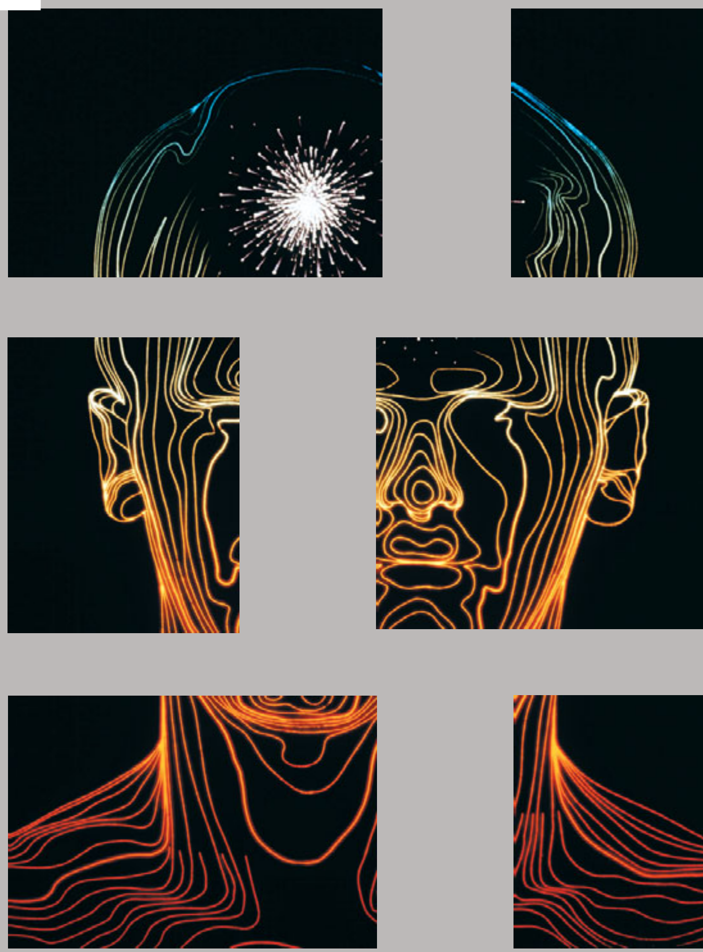
INTELLECTUAL CAPITAL



Efficiency on National and Company Level

HGK 1852
CROATIAN CHAMBER
OF ECONOMY

Deloitte.

Glossary

For quick and simple understanding of this analysis please find a brief description of terms used in this paper:

- **Value added (VA):** newly created value, calculated as follows

  VA = Operating profit+ Employee costs + Depreciation +Amortisation

  or

  VA = OUTPUT (Total income) - INPUT (All costs of purchasing goods and services from the market.)
- **Human Capital (HC): o**verall employee expenses (salaries, education, training); In this analysis considered an investment, not cost, and thus not substantial part of INPUT any more.
- **Structural Capital (SC):** result of Human Capital's past performance (organisation, licences, patents, image, standards, relationship with customers).
- **Capital Employed (CE):** all material and financial assets.
- **Human Capital Efficiency (HCE=VA/HC):** indicator which shows how much VA is created on each monetary unit invested in HC.
- **Structural Capital Efficiency (SCE=SC/VA):** indicator that shows the share of SC in value creation.
- **Intellectual Capital Efficiency (ICE=HCE+SCE):** Indicator which shows how efficiently IC has created value.
- **Capital Employed Efficiency (CEE=VA/CE):** indicator that shows how much VA is created on each monetary unit invested in CE.
- **Value Added Intellectual Coefficient (VAIC™=ICE+CEE):** indicates the value creation efficiency of all resources (sum of the previous indicators). It expresses the intellectual ability of a company, regional or national economy.

Value Creation Efficiency Analysis

(powered by VAIC™)

Starting point for the VAIC™ analysis (www.vaic-on.net) is the business result, value added. Two key resources are involved in the value creation process: physical and financial capital (CE – capital employed) and intellectual capital (IC). In order to calculate the value creation efficiency of these resources each one is related to the created VA. This way the efficiency indicators are received:

Intellectual capital efficiency (ICE) incorporates human capital efficiency (HCE) and structural capital efficiency (SCE) is one of the key idicators used throughout this report.

VAIC™ (Value Added Intellectual Coefficient), incorporating ICE and CEE, is the other key indicator reflecting the company's "total efficiency" or its "intellectual ability". The higher the VAIC™ indicator, the better management has utilized the existing potential.

What is the benefit of this measuring method? It is focussed on value creation, not cost control and takes intellectual capital performance, particulary human capital into account. This is valuable new information for all participants in value creation process: managers, shareholders, employees and others.

The VAIC™ analysis is simple. What makes it unique is that it can be applied on all levels of business activity: the macro-economic (national) level, the meso (sectors) level and the microeconomic (company level) and within the company. All data needed for the VAIC™ analysis on macro level are included in standard balance sheets and business reports.

Through VAIC™ management can detect weak points of value creation at any level of business, national, regional, within an industry, sector or a company.

Control of value creation efficiency enables managers to leverage their company's potential and maximise its value. However, what VAIC™ cannot provide, is a precise depiction of required changes in management of a company or an economy. VAIC™ is just a tool for scanning value creation efficiency (like blood analysis with humans). Therefore it is best if combined with other IC/KM-management tools.

Foreword

Measuring intellectual capital efficiency is one of the greatest challenges for all who are involved in economy, at macro as well as at micro level.

It is a challenge for everyone dealing with economic theory, since the prevailing one does not offer plausible answers to the existing business reality.

It is a challenge for governments, which are becoming more and more helpless as existing ways of governing national economies have become less and less efficient.

It is a challenge for managers who lead companies in times of turmoil with no reliable indicators of their business success.

It is a challenge for the employees who, on the one hand, are not yet aware of their new, significant role in value creation and, on the other hand, are totally insecure with regard to the future of their working places.

Until now just several concepts of presenting national IC-performance were published. The report “Sweden’s Intellectual Capital Balance Sheet” was the first and laid the foundations for the “Intellectual Capital of the State of Israel”. A different concept was applied in the report “Intellectual Capital Dvelopment in the Arab Region”. This report and the one published last year, the “Intellectual Capital – Efficiency of Croatian Economy”, take a third approach in measuring and presenting company’s and national IC – performance.

The pages to follow provide a possible way of coping with the challenges referred to previously. The Analysis is based on two key resources in each business: intellectual capital and capital employed (physical and financial capital). Both are treated equally, as investments, and both are in the function of value creation.

The IC of a company consists of all employees, their organization and their ability to create value, which is evaluated at the market. A company can have the best qualification structure, i.e. intellectual potential, but if it creates little value with regard to its resources, its intellectual ability is low.

Therefore, in order to get a full and objective picture of business success, it is not enough to monitor only capital employed but also intellectual capital efficiency at all levels: inside the company, between companies, between sectors of a national economy and between nations on a global scale.

Hope you will enjoy reading the analysis

Prof. Dr. Ante Pulic

Activating Intellectual Capital

The challenges of 21st century require efficient management of knowledge, and its relevant form in economy, intellectual capital, which has finally become the key factor of value creation. The problem that we are facing lies in the fact that knowledge is “intangible”, and therefore hard to manage and measure. The factor we can measure is the efficiency of applying knowledge in value creation.

Along with other available resources, the key drivers of new economy should be activated – the employees, their knowledge and organization in value creation processes that will be evaluated in the market.

Deloitte has recognized the importance and power of knowledge and joined the initiative of the Croatian Chamber of Economy contributing to research, encouragement, management and measurement of intellectual capital.

We also support the value creation efficiency analysis (powered by VAIC™), a new output measure for measuring intellectual capital performance on corporate, local, sector, regional, national and global level. This analysis has already been recognized as a Croatian export service, recognized and verified in global markets. VAIC™ helps national and local governments, company management and consultants in determining weak points and reasons for value destruction, in systematic improvement of value creation efficiency and establishing balance on higher and higher levels.

The mission of Deloitte is to assist our clients and their employees in achieving business success. This also applies to the field of management and measurement of intellectual capital in order to enable them to become powerful players in global markets.

Branko Tomašković
partner

In the current challenging business environment, organisations are faced with increasingly competitive markets. While an emphasis on cost reduction remains a vital focus, understanding the value added by Human Resources has never been more important.

The intellectual capital efficiency analysis (powered by VAIC™) is a key tool and methodology in helping management understand whether they are making sufficient investments in human capital and whether their human resource management programs are being applied correctly.

Historically, human resource functions have been tasked with performing ‘factory’ type operations, such as payroll, recruitment and some training. However, there is a much needed strategic human capital management role as well, that looks at:

- People development
- Career planning
- Succession planning
- Change management
- Motivation and rewards

Human resources are complicated, and understanding how well they perform and why they perform the way they do, can be an invaluable management tool. VAIC™ provides the opportunity for management to better understand how they can create more value in their business by better managing the capital they have invested in people.

We are delighted to have the opportunity to work with Professor Pulic and his team in supporting businesses in both understanding their human capital investments and how to better leverage that investment in creating long-term sustainable shareholder value.

Paul Trinder
partner

Deloitte.

Intellectual Capital Efficiency – Why ?

The following could be said about this key indicator of new economy: intellectual capital efficiency is for all the participants in current economy the same as productivity – the number of produced items in a certain time unit – once was for manual labour and manual labourer.

In order to calculate this efficiency, it is necessary to check how much value added the employees managed to create in interaction with the company's structural capital with all the infrastructure available.

VALUE ADDED (VA) is an exceptionally important new indicator, since it shows the ability of a company or whole economy to create value. It is a source for covering investments costs of all the employees – wages, health insurance, and pension funds – liabilities towards the creditors, taxes and shareholders' dividends, investments in the future.

INTELLECTUAL CAPITAL EFFICIENCY (ICE) indicates how much value added is created on one monetary unit invested in employees. Therefore it provides information about value creation efficiency of a company, business sector, regional or national economy. This is one of the first analyses to take intellectual capital performance into account when assessing a company's business success. Overall efficiency (VAIC™), which is the key parameter throughout this analysis, is largely determined by ICE – intellectual capital efficiency.

Who can benefit from this analysis?

Government and all other deceision makers that create and form the business environment

The results that follow indicate to governments to what extent economy has made progress or stagnated in comparison to the previous year and how individual national economies are performing in comparison to others. General trends show how the «value creation ability» has been developing in certain sector of economy, which are the stagnating and which the growing ones, how efficient the biggest European companies are whose efficiency considerably influences the efficiency of their national economies.

Companies

This analysis is important for companies as well, since it gives insight into value creation capacity. Namely, numerous companies generate income and profits, although they do not create value. This is a paradox due to new business environment and new criteria for business success. Besides that, this analytical approach enables them to orientate themselves in three directions;

- To see how capable they are of value creation in their business environment, in other words to assess their current position with regard to their immediate competition
- To compare the efficiency of their intellectual capital with the one created both on regional as well as national level
- To get a clear picture about efficiency of companies and sectors in international terms.

Investors

As a close relationship between the intellectual capital efficiency and the market value of a company has been proved in many cases, it enables forecasting fluctuations in share value. Examples have shown that a decrease in intellectual capital efficiency over several years has resulted in a decrease in their companies value and occasionally even led to bankruptcy. This is why intellectual capital efficiency represents a very important orientation for investors.

Employees

They finally receive the place which belongs to them in new economy: the employees have become a key investment, companies success or failure depends on. This is not just declarative: in this analysis employees are not treated as costs - wages and salaries are not costs but substantial part of value added- but as a resource which is equal to financial capital. Now employees can monitor their own value creation efficiency and orientate themselves accordingly (e.g. requirements of the labor union can now be viewed in the context of their member's value creation efficiency).

European Union - ICE vs. GDP

Measuring the efficiency of intellectual capital on national level is as important as on company level. Maybe even more, as laws and political decisions which are being issued at macro level strongly influence the entire economy and also individual company´s business success. By monitoring IC-efficiency at national level a new perspective on national economy´s performance can be obtained.

Like revenue and profit, which are no longer adequate indicators of business success at micro level, GDP can not be considered a valid indicator of a national economy performance any more.

What is the problem with GDP?

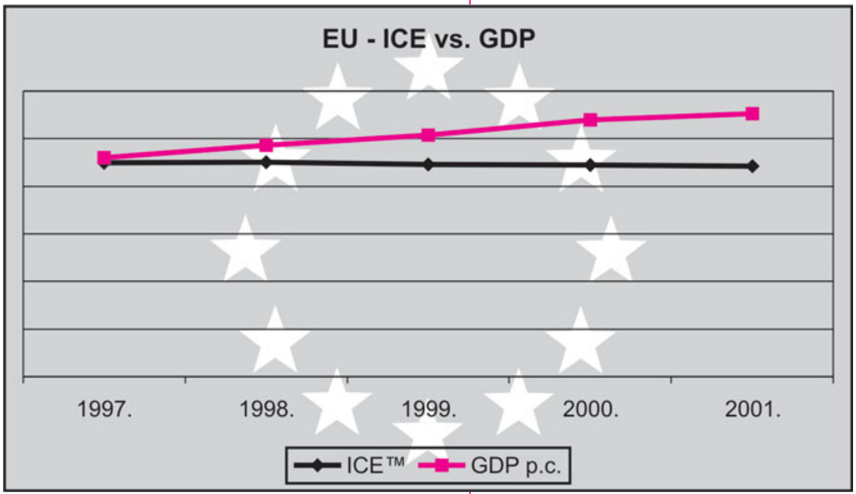
First, if a country has a GDP of X billion €, similar to revenue, you have no information, whether this is good or bad, with regard to the utilized resources.

Second, the macro level is being measured with one measure and the micro level with another, although both belong to the same economic organism.

The key question in this situation is what could be the substitute for GDP in knowledge economy? It could be the intellectual capital efficiency – ICE – of a country.

In order to receive an insight into the operational benefit of these two categories, the ICE for all European Union Countries has been calculated, summed up and compared to the GDP per capita. The analysis follows trends from 1997 to 2001 since this was the last year the data necessary for this analysis could be obtained for.

As it can be seen, GDP per capita rises continuously while ICE stagnates. Throughout the entire period value creation efficiency of intellectual capital does not change which means that in 2001 each monetary unit invested in employees created the same value as five years ago, in 1997.



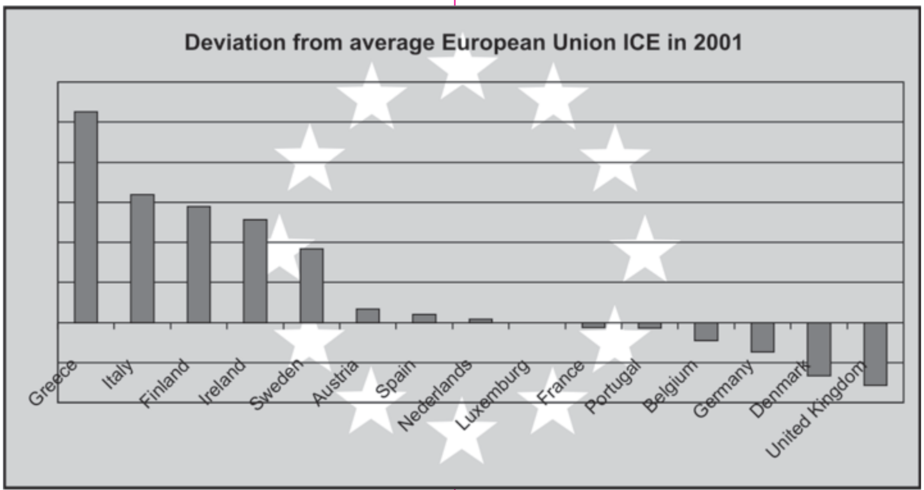
Well, the question arises which of the two indicators should be believed, or rather which one provides a more objective picture of the economic situation in the European Union.

High GDP p/c does not imply efficient economy. Although the UK shows the lowest value creation efficiency of intellectual capital of all the EU countries, it holds rank five according to GDP p/c. On the other hand the best country according to efficiency, namely Greece, does not excell according to GDP p/c. Let us take Italy which is holding rank two in efficiency but has a GDP p/c below the European average. It is obvious that intellectual capital efficiency – ICE – implies a new view of the current state of economic success in the European Union. The main reason for these differences is the fact that in calculating ICE only the working population was taken into consideration while with GDP p/c the entire population of a country comes into account.

As it can be seen, the value creation of EU countries is very concen-

GDP & ICE of EU Countries

2001	GDP p/c €	ICE
Luxemburg	50.039	2,21
Denmark	33.196	1,94
Ireland	29.821	2,72
Sweden	27.500	2,58
United Kingdom	27.143	1,89
Nederlands	26.845	2,23
Austria	26.374	2,28
Finland	26.141	2,79
Germany	25.155	2,06
Belgium	24.664	2,12
France	24.289	2,18
Italy	21.034	2,85
Spain	15.849	2,25
Greece	11.951	3,26
Portugal	11.882	2,18
EU TOTAL	**23.289**	**2,21**



trated. Please note that next to the created amount of VA the share in total value creation is listed too. The first four countries create 72% and the other eleven ones the remaining 28% of the entire value added. In order to get a clear picture of the economic competence of the EU countries, it is important to take ICE into consideration.

As one could notice, IC efficiency of several nations is in opposition to the created mass of value added. The "small" countries are actually the ones which have the most efficient economies within the EU. An exception to this and, at the same time a phenomenon, is Italy. It combines a desirable optimum: large amount of value added and high level of efficiency.

The problem here is that big economies like Germany or the UK are performing considerably below the European average, France being just slighly below.

Among the big four only Italy's economy turns out to be efficient. But why is the efficiency of "big" economies, primarily the UK and Germany such an important issue? Because it is here that even a slight improvement in efficiency would result in a considerable increase in value added. E.g. if the UK raised its efficiency only by 2% it would create approximately 32.000.000.000 € more value added while a 2% increase in Greece, a smaller economy, would result only in 23.000.000 € more value added .

