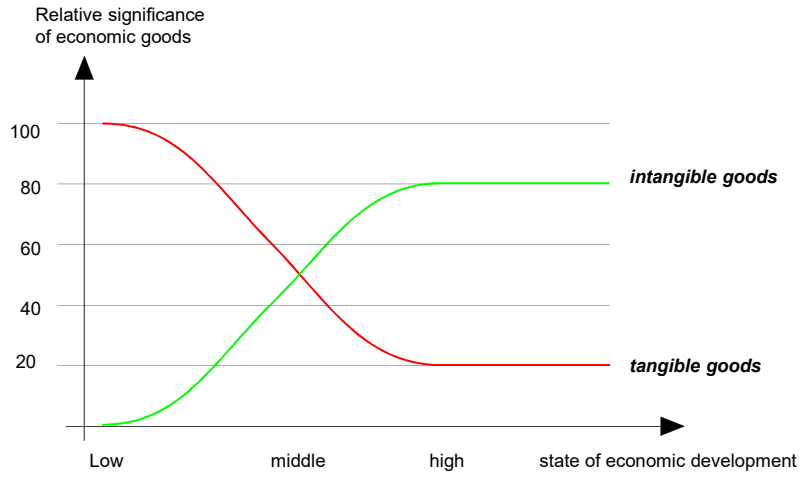
  Website: http://www.bengin.com/, Blog: http://www.bengin.net/wp/, Twitter: http://twitter.com/peterbretscher

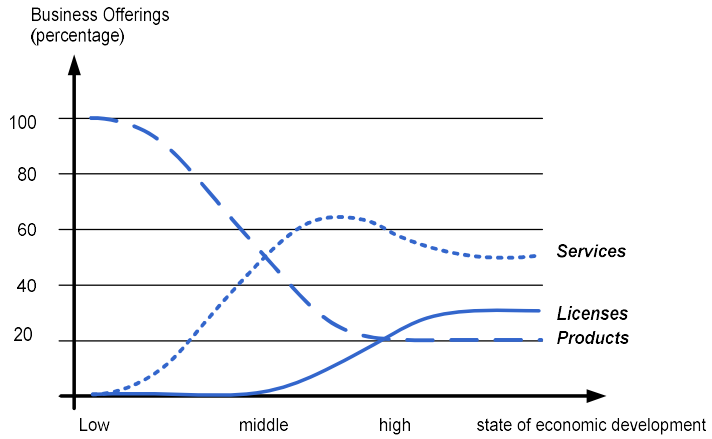
Agenda

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- **Two Outdated Paradigms Revised**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

Development of economic assets



Development of Business Offerings



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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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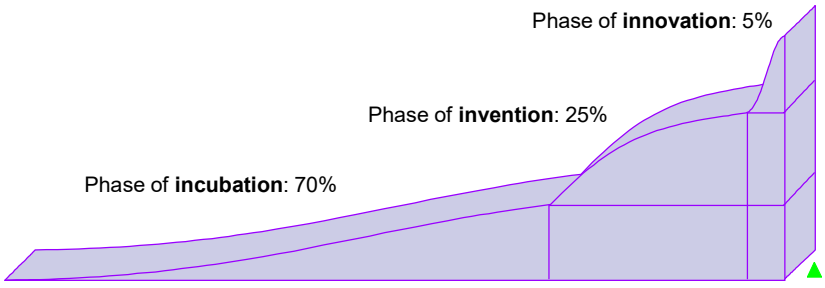
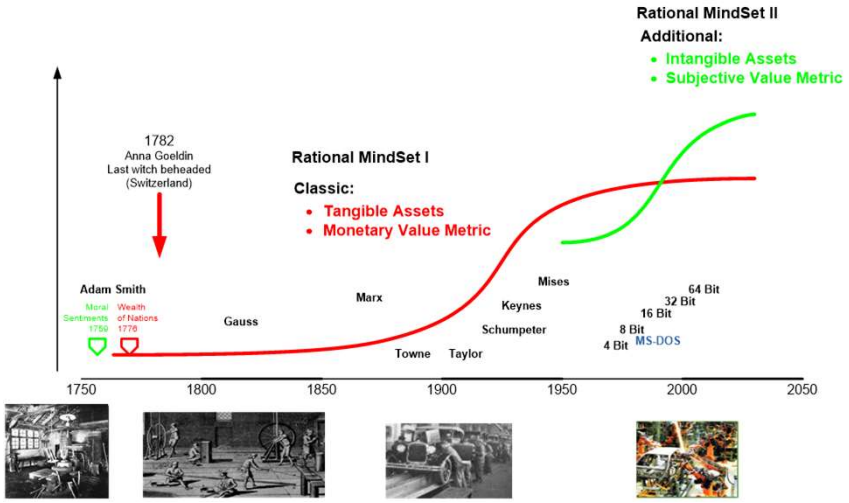
Idea to Innovation



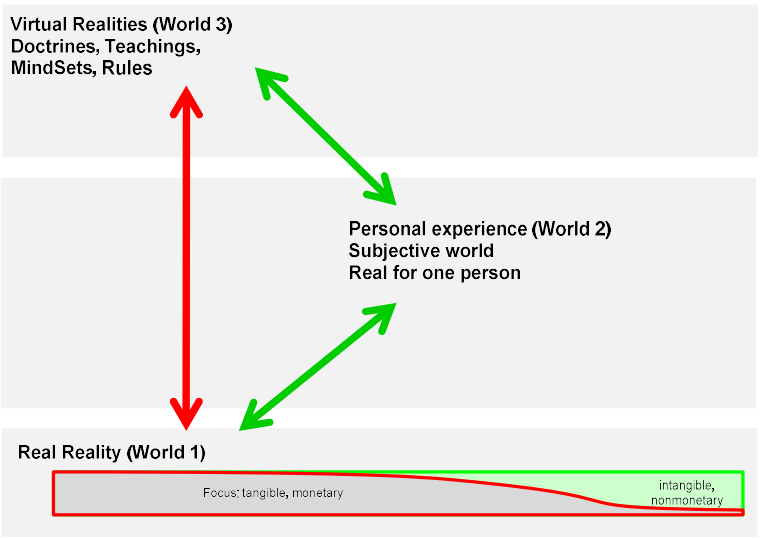
Examples:

