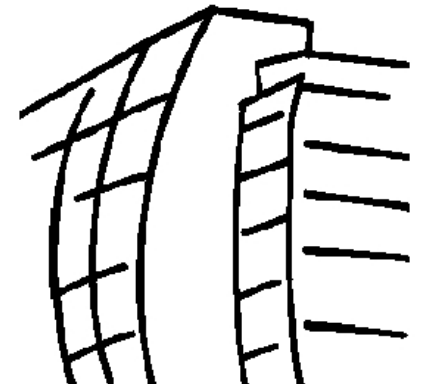


Intellectual Capital

G. Scott Erickson

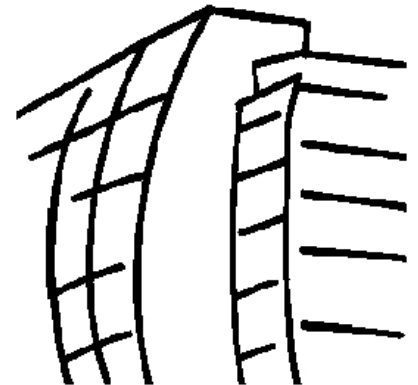
Ithaca College, NY

Fulbright Scholar, Queen's University, ON



Background

- Background
 - Selected literature review (a “taste” of IC)
- Assessing Strategic Position with IC