This example shows that value creation efficiency of intellectual capital can shed entirely new light on national economies performance and it is certainly a different one from GDP. In a knowledge based economy new ways of measuring national performance have to be considered if orientation is to be obtained. Therefore any considerate government, which feels responsible for the well being of its national economy, has to pay due attention to the presented issue.

Created value added

2001	VA € m	Share %
Germany	1.863.830	23,33
United Kingdom	1.383.844	17,32
France	1.358.900	17,01
Italy	1.140.830.	14,28
Spain	589.648	7,38
Nederlands	393.843	4,93
Belgium	227.369	2,85
Sweden	214.557.	2,69
Austria	200.394	2,51
Denmark	152.522	1,91
Finland	118.499	1,48
Greece	114.568	1,43
Portugal	106.395	1,33
Ireland	102.691	1,29
Luxemburg	19.737	0,25
EU TOTAL	7.987.627	100,00

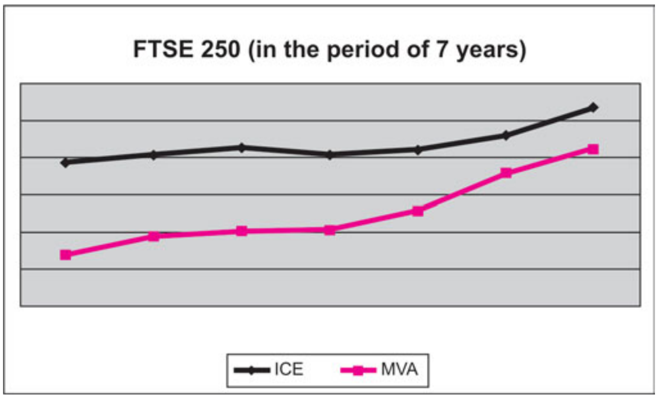
European Union ICE Ranking

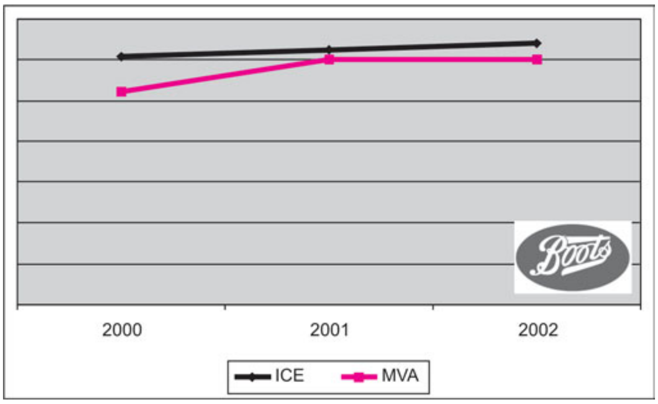
2001	ICE	VA € m
Greece	3,26	114.568
Italy	2,85	1.140.830
Finland	2,79	118.499
Ireland	2,72	102.691
Sweden	2,58	214.557
Austria	2,28	200.394
Spain	2,25	589.648
Nederlands	2,23	393.843
Luxemburg	2,21	19.737
France	2,18	1.358.900
Portugal	2,18	106.395
Belgium	2,12	227.369
Germany	2,06	1.863.830
Denmark	1,94	152.522
United Kingdom	1,89	1.383.844
EU TOTAL	2,21	7.987.627

ICE and Market Value – New Possibilities for Companies

It is hard to obtain a correlation between ICE and GDP but it is not for the market value of companies and their ICE. According to the results of an empirical analysis carried out at 30 randomly chosen companies listed at the FTSE 250, there is a close relationship between these two indicators.

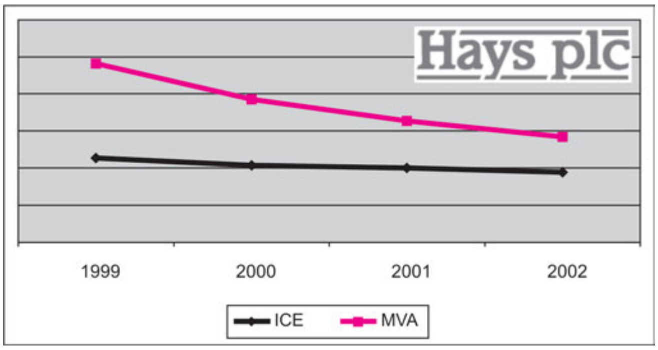
Statistical analysis was applied to 27 companies for the period of 8 years in three different ways. Each procedure led to the same conclusion, **that a relation between the coefficients ICE and MVA does exist**. The significance tests were positive.





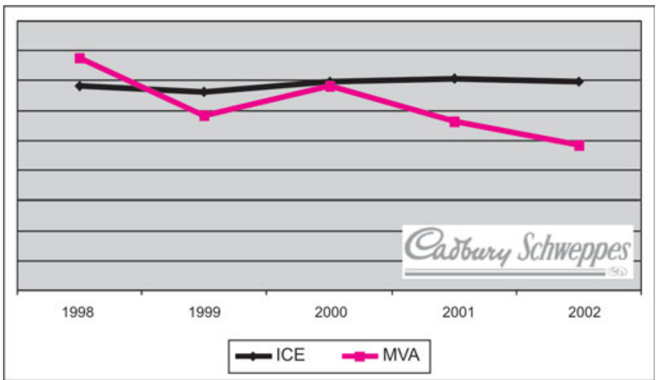
By taking an average ICE - MVA, as shown in the graph below, **a high degree of** correspondence between the two indicators can be noticed.

A high correspondence had also been received at a study carried out at the Vienna StockExchange. 70 companies listed on the Vienna stock exchange were selected and analyzed for three years (1994 – 1997). The results of the ICE analysis were compared with the MVA of the same companies. As it can be seen a high correspondence between average MVA and ICE does exist. In our opinion these empirical results could be the proof of a **close relationship between the value creation efficiency of intellectual capital and the market value of companies.**



Of what relevance is this for companies? They receive help in two and more ways:

- Firstly, regarding the increase of their market value. Now that they have received a signpost which directs them, they can work on increasing their IC efficiency
- Secondly, they can determine the actual value of their company although it is not listed at the stock exchange, or they can assess the value of company parts.



Intellectual Capital Efficiency – European TOP 500 by Countries

Country	No. of Comp.	VA € m	Best Company 2002	Sector	ICE
Austria	9	8.811	Verbund	Electricity	3,77
Belgium	15	34.930	D'Ietern	Support services	3,51
Czech Republic	1	1.052	Češky Telekom	Telecommunications	5,47
Denmark	8	12.409	TDC	Telecommunications	2,97
Finland	17	31.529	Sampo	Insurance	4,79
France	57	279.141	CNP Assurance	Life assurance	6,65
Germany	77	328.623	WCM	Real estate	4,62
Greece	6	6.728	Hellenic Telecommunications	Telecommunications	3,38
Hungary	1	562	MOL Hungarian Oil and Gas	Oil & gas	2,75
Ireland	7	11.178	Bank of Ireland	Banks	2,91
Italy	32	96.596	ENI	Oil & gas	6,32
Liechtenstein	1	1.083	Hilti	Construction & Building	1,68
Luxembourg	3	4.947	Ses Global	Media & photography	21,98
Norway	6	16.175	Norske Skogindustrier	Forestry & paper	3,92
Poland	2	3.160	Telekomunikacja Polska	Telecommunications	3,31
Portugal	6	8.943	CIMPOR	Construction & Building	5,37
Russia	2	10.477	Gazprom	Gas distribution	7,99
Spain	23	72.032	Gas Natural	Gas distribution	7,45
Sweden	22	44.508	Svenska Handelsbanken	Banks	3,76
Switzerland	32	114.692	Holcim	Construction & Building	5,10
The Netherlands	29	99.110	Nuon	Electricity	3,38
United Kingdom	144	403.221	British Land	Real estate	18,62
TOTAL	**500**	**1.589.905**	**ICE TOP 500**		**2,43**

The data presented in the chart implies several ambiquities:

- First, the small number of Italian companies represented among the ICE top 500 is in no relation to the size and efficiency of this economy on national level. The reason for this is that Italy is building its economic strenght on small to medium sized, but very efficient companies.
- Second, the most efficient national companies come from traditional sectors, not the high tech one: Oil & Gas and Gas distribution – 4, Construction & Building – 3, Electricity – 2, the hit sector being Telecommunications the most efficient one in 4 countries.
- Third, in the UK and Germany, the two largest countries according to value added, the most efficient companies come from real estate sectors while in two smaller economies – Ireland and Sweden – banks are the most efficient.
- Fourth, the appearance of Czech Republic, Hungary, Poland and Russia indicates that new players are joining the game, from areas noone has considered before.

TOP 500 - VA by Sectors

Share %	Sector	VA 2002 € m	ICE
16,19	Banks	257.347	2,30
8,83	Telecommunications	140.364	3,22
8,24	Automobiles & parts	130.929	1,92
7,91	Oil & gas	125.701	5,33
4,26	Electricity	67.670	3,37
4,09	Construction & Building	65.037	2,16
3,90	Diversified industrials	62.079	2,13
3,89	Pharmaceuticals & biotechnology	61.869	2,73
3,65	Media & photography	57.966	2,12
3,42	Food procesors	54.449	2,43
3,42	Chemicals	54.361	2,02
3,27	Engineering & machinery	52.068	1,69
3,18	Food & drug retailers	50.542	2,04
2,91	Insurance	46.212	2,61
2,84	General Retailers	45.142	1,91
2,45	Support services	39.012	1,77
2,18	Transport	34.586	1,99
1,80	Aerospace & defence	28.600	1,67
1,43	Life assurance	22.801	2,45
1,28	Beverages	20.376	3,03
1,26	Leisure & hotels	20.020	2,09
1,16	Mining	18.451	3,94
1,14	Gas distribution	18.175	5,13
1,05	Forestry & paper	16.745	2,79
1,00	Household goods	15.912	2,10
0,81	Personal Care	12.925	2,18
0,76	Health	12.075	1,89
0,74	Steel & other metals	11.842	1,91
0,70	Tobacco	11.165	3,74
0,54	IT Hardware	8.635	3,27
0,43	Software & IT services	6.889	1,76
0,40	Electronic & electrical	6.369	1,75
0,39	Water	6.225	3,16
0,28	Other finance	4.504	2,41
0,18	Real estate	2.861	7,91
100,00	**ICE TOP 500 TOTAL**	**1.589.905**	**2,43**

Half of the total value added created by the top 500 is created by the first six sectors. The other half is created by the remaining 29 sectors. The problem is that two of the first six sectors- Banks and Automobiles & parts- display value creation efficiency level which is below the Top 500 average. This way the potential of the «cream» of European business is unfortunately reduced.

Data source

As already mentioned, all the data necessary for calculating ICE on national level could be obtained from national statistics offices. It is somewhat more complex with the data necessary for calculating ICE according to sectors or companies. The base for more detailed calculation of value added were annual business reports published by the companies.

The accounting standards represented a serious problem here. US GAAP does not state the position wages and salaries, which makes it impossible to calculate either the value added or the intellectual capital efficiency. Since the data for calculation of parameters was not available for all companies, you may not be able to find some well known company.

The analysis The Value added Scoreboard, 2003 The Top 800 UK & 600 European companies by Value Added, published by Department of Trade and Industry, Business Finance & Investment Unit, UK, represented an important source of data for all the companies, where it was not possible to get hold of their annual reports.

TOP 500 - ICE by Sectors

Criterion

The criterion for being listed was the created value added whereby the bottom limit to be included was € 500 million. Next to the created value added, the European top 500 companies were also ranked according to their intellectual capital value creation efficiency.

Daimler Chrysler was the biggest company by creating € 30.336 million of value added in 2002. According to the results the average efficiency of our Top 500 is ICE= 2,43.

Some well known companies like MAN, Siemens, Alex Springer Verlag - Germany or Kingfisher, BBC, KPMG – UK, Cap Gemini Ernst & Young – France did not make it on the list of the most IC efficient European top 500, as they achieved minimal eficiency.

Other companies that could not make it on the list were the ones which although they created the required amount of value added did not create enough to cover for human capital (Ericsson – Sweden, Alcatel, Bull – France, Marconi – UK).

Share % in VA	Sector	ICE 2002	VA € m
0,18	Real estate	7,91	2.861
7,91	Oil & gas	5,33	125.701
1,14	Gas distribution	5,13	18.175
1,16	Mining	3,94	18.451
0,70	Tobacco	3,74	11.165
4,26	Electricity	3,37	67.670
0,54	IT Hardware	3,27	8.635
8,83	Telecommunications	3,22	140.364
0,39	Water	3,16	6.225
1,28	Beverages	3,03	20.376
1,05	Forestry & paper	2,79	16.745
3,89	Pharmaceuticals & biotechnology	2,73	61.869
2,91	Insurance	2,61	46.212
1,43	Life assurance	2,45	22.801
3,42	Food processors	2,43	54.449
0,28	Other finance	2,41	4.504
16,19	Banks	2,30	257.347
0,81	Personal Care	2,18	12.925
4,09	Construction & Building	2,16	65.037
3,90	Diversified industrials	2,13	62.079
3,65	Media & photography	2,12	57.966
1,00	Household goods	2,10	15.912
1,26	Leisure & hotels	2,09	20.020
3,18	Food & drug retailers	2,04	50.542
3,42	Chemicals	2,02	54.361
2,18	Transport	1,99	34.586
8,24	Automobiles & parts	1,92	130.929
2,84	General Retailers	1,91	45.142
0,74	Steel & other metals	1,91	11.842
0,76	Health	1,89	12.075
2,45	Support services	1,77	39.012
0,43	Software & IT services	1,76	6.889
0,40	Electronic & electrical	1,75	6.369
3,27	Engineering & machinery	1,69	52.068
1,80	Aerospace & defence	1,67	28.600
100,00	**ICE TOP 500 TOTAL**	**2,43**	**1.589.905**

In this chart, displaying efficiency according to sectors, all results are real except in the sector IT-Hardware. Only these companies from this sector entered the Top 500 list, which had minimal efficiency-meaning that they created at least that much value added to cover human capital investments. Only two companies satisfied this condition and thus joined the list. However, as we are dealing with a key sector of new economy, there is a separate chart in order to receive a real picture of its IC performance.

Company	VA € m	HC	ICE
Nokia, Finland	8.071	2.884	3,44
Ericsson, Sweden	3.615	5.675	0,07
Alcatel, France	3.035	6.442	-0,65
Oce, The Netherlands	1.428	1.216	1,32
Marconi, UK	1.049	2.614	-1,09
Bull, France	633	929	0,21
Spirent, UK	564	380	1,81
IT Hardware	**18.396**	**20.139**	**0,82**

ICE TOP 50 European Banks

Rank	Bank	ICE 2002	VA € m
1	Northern Rock, UK	5,88	544
2	Svenska Handelsbanken, Sweden	3,76	1.862
3	Lloyds, TSB, UK	3,72	8.643
4	Alliance & Leicester,UK	3,67	1.009
5	HBOS, UK	3,47	6.531
6	Banco Popular Espanol, Spain	3,34	1.353
7	DePfa, Germany	3,28	644
8	Dexia, Belgium	3,13	3.755
9	Bank Pekao, Poland	3,13	732
10	Union Bank of Norway, Norway	3,07	679
11	Alpha Credit Bank, Greece	3,05	910
12	Royal Bank of Scotland, UK	3,02	14.099
13	ForeningsSparenbanken, Sweden	3,01	1.619
14	DnB, Norway	2,99	1.130
15	EFG Eurobank Ergasius, Greece	2,96	640
16	Banco Comercial Portuges, Portugal	2,96	1.669
17	Banco De Sabadell, Spain	2,93	792
18	Bank of Ireland, Ireland	2,91	1.972
19	Danske Bank, Denmark	2,89	2.639
20	UniCredito Italiano, Italy	2,87	6.515
21	Bradford & Bingley, UK	2,84	680
22	Banca Popolare di Verona, Italy	2,78	889
23	Standard Chartered, UK	2,73	2.419
24	Nordea, Sweden	2,70	3.843
25	HSBC, UK	2,70	16.484
26	BHW, Germany	2,69	594
27	Banca Antonveneta Popolare, Italy	2,68	1.338
28	Banca Lombarda e Piemontese, Italy	2,65	819
29	Barclays, UK	2,62	11.336
30	National Bank of Greece, Greece	2,59	1.389
31	Sberbank, Russia	2,54	1.310
32	Banca Popolare di Bergamo, Italy	2,50	915
33	Commercial Bank of Greece, Greece	2,48	630
34	Banca Monte dei Paschi di Siena, Italy	2,45	3.220
35	BBV Argentaria, Spain	2,43	7.659
36	Banco Espanol de Credito, Spain	2,42	989
37	BNP Paribas, France	2,42	11.626
38	Erste Bank, Austria	2,40	1.350
39	Almanji, Belgium	2,39	4.100
40	Sanpaolo IMI, Italy	2,33	3.848
41	DZ Bank, Germany	2,30	2.115
42	Credit Agricole, France	2,28	9.644
43	Fortis, Belgium	2,20	7.175
44	BSCH, Spain	2,15	8.453
45	Espirito Santo Financial, Luxemburg	2,13	702
46	Banquee Populaires, France	2,13	3.418
47	Rabobank, The Netherlands	2,12	5.444
48	SEB, Sweden	2,07	2.015
49	HVB, Germany	2,04	6.395
50	Banca Popolare di Novara, Italy	2,00	577

Average intellectual capital efficiency of the banking sector is ICE=2,30

Unfortunately, this efficiency is not achieved by the biggest banks creating the largest amount of value added. Among the first 10 banks, according to the created value added, there are only 5 which are more efficient than the average and three of them (ABN AMRO, The Netherland, UBS and Credit Suisse, Switzerland, Credit Agricole, France) have such a low efficiency that they could not even make it on this list of 50 most efficient banks according to ICE.