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

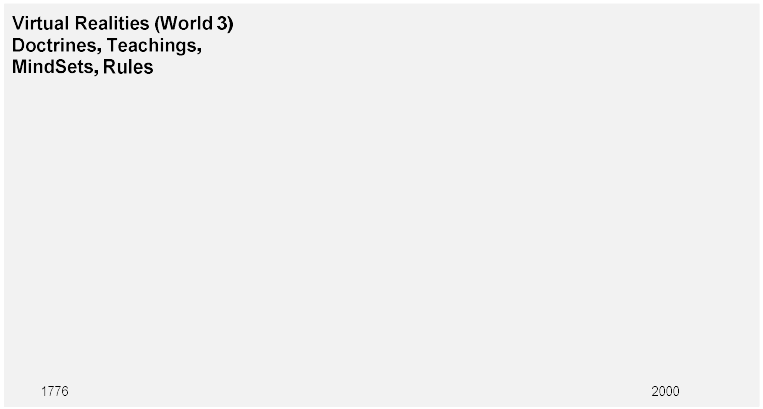
Development of Business Theory
(S-Curve of Product Development)



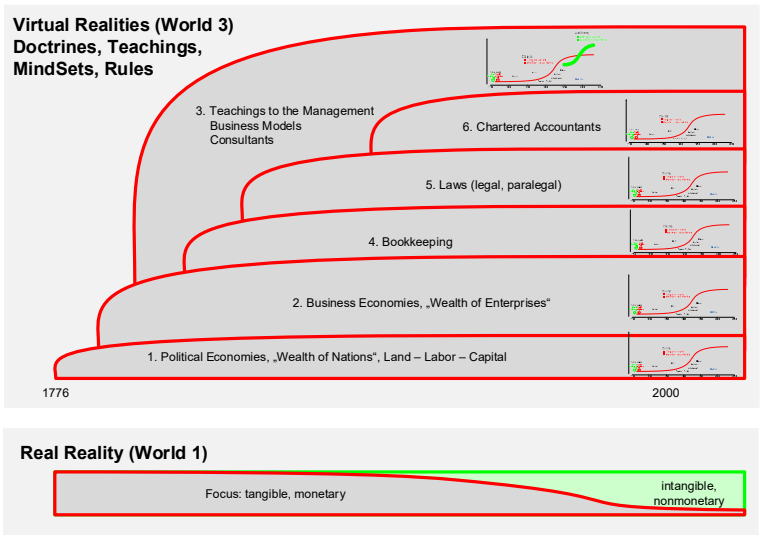
Three Worlds – trigger for invention?



World 3: Six interdependent fields



World 3: Six interdependent fields



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 divised 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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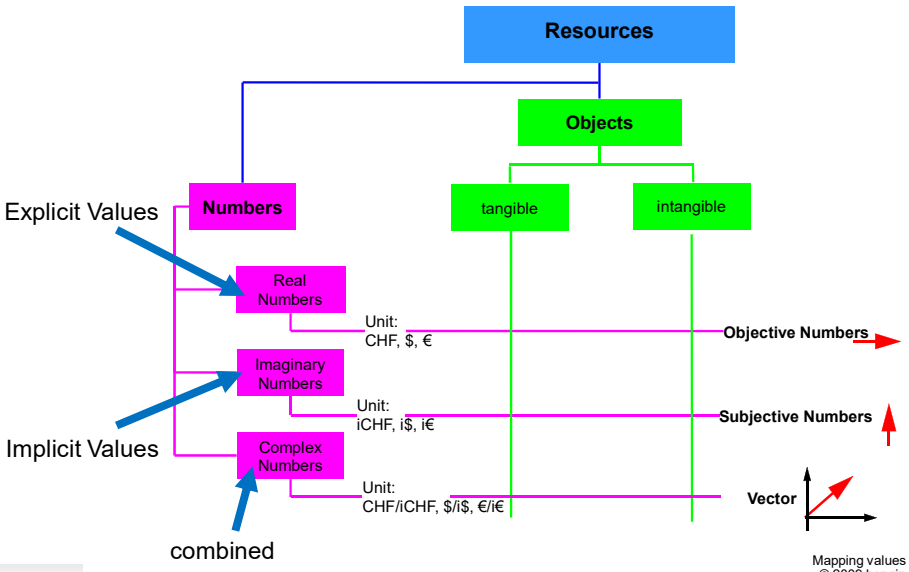
Enhancing Paradigms

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. **Land, Labor, 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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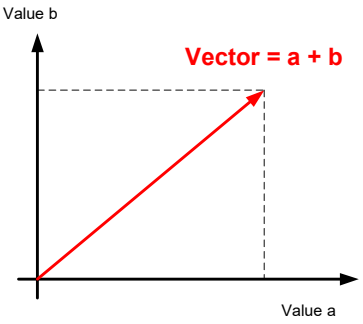
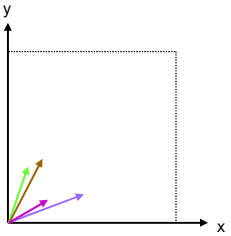
The Vector