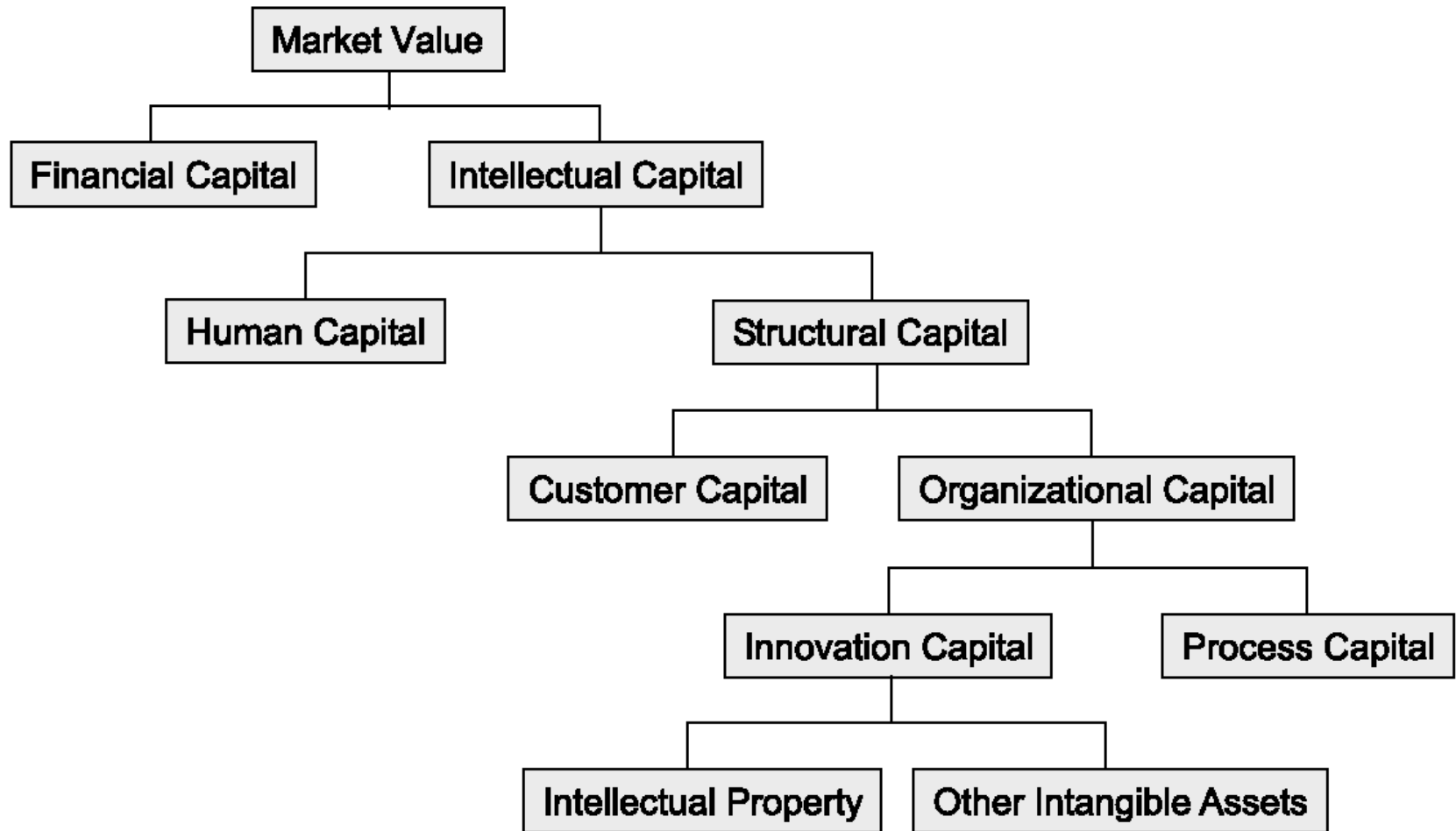
Background

Skandia Navigator

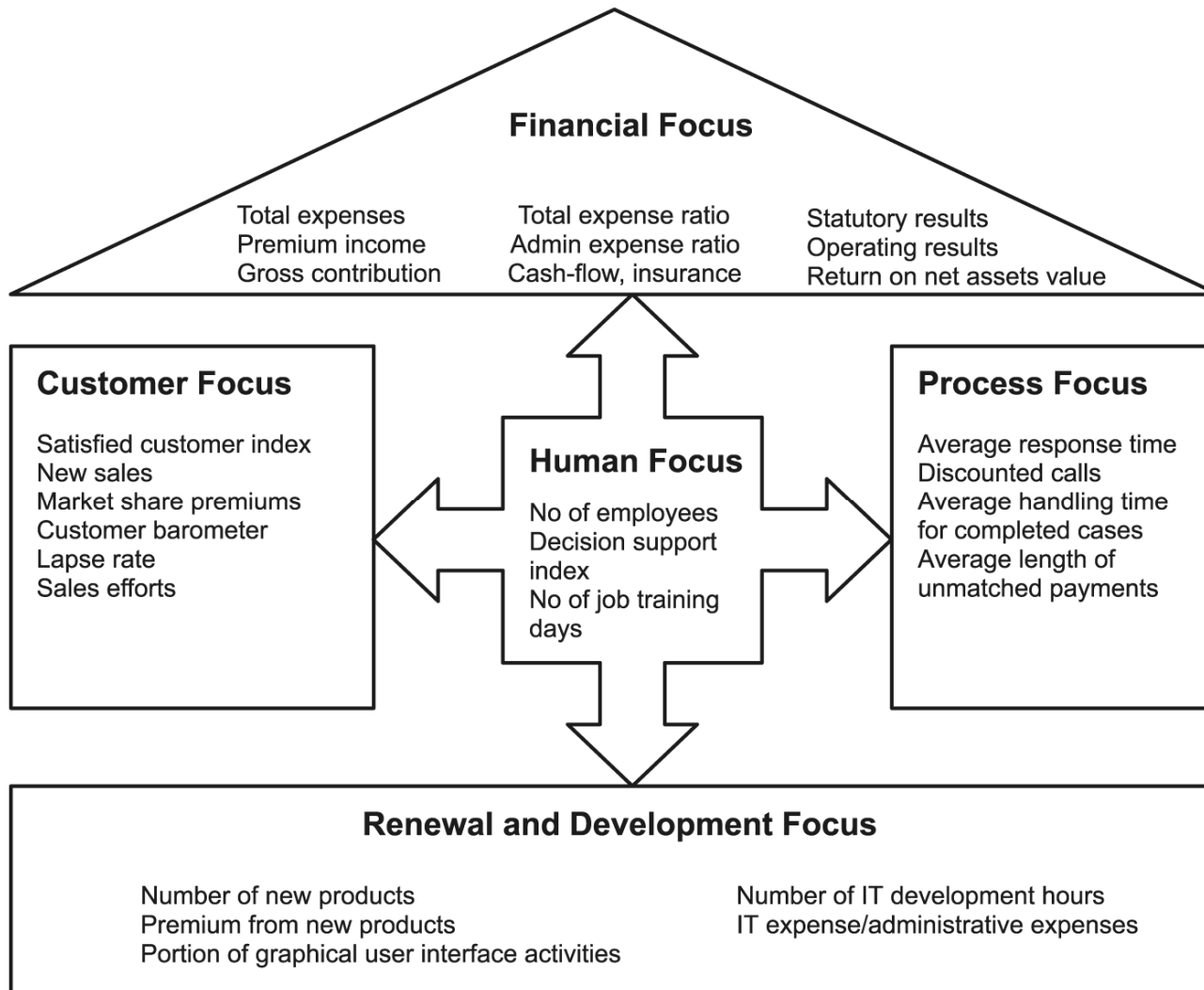
Edvinsson, Leif & Malone, Michael (1997) *Intellectual Capital: Realizing Your Company's True Value by Finding Its Hidden Brainpower*, Harper Business: New York

