

Business Engineering No. 014

Materielle und immaterielle Kennzahlen

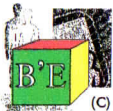
Intellektuelles Kapital

Immaterielles Kapital

Vektorielle Unternehmensbewertung

Das Nicht-Messbare messbar machen.

Peter Bretscher@inside.org



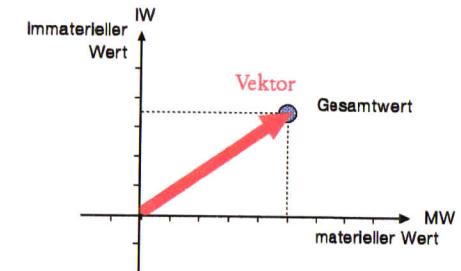
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Materielle und immaterielle Kennzahlen

Die Aufgabe:
«Das Messbare messen,
das Nicht-Messbare messbar machen.»

Galileo Galilei (1564–1642)

1. Intellectual Capital
(Edvinsson und Malone, Piatkus, August 1997)
2. Der Terror der Ökonomie
(Viviane Forrester, Zsolnay, 1997)
3. Tobins intellektuelles Kapital
(Sveiby, 1996 und Manager Bilanz 1/1998)
4. Vektorielle Wertschöpfung
(von Tobins linearem "Intellectual Capital" zu den Werte – Vektoren)
5. Vektorielle Unternehmensbewertung
(Beispiele: a) Summenvektor und b) Vektoraddition)
6. Immaterial Rankings
(Gegenüberstellung Intellectual Capital vs. Immaterielle Werte)



Intellectual Capital – The proven way to establish your Company's real value by measuring its hidden brainpower

Leif Edvinsson and Michael S. Malone (Coauthor of The Virtual Corporation), August 1997, PIATKUS

Contents

1. The Hidden Roots of Value
2. The Hidden Capabilities of a Corporation
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9. Real Life: The Human Focus
10. All Together now
11. A Common Value
12. A Future Market

Preparing the future [Seite 209]

We began this book with a failure and end it with an opportunity. The failure was that of the current financial accounting system to capture the true value of the modern enterprise – and the resulting inequity faced by small individual investors when competing with professional investors. Our goal was to identify those intangible factors off the balance sheet, measure them, and find a way to present them in a coherent way.

The result was a model for visualizing and reporting Intellectual Capital. It centered around a navigational tool that acted as an organizer for the different types of value-laden corporate investments, and that offered a more balanced and holistic perspective than traditional models.

That, in turn, led us to establish a body of measurements that best captured the essence of each of these types. What we discovered were two important facts. The first was that these measurements came in three forms, and that two of these could be reduced to a pair of variables that would act as a simple measure of IC performance that could be compared with the the same measure for other firms. The second was that, being detached from traditional revenues and profit and loss statements, this measure would also apply to other noncommercial organizations, including government and nonprofit institutions – making such a comparison possible for the first time.

The existence of this new value measurement system, as well as the IC common measure, opens the possibility of making a market in the speculation of Intellectual Capital and thus creating a brand-new reward system. The instrument of this market might be futures contracts on capital

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stock, or in the latest innovation, newly minted IC stock options.

And with that we come nearly full circle. What started as a search for true value and fairness to investors ends with an important new opportunity for those investors. Does that start the circle again as the advantages in this new market grow unequal? Perhaps in time, as we enter the next technological revolution. But for now, the measurement of Intellectual Capital brings accounting and investing back into alignment with the radical changes that are taking place in the corporation. And in its breadth it also captures the erasure of boundaries between companies and other institutions that is right now occurring everywhere in our society.

And after all, isn't this congruence, this reflection of the way we live today, the underlying value of all financial accounting?

Rather than replacing the current financial measurement system, the product of generations, Intellectual Capital measurement in fact complements and augments it. Orthodox accounting has found its way again. It is relevant once more to our future. And thus the work of much of the last millenium is made ready for the next.



The Roots of Value

Die Aufgabe:

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das Nicht-Messbare messbar machen.»

Galileo Galilei (1564–1642)

Aus: *Intellectual Capital*

Realizing your Company's true value by finding its hidden brainpower

Leif Edvinsson and Michael S. Malone (Coauthor of The Virtual Corporation), August 1997.

Perhaps the best way to appreciate the role of Intellectual Capital is metaphorical. If we picture a company as a living organism, say a tree, then what is described in organization charts, annual reports, quarterly statements, company brochures, and other documents is the trunk, branches, and leaves. The smart investor scrutinizes this tree in search of ripe fruit to harvest.