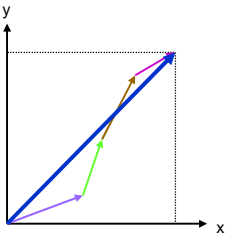
Single 2D-Vector



4 vectors of objects



Adding vectors



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Mapping values
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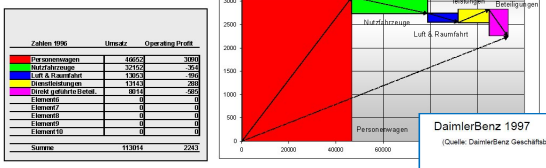
Vector Type 1

DaimlerBenz 1996

(Quelle: DaimlerBenz Geschäftsbericht 1997)

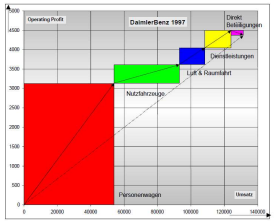


Zahlen 1996	Umsatz	Operating Profit
Personenwagen	46652	3080
Nutzfahrzeuge	32152	-354
Luft & Raumfahrt	13853	-596
Dienstleistungen	13143	288
Direkt gefuhrte Betell.	8814	-585
Element6	0	0
Element7	0	0
Element8	0	0
Element9	0	0
Element10	0	0
Summe	113814	2243

Die strichlierte Linie zeigt das durchschnittliche Verhältnis von "Operating Profit" zum "Umsatz".
Flachere Vektoren zeigen eine unterdurchschnittliche und steilere Vektoren eine überdurchschnittli

DaimlerBenz 1997

(Quelle: DaimlerBenz Geschäftsbericht 1997)



Zahlen 1997	Umsatz	Operating Profit
Personenwagen	55892	3132
Nutzfahrzeuge	35140	481
Luft & Raumfahrt	15096	432
Dienstleistungen	15456	457
Direkt gefuhrte Betell.	7866	-124
Element6	0	0
Element7	0	0
Element8	0	0
Element9	0	0
Element10	0	0
Summe	131371	4372

Die strichlierte Linie zeigt das durchschnittliche Verhältnis von "Operating Profit" zum "Umsatz".
Flachere Vektoren zeigen eine unterdurchschnittliche und steilere Vektoren eine überdurchschnittliche Performance.

More samples:

http://bh.bengin.com

https://www.bengin.net/soft/vektorbeispiele01_d.htm

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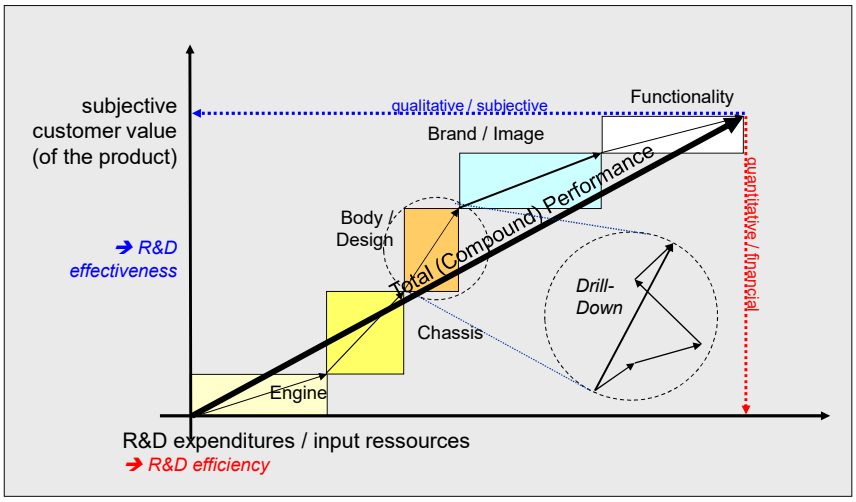
Vector Type 1 (Aggregation and Drilldown)



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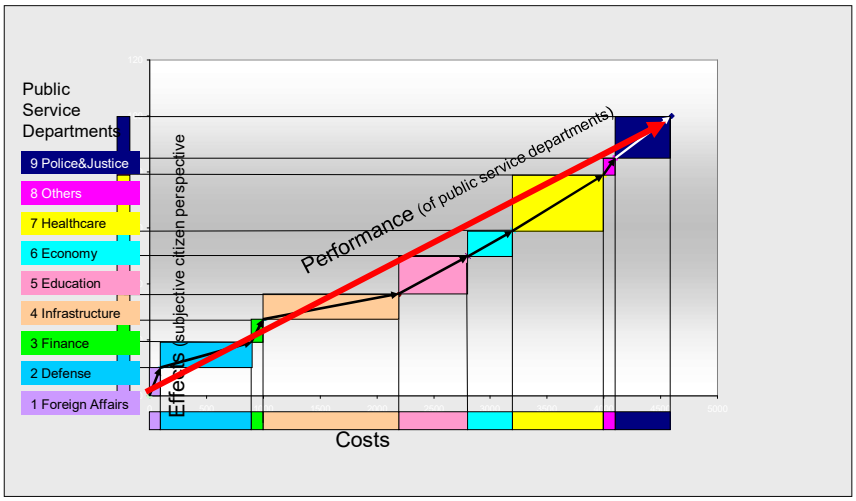
Vector Type 1 (Public Service Departments)



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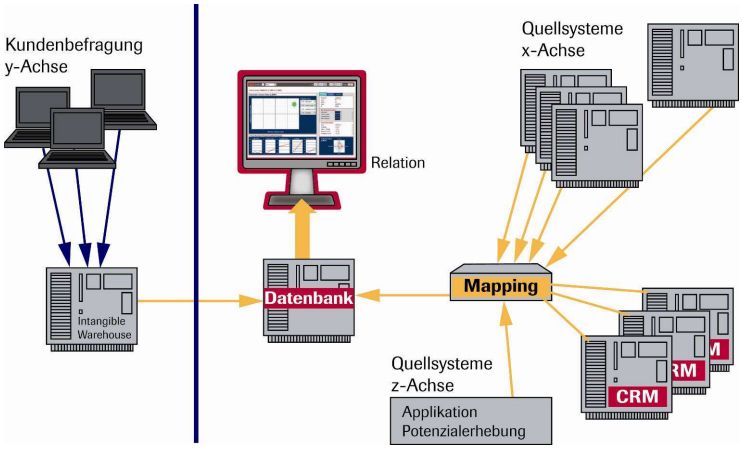
Vector Type 1 (practical application)