ICE - European Top 500 Companies

Rank	Company	Sector	VA € m	ICE
1	Ses Global, Luxembourg	Media & photography	932	21,98
2	British Land, UK	Real estate	632	18,62
3	Enterprise Oil, UK (now part of Shell)	Oil & gas	1.798	18,17
4	Land Securities, UK	Real estate	823	11,19
5	BG, UK	Oil & gas	2.066	9,05
6	Canary Wharf, UK	Real estate	609	8,08
7	Gazprom, Russia	Gas distribution	9.167	7,99
8	Shell, UK	Oil & gas	28.186	7,94
9	International Power, UK	Electricity	656	7,92
10	Gas Natural, Spain	Gas distribution	1.688	7,45
11	Repsol YPF, Spain	Oil & gas	10.187	7,17
12	Vodafone, UK	Telecommunications	16.755	6,70
13	CNP Assurance, France	Life assurance	899	6,65
14	ENI, Italy	Oil & gas	15.745	6,32
15	Mediaset, Italy	Media & photography	1.428	6,18
16	Kelda, UK	Water	723	6,14
17	Northern Rock, UK	Banks	544	5,88
18	Western Power Distribution, UK	Electricity	564	5,87
19	ENDESA, Spain	Electricity	6.206	5,82
20	Railtrack (now RT), UK	Transport	1.510	5,76
21	Lonmin, UK	Mining	647	5,72
22	ASF, France	Transport	1.318	5,70
23	Češky Telekom, Czech Republic	Telecommunications	1.052	5,47
24	Imperial Tobacco, UK	Tobacco	1.232	5,47
25	Iberdrola, Spain	Electricity	3.170	5,37
26	CIMPOR, Portugal	Construction & Building	636	5,37
27	Eurotunnel, UK	Transport	599	5,14
28	Holcim, Switzerland	Construction & Building	3.029	5,10
29	Rio Tinto, UK	Mining	4.700	5,08
30	Scottish and Southern Energy, UK	Electricity	1.633	5,03
31	Electricidade de Portugal	Electricity	2.288	4,92
32	Sampo, Finland	Insurance	1.598	4,79
33	BP, UK	Oil & gas	27.334	4,76
34	WCM, Germany	Real estate	797	4,62
35	TotalFinaElf, France	Oil & gas	23.231	4,60
36	Gallaher, UK	Tobacco	1.023	4,48
37	Autostrade, Italy	Transport	1.528	4,36
38	Buzzi Unicem, Italy	Construction & Building	602	4,29
39	BHP Billiton, UK	Mining	6.389	4,24
40	PowerGen UK	Electricity	2.019	4,23
41	CEPSA, Spain	Oil & gas	1.187	4,22
42	HEW, Germany	Electricity	2.266	4,19
43	Lattice, UK	Gas distribution	3.738	4,14
44	United Utilities, UK	Water	1.735	4,12
45	Punch, UK	Leisure & hotels	622	4,08
46	Portugal Telecom, Portugal	Telecommunications	2.496	4,02
47	Benetton, Italy	Household goods	716	3,95
48	Innogy, UK	Electricity	1.049	3,94
49	John Swire, UK	Transport	1.330	3,94
50	South African Beverages (now SABMiller), UK	Beverages	1.268	3,93

Rank	Company	Sector	VA € m	ICE
51	Norske Skogindustrier, Norway	Forestry & paper	1.622	3,92
52	Fortum, Finland	Oil & gas	1.983	3,81
53	Norsk, Hydro, Norway	Oil & gas	6.866	3,79
54	Verbund, Austria	Electricity	857	3,77
55	Telefonica, Spain	Telecommunications	15.453	3,76
56	Allied Domecq, UK	Beverages	1.746	3,76
57	Svenska Handelsbanken, Sweden	Banks	1.862	3,76
58	OMV, Austria	Oil & gas	1.385	3,75
59	BAT, UK	Tobacco	6.826	3,72
60	Lloyds, TSB, UK	Banks	8.643	3,72
61	Enel, Italy	Electricity	10.460	3,70
62	Alliance & Leicester,UK	Banks	1.009	3,67
63	Union Electrica Fenosa, Spain	Electricity	2.059	3,66
64	BAA, UK	Transport	1.879	3,63
65	Italgas, Italy	Gas distribution	962	3,63
66	Vattenfall, Sweden	Electricity	3.657	3,58
67	National Grid, UK	Electricity	1.852	3,55
68	D'Ietern, Belgium	Support services	920	3,51
69	HBOS, UK	Banks	6.531	3,47
70	Swisscom, Switzerland	Telecommunications	4.430	3,47
71	Telenor, Norway	Telecommunications	3.644	3,45
72	Holmen, Sweden	Forestry & paper	673	3,45
73	Nokia, Finland	IT Hardware	8.071	3,44
74	Telekom Austria, Austria	Telecommunications	1.588	3,40
75	Diageo, UK	Beverages	5.402	3,40
76	Nuon, The Netherlands	Electricity	1.339	3,38
77	Hellenic Telecommunications, Greece	Telecommunications	2.135	3,38
78	Italmobiliare, Italy	Construction & Building	1.858	3,38
79	P&O Princess Cruises, UK	Leisure & hotels	729	3,36
80	Olivetti, Italy	Telecommunications	12.452	3,36
81	SHV, The Netherlands	Diversified industrials	1.489	3,35
82	Banco Popular Espanol, Spain	Banks	1.353	3,34
83	Telia (now TeliaSonera), Sweden	Telecommunications	3.668	3,33
84	Telekomunikacja Polska, Poland	Telecommunications	2.428	3,31
85	Scottish Power, UK	Electricity	2.971	3,30
86	Man, UK	Other finance	582	3,28
87	Bewag, Germany	Electricity	893	3,28
88	DePfa, Germany	Banks	644	3,28
89	Cartiere Burgo, Italy	Forestry & paper	572	3,27
90	KPN, The Netherlands	Telecommunications	5.302	3,22
91	Saipem, Italy	Oil & gas	893	3,21
92	Aegon, The Netherlands	Life assurance	5.926	3,20
93	Interbrew, Belgium	Beverages	2.991	3,16
94	Severn Trent, UK	Water	1.576	3,15
95	Anglo American, UK	Mining	6.715	3,15
96	Dexia, Belgium	Banks	3.755	3,13
97	KirchMedia, Germany	Media & photography	816	3,13
98	ProSiebenSat1, Germany	Media & photography	516	3,13
99	Bank Pekao, Poland	Banks	732	3,13
100	George Wimpey, UK	Construction & Building	512	3,12

Rank	Company	Sector	VA € m	ICE
101	TF1, France	Media & photography	709	3,12
102	UPM-Kymmene, Finland	Forestry & paper	3.758	3,11
103	Reckit Benckiser, UK	Personal Care	1.419	3,11
104	INDITEX, Spain	General Retailers	1.137	3,10
105	Union Bank of Norway, Norway	Banks	679	3,07
106	Natinwide, UK	Other finance	1.113	3,07
107	Alpha Credit Bank, Greece	Banks	910	3,05
108	Altadis, Spain	Tobacco	1.532	3,05
109	Porsche, Germany	Automobiles & parts	1.815	3,03
110	Novartis, Switzerland	Pharmaceuticals & biotechnology	11.461	3,03
111	Allianz, Germany	Insurance	18.941	3,03
112	Royal Bank of Scotland, UK	Banks	14.099	3,02
113	Deutsche Telekom, Germany	Telecommunications	27.335	3,02
114	Cadbury Schweppes, UK	Food procesors	2.804	3,02
115	Taylor Woodrow, UK	Construction & Building	610	3,01
116	ForeningsSparenbanken, Sweden	Banks	1.619	3,01
117	Gaz De France, France	Oil & gas	4.277	3,01
118	AstraZeneca, UK	Pharmaceuticals & biotechnology	7.645	3,01
119	awg, UK	Water	980	3,00
120	Amadeus Global Travel, Spain	Leisure & hotels	669	3,00
121	Sanofi-Syntelabo, France	Pharmaceuticals & biotechnology	3.824	3,00
122	UCB, Belgium	Pharmaceuticals & biotechnology	1.306	2,99
123	DnB, Norway	Banks	1.130	2,99
124	Old Mutual, UK	Life assurance	2.755	2,99
125	Serono, Switzerland	Pharmaceuticals & biotechnology	765	2,98
126	Hermes International, France	Household goods	596	2,98
127	TDC, Denmark	Telecommunications	2.749	2,97
128	Montedison (now Edison), Italy	Diversified industrials	3.038	2,97
129	EFG Eurobank Ergasius, Greece	Banks	640	2,96
130	Electrabel, Belgium	Electricity	3.347	2,96
131	Banco Comercial Portuges, Portugal	Banks	1.669	2,96
132	Synthes-Stratec, Switzerland	Health	776	2,94
133	Banco De Sabadell, Spain	Banks	792	2,93
134	Pernord Ricard, France	Beverages	1.322	2,92
135	Lonza, Switzerland	Chemicals	807	2,92
136	Bank of Ireland, Ireland	Banks	1.972	2,91
137	Danske Bank, Denmark	Banks	2.639	2,89
138	Bertelsman, Germany	Media & photography	5.042	2,88
139	UniCredito Italiano, Italy	Banks	6.515	2,87
140	Parmalat Finanziaria, Italy	Food procesors	1.905	2,84
141	Yell, UK	Media & photography	514	2,84
142	Bradford & Bingley, UK	Banks	680	2,84
143	Stora Enso, Finland	Forestry & paper	4.709	2,83
144	Tate & Lyle, UK	Food procesors	980	2,82
145	L'Air Liquide, France	Chemicals	3.371	2,82
146	Swedish Match, Sweden	Tobacco	552	2,81
147	GlaxoSmithKline, UK	Pharmaceuticals & biotechnology	15.110	2,81
148	Richemont, Switzerland	Household goods	1.809	2,78
149	Helvetia Patria, Switzerland	Life assurance	1.072	2,78
150	Banca Popolare di Verona, Italy	Banks	889	2,78
151	Neckarwerke Stuttgart, Germany	Electricity	662	2,78
152	Hanson, UK	Construction & Building	2.235	2,77
153	Eircom, Ireland (now part of Valentia)	Telecommunications	1.052	2,76
154	MOL Hungarian Oil and Gas, Hungary	Oil & gas	562	2,75
155	Tchibo, Germany	Food & drug retailers	1.483	2,75
156	Barilla G & RF Llli, Italy	Food procesors	660	2,75
157	Heineken, The Netherlands	Beverages	2.914	2,74
158	Standard Chartered, UK	Banks	2.419	2,73
159	JC Decaux, France	Media & photography	662	2,70
160	Nordea, Sweden	Banks	3.843	2,70
161	HSBC, UK	Banks	16.484	2,70
162	Centrica, UK	Gas distribution	2.621	2,70
163	BHW, Germany	Banks	594	2,69
164	Banca Antonveneta Popolare, Italy	Banks	1.338	2,68
165	BMW, Germany	Automobiles & parts	12.081	2,67
166	Lafarge, France	Construction & Building	5.057	2,67
167	Carlsberg, Denmark	Beverages	1.788	2,67
168	Banca Lombarda e Piemontese, Italy	Banks	819	2,65
169	Altana, Germany	Pharmaceuticals & biotechnology	972	2,64
170	Roche, Switzerland	Pharmaceutic. & biotech.	9.976	2,63
171	Prudential, UK	Life assurance	2.536	2,63
172	Barclays, UK	Banks	11.336	2,62
173	Baloise, Switzerland	Insurance	1.439	2,61
174	Debenhams, UK	General Retailers	653	2,61
175	BOC, UK	Chemicals	2.446	2,60
176	National Bank of Greece, Greece	Banks	1.389	2,59
177	Sudzucker, Germany	Food procesors	1.316	2,59
178	Six Continents, UK	Leisure & hotels	3.225	2,57
179	Johnson Matthey, UK	Chemicals	616	2,57
180	Unilever, UK	Food procesors	13.571	2,56
181	Merial, UK	Pharmaceuticals & biotechnology	610	2,55
182	BT, UK	Telecommunications	13.730	2,54
183	Sberbank, Russia	Banks	1.310	2,54
184	H&M Hennes & Mauritz, Sweden	General Retailers	1.340	2,53
185	Nestle, Switzerland	Food procesors	16.889	2,53
186	Wittington Inestments, UK	Food procesors	1.650	2,53
187	Ashtead, UK	Support services	560	2,53
188	Heidelberger Zement, Germany	Construction & Building	2.658	2,51
189	ING Groep, The Netherlands	Insurance	14.543	2,51
190	Banca Popolare di Bergamo, Italy	Banks	915	2,50
191	MARZOTTO, Italy	Household goods	586	2,50
192	France Telecom, France	Telecommunications	18.184	2,49
193	Commercial Bank of Greece, Greece	Banks	630	2,48
194	Grupo Ferrovial, Spain	Construction & Building	1.002	2,48
195	Svenska Cellulosa, Sweden	Forestry & paper	3.244	2,48
196	Merloni Elettrodomestici, Italy	Household goods	513	2,48
197	Novo Nordisk, Denmark	Pharmaceuticals & biotechnology	1.835	2,47
198	Next, UK	General Retailers	930	2,47
199	Amvescap, UK	Other finance	1.572	2,46
200	Cable and Wireless, UK	Telecommunications	3.234	2,46

Rank	Company	Sector	VA € m	ICE
201	Motor-Columbus, Switzerland	Electricity	775	2,45
202	Giavudan, Switzerland	Personal Care	755	2,45
203	Banca Monte dei Paschi di Siena, Italy	Banks	3.220	2,45
204	Electricite de France, France	Electricity	15.370	2,44
205	RWE, Germany	Diversified industrials	8.587	2,44
206	Aare-Tessin, Switzerland	Electricity	767	2,43
207	Scotish & Newcastle, UK	Beverages	1.923	2,43
208	BBV Argentaria, Spain	Banks	7.659	2,43
209	Banco Espanol de Credito, Spain	Banks	989	2,42
210	Atlas Copco, Sweden	Engineering & machinery	2.272	2,42
211	BNP Paribas, France	Banks	11.626	2,42
212	BPB, UK	Construction & Building	813	2,40
213	Volkswagen, Germany	Automobiles & parts	23.573	2,40
214	Erste Bank, Austria	Banks	1.350	2,40
215	Emap, UK	Media & photography	592	2,39
216	Elisa Communications, Finland	Telecommunications	610	2,39
217	Almanji, Belgium	Banks	4.100	2,39
218	Numico, The Netherlands	Food procesors	1.473	2,39
219	Dyckerhoff, Germany	Construction & Building	876	2,39
220	Adidas-Salomon	Household goods	1.233	2,39
221	Aggregate Industries, UK	Construction & Building	704	2,38
222	Heraeus, Germany	Diversified industrials	843	2,35
223	Amersham, UK	Health	1.112	2,35
224	Energie Baden, Germany	Electricity	2.809	2,34
225	Coca-Cola HBC, Greece	Beverages	1.023	2,33
226	Rank,UK	Leisure & hotels	900	2,33
227	Sanpaolo IMI, Italy	Banks	3.848	2,33
228	Tesco, UK	Food & drug retailers	6.212	2,32
229	Swiss Life, Switzerland	Life assurance	1.562	2,32
230	Sol Melia, Spain	Leisure & hotels	563	2,31
231	Boots, UK	General Retailers	2.611	2,31
232	Wolters Kluwer, The Netherlands	Media & photography	1.983	2,30
233	DZ Bank, Germany	Banks	2.115	2,30
234	L'Oreal, France	Personal Care	4.484	2,30
235	Reed International (now Reed Elsevier), UK	Media & photography	3.581	2,29
236	Danone, France	Food procesors	3.701	2,29
237	Credit Agricole, France	Banks	9.644	2,28
238	E.ON, Germany	Diversified industrials	15.326	2,27
239	Glaverbel, Belgium	Construction & Building	802	2,27
240	Boehringer Ingelheim, Germany	Pharmaceuticals & biotechnology	3.230	2,26
241	Beiersdorf, Germany	Personal Care	1.370	2,25
242	Alliance UniChem, UK	Health	807	2,25
243	Compagnie Industriali Riunite, Italy	Diversified industrials	785	2,24
244	Societe BIC, France	Household goods	674	2,24
245	Dixons, UK	General Retailers	1.408	2,24
246	Smith & Nephew, UK	Health	720	2,24
247	Signet, UK	General Retailers	770	2,22
248	Aceralia, Spain	Steel & other metals	1.050	2,22
249	M-real, Finland	Media & photography	1.796	2,22
250	Marks & Spencer, UK	General Retailers	3.059	2,21