But to assume that this is the entire tree because it represents everything immediately visible is obviously a mistake. Half the mass or more of that tree is underground in the root system. And whereas the flavor of the fruit and the color of the leaves provides evidence of how healthy that tree is right now, understanding what is going on in the roots is a far more effective way to learn how healthy that tree will be in the years to come. The rot or parasite just now appearing thirty feet underground may well kill that tree that today looks in the prime of health.

That is what makes *Intellectual Capital* – the study of the roots of a company's value, the measurement of the hidden dynamic factors that underlie the visible company of buildings and products – so valuable.

What are these factors? According to research conducted by the Swedish insurance and financial services company Skandia, these factors typically take two forms:

1. Human capital.

The combined knowledge, skill, innovativeness, and ability of the company's individual employees to meet the task at hand. It also includes the company's values, culture and philosophy. Human capital cannot be owned by the company.

2. Structural capital.

The hardware, software, databases, organizational structure, patents, trademarks, and everything else of organizational capability that supports those employees' productivity – in a word, everything thing left at the office when the employees go home. Structural capital also includes customer capital, the relationships developed with key customers. Unlike human capital, structural capital can be owned and thereby traded.

It is easy to see why Intellectual Capital does not fit within traditional accounting models. In particular, Intellectual Capital values activities, such as customer loyalty or employee competence building, that may not impact the bottom line of a company for years. And it devalues near-term success that does not position the company for the future.

Intellectual Capital may be a new theory, but in practice it has been around for years as a form of common sense. It has always lurked in that multiple between a company's market value and its book value. But until recently, it was always assumed that this difference was entirely a subjective factor, driven by gossip, insider information about upcoming products, and a gut feeling about a company's prospects, that could never be empirically measured. Moreover, it was also assumed that any such gap was a temporary aberration, a nonempirical added value that would, in due time, manifest itself in some form – increased revenues, reduced overhead, improved productivity or market share – that could be measured by traditional means.

But recent business history has shown neither to be true. The core of the so-called knowledge economy is huge investment flows into human capital as well as information technology. And, stunningly, neither of these appear as positive values in traditional accounting. Rather, it is often just the opposite. Yet, these investments are the key tools of the new value creation.

Somehow, if only by hunches and intuitions, the market is putting a value on invisible assets. And some of these qualitative assets seem to hover in the ether almost indefinitely, converting to line items on the balance sheet years after the market has accounted for them.



The recognition of this new business reality is forcing a new balance to emerge, in which the past is balanced by the future and the financial by the nonfinancial-Intellectual Capital. The case for establishing a new way to measure institutional value is powerful. If Intellectual Capital represents the buried root mass of the visible tree, or, to use another familiar image, the giant iceberg hidden beneath the tiny islet above the surface; if it indeed accounts for two thirds or more of the real worth of companies; then we are faced not just with an inequity in the investment community but a true crisis that extends across the economy. Given the frenzied pace of technological change and the almost instantaneous speed of modern telecommunications, we are flying blindly in a hurricane depending on instruments that measure the wrong things. (Some of the latest theories about Intellectual Capital even suggest that it is related to chaos theory or to complex adaptive – that is – living-systems.)

Obviously this imbalance cannot continue. The sheer wastefulness of resources flowing to the wrong places at the wrong time is dangerous enough. But an even greater risk is that the same indicators that fail to show the economy surging upward are also likely to miss when those underlying forces start trending down. We are in enormous danger of losing our direction and flying straight into the ground without even knowing we are heading towards disaster. This alone should chill the soul of every investor, manager, or politician. . . and it should be more than incentive to search for effective ways to measure and nurture Intellectual Capital.

Not that this search will be easy. By its very definition, subjective information cannot be strictly codified. And this fuzziness courts abuse. Says Herwick, «Whenever money is involved, people will abuse the process.» In particular, he doubts any company will make projections about future intangibles unless they are legally «held harmless and blameless.» But that itself may open the door to wild and patently false predictions. «So,» says Herwick, «in an attempt to protect the individual investor, we may ironically create a system that allows for greater abuse.»

He isn't alone. Davidow, too, fears the scenario of «a company president standing up to announce that "the company factory has burned down, we've lost all of our significant customers, but thanks to an as-yet unproven scientific breakthrough, we are today announcing major profits.» Ken Hagerty, who, as director of the Coalition for American Equity Expansion, led the U.S. electronics industry in its battle against government plans for a values-based stock option accounting plan, is equally concerned. «How can you put a value on risk taking?» he asks. «It sounds like the same approach all over again, operating from the same flawed judgement base – and it could lead to the same outcry.»