Asking customer
(Internet)

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



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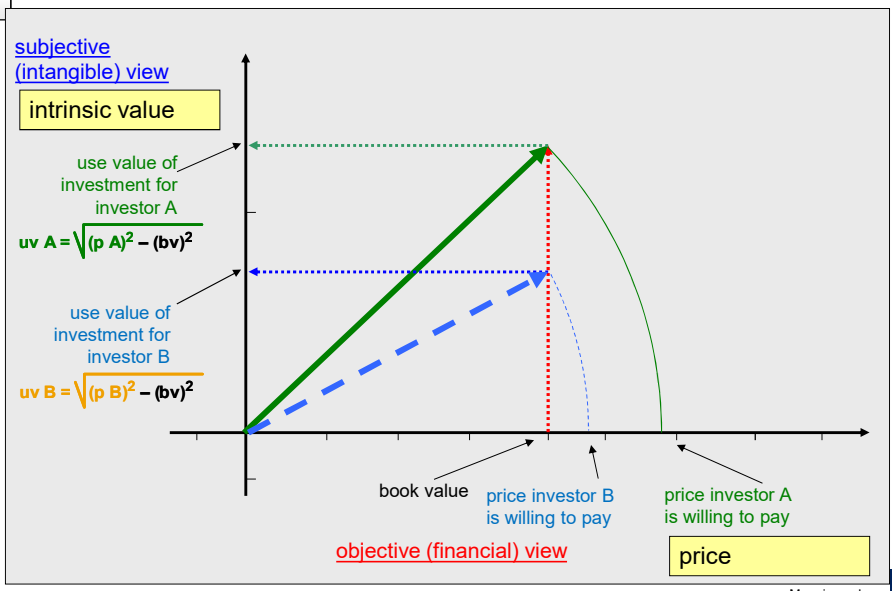
Vector Type 2: Linking „objective“ with „subjective“ axis



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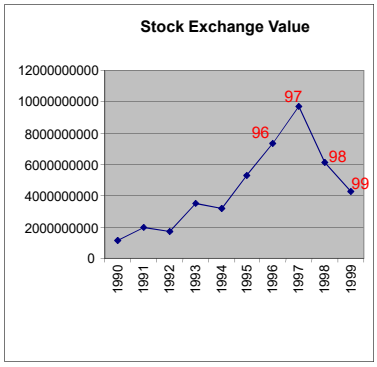
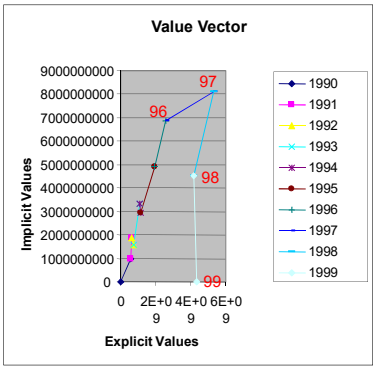
Overpriced Papers? Is the Vector a prognostic tool?

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





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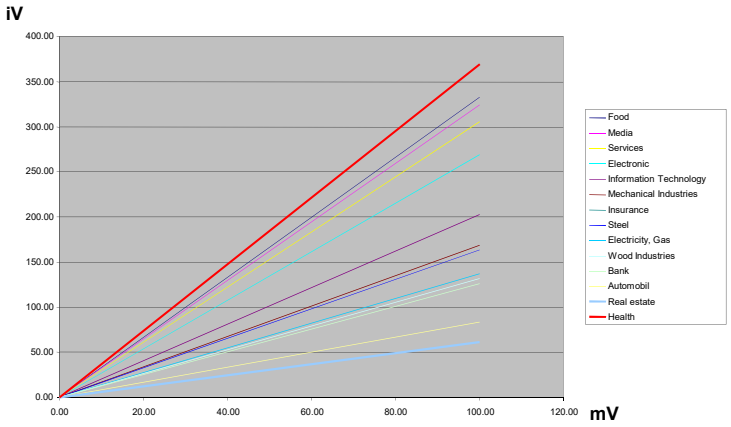
14 types of industry (Sveiby)



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

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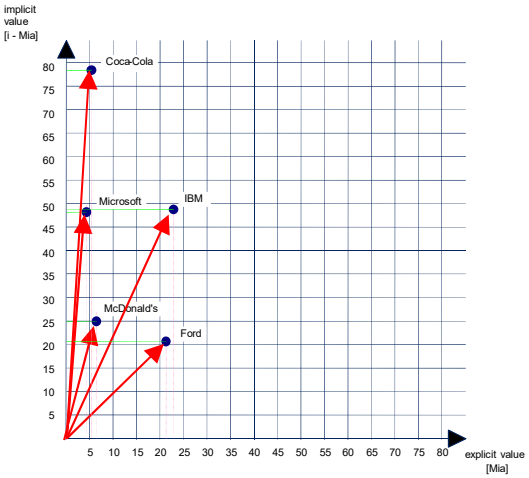
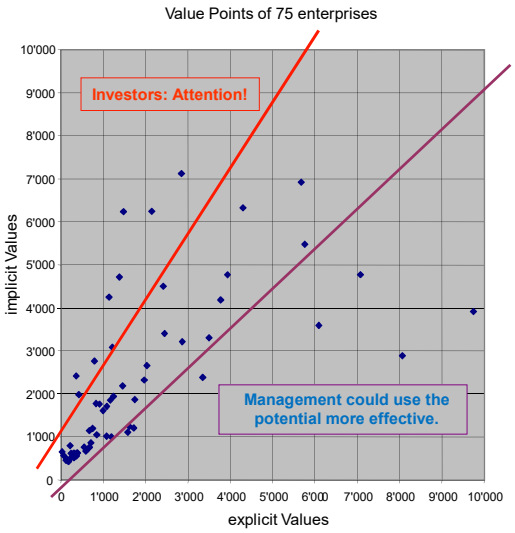
Intangible Assets or Shareholders Profit Expectation?