Stewart, Tom (1998) *Intellectual Capital: The New Wealth of Organizations*, Doubleday: New York

Background



Background



Background

Skandia Navigator Report – American Skandia

		1997	1996	1995
FINANCIAL FOCUS				
Return on capital employed %		21.9	27.1	28.7
Operating result (MSEK)		1,027	579	355
Value added/employee (SEK 000s)	2,616	2,206	1,904	
CUSTOMER FOCUS				
Number of contracts		189,104	133,641	87,836
Surrender ratio		4.4%	4.4%	4.1%
Points of sale		45,881	33,287	18,012
HUMAN FOCUS				
Number of full time employees		599	418	300
Number of managers (total)		88	86	81
Number of women managers		50	27	28
Training expense/employee (SEK 000s)		2.5	15.4	2.5
PROCESS FOCUS				
Number of contracts/employee		316	320	293
Admin expense/gross premiums		3.5%	2.9%	3.3%
IT expense/admin expense		8.1%	12.5%	13.1%
RENEWAL AND DEVELOPMENT FOCUS				
Share of premiums from new launches		0.9%	23.7%	49.2%
Increase in net premiums written	31.9%	113.7%	29.9%	
Development expenses/admin expense		9.5%	9.9%	10.1%
Share of staff < 40 years old		76%	78%	81%

Background

Satisfied Customer Index and Customer Loyalty Measures.

In one commercial division in Norway over 7000 customers were surveyed and their views on products and satisfaction obtained. This resulted in the initiation of a quality assurance project, with expected outcome of even more customer loyalty. Customer measures also included telephone accessibility and policies not surrounded.

Background

Quality in IT Systems

In Skandia information services unit, an important process measure is that of functions points per employee-month. The function point measure, developed by IBM, is an indicator of the complexity of a system. The measure therefore gives an indicator of programmer productivity. Human measures are number of training hours, and an employee's 'empowerment index'.

Background

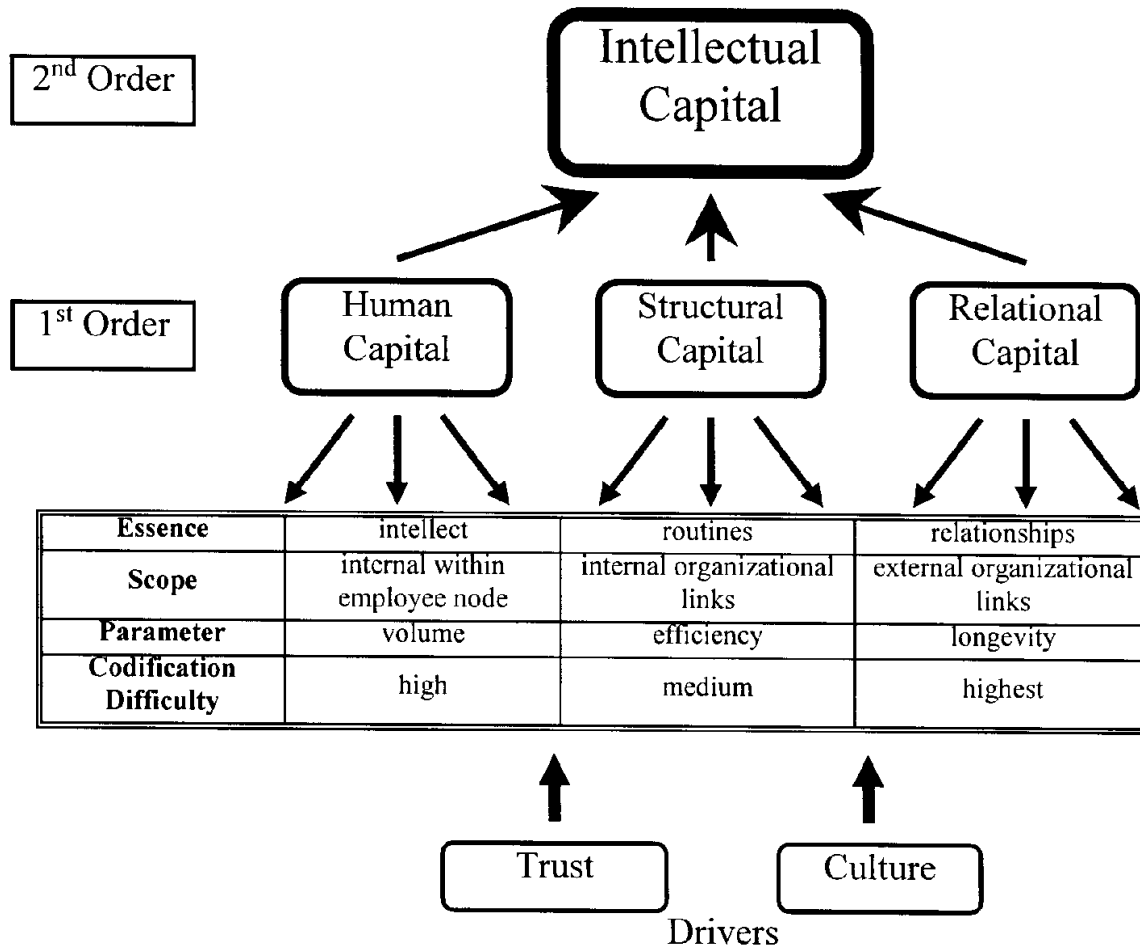
Renewal through competence and market development