These concerns, coming from industry veterans, cannot be ignored. But neither should they stop the movement toward identifying and measuring Intellectual Capital. The need is simply too great, and the current lack of consensus too costly, to turn back. Certainly, the current accounting system has hardly had an unchecked history. Rather, it has reached an acceptable balance

between the thousands of companies that use the system properly and the handful that take advantage of its soft spots – a balance made more acceptable because of the punitive enforcement powers of the SEC. The same, we believe, can be done with Intellectual Capital reporting. The most obvious potential abuses can be checked from the start, the more subtle ones countered by a growing body of statutes and case law.

It is comforting that one individual who believes Intellectual Capital disclosure can and must be done is Steven M.H. Wallman, one of the two current commissioners of the Securities and Exchange Commission. «What seems clear to me is that (an accounting entry of) zero is the wrong answer» he says. «So the question is: how do you appropriately report intellectual capital?»

Wallman admits to sharing the others' fears. Not only, he says, is there the danger of fraud surrounding the measurement of Intellectual Capital, but perhaps even worse, the risk that honest companies will produce these numbers in good faith, then be sued for misrepresentation when the predictions don't pan out.

At the same time, Wallman says, «Disclosure is good for everybody because it reduces risk – and that makes the cost of capital lower for companies, lowers the returns demanded by investors, and in turn benefits everyone else from employees to suppliers.» Even accounting firms, he adds, might find the new reporting systems represent an opportunity to market more of their services.

«If we can just come up with the right balance,» says Wallman, «everybody win».

(bä) MegaLink 13/97, 26.08.97



Immaterielles Kapital

HUMAN CAPITAL
+ STRUCTURAL CAPITAL^{*)}
= INTELLECTUAL CAPITAL

*) e.g. IT organizations, customer relationship
i.e., all that is left behind when staff is
going home.

INTELLECTUAL CAPITAL
= KNOWLEDGE CAPITAL
= NONFINANCIAL ASSETS
= IMMATERIAL ASSETS
= HIDDEN ASSETS
= INVISIBLE ASSETS
= MEANS TO ACHIEVE TARGET

«Intellectual Capital»,
Leif Edvinsson and Michael S. Malone.
August 1997

One of the greatest challenges facing any business today is the gap between its balance sheet and its market valuation. This gap, representing the bulk of a company's true value, consists of indirect assets – organizational knowledge, customer satisfaction, product innovation, employee morale, patents and trademarks – that never appear in its financial reports.

Only in the last few years have companies tackled the challenge of measuring this "Intellectual Capital." And no company has taken IC measurements as far as the Swedish financial services company Skandia, which in 1995 published the

world's first IC annual report. The executive who led the team, the first-ever director of intellectual capital, was Leif Edvinsson.