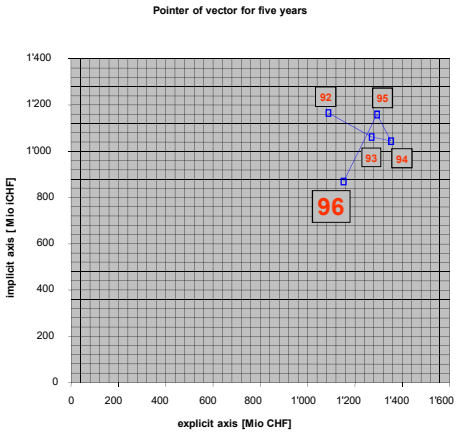
The explicit Value and the implicit Value together draw a complete picture about the company's value and its development.

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.

2nd 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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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**.

Three 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

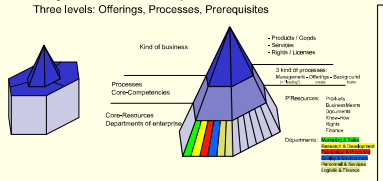
Outside-In
and
Inside-Out

4. Optimizing Value Net

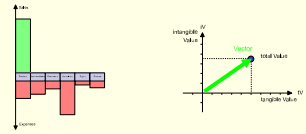
From
supplier of supplier
to
customer of customer

Four Main Points

1. Structuring the Elements of a Corporation
Three levels: Offerings, Processes, Prerequisites

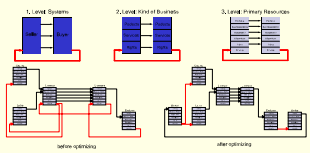


2. Quantifying means (numbers and indicators)
- from P&L account to the P&L profile
- Numbering system for tangible and intangible values

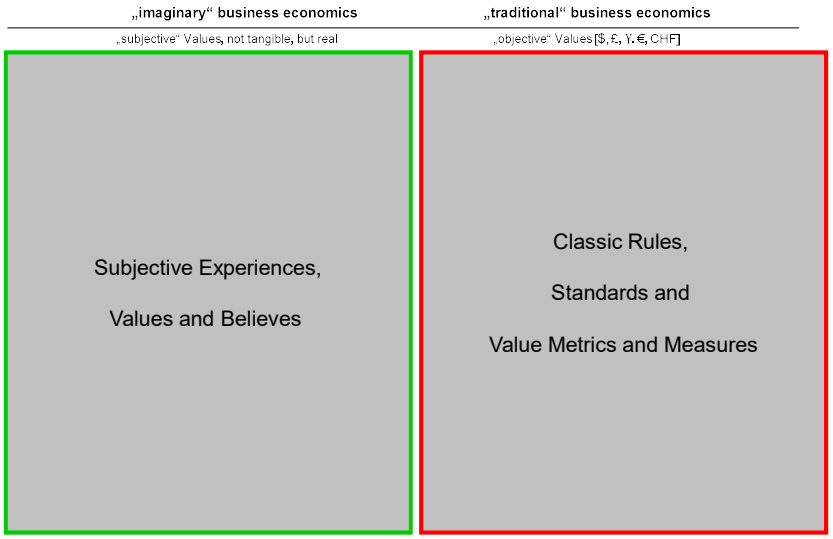


3. Development of enterprise (Strategies, options...)
- Market-oriented (outside-in) and offerings-oriented (inside-out)

4. Closed Loop Business Relations
- planning, design, optimize Value Adding Net [VAN]
- from the supplyer of the supplyer to the customer of the customer



Back- and Frontside of the Economics MindSet



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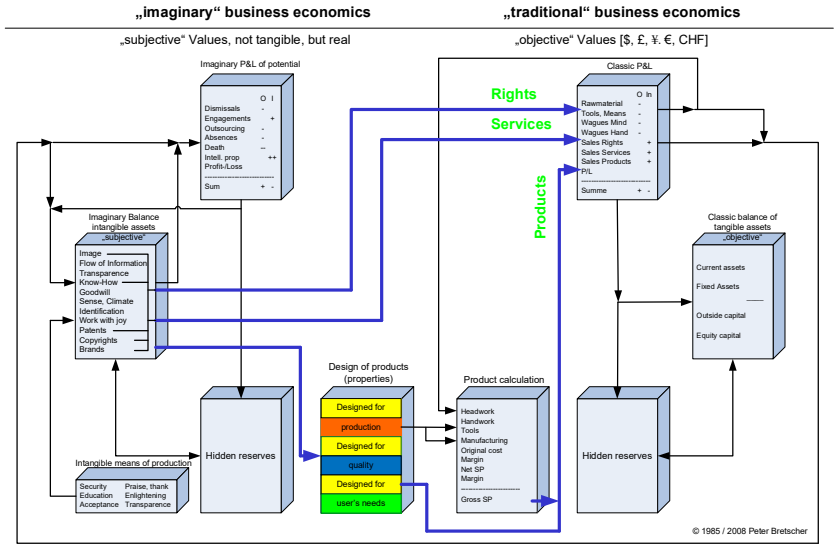
Back- and Frontside of the Economics MindSet



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Pricing Values?