In SkandiaBanken Fonder, a company with only 15 employees, but one that manages 18 investment funds, renewal measures include competence development expense per employee and marketing expenditure per customer, as well as a satisfied employee index.

Background

Bontis, Nick (1999) “Managing organizational knowledge by diagnosing intellectual capital: framing and advancing the state of the field,” *International Journal of Technology Management*, 18:5-8, 433-463.

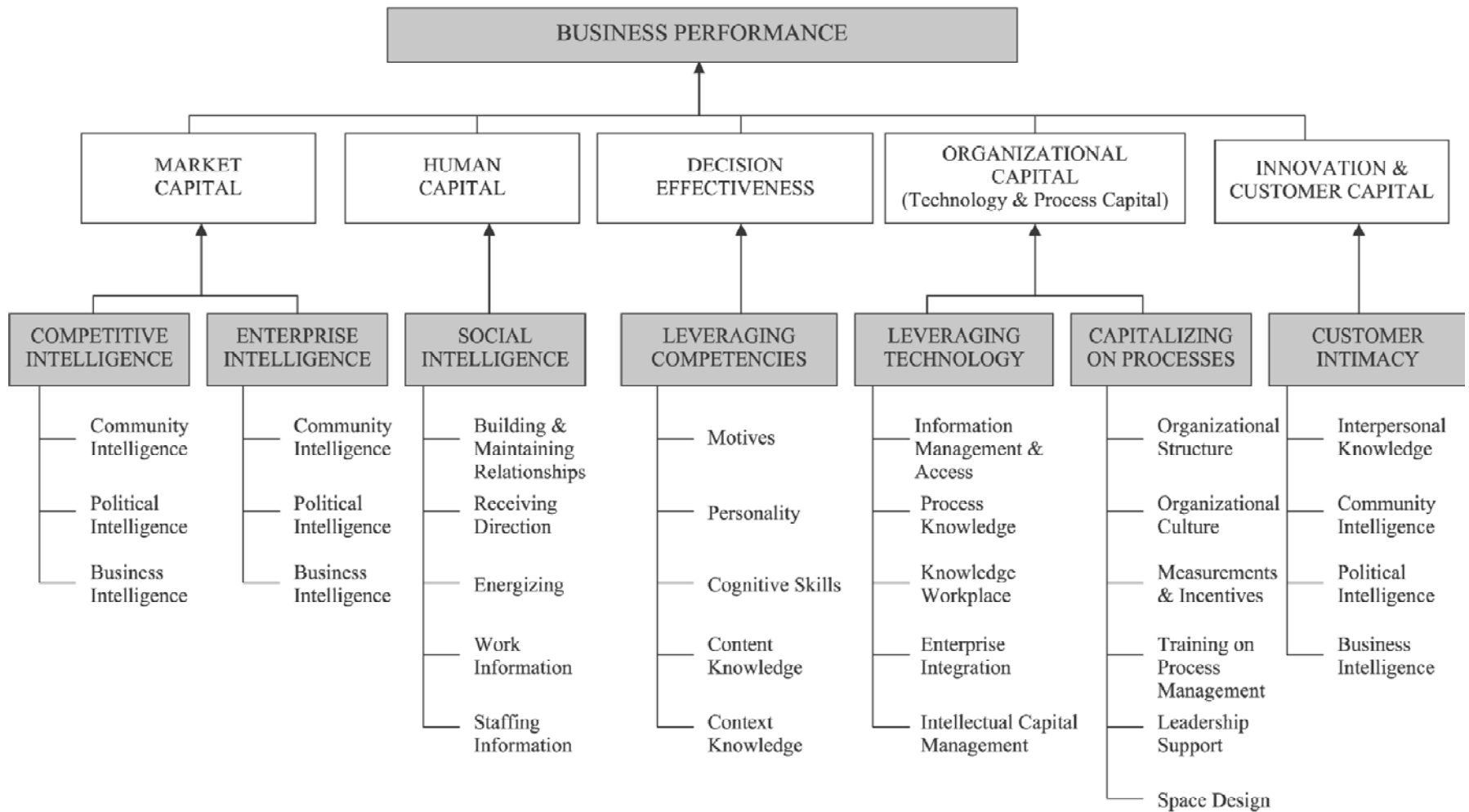
Background



Background

Andreou, A.N., Green, A. & Stankosky, M. (2007) "A framework of intangible valuation areas and antecedents," *Journal of Intellectual Capital*, 8:1, 52-75

Background



Background

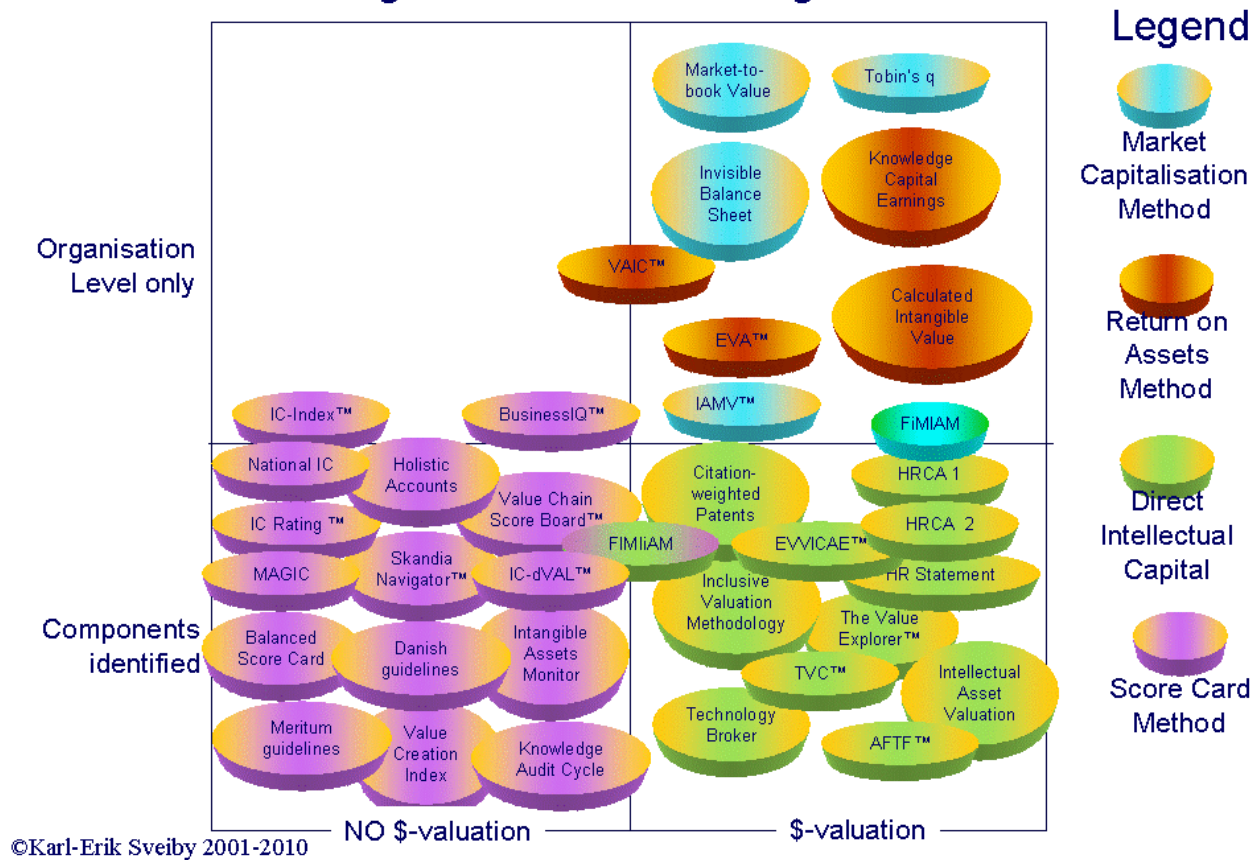
Andriessen, Dan (2003) *Making Sense of Intellectual Capital: Designing a Method for the Valuation of Intangibles*, Elsevier: Boston.