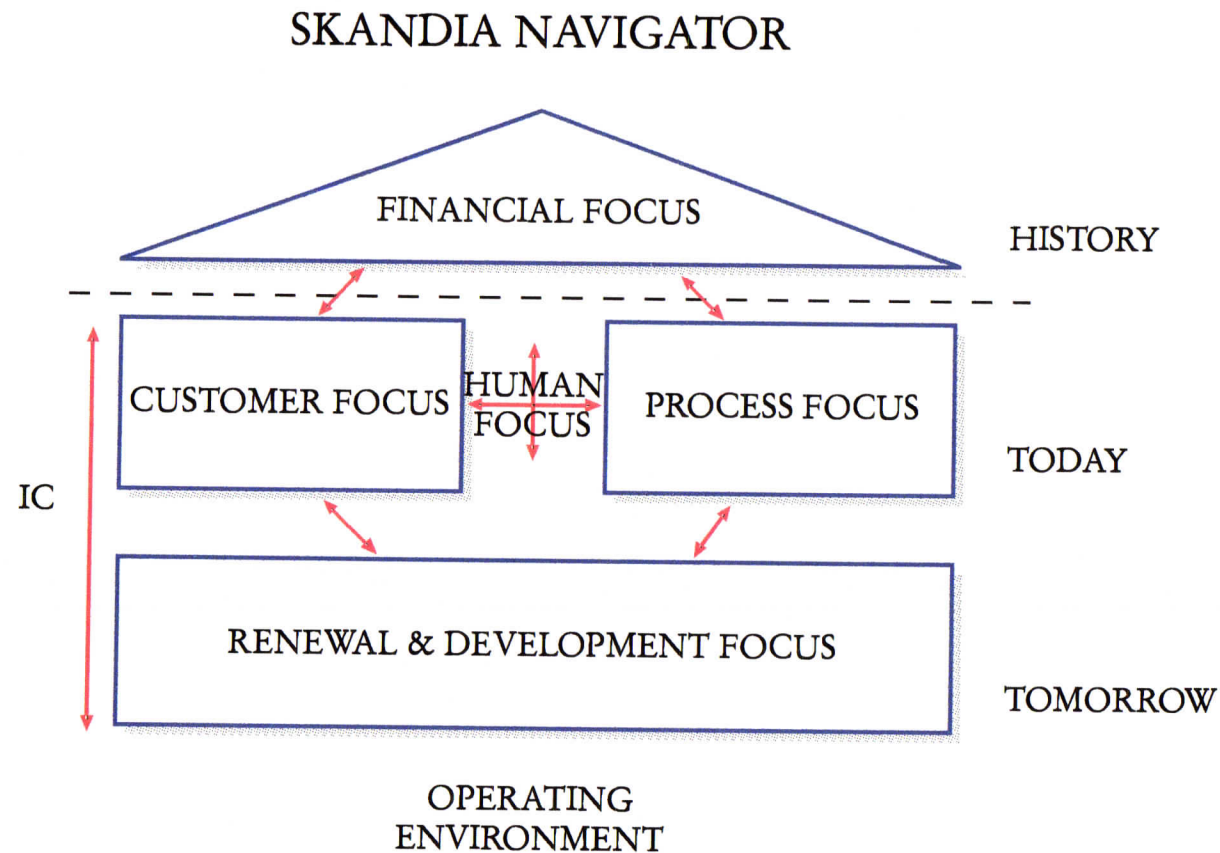
Now Edvinsson has teamed up with noted business author Michael S. Malone to write the first book that explains the workings of IC measurement and its usefulness to the modern corporation. Intellectual Capital is also the first book ever to present a universal IC measurement and reporting system.

And that's only the beginning. The authors also show how IC measurement can be used in any

organization, including government agencies and non-profit institutions; they present a simple new measure as a yardstick to compare IC value and efficiency of different organizations; and finally, they propose a new kind of IC "stock-market" exchange.

Intellectual Capital will transform the nature of doing business by establishing the real value of enterprises for those who manage them, work them, and invest in them. The result will be a revolutionary transformation of the modern economy.

Immaterielles Kapital

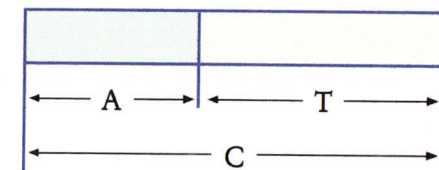
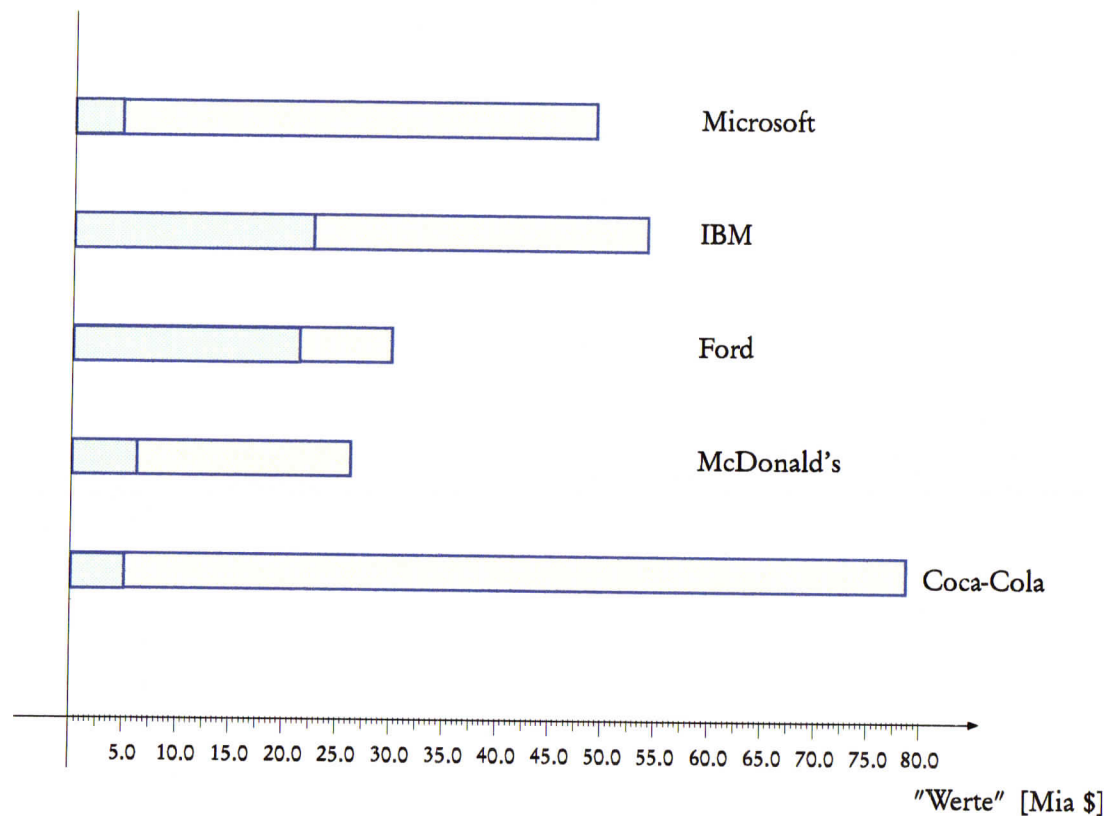