Economic Value Architecture & Engineering

Tangible and intangible

assets of an enterprise,

potential of an enterprise,

values of an enterprise

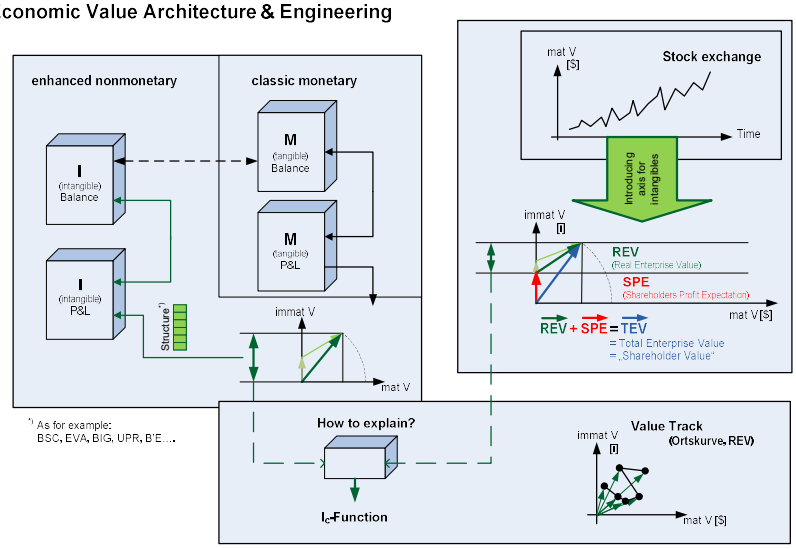
Market for **Papers**

(Stock-Exchange)

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

Pricing Values?

Economic Value Architecture & Engineering



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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Eggersriet, Switzerland

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Beyond Limits of Classic Business Paradigms

Thank You

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Blog https://bengin.net/wp/
Twitter https://twitter.com/peterbretscher
Special Website https://bengin.net/dresden/

backing slides

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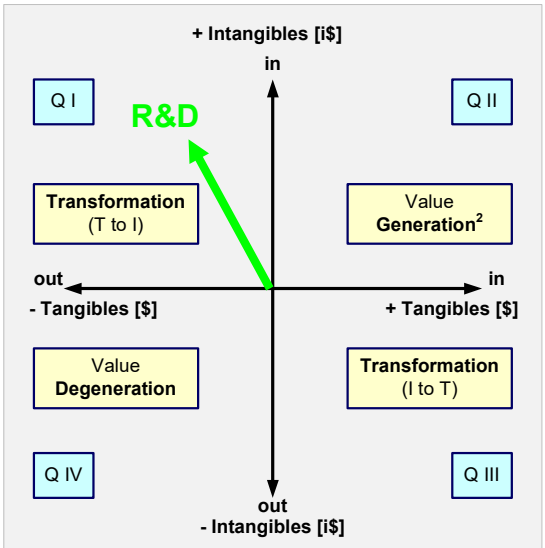
The four Quadrants of Value generation



Q I: Transform -T/+I
- New projects
- Revisions of offerings
- Insourcing/merging
- ....

Q II: Generation +T/+I
- Daily business
- Selling, dispatch
- (Re)Production
- ....

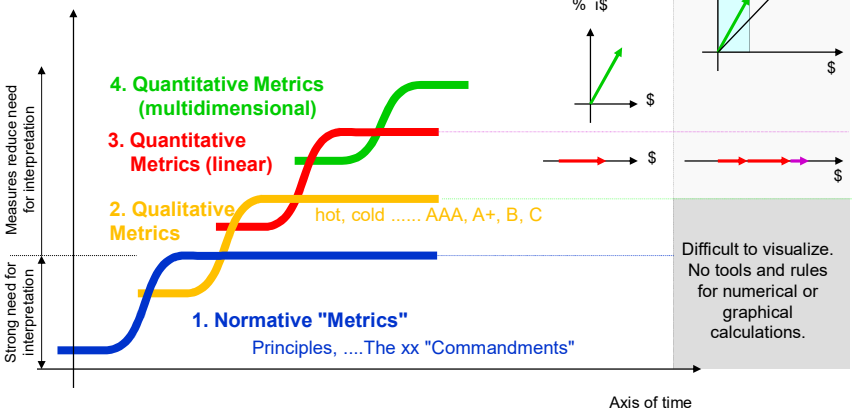
Q III: Transform -I/+T
- Outsourcing
- Leaner production
- ....

Q IV: Degeneration -I/-T
- Graveyard
- ....

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.



Possible to calculate with and visualize 2D-Values

Difficult to visualize. No tools and rules for numerical or graphical calculations.

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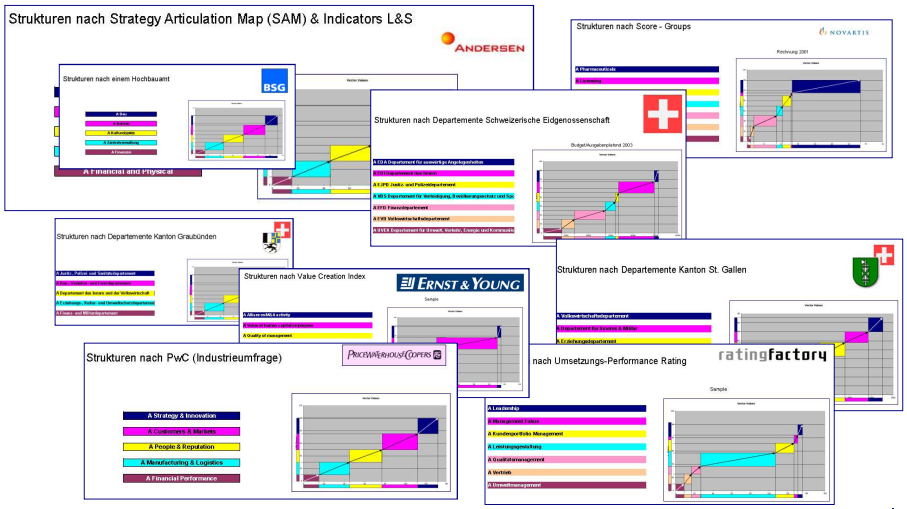
Von verschiedenen Organisationen in verschiedenen Projekten