Rank	Company	Sector	VA € m	ICE
251	Rexam, UK	Support services	1.596	2,21
252	Fraport, Germany	Transport	1.132	2,20
253	Wm Morrison Supermarkets, UK	Food & drug retailers	1.123	2,20
254	Orkla, Norway	Food procesors	2.234	2,20
255	Fortis, Belgium	Banks	7.175	2,20
256	Hilton, UK	Leisure & hotels	1.545	2,20
257	Bunzl, UK	Support services	823	2,19
258	Suez, France	Diversified industrials	13.648	2,17
259	CRH, Ireland	Construction & Building	3.321	2,16
260	BSCH, Spain	Banks	8.453	2,15
261	Borealis, Denmark	Chemicals	559	2,15
262	Scania, Sweden	Engineering & machinery	1.795	2,15
263	Sonae SGPS, Portugal	Food & drug retailers	1.256	2,14
264	Merck, Germany	Pharmaceuticals & biotechnology	2.807	2,14
265	DSM, The Netherlands	Chemicals	1.996	2,14
266	IMERYS, France	Construction & Building	937	2,13
267	Trinity Mirror, UK	Media & photography	797	2,13
268	Espirito Santo Financial, Luxemburg	Banks	702	2,13
269	Jeronimo Martins, Portugal	Food & drug retailers	597	2,13
270	Banquee Populaires, France	Banks	3.418	2,13
271	Carrefour, France	Food & drug retailers	10.530	2,12
272	Rabobank, The Netherlands	Banks	5.444	2,12
273	Tessenerio, Belgium	Chemicals	546	2,12
274	Nutreco, The Netherlands	Food procesors	623	2,12
275	British Sky Broadcasting, UK	Media & photography	673	2,11
276	Draka, The Netherlands	Electronic & electrical	583	2,11
277	Istituto Finanziario Industriale, Italy	Automobiles & parts	14.121	2,11
278	Groupe Lagardere, France	Media & photography	4.130	2,10
279	P&O, UK	Transport	1.423	2,10
280	Ciba Specialty Chemicals, Switzerlands	Chemicals	1.939	2,10
281	Kemira, Finland	Chemicals	700	2,09
282	Telewest Communications, UK	Telecommunications	797	2,09
283	GUS, UK	General Retailers	2.857	2,08
284	Solvay, Belgium	Chemicals	2.595	2,08
285	Pinault Printemps-Redoute, France	General Retailers	5.843	2,08
286	BASF, Germany	Chemicals	9.369	2,08
287	Jefferson Smurfit, Ireland	Forestry & paper	1.596	2,07
288	Swatch, Switzerland	Household goods	1.335	2,07
289	SEB, Sweden	Banks	2.015	2,07
290	Rallye, France	Food & drug retailers	3.573	2,06
291	Colruyt, Belgium	Food & drug retailers	592	2,06
292	Franz Haniel & Cie, Germany	Support services	2.165	2,06
293	Huhtamaki, Finland	Support services	827	2,06
294	AREVA, France	Diversified industrials	4.140	2,05
295	Saint-Gobain, France	Construction & Building	9.977	2,04
296	Pirelli, Italy	Diversified industrials	2.295	2,04
297	HVB, Germany	Banks	6.395	2,04
298	CSM, The Netherlands	Food procesors	935	2,03
299	Safeway, UK	Food & drug retailers	2.249	2,03
300	Acciona, Spain	Construction & Building	766	2,03

Rank	Company	Sector	VA € m	ICE
301	Schering, Germany	Pharmaceuticals & biotechnology	2.329	2,03
302	Kerry, Ireland	Food procesors	782	2,03
303	Peugeot (PSA), France	Automobiles & parts	11.615	2,02
304	AXA, France	Insurance	8.650	2,02
305	Christian Dior, France	Household goods	3.504	2,02
306	Pilkington, UK	Construction & Building	1.545	2,02
307	Koninklijke Vopak, The Netherlands	Support services	1.125	2,02
308	Finmeccanica, Italy	Aerospace & defence	2.785	2,02
309	Arcadia, UK	General Retailers	633	2,01
310	Syngenta, Switzerland	Chemicals	2.148	2,01
311	Rentokil Initial, UK	Support services	2.386	2,01
312	Cobham, UK	Aerospace & defence	524	2,01
313	Vallourec, France	Engineering & machinery	842	2,01
314	Vivendi Universal, France	Media & photography	17.933	2,00
315	Arbed, Luxembourg	Steel & other metals	3.314	2,00
316	Linde, Germany	Engineering & machinery	3.370	2,00
317	Banca Popolare di Novara, Italy	Banks	577	2,00
318	ICI, UK	Chemicals	3.015	1,97
319	AMB Aachner & Munchener (now AMB Generali), Germany	Life assurance	1.579	1,97
320	Lex Service (now RAC), UK	Support services	536	1,97
321	AKZO Nobel, The Netherlands	Chemicals	5.059	1,97
322	Zodiac, France	Aerospace & defence	660	1,97
323	Essilor International, France	Health	1.069	1,96
324	ABN AMRO, The Netherlands	Banks	11.312	1,96
325	RMC, UK	Construction & Building	2.029	1,96
326	Fimalac, France	Support services	689	1,95
327	Bongrain, France	Food procesors	743	1,95
328	Wolseley, UK	Construction & Building	2.342	1,95
329	Julius Baer, Switzerland	Other finance	640	1,94
330	AGBAR, Spain	Water	1.210	1,94
331	Buderus, Germany	Engineering & machinery	669	1,93
332	Banca Popolare di Milano, Italy	Banks	630	1,93
333	Delhaize, Belgium	Food & drug retailers	4.050	1,93
334	Sainsbury, UK	Food & drug retailers	4.271	1,93
335	Sandvik, Sweden	Engineering & machinery	2.355	1,92
336	Koramic Building Products, Belgium	Construction & Building	524	1,92
337	Wacker-Chemie, Germany	Chemicals	1.322	1,92
338	mm02, UK	Telecommunications	1.269	1,92
339	Independent News & Media, Ireland	Media & photography	533	1,91
340	Credit Lyonnais, France	Banks	3.978	1,91
341	Adecco, Switzerland	Support services	2.456	1,91
342	Etex, Belgium	Construction & Building	1.540	1,90
343	Hays, UK	Support services	1.416	1,90
344	Wella, Germany	Personal Care	1.135	1,90
345	Dimension Data, UK	Software & IT services	522	1,90
346	FCC, Spain	Construction & Building	1.989	1,90
347	DS Smith, UK	Forestry & paper	572	1,90
348	SSAB Svenskt Stal, Sweden	Steel & other metals	629	1,90
349	Arla Foods, Denmark	Food procesors	1.112	1,90
350	Zurcher Kantonalbank, Switzerland	Banks	552	1,89

Rank	Company	Sector	VA € m	ICE
351	Accor, France	Leisure & hotels	3.514	1,89
352	Ahold, The Netherlands	Food & drug retailers	11.682	1,88
353	Allied Irish Banks, Ireland	Banks	1.922	1,88
354	VNU, The Netherlands	Media & photography	2.734	1,88
355	Preussag (now TUI), Germany	Leisure & hotels	4.150	1,88
356	Wienerberger Baustoffindustrie, Austria	Construction & Building	572	1,88
357	Smiths, UK	Aerospace & defence	2.141	1,88
358	Hunter Douglas, The Netherlands	Construction & Building	747	1,88
359	Societe Generale, France	Banks	8.242	1,87
360	SanomaWSOY, Finland	Media & photography	616	1,87
361	Assa Abloy, Sweden	Engineering & machinery	1.165	1,87
362	Caisse d'Epargne, France	Banks	3.731	1,87
363	Bayer, Germany	Chemicals	11.118	1,86
364	Eramet, France	Steel & other metals	716	1,86
365	Groupe SEB, France	Household goods	552	1,85
366	K+S, Germany	Chemicals	723	1,85
367	Outokumpu, Finland	Steel & other metals	1.302	1,85
368	Renault, France	Automobiles & parts	7.018	1,84
369	BUPA, UK	Insurance	1.042	1,84
370	Henkel, Germany	Personal Care	3.763	1,84
371	Bouyges, France	Construction & Building	6.235	1,83
372	SAP, Germany	Software & IT services	4.051	1,83
373	Linpac, UK	Support services	513	1,83
374	Trelleborg, Sweden	Automobiles & parts	609	1,83
375	Pechiney, France	Steel & other metals	2.324	1,82
376	Rautaruuki, Finland	Steel & other metals	760	1,82
377	UBS, Switzerland	Banks	18.840	1,82
378	Bohler-Uddeholm, Austria	Steel & other metals	590	1,81
379	Spirent, UK	IT Hardware	564	1,81
380	Douglas, Germany	General Retailers	664	1,81
381	Fresenius, Germany	Health	3.167	1,80
382	FKI, UK	Engineering & machinery	1.009	1,80
383	MAHLE, Germany	Automobiles & parts	1.269	1,80
384	Banca Popolare di Lodi, Italy	Banks	553	1,80
385	Bekaert, Belgium	Engineering & machinery	687	1,80
386	Voest Alpine Stahl, Austria	Steel & other metals	1.157	1,80
387	FLS Industries, Denmark	Engineering & machinery	926	1,79
388	Coop Switzerland, Switzerland	Food & drug retailers	2.229	1,79
389	Tomkins, UK	Engineering & machinery	1.952	1,79
390	Vedior, The Netherlands	Support services	893	1,79
391	West LB, Germany	Banks	2.356	1,78
392	Rexel, France	Electronic & electrical	1.286	1,78
393	Big Food, UK	Food & drug retailers	694	1,77
394	WH Smith, UK	General Retailers	740	1,77
395	Hagemeyer, The Netherlands	Electronic & electrical	1.210	1,76
396	BBA, UK	Transport	742	1,76
397	Sig, Switzerland	Support services	617	1,76
398	GKN, UK	Automobiles & parts	2.276	1,76
399	Sika Finanz, Switzerland	Chemicals	530	1,76
400	Granada, UK	Media & photography	890	1,76

Rank	Company	Sector	VA € m	ICE
401	Eureko, The Netherlands	Life assurance	1.440	1,76
402	Metro, Germany	General Retailers	7.479	1,76
403	Grupo Dragados, Spain	Construction & Building	1.776	1,76
404	Thomson Multimedia, France	Electronic & electrical	2.264	1,75
405	CGNU (now Aviva), UK	Life assurance	4.298	1,74
406	RHM Group One, UK	Food procesors	949	1,74
407	Reuters, UK	Media & photography	2.961	1,74
408	Jungheinrich, Germany	Engineering & machinery	644	1,73
409	Heidelberger Druckmaschinen, Germany	Engineering & machinery	2.118	1,73
410	Autogrill, Italy	Leisure & hotels	1.376	1,73
411	Co-operative Group (CWS), UK	Diversified industrials	1.310	1,72
412	Robert Bosch, Germany	Automobiles & parts	13.127	1,71
413	Clariant, Switzerland	Chemicals	2.122	1,71
414	Austrian Airlines, Austria	Transport	564	1,71
415	ACS, Spain	Construction & Building	1.140	1,71
416	SKF, Sweden	Engineering & machinery	2.139	1,71
417	Galeries Lafayette, France	General Retailers	1.105	1,71
418	Northern Foods, UK	Food procesors	843	1,70
419	Knorr-Bremse, Germany	Engineering & machinery	539	1,70
420	British Airways, UK	Transport	3.973	1,70
421	Whitbread, UK	Leisure & hotels	1.180	1,69
422	Misys, UK	Software & IT services	639	1,69
423	Bayerische Landesbank Girozentrale, Germany	Banks	895	1,69
424	Hilti, Liechtenstein	Construction & Building	1.083	1,68
425	First Choice Holidays, UK	Leisure & hotels	513	1,68
426	Banka di Roma (now Capitalia), Italy	Banks	2.015	1,68
427	Otto Versand, Germany	General Retailers	2.381	1,68
428	Freudenberg, Germany	Diversified industrials	1.642	1,67
429	Partek, Finland	Engineering & machinery	657	1,66
430	Karstadt Quelle, Germany	General Retailers	4.060	1,66
431	Royal Volker Wessels Stevin, The Netherlands	Construction & Building	809	1,66
432	Airtours, UK	Leisure & hotels	1.035	1,66
433	Rieter, Switzerland	Engineering & machinery	783	1,66
434	Imtech, The Netherlands	Support services	656	1,65
435	BAE Systems, UK	Aerospace & defence	5.515	1,64
436	Gambro, Sweden	Health	1.276	1,64
437	London Transport, UK	Transport	1.246	1,64
438	IMI, UK	Engineering & machinery	965	1,63
439	ZF, Germany	Automobiles & parts	2.374	1,63
440	Electrolux, Sweden	Household goods	3.734	1,63
441	Behr, Germany	Automobiles & parts	669	1,63
442	Kuehne & Nagel International, Switzerland	Transport	829	1,62
443	VINCI, France	Construction & Building	5.562	1,62
444	SAAB, Sweden	Aerospace & defence	976	1,62
445	Royal Vendex KBB, The Netherlands	General Retailers	1.113	1,62
446	Kamps, Germany	Food procesors	599	1,61
447	Michelin, France	Automobiles & parts	6.569	1,61
448	Littlewoods, UK	General Retailers	532	1,61
449	TNT Post (now TPG), The Netheralands	Support services	4.800	1,61
450	EADS, The Netherlands	Aerospace & defence	8.587	1,61

Rank	Company	Sector	VA € m	ICE
451	Migros Community, Switzerland	General Retailers	3.598	1,60
452	B Braun Melsungen, Germany	Health	1.215	1,60
453	Commerzbank, Germany	Banks	3.827	1,60
454	Carl-Zeiss, Germany	Health	1.933	1,60
455	TietoEnator, Finland	Software & IT services	729	1,60
456	Wurth, Germany	Diversified industrials	1.799	1,59
457	Danka Business Systems, UK	Support services	633	1,59
458	Stagecoach, UK	Transport	1.636	1,59
459	Rhodia, France	Chemicals	1.951	1,59
460	Rolls-Royce, UK	Aerospace & defence	3.128	1,58
461	Bankgesellschaft Berlin, Germany	Banks	1.215	1,58
462	JM Volth, Germany	Diversified industrials	1.375	1,57
463	Buhrman, The Netherlands	Support services	1.712	1,57
464	MG Technologies, Germany	Engineering & machinery	2.441	1,57
465	Air France, France	Transport	4.601	1,57
466	Altran Technologies, France	Software & IT services	949	1,57
467	Panalpina World Transport, Switzerland	Transport	627	1,57
468	Skandia, Sweden	Life assurance	733	1,56
469	FirstGroup, UK	Transport	1.779	1,56
470	Danfoss, Denmark	Engineering & machinery	802	1,56
471	Bau Holding Strabag, Austria	Construction & Building	747	1,55
472	Georg Fischer, Switzerland	Engineering & machinery	969	1,55
473	Thyssen Krupp, Germany	Engineering & machinery	11.811	1,55
474	Deutsche Post, Germany	Support services	13.687	1,55
475	WPP, UK	Media & photography	4.251	1,55
476	Metso, Finland	Engineering & machinery	1.449	1,55
477	Bollore Investissement, France	Transport	773	1,55
478	Arriva, UK	Transport	1.146	1,54
479	Continental, Germany	Automobiles & parts	3.478	1,54
480	DaimlerChrysler, Germany	Automobiles & parts	30.336	1,53
481	Krones, Germany	Engineering & machinery	519	1,53
482	Koninklijke Wessanen, The Netherlands	Food procesors	680	1,53
483	Celanese, Germany	Chemicals	1.429	1,53
484	Credit Suisse, Switzerland	Banks	18.165	1,53
485	Thales, France	Aerospace & defence	4.284	1,53
486	John Lewis, UK	General Retailers	1.442	1,53
487	Morgan Crucible, UK	Engineering & machinery	706	1,53
488	ICAP, UK	Other finance	597	1,52
489	Coats, UK	Household goods	660	1,52
490	Nexans, France	Electronic & electrical	1.026	1,52
491	Lufthansa, Germany	Transport	5.373	1,52
492	FAG Kugelfischer Georg Schafer, Germany	Engineering & machinery	940	1,52
493	RAG, Germany	Diversified industrials	5.802	1,51
494	Rheinmetall, Germany	Engineering & machinery	1.808	1,51
495	Finnair, Finaland	Transport	577	1,51
496	Pearson, UK	Media & photography	2.266	1,51
497	Kone, Finland	Engineering & machinery	1.386	1,50
498	Volvo, Sweden	Engineering & machinery	4.353	1,49
499	AVA, Germany	General Retailers	786	1,49
500	Publicis, France	Media & photography	1.612	1,49

Intellectual Capital – Key Resource of Modern Economy

In the process of monitoring international trends, the Croatian Chamber of Economy actively supports, encourages and promotes the methods and systems that facilitate Croatian economy to face the challenges of the new, knowledge- based economy effectively.

This unique and comprehensive analysis of measuring value creation efficiency on national, regional and corporate level is one of the key economic initiatives, since it supports the necessary orientation of Croatian economy towards value creation and increasing the overall efficiency of Croatian economy, which would make it competitive in global terms.

With the aim to add additional impetus to Croatian economy and encourage it to pay more attention to the significance of intellectual capital, the key resource of present-day economy, the Croatian Chamber of Economy decided to publish this brochure for the second year.

Publishing this brochure for the second time in a relatively short period puts Croatia on the list of very few countries that have systematically and continuously embarked on analysing the performance of national intellectual capital. So far only four countries have carried out such an analysis, and they have done it only once. The only exception is Ministry of Trade and Industry in Great Britain, which has already twice produced a similar analysis, published under the title «The Value Added Scoreboard».

Moreover, this analysis for 2002 shows that Croatian economy manages to perform efficiently and successfully in global terms. This is clearly indicated by high efficiency level of Croatian banking sector, which is, indeed, higher than the European average. The leading Croatian companies such as Pliva and INA show similar efficiency as their European counterparts and competitors. Finally, Croatian branch offices of foreign companies clearly indicate that in terms of efficiency they by no means lag behind their parent companies.

This intellectual capital efficiency analysis is useful for all the players in economy: companies - since they can orient themselves better in their business environment, managers and employees- since they gain insight into value creation potential, state – to pinpoint the sectors and areas which are leading in the national economy. This is why the Croatian Chamber of Economy has started to implement this analysis in its county chambers.

In order to contribute to growth in efficiency of companies all over Croatia, measuring has been supported by systematic education and popularisation of the IC issue among economic subjests.

Nadan Vidošević,
President of Croatian
Chamber of Economy

Intellectual Capital – New Moving Force of Business in Croatian Forests Ltd.

Managing the company that employs over ten thousand employees – Croatian Forests Ltd – implies continuous reexamination how the company one manages should be led, how successful it is or should be, what kind of clients it has or should have, how much is invested in new technologies and to what extent it affects the performance and efficiency of the organization and finally, how competitive the company is with regard to its environment. The answers are not always easy or satisfactory, but they do warn us about our weaknesses and serve as guidelines for future activities.

However, the role of the manager is only to run a company, and its core, energy and strength are its employees, their knowledge and experience that represent the company's intellectual capital. Until recently hardly anyone thought about intellectual capital or discussed its importance – performance and efficiency of a company was measured by figures, ratio between earnings and costs, while knowledge and initiative of the employees was welcome, although not measured or evaluated. This era is approaching its end. Nowadays the employees are encouraged to use their knowledge and expertise to create value, and the objective of each company is to refine and leverage its abilities in the long term.