Intellektuelles Kapital (James Tobin)

Fünf Firmen, 1995

Quelle A, C, T: Sveiby, 1996, zitiert in Manager Bilanz 1/1998

	A	C	T
Microsoft	4.5	49.1	44.6
IBM	22.5	54	31.5
Ford	21.4	30	8.6
McDonald's	6.2	26.2	20
Coca-Cola	5.2	78.6	73.4



Legende:

- A = materielle Aktiven aus Bilanz
- C = Börsenkapitalisierung
- T = Tobins intellektuelles Kapital ($C - A$)

Vektorielle Unternehmensbewertung

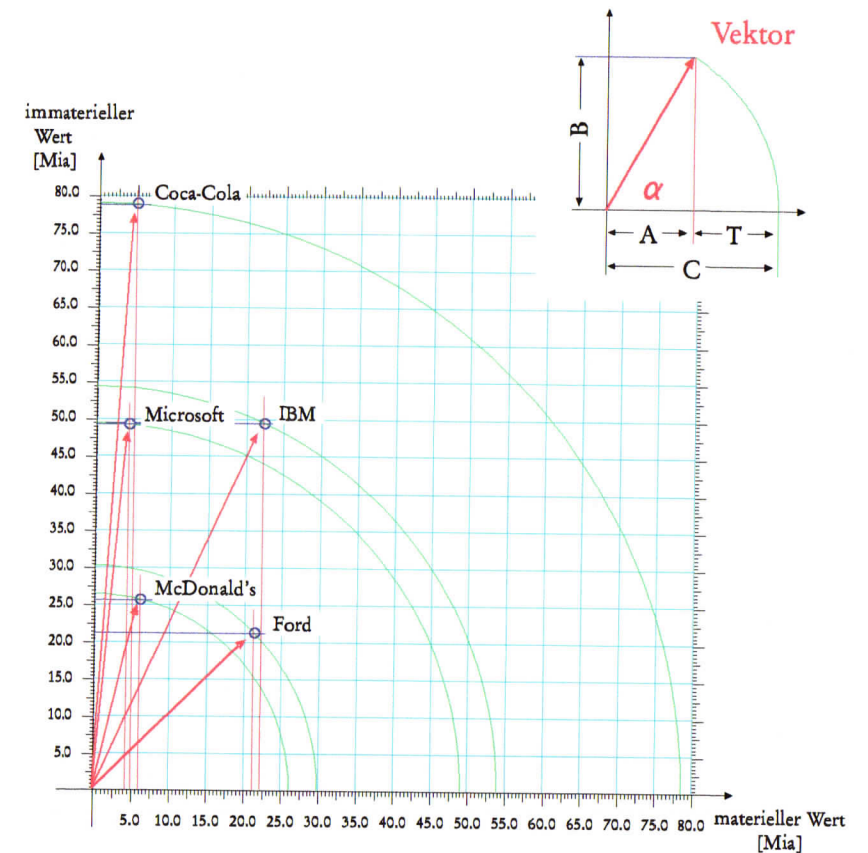
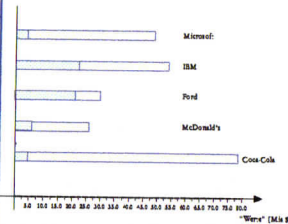
Lineares Werteverständnis, fünf Firmen, 1995

Quelle für A, C, T: Sveiby, 1996, zitiert in Manager Bilanz 1/1998

	A	C	T
Microsoft	4,5	49,1	44,6
IBM	22,5	54	31,5
Ford	21,4	30	8,6
McDonald's	6,2	26,2	20
Coca-Cola	5,2	78,6	73,4