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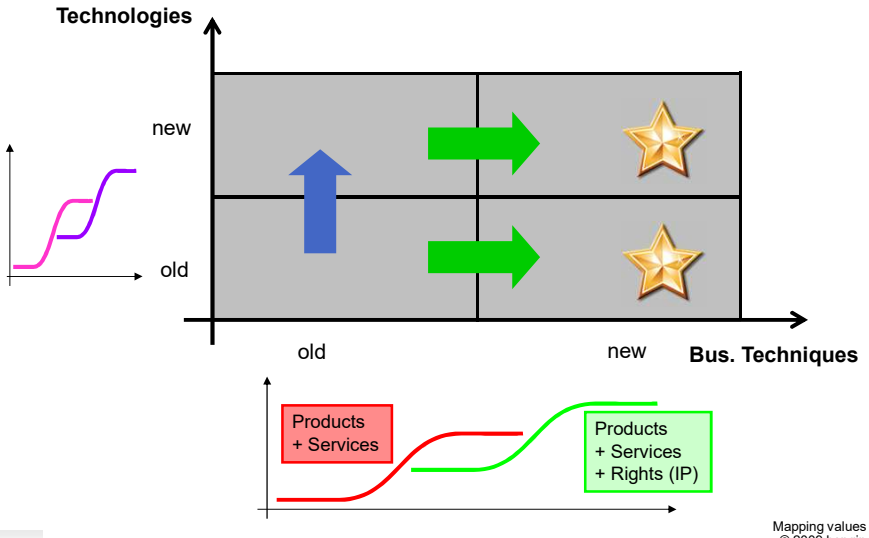
Innovating Business Models



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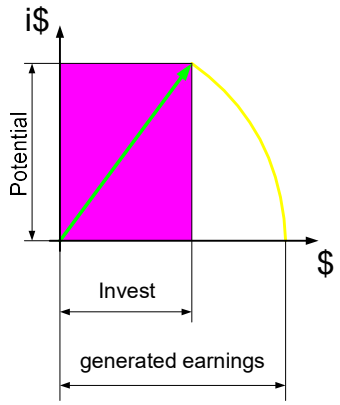
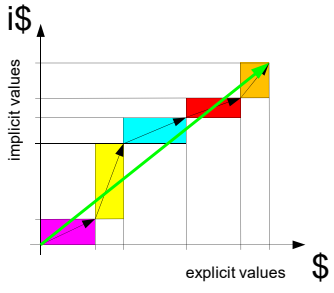
Measuring performance

Creating Values



Counting Values



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

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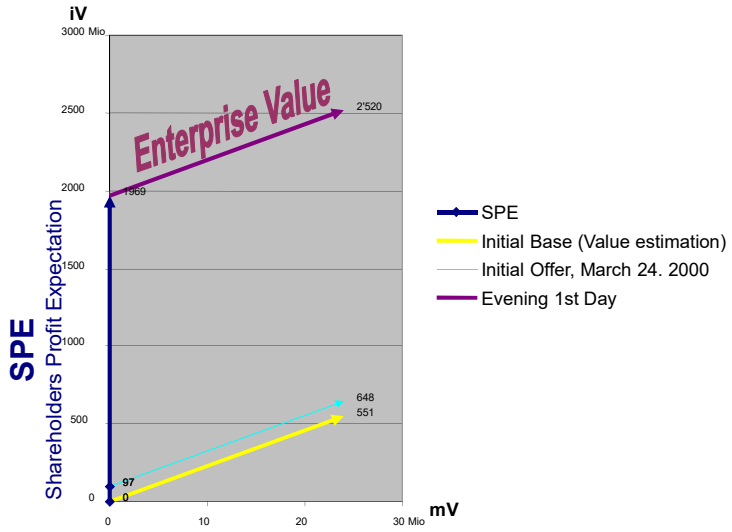
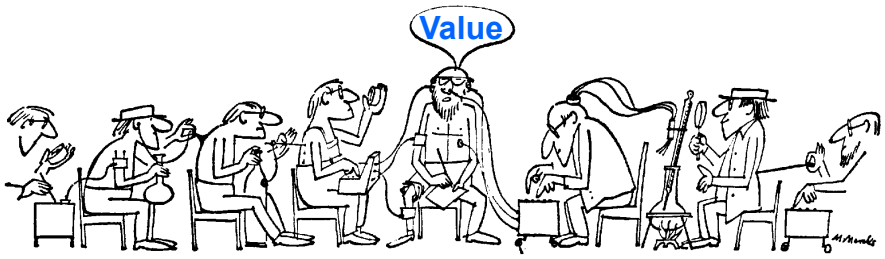
Value (Price) Development of Paper
(Shareholders view)