Therefore the company Croatian Forests Ltd. has already embarked on the project of organizing lectures and workshops to raise awareness among the employees of the importance of this intangible resource – intellectual capital. Finance capital of Croatian Forests Ltd, a state-owned company, is fixed, but intellectual capital of the company is huge, which does not mean that its potential cannot be further increased. As a result of this exceptional knowledge base and efforts all the employees in the forestry sector have been making in the past 250 years of organized forestry and sustainable management of forests, today we can pride ourselves in having probably the most precious resource of all – natural forests.

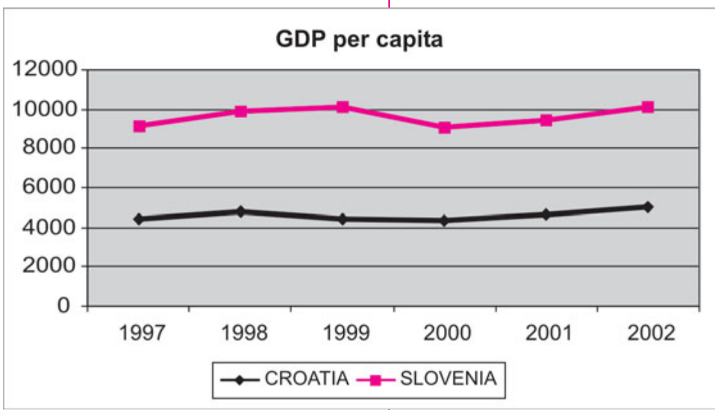
Željko Ledinski,
Chairman of the Board in Croatian
Forests Ltd., B. Sc.(Forestry)

ICE – National Report of Croatia

The following pages shall demonstrate what an IC efficiency analysis of a nation can look like.

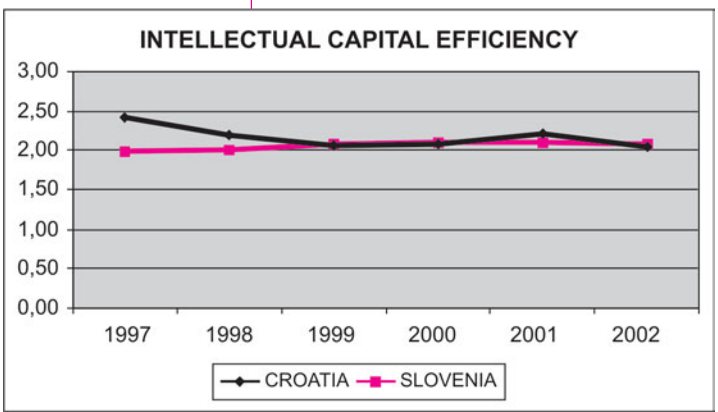
Until now countries have benchmarked themselves by GDP per capita, and the following graph shows such a comparison.

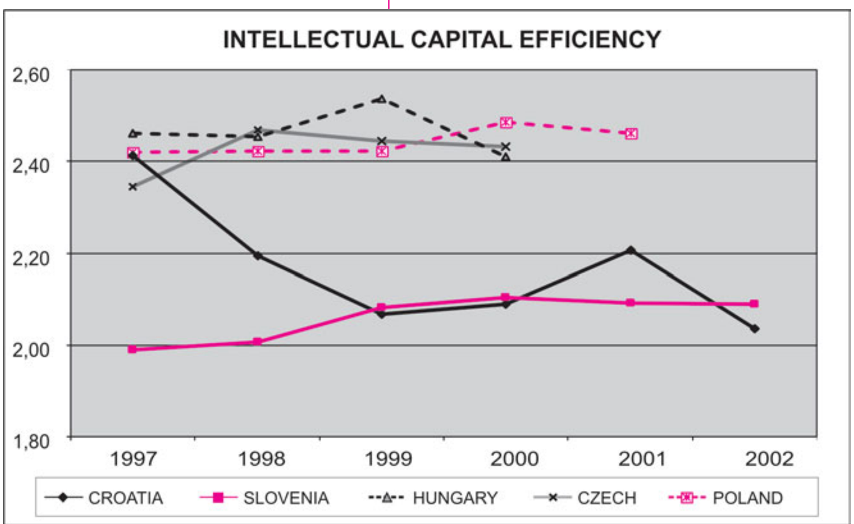
The result, in this case double the GDP p/c in Slovenia, would create a certain picture of capabilities of both countries' economies, namely that the Croatian economy is twice as weak as the Slovenian one, with all the implications that such a conclusion brings forth.



The IC Efficiency analysis presents an utterly different picture of Croatia's and Slovenia's economic capabilities.

As we can see, in these two countries which economies are more or less equally efficient in terms of utilizing intellect. Moreover, in some periods – 1997, 1998 i 2001 – the ICE of Croatian economy was even above the Slovenian (please note that in the entire period Slovenia's GDP was double the Croatian). Knowing both economies well, it can be said that the result received by the ICE analysis is much closer to reality than the one implied by GDP.





While creating an intellectual capital balance sheet, it is important to start with the economic environment in which it operates. In this case it means ICE benchmarking with neighbouring countries. According to the results (see chart below) we can see that they perform at similiar IC efficiency levels as Croatia.

The following step is detailed analysis of ICE within a national economy.

Croatian Economy in 2002

The following analysis covers economy that creates slightly more than 60 % of the total value added in Croatia (the rest is generated in nonmaterial activities such as health service, education, science, administration of justice, the police and the army). In comparison to the previous year, value added rose slightly (about 8,8 %). However, the cause of considerable concern is the fact that there was a significant fall in value creation efficiency in economy. This in turn means that more resources were employed to realize it.

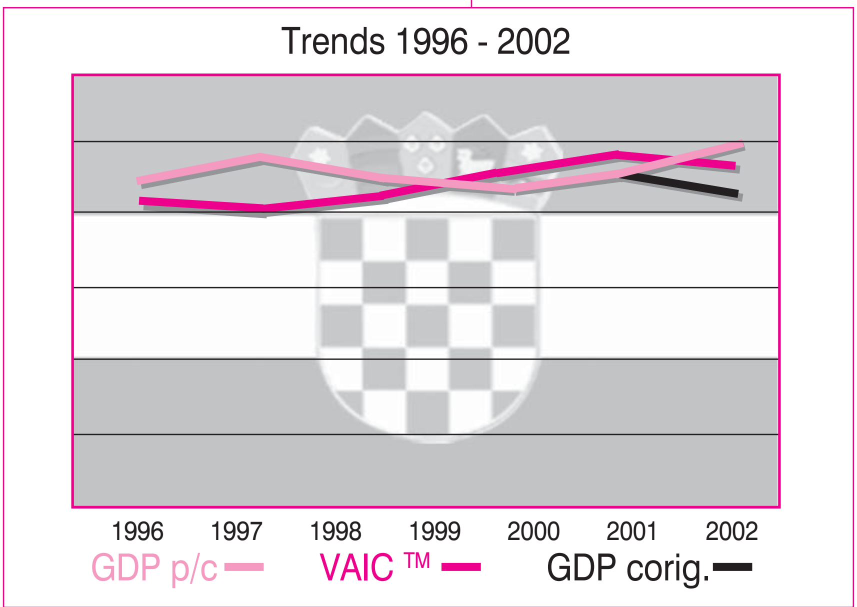
As we can see in the graph, in the year 2002, after two years of steady rise, there was a fall in IC efficiency. Until that year IC efficiency was higher than GDP per capita growth. This kind of analysis therefore warns us that in 2002 Croatian economy did not perform as successfully as we might think based on official sources available. Anyone who is good at calculating will reach the same conclusion: GDP per capita growth is only the result of the low exchange rate of US dollar, and it is by no means proof of efficiency of Croatian economy. If we take the corrected exchange rate of American dollar, then there is a significant fall, as well as in efficiency.

Eight of the 17 sectors listed in the table create 94 % of value in Croatian economy, but value creation is not evenly distributed even among them. The first four are the backbone, since they create 75 % of value added, and can be said to be prime movers that fuel the Croatian economy. However, there are significant differences even among them: in comparison to previous year the share of industry in value added increased by only 2 %, while the share of trade rose by 23 % and transport by 19 %. Furthermore, these two sectors, along with electricity, gas and water supply are the only sectors whose efficiency is above the Croatian average. Industry, construction business and services somewhat lag behind this average, although in the years to come it is realistic to expect them to reach the national average. What particularly worries in the results of this analysis is the very low efficiency in the sector of “hotels and restaurants” (tourism industry). With regard to the available resources, this sector has far too small a share in Croatian economy, and its efficiency just managed to reach the level it had in 1996 after several years of declining. If we take into account the potentials of tourism industry it is certainly an area that is bound to grow and increase both its value creation and its efficiency in order to “pull forward” other sectors, first and foremost agriculture.

County of Istria reached the first position on the list, even though value creation efficiency of its economy remained the same as in 2001. Economy of the City of Zagreb, which creates more than a half of total value, remained on the second position, although it also witnessed a decrease in efficiency. County of Zagreb changed its ranking and

Value Creation in Croatia

	VA 2002	VA 2001	Change
Economy	86.565	79.549	8,8
Other	57.300	57.318	0,0
Total	143.865	136.867	5,1



Rank	Sectors	VA	share %	VAIC™
1	INDUSTRY	27.489.245	31,7	2,30
2	RETAILERS	17.602.136	20,3	2,64
3	TRANSPORT	13.474.677	15,6	2,73
4	CONSTRUCTION AND BUILDING	6.845.130	7,9	2,19
5	SERVICES	5.709.078	6,6	2,28
6	ELECTRICITY, OIL AND GAS	4.548.508	5,3	2,78
7	LEISURE & HOTELS	2.972.246	3,4	1,99
8	AGRICULTURE AND FORESTRY	2.330.033	2,7	1,59
9	KEY SECTORS	80.971.053	93,5	
	ECONOMY TOTAL	**86.565.471**	**100,00**	**2,39**

reached the third position, but it remained at the same efficiency level as in 2001. This is mainly due to the fact that there has been a fall in efficiency of total Croatian economy.

County of Lika-Senj made relatively the most significant step forward, since it increased its value creation efficiency by 1 kuna in comparison to the previous year and improved its ranking from last position to 14th. Compared to previous year's results, County of Vukovar-Srijem achieved the most significant progress in terms of created value added and also increase in efficiency.

In 2002 in the County of Karlovac there was a significant fall in value creation efficiency, which resulted in its fall from the first position to 13th. The same thing happened in County of Virovitica-Podravina, which is presently at the very bottom of the ranking. It is also difficult to explain the position of County of Dubrovnik-Neretva, with regard to the rich resources at its disposal.

As with the analysis according to sectors, value creation is concentrated in very few counties. In addition to the City of Zagreb, there are five counties that account for almost 80 % of overall value added created in 2002. Therefore we could conclude that the future of Croatian economy is currently reduced to only four sectors, the City of Zagreb and five counties. This need not necessarily be negative if the leaders of the country are aware of that. However, this issue should be dealt with separately.

Rank	County	VA	VAIC™	change to 2001
0	NATIONAL INDEX OF CROATIA	86.565.471.425	2,39	-0,05
1	18. ISTARSKA ŽUPANIJA	5.557.831.660	2,70	0
2	21 GRAD ZAGREB	45.579.808.800	2,64	-0,09
3	01 ZAGREBAČKA ŽUPANIJA	3.835.504.222	2,64	0
4	13 ZADARSKA ŽUPANIJA	1.205.918.136	2,58	0,09
5	05 VARAŽDINSKA ŽUPANIJA	2.672.096.807	2,36	0,08
6	06 KOPRIVNIČKO-KRIŽEVAČKA ŽUPANIJA	1.800.606.626	2,20	0,06
7	14 OSJEČKO-BARANJSKA ŽUPANIJA	3.425.649.243	2,19	0,13
8	02 KRAPINSKO-ZAGORSKA ŽUPANIJA	1.224.266.217	2,16	0,02
9	20 MEĐIMURSKA ŽUPANIJA	1.559.143.276	2,15	-0,12
10	07 BJELOVARSKO-BILOGORSKA ŽUPANIJA	1.127.877.853	2,13	0,35
11	12 BRODSKO-POSAVSKA ŽUPANIJA	1.041.127.864	2,12	0,34
12	17 SPLITSKO-DALMATINSKA ŽUPANIJA	5.326.520.778	2,04	0,20
13	04 KARLOVAČKA ŽUPANIJA	1.519.829.417	2,03	-0,77
14	09 LIČKO-SENJSKA ŽUPANIJA	302.818.343	2,03	1,00
15	08 PRIMORSKO-GORANSKA ŽUPANIJA	4.832.620.523	1,97	-0,08
16	16 VUKOVARSKO-SRIJEMSKA ŽUPANIJA	1.268.840.669	1,95	0,32
17	11 POŽEŠKO-SLAVONSKA ŽUPANIJA	613.970.003	1,81	-0,20
18	19 DUBROVAČKO-NERETVANSKA ŽUPANIJA	1.281.807.842	1,67	-0,16
19	03 SISAČKO-MOSLAVAČKA ŽUPANIJA	1.132.243.652	1,60	-0,28
20	15 ŠIBENSKO-KNINSKA ŽUPANIJA	710.260.093	1,57	0,20
21	10 VIROVITIČKO-PODRAVSKA ŽUPANIJA	546.729.401	1,56	-0,30

How Efficient are the Big Players?

Year	VA TOP 400	VA economy	Share TOP 400
2001.	51 mlrd.	79,5mlrd.	64%
2002.	44 mlrd.	86,5 mlrd.	51%

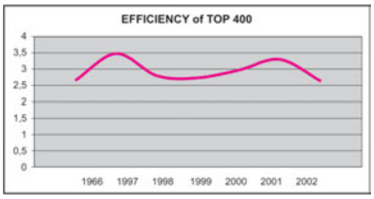
As we can see, in 2002 the value added created in this group of companies fell drastically. It might be comforting to add that there was a similar trend with 600 major European companies, which is just another proof that it is the same process on large scale. Furthermore, there is a marked fall in the share of top 400 companies in the total value added created in Croatian economy.

However, what worries most is another negative trend. Namely, value creation efficiency of intellectual capital has also fallen reaching the lowest level – below its 1996 level. That means that for one kuna invested in resources –intellectual capital – less value is created than in 1996. The cause for this condition is the fall of IC efficiency.

While discussing the issue of reducing the amount of value creation in top Croatian companies, we have to point out that this is also happening to many famous internationals. It is quite difficult to comment on such results and keep a sense of perspective, therefore just a brief comment. A decrease in value creation efficiency does not necessarily have to be treated as a negative trend if it occurs one or two consecutive years. This is generally the result of opting for long-term investment. However, if there is a fall in value added in several consecutive years, followed by a fall in intellectual capital efficiency, it is sure that the company is "going down". Several companies on the list are on such a way.

Results

Similar to last year, the largest Croatian companies have been divided into three categories. The basic criterion was value added. As we have already said, value creation is key objective of companies in modern economy, and it is therefore logical to take it as a basis for benchmarking. On the other hand, the amount of value added should not be the only criterion, since it is even more important how efficiently this value is created, that is, how much value is created on each kuna invested in resources – intellectual and financial capital. According to this second criterion – efficiency – we have evaluated the companies within each group. The list of companies that are shown in the following table represent the top companies of Croatian economy because of the amount of value created and remarkable value creation efficiency.



Companies that Created Less Value than last Year		
Rank	Company	m kunas
1	LURA	-80
2	EUROPAPRESS	-69
3	ATLAS	-53
4	DINERS	-53
5	VEČERNJI LIST	-46
6	COCA COLA	-42
7	FRANCK	-36
8	TISAK	-36
9	CEDEVITA	-33
10	LRH OPATIJA	-30
11	MEDIKA	-28
12	EXPORTDRVO	-20

The first eight companies have shown outstanding efficiency, while only the last two ones are below the Croatian average level (VAIC = 2,39). The company VIPNET (mobile phone operator) managed to increase its value added by

THE FIRST GROUP consists of the companies that created more than 450 million value added in 2002. The following table shows their efficiency:

Rank	Rank Reven.	Company	VA	VAIC™
1	8	VIPNET d.o.o.	1.069.569.508	7,52
2	10	TVORNICA DUHANA ROVINJ d.d.	618.743.763	6,90
3	2	HT - HRVATSKE TELEKOMUNIK	4.975.197.498	5,24
4	23	CROATIA AIRLINES d.d.	455.604.242	3,61
5	4	PLIVA d.d.	1.374.279.316	3,56
6	1	INA-INDUSTRIJA NAFTE d.d.	2.637.814.837	3,38
7	15	ERICSSON NIKOLA TESLA d.d.	523.500.605	3,17
8	3	HRVATSKA ELEKTROPRIVREDA	1.494.106.070	3,00
9	21	HEP- DISTRIBUCIJA d.o.o.	729.861.122	2,30
10	19	HP d.d.	1.102.616.336	2,06

THE SECOND GROUP consists of the companies that create more than 100 million value added. Here are the most efficient ones:

Rank	Rank Reven.	Company	VA	VAIC™
1	142	PLINACRO d.o.o.	253.790.643	14,07
2	194	RONHILL d.o.o.	162.024.888	11,58
3	30	RENAULT HRVATSKA d.o.o.	107.972.585	10,55
4	121	CHROMOS AGRO d.d.	144.693.686	9,81
5	48	TANKERSKA PLOVIDBA d.d.	205.477.104	7,56
6	101	NAŠICECEMENT d.d.	228.207.226	6,58
7	46	ZAGREBAČKA PIVOVARA d.d.	434.143.028	6,21
8	13	P.Z. AUTO d.o.o.	101.915.645	5,86
9	129	PBZ AMERICAN EXPRESS	205.803.006	5,76
10	159	TVORNICA DUHANA ZAGREB	127.937.004	5,68
11	107	FLIBA d.o.o.	101.520.882	5,64
12	138	SAMOBORKA d.d.	116.360.269	5,63
13	72	ŽITO d.o.o.	104.274.904	5,59
14	108	JANAF, d.d.	225.664.311	5,41
15	163	TC KOROMAČNO d.o.o.	120.959.624	4,77
16	67	BELUPO LIJEKOVI I KOZMETIKA	287.677.548	4,29
17	99	DM-DROGERIE MARKT d.o.o.	101.486.432	3,95
18	39	PEVEC d.o.o.	120.740.270	3,91
19	105	GAVRILOVIĆ d.o.o.	128.716.415	3,87
20	45	DALMACIJACEMENT-RMC GROUP	271.594.555	3,76

THIRD GROUP is the most interesting one. It includes all the companies that create up to 100 million value added. It is interesting since it always includes the most efficient companies, although with continual oscillations. Genuine surprise not only in this group, but in entire Croatian economy is definitely MI Braća Pivac. Here is the list for 2002:

Rank	Rank Reven.	Company	VA	VAIC™
1	131	MESNA IND. BRAĆA PIVAC d.o.o.	96.960.530	11,42
2	283	STROJOPROMET-ZAGREB d.o.	40.680.606	10,20
3	32	AGROKOR-TRGOVINA d.d.	60.693.301	9,85
4	306	COMPUTECH d.o.o.	26.165.866	9,18
5	74	M-SAN GRUPA d.o.o.	58.684.239	9,13
6	172	MOBIS ELECTRONIC d.o.o.	30.603.330	8,93
7	335	DUMA KOŽE d.o.o.	28.461.700	8,07
8	157	VETERINARIA d.o.o.	79.005.478	7,30
9	302	UGO OPREMA d.o.o.	44.667.867	7,24
10	192	JADROPLOV d.d.	51.498.832	7,21
11	77	PEUGEOT HRVATSKA d.o.o.	36.651.025	7,14
12	37	BENETTON CROATIA d.o.o.	91.351.411	6,23
13	65	MEDICAL INTERTRADE d.o.o.	82.453.597	5,87
14	284	PRVA SPORT. KLADIONICA d.o.o.	96.127.994	5,86
15	210	TERMOCOMMERCE d.o.o.	37.638.317	5,77
16	243	WIENERBERGER ILOVAC d.d.	87.951.549	5,70
17	145	ŠPORT TIP d.o.o.	53.151.114	5,61
18	217	ELEKTROMAGIC d.o.o.	17.092.206	5,60
19	141	MINACO d.o.o. NAŠICE	27.291.404	5,58
20	56	OKTAL PHARMA d.o.o.	68.641.753	5,29

37 %, while HT (Croatian Telecom) increased it by 14 %.

