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

Juergen H. Daum, Chief Solution Architect, SAP AG, Walldorf, Germany
Peter Bretscher, Ing. Büro für Wirtschaftsentwicklung, Eggersriet, Switzerland


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 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 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: http://www.bengin.com/

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**

**Seller’s Market**
(until the 1970s)

- **industrial economy**
  - (car production in the 1920s)
- **Customer focus:**
  - availability
  - (absolute) price
- **Managerial focus:**
  - production capacity
  - cost

**Focus on external Effectiveness**

**Buyers’ Market**
(since the 1970s)

- **knowledge economy**
  - (media production in the 2000s)
- **Customer focus:**
  - variety
  - subjective customer value
- **Managerial focus:**
  - innovation
  - customer relations

The consequence:
The transformation of the asset basis of corporations

**Energy + Industrial Assets**
- Machinery & equipment
- Physical Infrastructure
- Inventory

**Efficient Production**

**Knowledge + Intangible Assets**
- Human + Intellectual Capital
- Innovation power / R&D pipeline
- Brands and Relationships

**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.

- **Enterprise-Resources**
  - Financial Assets
  - Physical Assets
  - Intangible Assets
- **Relationship Assets**
  - Customer capital: brands, customer relations
  - Partner capital: supplier network, dealer network
- **Structural/Org.-Assets**
  - Business infrastructure: work procedures, processes, information systems etc.
  - Products / R&D capital
  - Intellectual property: patents, copyrights, etc.
- **Human Assets**
  - Individual know-how, professional and social competence, innovation & adaptation capabilities, - of employees and freelancers

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

Input R&D expenditures → **R&D** → Fin. Output: Revenues, Market Share & Profits
The challenge: value created is not a function of the amount of money that has been invested.

Input
R&D expenditures

R&D

Cust. Value:
Products that meet subjective customer values

Fin. Output:
Revenues, Market Share & Profits

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)

- “subjective temperature impression/rating”
  - “hot”
  - “normal”
  - “cold”

- Alfredo (South Italian)
- Lars (Nordic)

- “objective temperature”

Example 2: Price
(How much is Mrs. Miller willing to pay for her new dress?)

- “subjective” customer value
  - “expensive”
  - “normal”
  - “cheap”

- Dress from Designer Boutique
- Dress from Dep. Store
We are using subjective “measurement” all the time

Mrs. Miller’s product valuation

Dress from Dep. Store

Dress from Boutique

Brand / Designer Label

Design

Shop experience

Material

Intangible Values!

at this price Mrs. Miller would buy

“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)

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The concept of Vector-Based Performance Measurement & Visualisation

The Basics of the Concept

- Qualitative valuation (e.g., subjective customer value / customer satisfaction)
- Organisational effectiveness in satisfying customer demand and meeting customer expectations
- Monetary/quantitative valuation (e.g., cost, profit)
- Organisational efficiency in utilizing resources

α = sustainability indicator

Total (Compound) Performance

Qualitative / Subjective

Quantitative / Financial

Decreased efficiency

Increased efficiency
The concept of Vector-Based Performance Measurement & Visualisation

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

- Helps managers to keep tabs 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
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".

- 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)
**Application at Public Service Organisations**

„New Public Management“ of the Kanton Basel-Stadt/CH - Transformation: The Vector-Based Approach to Performance Measurement -

- **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)

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

Subjective Customer Value (of the entire offering)

Effect on Total (Compound) Performance

Operative Performance

R&D

Marketing / Sales

Financial Return

Subjective Customer Value (of the product)

R&D costs / input resources

Sales price achieved

Application at Car Manufacturers (OEMs)

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

- **Total (Compound) Performance**
  - Subjective Customer Value (of the entire offering)
  - Margin / ROI

- **Operative Performance**
  - R&D
  - Fulfillment
  - Marketing / Sales

- **Performance of Resource Management**
  - R&D Process KPIs
  - Fulfillment Process KPIs
  - CRM Process KPIs

Application at Software Companies
Application at Software Companies

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

Customer Engagement Process Steps:
- 9 Maintenance
- 6 Others
- 7 System Optimization
- 6 Go Live Check
- 5 User Training
- 4 Implementation
- 3 Prototyping
- 2 Blueprint
- 1 Opportunity Investigation

Performance (in customer engagement process)
Costs
Effects
(= customer value created)

Application in Enterprise Valuation
Application in Enterprise Valuation

subjective (intangible) view

intrinsic value

use value of investment for investor A

$uv_A = (p_A)^2 - (bv)^2$

objective (financial) view

price

book value

price investor A is willing to pay

price investor B is willing to pay

Use value of investment for investor A

price investor A is willing to pay

price investor B is willing to pay
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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Example of a Consumer Products Company

- **Enterprise value:**
  - mid 1980s: 1.2 Bn
  - mid 1990s: 3.5 Bn
  - 2004: 8.8 Bn

- Internally created Intangibles (e.g. brands) + realized acquisition synergies
- Goodwill + acquired Intangibles (e.g. brands)
- Tangible Assets + Working Capital

```
mid 1980s
1.2 Bn
```
```
mid 1990s
3.5 Bn
```
```
2004
2.5 Bn
```
```
2.0 Bn
```
```
2.5 Bn
```
```
8.8 Bn
```

- "Reach" of balance sheet = 19%!!
- "Reach" of traditional management accounting

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

Conclusion & outlook

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

- **History**
- **Book Value**
- **Market Value**
- **Future**

Required: Performance Measurement Systems that provide insight into the (intangible) value creation process
Conclusion & outlook

Organisations need today performance measurement systems that:

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

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<thead>
<tr>
<th>Ressource View</th>
<th>Process View</th>
<th>Results View</th>
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<tbody>
<tr>
<td>Financial Assets</td>
<td>Sales/Marketing</td>
<td>Customer Value Created</td>
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<td>Physical Assets</td>
<td>R&amp;D</td>
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<td>Human Assets</td>
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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 (Resource, 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!

Juergen H. Daum  
Chief Solutions Architect  
Business Solutions Architect Group, SAP AG  
E-Mail: juergen.daum@sap.com  
Personal Website: http://www.juergendaum.com

Book references

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

Intangible Assets and Value Creation  
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John Wiley & Sons, Chichester, 2002  
ISBN: 047085120

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