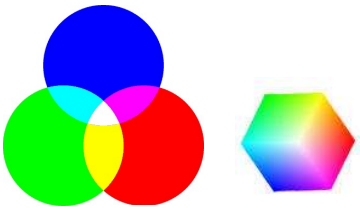


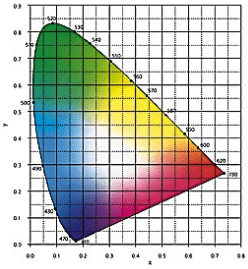
Explained world



Nach: Marie Marks,
Manager Magazin 3/85

Color measures





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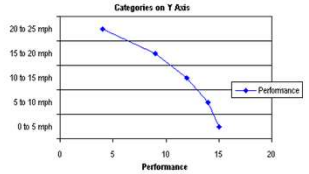
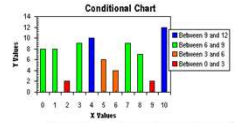
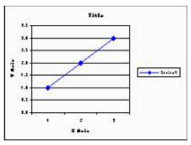
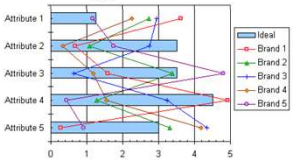
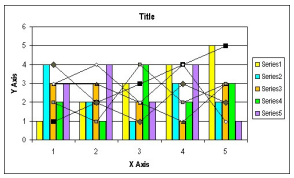
1D – 2D rulers, metrics

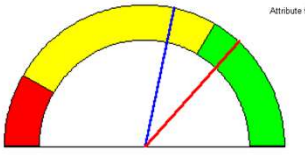






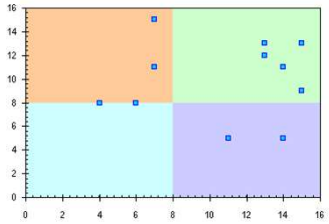






Key Performance Indicators

Blue: 2002 Performance
Red: 2001 Performance
Green Band: Above Projections
Yellow Band: Below Projections
Red Band: Negative Performance



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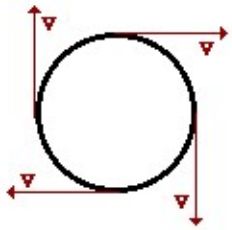
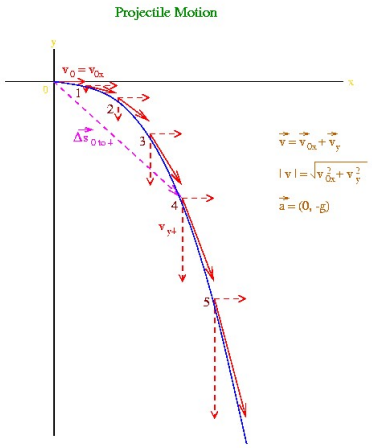
Vector: Velocity



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



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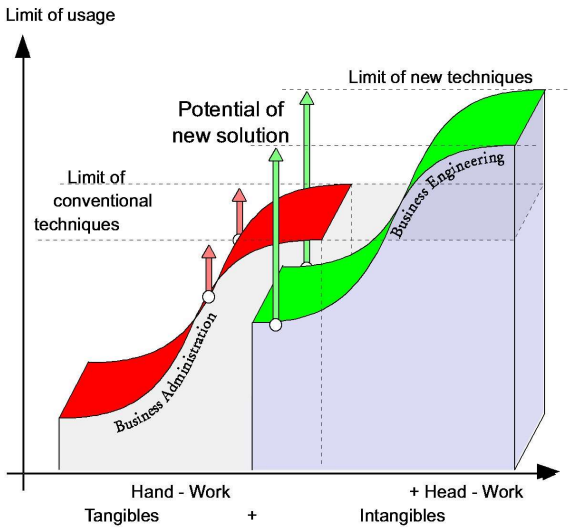
Next step: Focus on economic MindSetting / Paradigms



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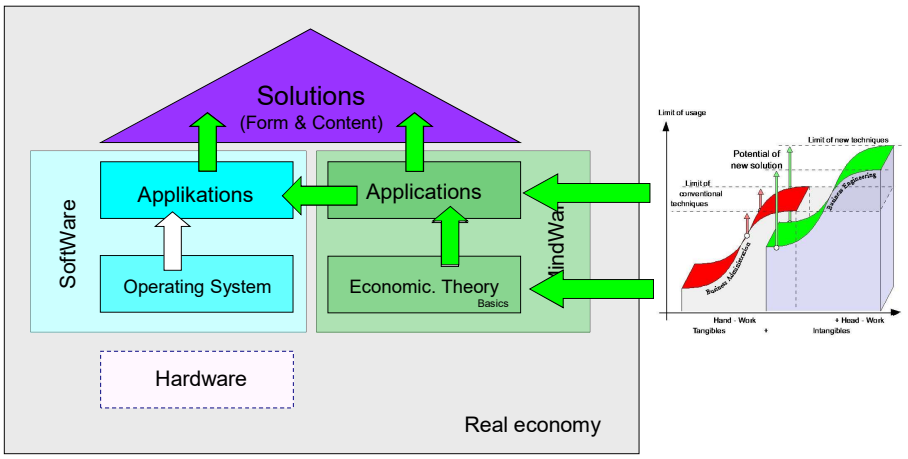
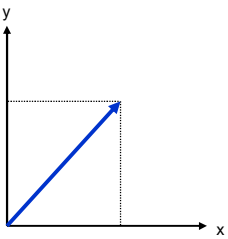
New MindWare & SoftWare → quantum leap in the simulation and planning of todays economy.



Basics of 2D-Value-Vector

Illustration 1

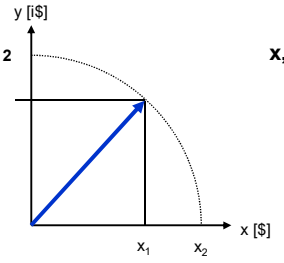


x, y = two arbitrary properties of an object

x	y
Cost	Price
Transports initialized	Transports finished
Budget	Rechnung
Medical Properties	Subjective condition
Turnover	Sparten gewichtet

x	y
Turnover	Volume [m³]
Cost	Deckungs-beitrag
Price	Retouren
Turnover	Mitarbeiter-zufriedenheit
Retouren	Kunden-zufriedenheit

Illustration 2



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