What is interesting is the fact that both these companies have higher intellectual capital efficiency than their parent companies. Thus Telekom Austria has VAIC 3,84 (Vodafone=7,14). Deutsche Telekom, co-owner of HT has efficiency of 3,34. Similarly, Ericson Nikola Tesla is far more successful in its performance than its parent company in Sweden, which operated at a loss last year. Moreover, in terms of efficiency Pliva is better than two of the largest pharmaceuticals in Europe (according to value added) – Novartis and Roche- that have efficiency level of 3,16 and 2,77. INA (gas and petroleum) is just slightly less efficient than the Austrian competitor OMV – 3,95. Tvornica duhana Rovinj (tobacco industry) is far more efficient than the largest European company in the same business - BAT, which has efficiency level of 3,92. The examples we have just mentioned clearly illustrate that the leading Croatian companies can hold their own with the European competition.

The table clearly shows that all of them perform well above Croatian average. Most of them are well-known names from last year's report. From this group we should especially point out Plinacro, Cromos Agro and Našicecement, the companies that managed to increase not only value added, but also their efficiency.

The companies Tankerska plovidba and P.Z. Auto created less value in comparison to previous year, and therefore their efficiency decreased as well. Nevertheless, their efficiency was and still is high enough to remain on the list of best companies.

It is interesting to note that the category of most efficient companies includes all three Croatian cement plants, two of them being new on the list – TC Koromačno and Dalmacijacement. Newcomers are also the chain of stores DM, Pevec and Renault Croatia.

The new image of banking sector

The results of value creation in Croatian banks are quite different from those in economy. In spite of the fact that in 2002 there was a sharp fall among the top 400 companies, the banks managed to create more than 6,7 billion value added, which represents a 45 % increase on previous year. Likewise their value creation efficiency increased by almost 20 % (Croatian average VAIC = 3,67). Moreover, the efficiency of Croatian banking sector is significantly higher than European average (see table).

General overview of efficiency of Croatian banks is divided into three sections.

THE FIRST GROUP consists of the banks disposing with stock capital exceeding one billion kuna. Until recently the situation was relatively stable, since only two major Croatian banks managed to exceed this limit. However, the mergers that have taken place this year have changed the situation and it has become more interesting – therefore the results for 2002 have been presented consolidated.

Rank	Bank	VA	VAIC™
1	SPLITSKA BANKA mem. HVB Group	564.833.000	4,64
2	PRIVREDNA BANKA ZAGREB	1.536.000.000	4,18
3	ZAGREBAČKA BANKA	2.150.000.000	3,39
4	ERSTE & STEIERMARKISCHE	394.829.000	2,70

In the first group the leading bank is **Splitska banka**, which is hardly surprising since there was a merger of two already successful institutions (Hypo Vereinsbank and Splitska Banka). **Privredna bank**a continues to have a significant rise in value added and a moderate increase in efficiency, as well as **Zagrebačka banka**, which in spite of this trend, still lags behind in terms of efficiency. The **Erste & Steiermarkische** Group has also fallen in ranking, which is partly what could be expected if we consider the case of former Riječka banka. Comparing efficiency of these banks with Croatian average in that sector, it is obvious that both the banks perform below the average. Since all these banks were acquired by foreign capital, it is encouraging to compare the efficiency of their Croatian branches with the parent company. Privredna banka, for instance, performs almost three times more efficiently and Splitska banka twice as efficiently as their parent companies. Zagrebačka banka is slightly above, while Erste is slightly below the efficiency level of their parent companies.

The most efficient bank in the second group, and at the same time the most successful bank in Croatia is **Štedbanka.** For sixth consecutive year this bank has the highest efficiency level in the whole sector. The major surprise of the year is **Hrvatska poštanska banka**, which prides itself in highest increase percentage, a real boom in terms of value added and a significant increase in value creation efficiency. This only shows that the Croatian-owned banks can keep up with the foreign-owned banks. In addition to this, it proves that there was no need for the massive sale of Croatian banks.

In the second group **Hypo Alpe-Adria bank** fell from the first to the third position. After three years of dramatic growth, when value added was doubling every year, the bank is now facing a much quieter period. It remains to be seen how the situation will be developing in the future.

THE SECOND GROUP consists of the banks disposing with stock capital ranging from 200 to 999 million kuna. The situation in this group has become simpler, since four banks have changed the category.

Rank	Bank	VA	VAIC™
1	ŠTEDBANKA	34.342.000	6,53
2	HRVATSKA POŠTANSKA BANKA	130.875.000	4,55
3	HYPO ALPE-ADRIA BANK	254.151.000	4,31
4	VARAŽDINSKA BANKA	167.645.000	3,91
5	RAIFFEISEN BANK AUSTRIA	441.639.000	3,85
6	RIADRIA BANKA	68.449.000	3,71

Varaždinska banka is still performing well in comparison to its competitors in this group, with a slight increase in value added and the efficiency equal to last year. The bank that had the most dramatic decrease in efficiency in comparison to previous year is **Raiffeisenbank Austria.** In spite of this trend, this bank is still performing more efficiently than the parent company, which has efficiency of 3,77 – a fall in efficiency in comparison to previous year. Finally, **Riadria bank** has gone up for one position, increasing both its value added and efficiency.

THE THIRD GROUP consists of the banks with stock capital under 200 million kunas.

Rank	Bank	VA	VAIC™
1	CASSA DI RISPARMIO TRIESTE	46.281.000	5,93
2	CENTAR BANKA	32.049.000	3,53
3	PARTNER BANKA	30.306.000	3,09
4	VOLKSBANK	59.954.000	2,72
5	KREDITNA BANKA ZAGREB	21.447.000	1,96
6	CROATIA BANKA	49.112.000	1,76

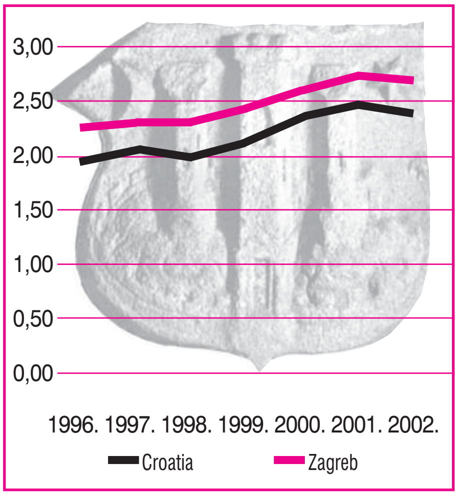
The leader of third group is **Casa di Risparmio Trieste** with significant increase in value added and value creation efficiency. The next ones on the list are **Centar banka and Partner banka**, performing well below the first one on the list, although both of these banks recorded growth according to both criteria applied in this analysis. There was a fall in ranking in the efficiency of Volksbank compared to previous year – while it was above the average efficiency of the banking sector, now it performs below. The average another reason for worry is the situation in **Croatia banka** – this bank halved its value creation compared to previous year, which was also followed by a significant fall in efficiency.

Efficiency of top European banks

In order to get a clear picture about efficiency of banking sector in Croatia we have analysed several major European banks.

Bank		VA € mil.	VAIC™
UBS	Switzerland	19117	2,30
HSBC	UK	16726	3,18
BNP Paribas	France	11797	2,90
UniCredito	Italy	6611	3,35
HVB	Germany	6489	2,52
Intesa	Italy	4523	1,83
Erste Bank	Austria	1370	2,88
Sberbank	Rusia	1330	3,02
Bank Pekao	Poland	742	3,61
Average the biggest 70 in Europe			**2,78**

The City of Zagreb – the capital of Croatia



The companies that operate in the City of Zagreb region create 53 % of total value added created in Croatian economy. Bearing that fact in mind, the results for 2002 are hardly surprising. Due to the fall in efficiency of the companies based in Zagreb, the overall efficiency of Croatian economy decreased. Many companies that significantly affect general trend created less value in 2002 than a year earlier. All but one company from the Croatian top 400 list which created less value added than the year before being from Zagreb.

Another problem of the economy of Zagreb are the companies that are still owned by the city. According to their strength – available resources, financial and intellectual capital, generated income- this group consists of 10 leading Croatian companies. Their efficiency continues to be a problem which, with regard to their overall strength and influence, has significant negative impact on overall performance of the economy of the City.

With the exception of Gradska plinara (gas provider), all the companies have fallen in efficiency compared to previous year. They create value at the rate below Zagreb average, many of them below Croatian average level, thereby decreasing the efficiency of whole Croatian economy in this region. It is difficult to comprehend that such a situation in this extremely important segment is still tolerated.

Talking about this type of companies, it is important to point out that the state-owned companies are far more successful than those owned by the City of Zagreb. Therefore it could be said that INA (oil and gas), HEP (electricity provider), Croatia Airlines, JANAF (oil distribution) and even HT (telecom) create value extremely efficiently with regard to their sector.

The companies from Zagreb, being the backbone of Croatian economy, are those that create value at highest efficiency levels. The first 50 companies according to this criterion create as much as 20 % of total value of all Croatian companies.

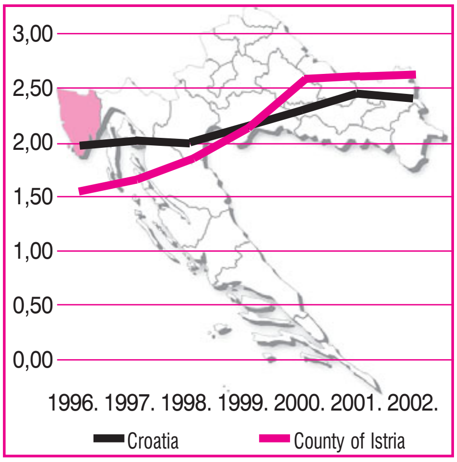
Rank	Rank Rev.	Company	VA	VAIC™
1	142	PLINACRO d.o.o.	253.790.643	14,07
2	30	RENAULT HRVATSKA d.o.o.	107.972.585	10,55
3	32	AGROKOR-TRGOVINA d.d.	60.693.301	9,85
4	121	CHROMOS AGRO d.d.	144.693.686	9,81
5	306	COMPUTECH d.o.o.	26.165.866	9,18
6	74	M SAN GRUPA d.o.o.	58.684.239	9,13
7	172	MOBIS ELECTRONIC d.o.o.	30.603.330	8,93
8	335	DUMA KOŽE d.o.o.	28.461.700	8,07
9	8	VIPNET d.o.o.	1.069.569.508	7,52
10	157	VETERINARIA d.o.o.	79.005.478	7,30
11	302	UGO OPREMA d.o.o.	44.667.867	7,24
12	77	PEUGEOT HRVATSKA d.o.o.	36.651.025	7,14
13	46	ZAGREBAČKA PIVOVARA d.d.	434.143.028	6,21
14	284	PRVA SPORTSKA KLADIONICA	96.127.994	5,86
15	210	TERMOCOMMERCE d.o.o.	37.638.317	5,77
16	129	PBZ AMERICAN EXPRESS	205.803.006	5,76
17	159	TVORNICA DUHANA ZAGREB d.d.	127.937.004	5,68
18	145	ŠPORT TIP d.o.o.	53.151.114	5,61
19	108	JANAF, d.d.	225.664.311	5,41
20	56	OKTAL PHARMA d.o.o.	68.641.753	5,29
21	2	HT - HRVATSKE TELEKOMUNIKACIJE	4.975.197.498	5,24
22	385	ECOS TRGOVINA d.o.o.	16.652.940	5,09
23	80	CITROEN HRVATSKA	41.216.032	5,06
24	135	RECRO d.d.	34.238.076	4,90
25	386	RADIN-REPRO I ROTO d.o.o.	42.407.352	4,77
26	232	FERO-TERM d.o.o.	26.882.144	4,52
27	251	ORVAS PLUS d.o.o.	31.509.031	4,50
28	166	HEP - PRIJENOS d.o.o.	182.270.703	4,36
29	63	EUROLINE d.o.o.	80.137.896	4,32
30	99	DM-DROGERIE MARKT d.o.o.	101.486.432	3,95
31	25	HEP- PROIZVODNJA d.o.o.	375.899.632	3,93
32	120	TORNADO-BAKIN d.o.o.	40.102.286	3,93
33	148	HRVATSKA LUTRIJA d.o.o.	175.911.484	3,86
34	94	STRABAG d.o.o.	80.776.260	3,81
35	22	OMV ISTRABENZ d.o.o.	37.436.005	3,78
36	86	FRANCK d.d.	212.975.249	3,74
37	76	ATLANTIC TRADE d.o.o.	61.275.701	3,70
38	298	BAUHAUS-ZAGREB k.d.	26.016.650	3,65
39	338	ŠKOLSKA KNJIGA d.d.	66.289.899	3,64
40	23	CROATIA AIRLINES d.d.	455.604.242	3,61
41	253	KAMGRAD d.o.o.	26.957.784	3,57
42	43	COCA-COLA BEVERAGES HRVATSKA	312.846.438	3,57
43	4	PLIVA d.d.	1.374.279.316	3,56
44	36	AWT INTERNATIONAL d.o.o.	95.679.953	3,56
45	58	GORENJE ZAGREB d.o.o.	45.946.619	3,56
46	231	BEIERSDORF d.o.o.	25.192.946	3,50
47	147	KRKA-FARMA	47.842.288	3,47
48	27	SIEMENS d.d.	336.239.102	3,41
49	118	TIFON d.o.o.	15.275.024	3,39
50	1	INA-INDUSTRIJA NAFTE d.d.	2.637.814.837	3,38

County of Istria

Rank	Rev.	Company	VA	VAIC™
1	194	RONHILL d.o.o.	162.024.888	11,58
2	10	TVORNICA DUHANA ROVINJ d.d.	618.743.763	6,90
3	163	TC KOROMAČNO d.o.o.	120.959.624	4,77
4	375	HEMPEL d.o.o.	49.816.399	4,28
5	364	ANITA d.d.	89.409.371	3,53
6	279	EUROTRADE d.o.o.	18.144.687	3,38
7	185	ISTRATURIST UMAG d.d.	127.101.804	3,21
8	370	VALALTA d.d.	38.877.163	3,02
9	326	ISTRA CEMENT INTERNAT.	48.449.82	3,02
10	347	ETRADEX d.o.o.	3.892.378	2,84
11	127	RIVIERA HOLDING d.d.	164.424.591	2,77
12	123	PLAVA LAGUNA d.d.	184.545.805	2,76
13	362	GLAS ISTRE d.o.o.	26.184.177	2,47
14	184	JADRAN-TURIST ROVINJ, d.d.	118.181.695	2,46
15	278	ISTRACOMMERCE	19.035.059	2,13

The economy of the County of Istria is one of the most dynamic ones in Croatia. In five years it managed to transform from average economy to the most efficient one in whole Croatia. After economy of the City of Zagreb, which is specific, Istria region is the one where most value is created in Croatia. While intellectual capital efficiency decreased slightly in the whole country, the County of Istria managed to keep the same efficiency level as previous year. Although this by itself represents a tremendous success, after two years of stagnation Istria will have to concentrate on finding ways to boost the economy and make it as successful as it was from 1996 to 2000.