Background

SAMPLE OF 25 METHODS FOR VALUING AND MEASURING INTANGIBLES		
Section in	Method	Community
Appendix A		
A.5	Holistic value approach (HVA) (Pike and Roos, 2000)	Intellectual capital
A.7	Intellectual capital audit (Brooking, 1996)	Intellectual capital
A.8	Intellectual capital-index (Roos et al., 1997)	Intellectual capital
A.9	Inclusive Value Methodology™ (M'Pherson and Pike, 2001b)	Intellectual capital
A.10	Intangible asset monitor (Sveiby, 1997)	Intellectual capital
A.12	Intellectual capital benchmarking system (Viedma, 2001b)	Intellectual capital
A.13	Intellectual capital dynamic value (Bounfour, 2002)	Intellectual capital
A.14	Intellectual capital statement (Mouritsen et al., 2001c)	Intellectual capital
A.16	Konrad group (Sveiby et al., 1989)	Intellectual capital
A.19	Skandia navigator (Edvinsson and Malone, 1997)	Intellectual capital
A.20	Sullivan's work (Sullivan, 1998abc)	Intellectual capital
A.24	Value-Added Intellectual Coefficient™ (VAIC) (Pulic, 2000a,b)	Intellectual capital
A.2	Calculated intangible value (Stewart, 1997)	Accounting
A.3	Citation-weighted patents (Hall et al., 2001)	Accounting
A.11	Intangibles scoreboard (Gu and Lev, 2002)	Accounting
A.15	iValuing factor (Standfield, 2001)	Accounting
A.17	Market-to-book ratio (Stewart, 1997)	Accounting
A.22	Tobin's Q (Stewart, 1997)	Accounting
A.25	Value chain scoreboard (Lev, 2001)	Accounting
A.1	Balanced scorecard (Kaplan and Norton, 1992, 1996a,b, 2001)	Performance measurement
A.4	Economic Value Added™ (Stewart III, 1994)	Performance measurement
A.18	Options approach (Dixit and Pindyck, 1998)	Valuation
A.21	Technology factor (Khoury, 1998)	Valuation
A.23	Valuation approaches (Reilly and Schwehs, 1999)	Valuation
A.6	Human resource accounting (Sackmann et al., 1989)	Human resource

Background

Intangible Assets Measuring Models



Using IC to Assess Strategic Position

“Assessing Knowledge Management Needs:
A Strategic Approach to Developing Knowledge”

With Helen N. Rothberg

International Journal of Knowledge Management

Using IC to Assess Strategic Position

- Does KM matter?
 - Related to competitive advantage?
 - Related to superior financial performance?
- If so, how do you assess standing?
 - Data available
 - Easily calculated
 - Robust across firms/industries
- Given standing, what is appropriate strategy?
 - KM cost/benefit
 - Knowledge asset protection concerns

Using IC to Assess Strategic Position

- Measure
 - Organization level
 - \$ value
- Tobin's q
 - Nobel (1981)
 - Market value to replacement value of assets
 - Common variation, market value to book value of assets