Legende:

A = materielle Aktiven aus Bilanz
C = Börsenkapitalisierung
T = Tobins intellektuelles Kapital (C - A)



	immat. Wert B	Werte-Vektor $V = A + B i$	Nutzen $N = \tan \alpha$
Microsoft	48,9	$V = 4,5 + 48,9 i$	$N = 10,87$
IBM	49,1	$V = 22,5 + 49,1 i$	$N = 2,18$
Ford	21	$V = 21,4 + 21 i$	$N = 0,98$
McDonald's	25,5	$V = 6,2 + 25,5 i$	$N = 4,11$
Coca-Cola	78,4	$V = 5,2 + 78,4 i$	$N = 15,08$

Legende:

B = immaterielle Werte (auf zweiter Achse)

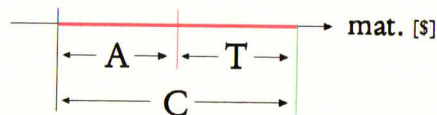
$$B = \sqrt{C^2 - A^2} = \sqrt{T(2A + T)}$$

$$N = \text{Nutzen} = \tan \alpha = \frac{\text{immaterieller Wert}}{\text{materieller Wert}}$$

Vektorielle Wertschöpfung

von Tobins linearem "Intellectual Capital" zu den Werte-Vektoren

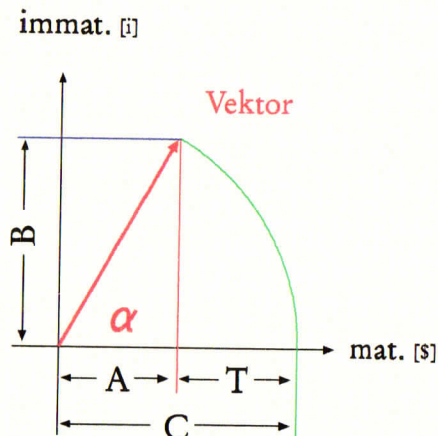
Klassisch linear



Legende:

- A = materielle Aktiven
- = fehlt
- C = Börsenkapitalisierung
- T = Tobins "Intellectual Capital"

Vektor I

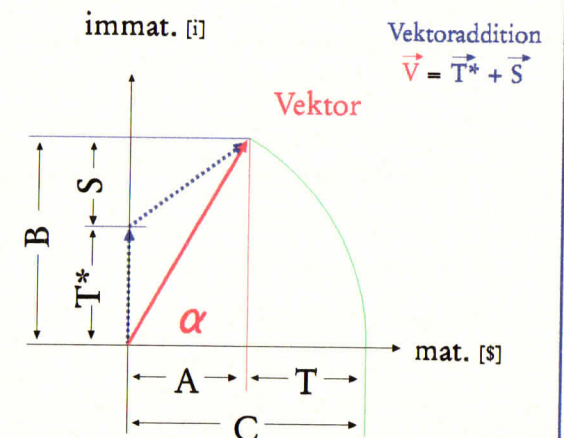


Legende:

- A = materielle Aktiven
- B = immaterielle Aktiven
- C = Börsenkapitalisierung
- T = Tobins "Intellectual Capital"