Rank	City	VA	VAIC™
1	PULA	1.492.476.288	2,02
2	ROVINJ	1.028.551.329	3,96
3	POREČ	626.560.962	2,67
4	UMAG	460.730.474	2,83
5	BUZET	264.317.369	2,31
6	PAZIN	251.567.691	2,17
7	KRŠAN	247.958.751	20,68
8	LABIN	227.087.385	2,04
9	KANFANAR	173.483.859	9,10
10	RAŠA	134.688.574	3,73
11	VRSAR	104.990.199	3,37
12	BUJE	103.583.850	2,19
13	NOVIGRAD	97.981.880	2,65
14	VODNJAN	44.362.623	2,45
15	MEDULIN	40.662.809	2,55
16	FAŽANA	38.357.507	3,84
17	LUPOGLAV	32.472.773	3,27
18	ŽMINJ	30.338.177	2,27
19	SVETA NEDELJA	20.245.879	1,46
20	LIŽNJAN	18.484.992	2,14
21	BRTONIGLA	18.004.107	2,03
22	CEROVLJE	13.210.617	1,92
23	MARČANA	12.853.330	1,13
24	PIĆAN	11.534.780	1,41
25	VIŠNJAN	9.993.961	2,75
26	TINJAN	7.619.741	3,64
27	OPRTALJ	7.160.444	1,72
28	SVETI PETAR U ŠUMI	6.777.348	4,98
29	KAROJBA	6.398.831	1,76
30	BARBAN	4.397.633	1,91
31	KAŠTELIR - LABINCI	3.339.367	1,75
32	MOTOVUN	3.185.804	1,47
33	BALE	2.623.463	1,53
34	LANIŠĆE	2.572.068	1,94
35	VIŽINADA	2.403.049	2,66
36	GROŽNJAN	2.241.446	2,47
37	SVETVINČENAT	1.978.933	2,03
38	GRAČIŠĆE	1.389.788	3,16
39	SVETI LOVREČ	1.243.579	1,60



The reason for the stagnation in efficiency is the fact that the leading towns in the county are losing momentum – first of all Pula and Rovinj. Economy of Pula has lost momentum in value creation. Namely, it created the same amount of value as previous year, and moreover, this was followed by a decrease in efficiency. The dramatic fall in efficiency happened in another town, Rovinj, which presently creates 1 kuna less than previous year, which is a significant fall. The positive examples, i.e. towns that have increased value creation and efficiency are Umag, Pazin, Kanafar and Vrsar.

While listing the most successful towns, we must mention Kršan. Namely, economy of this town has increased value 10 times since 1997, and is presently, with the final results for 2002, absolutely the leading town in terms of efficiency in whole Croatia. On the other hand, the exotic little town Motovun experienced both a decrease in value added and efficiency compared to the year before.

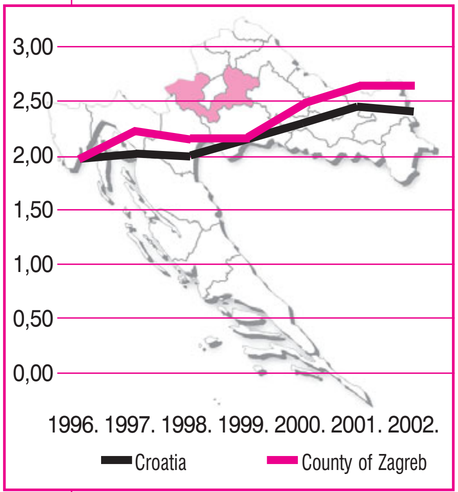
As far as particular companies are concerned, cigarette producer Tvornica duhana Rovinj is still at the very top of the list, although its efficiency was lower than previous year. The cement plant is presently the third, thereby taking the position of OMV Istrabenz which is no longer on the list of most efficient companies. “AnitaVrsar” is the most efficient company not only among all Istrian hotel and catering industries, but also in whole Croatia.

County of Zagreb

Rank	Rev.	Company	VA	VAIC™
1	283	STROJOPROMET-ZAGREB d.o.	40.680.606	10,20
2	220	E PLUS, d.o.o.	12.337.533	9,62
3	65	MEDICAL INTERTRADE d.o.o.	82.453.597	5,87
4	13	P.Z. AUTO d.o.o.	101.915.645	5,86
5	107	FLIBA d.o.o.	101.520.882	5,64
6	138	SAMOBORKA d.d.	116.360.269	5,63
7	309	ROBIĆ d.o.o.	12.080.393	5,46
8	181	STANIĆ d.o.o.	42.873.479	4,65
9	291	MESSER CROATIA PLIN d.o.o.	81.941.693	4,10
10	190	VETERINA, d.o.o.	105.616.958	3,19
11	398	KVASAC d.o.o.	51.814.920	3,11
12	300	ZUBAK AUTO	21.889.665	2,92
13	221	ZRAČNA LUKA ZAGREB, d.o.o.	129.976.049	2,04
14	40	MERCATOR-H, d.o.o. VELIKA	118.608.187	2,02
15	270	AGROPRERADA d.d.	18.620.502	1,73

Rank	City	VA	VAIC™
1	VELIKA GORICA	1.161.383.647	2,27
2	SAMOBOR	563.870.741	3,13
3	SVETA NEDELJA	478.422.307	3,37
4	ZAPREŠIĆ	296.220.262	2,61
5	STUPNIK	243.347.180	4,15
6	JASTREBARSKO	157.492.759	2,66
7	IVANIĆ-GRAD	156.269.025	2,81
8	SVETI IVAN ZELINA	137.483.244	2,27
9	BRDOVEC	129.225.730	3,53
10	VRBOVEC	117.669.012	1,02
11	DUGO SELO	108.557.575	2,47
12	DUBRAVA	42.759.427	3,83
13	RUGVICA	33.194.074	3,80
14	KRIŽ	26.389.557	1,56
15	PUŠĆA	25.075.300	3,33
16	DUBRAVICA	21.204.808	2,72
17	KLINČA SELA	18.743.825	3,55
18	GRADEC	16.274.090	1,53
19	KLOŠTAR IVANIĆ	15.262.233	3,01
20	BISTRA	15.250.402	1,86
21	BEDENICA	6.849.420	2,51
22	JAKOVLJE	6.738.785	1,92
23	MARIJA GORICA	6.271.677	2,87
24	PISAROVINA	4.780.972	2,19
25	ORLE	3.856.163	2,74
26	KRAŠIĆ	3.495.208	1,36
27	FARKAŠEVAC	2.707.839	3,05
28	LUKA	2.609.699	1,84
29	PRESEKA	895.096	3,62
30	POKUPSKO	637.478	2,15
31	KRAVARSKO	563.743	1,06
32	RAKOVEC	387.315	0,95
33	ŽUMBERAK	87.070	0,47

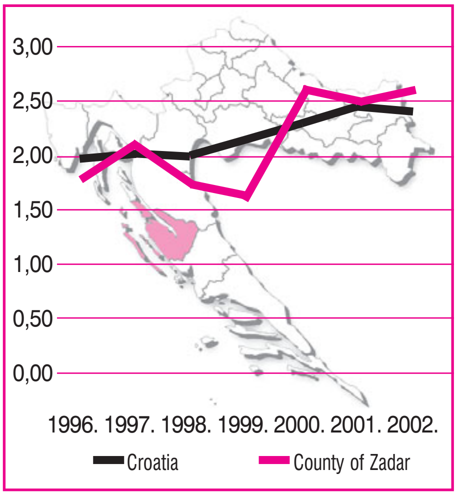
The county of Zagreb and its economy have always been either around or above national average. This trend continued in 2002 as well, since the efficiency remained on the same level as previous year, even though there was no increase. This county managed to resist the general trend in whole Croatian economy – a slight fall similar to the County of Istria.



Velika Gorica remains the backbone of value creation in the region. In 2002 it managed to increase value creation by 50 %. This huge leap was accompanied with a slight decrease in efficiency, but this does not make it less successful. Sveta Nedelja is another example of very successful performance, since it also had a rise exceeding 50 %, which makes it the record-holder in terms of growth. If this trend continues, Sveta Nedelja will soon leave behind Samobor, which has so far been the second centre in terms of value creation in the county of Zagreb. The fact that value added and efficiency have decreased in comparison to previous year is a clear indication that Samobor is facing problems. A similar trend occurred in Zaprešić and Jastrebarsko. Since these towns together account for one fifth of total value created in the county, some steps will have to be taken in order to stop the negative trend. Finally, we must mention Stupnik, the town that made a huge leap on the list with enormous growth in value creation and even more rapid growth in efficiency. The similar trend was noticed in Brdovec, the place that has left behind Vrbovec in terms of value created.

Most of the companies that were highlighted as most successful previous year are still on the list. We should point out that Strojopromet achieved remarkable efficiency, although in 2001 it was not that successful, and a similar trend occurred with the company E-plus. The companies Medical, P.Z. Auto, Fliba and Samoborka remained at the very top of the list, although all of them operated at much lower efficiency than previous year.

County of Zadar



Rank	Rev.	Company	VA	VAIC™
1	48	TANKERSKA PLOVIDBA d.d.	205.477.104	7,56
2	350	TANKERKOMERC d.d.	42.343.438	3,70
3	397	INTERMOD d.o.o.	25.027.099	3,53
4	195	SONIK d.o.o.	16.816.729	2,26
5	143	ALUFLEXPACK, d.o.o.	39.410.785	1,76
6	244	ZADRANKA d.d.	18.375.932	1,19

Like so many times in analysing performance, the Zadar economy deviates from the general trend in Croatia: whereas the national economy is declining, the efficiency of Zadar county is slightly higher than previous year. This is the reason why for the third consecutive year county of Zadar still remains one of the very few counties that perform above the national average. However, keeping such a status is a result of extremely interesting circumstances.

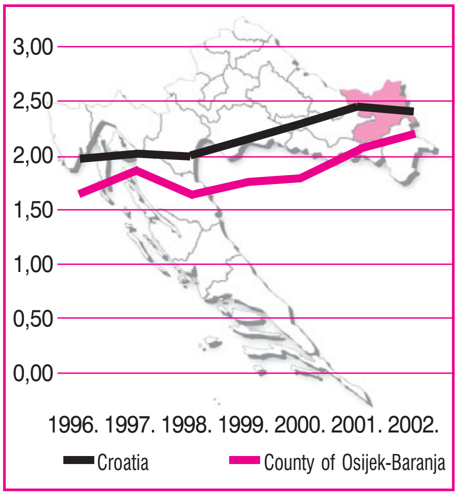
Due to the key company in Zadar, Tankerska plovidba, which is of course closely dependent on global trends, value added and efficiency hawe decreased significantly. As a rule, in such cases the whole economy of the region staggers and faces serious difficulties, since one company alone accounted for about 80 % of total regional economy. So, how to explain the fact that the Zadar economy managed to survive? To put it simply, the reason for this is appearance of new players that managed to neutralise such a huge loss.

The towns Biograd na Moru, Pag, Poličnik, Gračac, Stankovci, Bibinje and Vir succeeded in achieving a significant increase in value added and efficiency, which compensated for the slump in Zadar economy. To illustrate this let us point out that Poličnik managed to increase value creation 10 times in less than a year.

There have been no major changes in ranking of the leading companies in the Zadar area. Tankerska plovidba, in spite of the considerable fall in value creation, still remains the absolute leader in local terms. Tankerkomerc managed to improve its ranking from the sixth position last year to the second position. The only new company that managed to enter the list of the leading companies in the Zadar region is Intermod.

Rank	City	VA	VAIC™
1	ZADAR	789.690.788	2,56
2	BIOGRAD NA MORU	78.784.355	2,47
3	PAG	44.179.146	2,60
4	POLIČNIK	43.253.449	1,79
5	SVETI FILIP I JAKOV	42.046.155	4,89
6	BENKOVAC	37.476.502	1,83
7	GRAČAC	22.551.976	6,57
8	NOVIGRAD	16.926.804	18,32
9	PAKOŠTANE	15.702.293	1,95
10	KALI	15.169.883	1,96
11	NIN	15.048.729	2,17
12	STANKOVCI	12.270.817	6,18
13	BIBINJE	12.020.550	3,50
14	PREKO	10.498.089	2,27
15	VIR	10.136.056	2,23
16	SUKOŠAN	6.912.523	2,49
17	POSEDARJE	6.673.445	4,28
18	SALI	5.556.516	1,88
19	PAŠMAN	3.771.750	2,51
20	PRIVLAKA	3.423.585	1,70
21	OBROVAC	3.084.839	1,70
22	ŠKABRNJE	2.291.439	2,94
23	GALOVAC	2.047.124	3,85
24	STARIGRAD	1.845.789	2,35
25	TKON	1.502.184	2,73
26	POLAČA	1.291.692	2,44
27	RAŽANAC	957.599	1,49
28	KUKLJICA	602.244	1,85
29	ZEMUNIK DONJI	552.187	2,44
30	JASENICE	215.249	0,00
31	LIŠANE OSTROVIČKE	202.837	2,98
32	POVLJANA	-	0,00

County of Osijek-Baranja



This county has never been closer to Croatian average due to a continuous growth in efficiency ever since 1999. Therefore it could be expected that this will happen already in the next analysis. Compared to the previous year it climbed one place up on the list of most successful Croatian counties.

Such a result has been realized first of all thanks to business performance of the first five towns in the region. All of them managed to increase both the realized value added and efficiency, and since they together create more than 85 % of the value in the county, it is easy to understand the reasons why Osijek-Baranja county has improved its position. The leading town among those that decreased both in value added and efficiency is Valpovo. However, this has not significantly influenced the total result.

Although almost all the companies that were listed as successful and efficient ones last year remain on the list, there have been several changes of position. Našicecement, with its dynamic increase in efficiency, is rightfully the leader in economy of the region. On the other hand Benetton was not as efficient as before (a decrease of more than 1/3), and is presently on second position. Žito swapped position with Minaco. It should be pointed out that the well - known companies such as Saponia and Belišće performed less efficiently in 2002, although they are still at the top.

Rank	Rev.	Company	VA	VAIC™a
1	101	NAŠICECEMENT d.d., NAŠICE	228.207.226	6,58
2	37	BENETTON CROATIA d.o.o.	91.351.411	6,23
3	72	ŽITO d.o.o.	104.274.904	5,59
4	141	MINACO d.o.o. NAŠICE	27.291.404	5,58
5	339	BIJELIĆ CO d.o.o.	7.668.938	4,51
6	233	DOSEG d.o.o.	18.767.862	4,28
7	44	ALASTOR d.o.o.	95.830.719	2,96
8	247	GRADNJA d.o.o. OSIJEK	44.419.778	2,74
9	174	OSIJEK-KOTEKS d.d.	47.963.118	2,68
10	124	SAPONIA d.d.	99.171.914	2,46
11	57	BELIŠĆE d.d.	182.412.559	2,33
12	239	ĐAKOVŠTINA d.d.	55.928.908	2,26
13	293	INA-OSIJEK PETROL d.d.	12.361.855	2,20
14	140	IPK TVORNICA ŠEĆERA OSIJEK d.o.o.	70.874.130	2,18
15	322	VODOVOD-OSIJEK d.o.o.	70.205.521	2,17
16	377	AUTO KUĆA LOZIĆ d.o.o.	5.358.110	2,11
17	241	SLOBODA d.d.	81.796.955	2,06
18	304	LIMEX d.o.o.	25.824.345	1,92
19	152	BILJEMERKANT d.o.o.	30.914.010	1,81
20	154	IPK RATARSTVO STOČARSTVO	50.909.343	1,59
21	331	IPK MIA MLJEKAR. INDUSTRIJA	17.472.390	1,41
22	61	BELJE d.d. DARDA	130.445.412	1,34
23	392	PPK VALPOVO d.d.	15.783.910	1,14

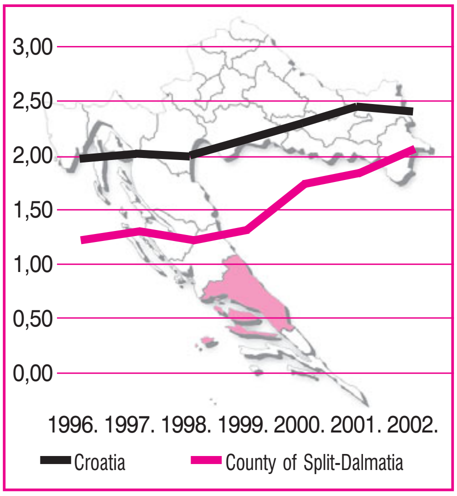
Rank	City	VA	VAIC™
1	OSIJEK	1.875.751.026	2,27
2	NAŠICE	383.664.833	3,75
3	ĐAKOVO	242.781.083	2,04
4	BELIŠĆE	235.367.135	2,23
5	DARDA	159.110.848	1,44
6	VALPOVO	94.418.288	1,54
7	DONJI MIHOLJAC	92.354.283	1,81
8	ANTUNOVAC	51.571.875	1,48
9	BELI MANASTIR	43.217.954	1,45
10	BILJE	39.817.492	2,40
11	ČEPIN	22.757.157	1,16
12	ĐURĐENOVAC	22.075.200	1,41
13	SEMELJCI	20.974.118	3,94
14	PETRIJEVCI	15.425.237	1,74
15	KNEŽEVI VINOGRADI	14.545.685	1,73
16	BIZOVAC	12.010.845	0,00
17	KOŠKA	11.971.387	3,74
18	STRIZIVOJNA	11.132.001	2,54
19	PODGORAČ	10.567.342	2,35
20	FERIČANCI	9.001.025	1,62
21	DRENJE	8.370.987	0,00
22	SATNICA ĐAKOVAČKA	7.450.434	2,74
23	ERNESTINOVO	6.131.928	1,47
24	PETLOVAC	6.051.264	7,88
25	MAGADENOVAC	4.920.418	2,26
26	MARIJANCI	4.088.801	2,28
27	PUNITOVCI	3.813.866	1,21
28	ERDUT	2.581.964	0,00
29	JAGODNJAK	2.514.439	1,76
30	VILJEVO	2.401.496	1,82
31	VLADISLAVCI	2.066.224	0,00
32	GORJANI	1.865.371	0,00
33	ČEMINAC	1.369.050	1,33
34	DRAŽ	1.089.035	0,53
35	VIŠKOVCI	547.996	0,00
36	POPOVAC	480.843	0,20
37	ŠODOLOVCI	468.501	2,10
38	PODRAV. MOSLAVINA	360.144	1,05
39	LEVANJSKA VAROŠ	282.557	0,62
40	VUKA	181.376	3,13
41	DONJA MOTIČINA	129.524	1,56
42	TENJA	-	0,00
43	TRNAVA	-	0,00

County of Split-Dalmatia

Economy of this county continued the positive trend, which has lasted since 1999. In spite of the overall fall in efficiency of Croatian economy, in other words rather unfavourable business environment, this county registered growth, since it creates on average 20 lipa more on one kuna invested than previous year. Potential of the county is enormous, so it is hoped that this positive trend of increase in efficiency will not only continue, but also gather pace.