Using IC to Assess Strategic Position

Company	Market Cap	Book Value	Assets	Difference	Cap/Book	Cap/Assets
Microsoft	\$263b	\$31b	\$63 b	\$232b	4.12	8.47
Salesforce .com	\$4.6b	\$0.35b	\$0.8b	\$4.25b	5.98	13.03
Wal-Mart	\$193b	\$59b	\$155b	\$134b	1.24	3.28

Using IC to Assess Strategic Position

- Difference
 - Huge bias to large, established companies with high market cap
- Ratio (cap/book)
 - More comparable
 - Assets less liabilities
 - Ownership of assets important to IC standing?
- Ratio (cap/assets)
 - Assets only
 - Value of firm given particular level of assets

Using IC to Assess Strategic Position

High/Low (n)	KM Ratio	ROA	ROE	ROI	Beta
42 Wholesale					
Mkt Cap/Assets					
High (n=22)	1.64	9.01	20.63	13.14	0.74
Low (n = 17)	1.08	4.01	14.28	6.40	1.08
t-statistic		.0003**	.354	.002**	.111
Mkt Cap/Book					
High (n=23)	3.80	7.72	18.54	11.69	0.71
Low (n=16)	1.94	5.24	16.49	7.63	1.16
t-statistic		.110	.784	.083	.045*
44 Retail					
Mkt Cap/Assets					
High (n=26)	2.45	12.60	26.27	17.69	1.10
Low (n = 24)	0.83	3.70	8.26	5.37	1.25
t-statistic		.0001**	.002**	.0001**	.248
Mkt Cap/Book					
High (n=24)	5.45	12.75	27.85	18.09	1.12
Low (n=26)	1.91	3.76	7.05	5.24	1.22
t-statistic		.0001**	.0005**	.0001**	.490
45 Retail					
Mkt Cap/Assets					
High (n=16)	2.63	7.22	12.01	10.01	1.47
Low (n = 21)	0.70	3.83	7.07	5.00	1.12
t-statistic		.380	.779	.527	.278
Mkt Cap/Book					
High (n=22)	4.09	6.89	13.44	10.85	1.45
Low (n=15)	1.77	2.16	4.82	2.98	1.03
t-statistic		.103	.330	.082	.035*

*significant at 95% level, **significant at 99% level

Using IC to Assess Strategic Position

High/Low (n)	KM Ratio	ROA	ROE	ROI	beta
51 Information Services					
Mkt Cap/Assets					
High (n=22)	2.45	8.48	17.64	11.76	1.58
Low (n = 22)	0.66	1.48	3.87	2.21	1.40
t-statistic		.0002**	.0004**	.0005**	.574
Mkt Cap/Book					
High (n=22)	6.07	6.35	16.87	10.00	1.03
Low (n=22)	1.73	3.31	6.37	3.97	1.34
t-statistic		.1118	.052	.043*	.350
54 Prof, Sci & Tech Services					
Mkt Cap/Assets					
High (n=25)	2.49	7.55	15.42	11.78	1.75
Low (n = 23)	0.62	4.74	8.99	7.99	1.29
t-statistic		.179	.463	.299	.032*
Mkt Cap/Book					
High (n=30)	5.38	8.31	15.24	14.01	1.61
Low (n=19)	1.97	4.10	8.18	5.84	1.39
t-statistic		.019*	.351	.007**	.344
*significant at 95% level, **significant at 99% level					

Using IC to Assess Strategic Position

- Results
 - Clear differences between high and low ratio groups
 - If KM/IC does matter, can definitely distinguish between performance levels
 - Appears to be difference in financial performance between high and low ratio groups
 - Variety of measures
 - Diverse industries
 - Difference is apparent regardless of ratio used
 - Inconclusive, more evidence needed

Using IC to Assess Strategic Position

- Results
 - More work on financial performance measures
 - Might be tautological (return on assets vs. cap to assets)
 - Obviously a lot of other variables have an impact
 - Comparing across industries
 - Tobin's q affected by asset levels (Microsoft v. Wal-Mart)
 - Can index be created to normalize and allow direct comparisons?

Using IC to Assess Strategic Position

- Academic takeaways
 - Somewhere in here is a valid measure that is easily done and robust
 - Allows us to get a better handle on IC and its consequences
 - Can be supported by some of the more detailed internal measures
- Practitioner takeaways
 - Method to assess industry standing, best practices, other issues regarding IC and KM
 - Gives sense of how critical KM is to industry, brings cost/benefit into decisions on KM investment
 - Can be supported by some of the more detailed internal measures

Thank You!

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