$N = \tan \alpha = \text{Nutzen}$

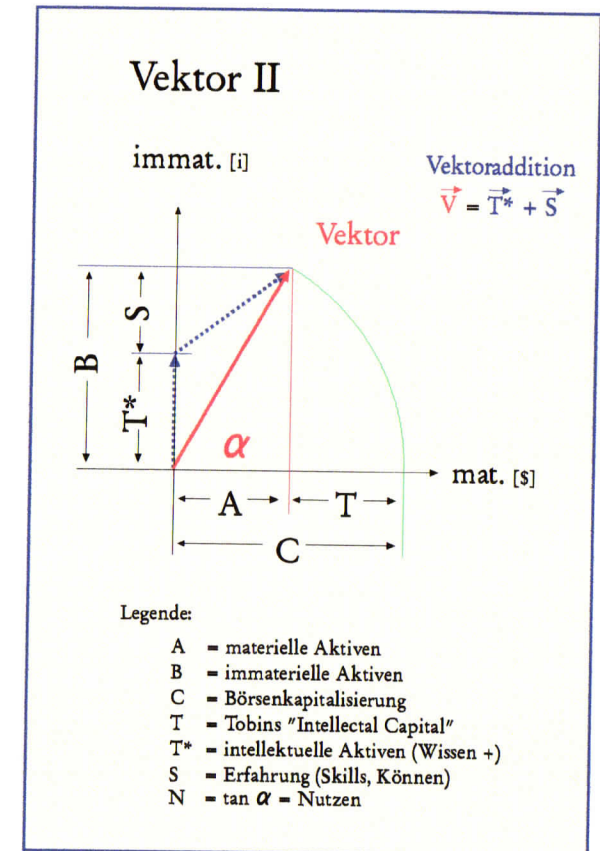
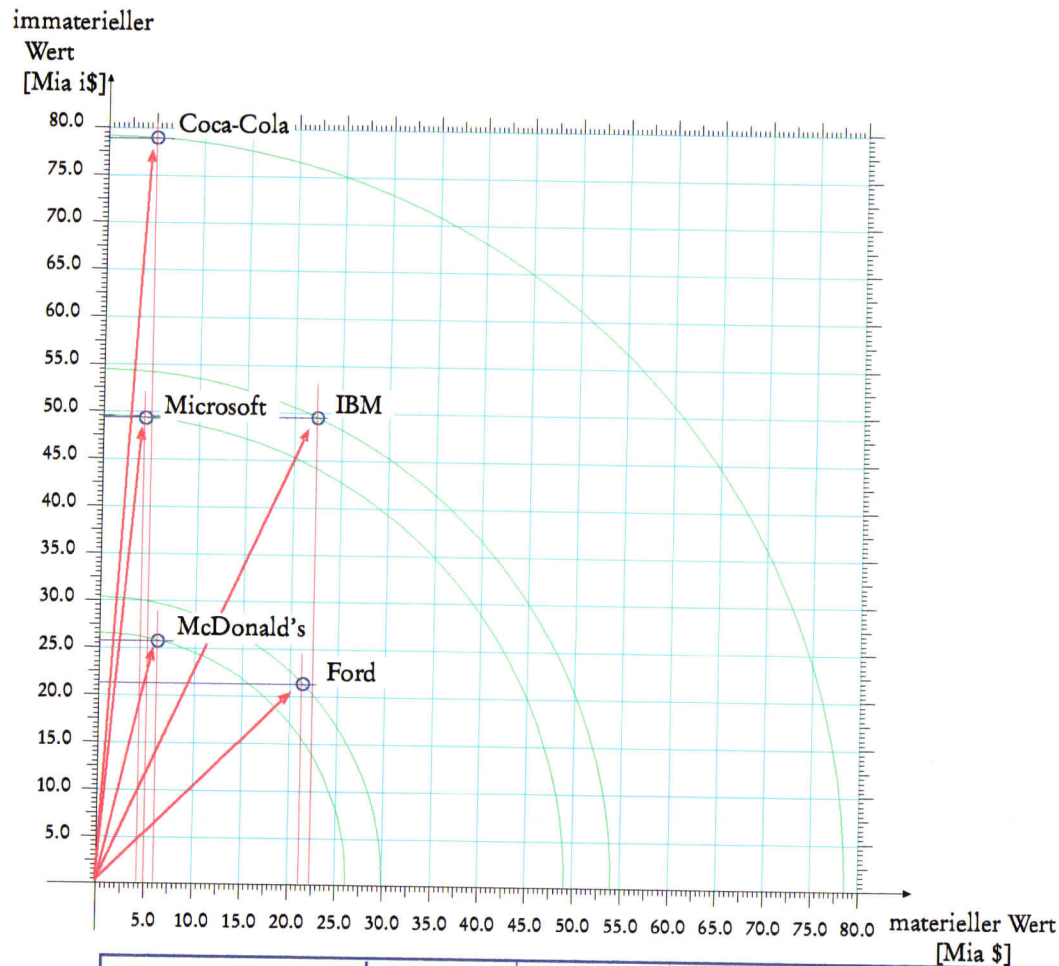
Vektor II



Legende:

- A = materielle Aktiven
- B = immaterielle Aktiven
- C = Börsenkapitalisierung
- T = Tobins "Intellectual Capital"
- T* = intellektuelle Aktiven (Wissen +)
- S = Erfahrung (Skills, Können)
- N = $\tan \alpha = \text{Nutzen}$

Vektorielle Unternehmensbewertung



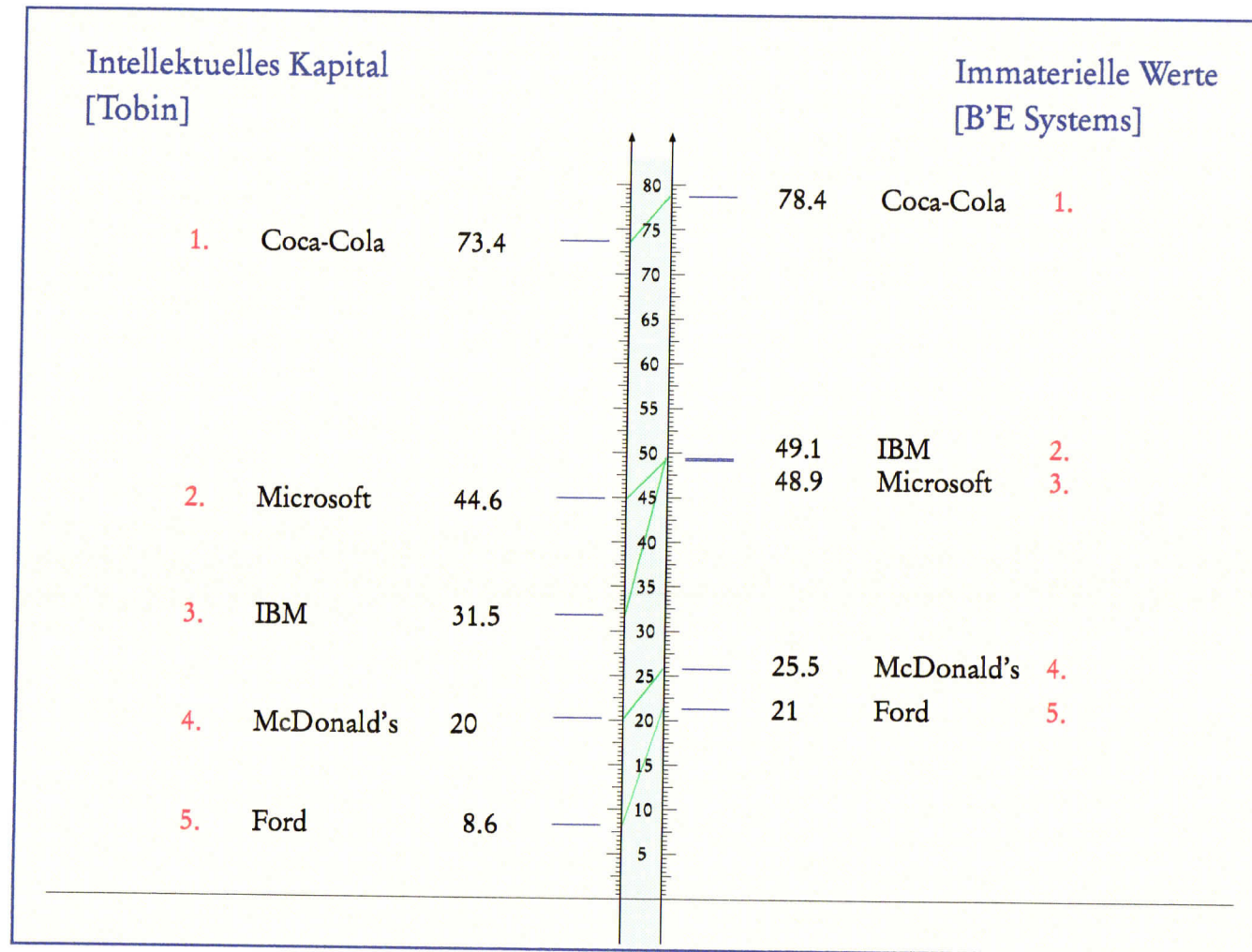
	A	C	B	T	T*	S	N	$V = A + B i$
Microsoft	4.5	49.1	48.9	44.6	44.6	4.3	10.87	$V = 4.5 + 48.9 i$
IBM	22.5	54	49.1	31.5	31.5	17.6	2.18	$V = 22.5 + 49.1 i$
Ford	21.4	30	21	8.6	8.6	12.4	0.98	$V = 21.4 + 21 i$
McDonald's	6.2	26.2	25.5	20	20	5.5	4.11	$V = 6.2 + 25.5 i$
Coca-Cola	5.2	78.6	78.4	73.4	73.4	5.0	15.08	$V = 5.2 + 78.4 i$

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Immaterial Rankings

Fünf Firmen, Stand 1995/96



Mäppchen 14:

Materielle und immaterielle Kennzahlen

[MIK00010]

1. Intellectual Capital
2. Der Terror der Ökonomie
3. Tobins intellectual Capital
4. Vektorielle Wertschöpfung
5. Vektorielle Unternehmensbewertung
6. Immaterial Rankings