Much credit goes to the first four towns, since they managed to increase not only value added but also efficiency. Record-holder of the region is Vrgorac, the town that increased value creation by 50 % with much higher efficiency level than before. Therefore this town and another one, Marina, are leaders in terms of efficiency in the whole county. Bright spots of the region are also Hvar and Bol. On the other hand, however, there are some weak points in the region, towns which do not create but destroy value – these are Trogir and Omiš with significantly less value added and much lower efficiency level than earlier.

The leading two companies remain the same ones: Drvenik Tuna and Braća Pivac continue performing at exceptionally high efficiency level, setting the pace in the region. Two other companies should be singled out – Kerum and AD Plastik, which have achieved exceptionally high efficiency level for this branch of industry.



Rank	Rev.	Company	VA	VAIC™a
1	264	DRVENIK-TUNA, d.o.o.	10.998.310	20,63
2	131	MESNA INDUSTRIJA BRAĆA PIVAC	96.960.530	11,42
3	236	TEOMIS, d.o.o.	3.523.420	8,77
4	192	JADROPLOV d.d.	51.498.832	7,21
5	217	ELEKTROMAGIC d.o.o.	17.092.206	5,60
6	310	ROBOT COMMERCE, d.o.o.	22.829.362	4,67
7	343	GRAĐA d.d.	13.859.023	4,52
8	355	BRODOSPAS d.d.	49.101.183	4,00
9	45	DALMACIJA-CEMENT-RMC GROUP	271.594.555	3,76
10	258	LAVČEVIĆ d.d.	7.038.529	3,45
11	160	STUDENAC, d.o.o.	17.754.521	3,00
12	93	TOMMY COMMERCE d.o.o.	41.396.032	2,89
13	393	DALMACIJAVINO d.d.	65.912.944	2,64
14	78	KERUM d.o.o.	49.254.969	2,62
15	371	PEKO-DAL d.o.o.	25.863.847	2,48
16	387	PROD. CENTAR DALMACIJA d.o.o.	5.032.031	2,47
17	111	AD PLASTIK d.d.	118.893.963	2,41
18	301	JADRANSKA PIVOVARA - SPLIT d.d.	51.024.779	2,39
19	261	DIK-COMMERCE d.o.o.	3.027.001	2,34
20	164	SLOBODNA DALMACIJA - TRG	32.052.500	2,13
21	367	MERKUR 5, d.o.o.	8.013.513	2,07
22	49	KONSTRUKTOR-INŽENJERING d.d.	151.633.414	1,88
23	26	BRODOMERKUR d.d.	95.844.690	1,66
24	256	SLOBODNA DALMACIJA d.d.	74.999.766	1,66

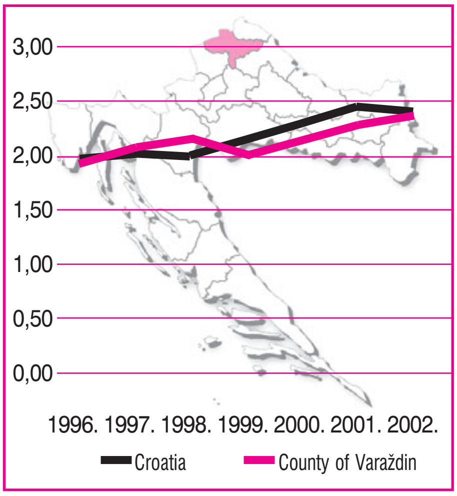
Rank	City	VA	VAIC™
1	SPLIT	3.245.733.947	2,07
2	KAŠTELA	461.046.030	2,42
3	SOLIN	366.729.026	2,51
4	VRGORAC	136.268.477	4,86
5	MAKARSKA	121.628.052	1,62
6	SINJ	108.506.287	1,48
7	TROGIR	95.749.660	0,00
8	OMIŠ	82.331.316	1,34
9	IMOTSKI	75.493.723	1,87
10	HVAR	50.304.457	1,99
11	SEGET	41.899.662	2,50
12	PUČIŠĆA	39.916.021	1,67
13	SUPETAR	39.696.937	2,03
14	PODSTRANA	37.629.831	2,50
15	TUČEPI	36.684.908	2,68
16	DUGI RAT	34.264.095	1,41
17	POSTIRA	33.738.094	1,98
18	BOL	30.243.814	1,72
19	BRELA	27.464.301	2,46
20	PODGORA	25.819.485	1,42
21	BAŠKA VODA	24.717.358	2,28
22	JELSA	24.164.639	1,54
23	STARI GRAD	21.335.748	1,71
24	MARINA	19.955.736	4,42
25	KOMIŽA	17.081.012	1,34
26	DICMO	12.320.805	3,58
27	DUGOPOLJE	11.485.551	2,30
28	PODBABLJE	11.465.895	4,11
29	SELCA	10.871.731	2,65
30	OTOK	8.818.747	2,91
31	KLIS	8.092.114	2,37
32	CISTA PROVO	8.016.470	3,46
33	NEREŽIŠĆA	6.719.134	3,20
34	VIS	6.290.587	0,00
35	TRILJ	6.100.420	0,00
36	PROLOŽAC	6.020.260	2,41
37	LOVREĆ	4.589.486	4,68
38	GRADAC	4.288.843	1,52
39	MILNA	4.054.043	3,36
40	ŠESTANOVAC	2.340.658	1,04
41	HRVACE	2.099.171	1,78
42	VRLIKA	1.954.255	0,00
43	ŠOLTA	1.657.001	0,00
44	LEĆEVICA	1.623.969	4,26
45	ZMIJAVCI	1.435.818	2,79
46	SUTIVAN	1.433.048	1,67
47	LOKVIČIĆI	1.309.647	2,02
48	OKRUG	1.197.277	0,00
49	RUNOVIĆI	941.177	1,46
50	ZADVARJE	809.077	2,05
51	ZAGVOZD	716.717	1,25
52	MUĆ	624.779	3,50
53	PRIMORSKI DOLAC	401.563	1,63
54	SUĆURAJ	397.513	1,11
55	PRGOMET	42.406	0,00

County of Varaždin

This county, which was for a long time above the national efficiency average, is after three years again around it. In spite of this, its performance could be considered successful, since just three counties and the City of Zagreb are more efficient than the average. Therefore County of Varaždin is presently on fifth position.

Bearing in mind the fact that the share of the city of Varaždin in value creation of the whole county is almost 70 %, it is obvious that if the city is performing satisfactorily, then the whole county will be performing well, too. This is exactly what happened in 2002. Varaždin managed to raise both its efficiency level and value creation. The three other towns on the list also contribute to improvement of overall efficiency of the county, so the total result of the county is logical.

The leading companies in the region kept their position from the previous year, only their rankings are slightly different. Thus the company Termoplin leaped from the ninth position to the first, and Termika from the sixth to second. Neckermann managed to keep the third position, although its efficiency decreased significantly. Vindija moved from the fifth to fourth position, although efficiency of this company decreased as well. Another company made a significant progress – Varteks, which was not on the list before.



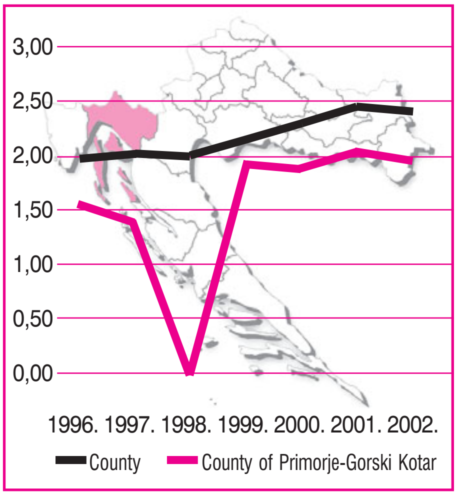
Rank	Rev.	Company	VA	VAIC™
1	316	TERMOPLIN d.d.	36.794.970	3,59
2	342	TERMIKA d.o.o. NOVI MAROF	49.026.800	3,21
3	373	NECKERMANN d.o.o.	14.549.243	3,19
4	9	VINDIJA d.d. VARAŽDIN	131.054.017	2,89
5	103	MEDIFARM-VELEBIT d.d.	27.331.355	2,76
6	323	MAGMA d.o.o.	7.024.035	2,68
7	321	MIV d.d.	64.836.054	2,51
8	257	TRGONOM d.o.o.	15.606.667	2,26
9	156	CESTA-VARAŽDIN d.d.	47.595.565	2,13
10	183	ZAGORJE-TEHNOBETON d.d.	59.524.643	1,97
11	82	VARTEKS d.d.	217.108.114	1,78

Rank	City	VA	VAIC™
1	VARAŽDIN	1.775.133.692	2,37
2	IVANEC	173.719.545	2,18
3	LUDBREG	147.910.197	1,95
4	NOVI MAROF	145.485.856	2,52
5	LEPOGLAVA	82.988.621	2,67
6	TRNOVEC BARTOLOVEČKI	44.737.038	2,64
7	DONJI MARTIJANEC	39.578.006	3,30
8	PETRIJANEC	35.763.996	2,74
9	GORNJI KNEGINEC	29.596.044	2,22
10	MARUŠEVEC	26.223.099	2,94
11	VARAŽDINSKE TOPLICE	24.433.340	2,05
12	LJUBEŠĆICA	21.404.033	2,74
13	VELIKI BUKOVEC	17.834.347	2,43
14	SVETI ILIJA	14.082.120	5,53
15	VIDOVEC	13.779.699	1,83
16	BEDNJA	11.170.460	1,57
17	SRAČINEC	10.687.207	2,41
18	JALŽABET	8.836.221	2,35
19	BREZNICA	8.826.551	2,48
20	CESTICA	8.370.586	1,89
21	BREZNIČKI HUM	8.211.679	2,11
22	SVETI ĐURĐ	5.742.557	2,48
23	VINICA	5.089.297	1,97
24	BERETINEC	3.991.754	2,62
25	MALI BUKOVEC	3.208.448	2,47
26	VISOKO	2.819.151	2,57
27	KLENOVNIK	2.158.143	3,66
28	DONJA VOĆA	315.120	2,17

County of Primorje-Gorski Kotar

Following the overall Croatian trend this county recorded a fall in value creation efficiency in 2002 too. It is actually deviating from Croatian average although there is no valid reason for that with regard to the physical and financial resources at disposal. The problem is evidently with intellectual capital. With regard to the utilisation of capital employed it is 10% more successful than the other counties, but with regard to intellectual capital efficiency it is lagging behind the Croatian average by almost 20%. This has determined overall efficiency (VAIC™) and its ranking. The main problem of this county is the economy of the city of Rijeka which contributes with 60% share in the created value added. However, low efficiency level nullifies many positive results achieved by the most efficient towns in the area like Opatija, Mali Lošinj and Kastav. These centers perform above the county's average while efficiency Rijeka's economy is lower than a year before (being critical then too). This information should therefore be of great concern to local government. Another warning is related to Opatija's economy which is negatively influenced by the poor performance of the hotel chain Liburnia Riviera Hotels. LRH creates almost a quarter of total value added but at very low efficieny level, thus neutralizing the excellent results of other companies. According to value creation efficiency Čavle is the leader of the county but Crikvenica and Omišalj, which have managed to increase efficiency have to be pointed out too.

The problem with this county's ranking list, which has changed slightly compared to the year before, is that only the six first ranked companies perform above the Croatian average while all the others stay below. In contrast to that all 12 leading companies of county of Split perform above the county and Croatian average.



Rank	Rev.	Company	VA	VAIC™a
1	230	MEGGLE ADRIA d.o.o.	12.213.965	5,62
2	84	EURO PETROL d.o.o.	29.279.997	3,65
3	383	ADRIA P. A. d.o.o.	6.567.649	3,63
4	365	JADRANSKI POMORSKI SERVIS	53.683.658	3,33
5	188	FINVEST CORP d.d.	55.576.860	2,58
6	400	ISTRAVINOEXPORT d.d.	30.368.632	2,57
7	353	NOVI LIST d.d.	62.425.810	2,38
8	66	JADROLINIJA	197.130.124	2,37
9	191	JADRANKA d.d.	88.129.232	2,22
10	104	PLODINE d.o.o.	27.006.190	2,16
11	274	AUTOTRANS d.d.	64.199.252	2,13
12	384	JADRAN - PHARMA d.d.	6.164.177	2,11
13	307	PREHRAMBENO INDUSTRIJSKI KOMB.	52.149.336	2,03
14	130	BRODOKOMERC NOVA d.o.o.	36.860.545	1,93
15	75	ELEKTROMA-TERIJAL d.d.	43.838.533	1,69
16	227	LIBURNIA RIVIERA HOTELI d.d.	82.372.116	1,63
17	225	DUHAN d.d.	14.182.040	1,50
18	259	GP KRK d.d.	35.659.087	1,45

Rank	City	VA	VAIC™
1	RIJEKA	2.823.014.990	1,87
2	OPATIJA	410.787.289	2,24
3	MALI LOŠINJ	162.154.786	2,17
4	KASTAV	120.170.674	3,01
5	KRK	117.398.280	2,02
6	VIŠKOVO	116.892.359	2,67
7	MATULJI	111.261.096	2,40
8	RAB	109.026.290	2,26
9	CRIKVENICA	102.456.165	1,80
10	ČABAR	81.674.933	2,28
11	BAKAR	69.165.816	1,66
12	OMIŠALJ	62.990.939	2,54
13	CRES	54.436.150	1,96
14	ČAVLE	46.570.243	3,88
15	PUNAT	45.925.598	2,11
16	NOVI VINODOLSKI	44.883.315	2,25
17	DELNICE	41.886.492	2,39
18	FUŽINE	38.022.219	3,57
19	BAŠKA	36.751.533	2,58
20	KLANA	36.077.614	2,02
21	MALINSKA-DUBAŠNICA	31.642.566	1,73
22	RAVNA GORA	30.362.791	1,67
23	LOVRAN	28.802.448	2,66
24	KOSTRENA	21.323.217	2,42
25	KRALJEVICA	16.623.768	0,00
26	LOKVE	15.921.342	2,22
27	VRBOVSKO	13.909.571	0,00
28	VRBNIK	9.409.377	2,72
29	DOBRINJ	8.337.102	1,64
30	JELENJE	7.981.065	2,26
31	MRKOPALJ	5.218.499	1,07
32	VINODOLSKA OPĆINA	3.662.576	1,96
33	MOŠĆENIČKA DRAGA	3.519.091	1,75
34	SKRAD	3.461.059	4,29
35	BROD MORAVICE	899.270	1,16

County of Vukovar-Srijem

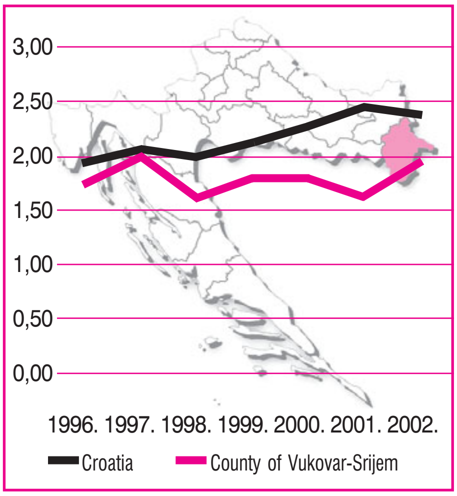
After a period of ups and downs finally the big come back: in 2002 the economy of this county finally reached the efficiency level of the year 1996. The increase in value added by 60% and value creation efficiency by 20% (creating 32 lipa per invested kuna in resources) in comparison to the year before enabled this county to become one of the three most successful counties in Croatia (with regard to the ability to improve performance).

The economies of the towns of Vinkovci and Andrijaševci are, the levers of success, increasing both value creation and value creation efficiency. Since these towns represent 2/3 of the entire economy, it is no wonder that total results of the county improved. Last year's leading companies remain more or less the same, some switching places though, which shows that businesses are stable.

Rank	City	VA	VAIC™
1	VINKOVCI	471.956.340	2,19
2	VUKOVAR	256.138.813	1,18
3	ŽUPANJA	195.522.369	2,73
4	ANDRIJAŠEVCI	193.268.385	2,47
5	ILOK	41.567.374	2,11
6	STARI JANKOVCI	11.165.593	2,84
7	TOVARNIK	9.970.873	1,35
8	DRENOVCI	9.170.618	2,20
9	GUNJA	8.089.947	2,02
10	IVANKOVO	7.772.166	1,59
11	NUŠTAR	7.078.496	1,63
12	TRPINJA	6.779.889	2,81
13	OTOK (VINKOVCI)	6.576.336	1,35
14	CERNA	6.396.773	1,87
15	LOVAS	5.115.554	1,62
16	JARMINA	4.696.285	1,26
17	BOROVO	4.511.029	2,60
18	VRBANJA	4.406.974	2,43
19	TORDINCI	3.598.544	2,37
20	BOŠNJACI	2.926.576	2,19
21	PRIVLAKA	2.672.884	2,11
22	BABINA GREDA	2.089.823	1,94
23	VOĐINCI	1.981.905	1,74
24	STARI MIKANOVCI	1.460.927	0,00
25	NEGOSLAVCI	1.393.882	1,16
26	GRADIŠTE	1.005.001	2,09
27	MARKUŠICA	895.326	2,58
28	TOMPOJEVCI	520.562	1,70
29	BOGDANOVCI	114.638	0,00
30	NIJEMCI	-	0,00

Rank	Rev.	Company	VA	VAIC™
1	146	SLADORANA d.d.	86.836.309	3,69
2	282	BOSO d.o.o.	18.140.082	3,47
3	260	PIK-VINKOVCI d.d.	55.865.815	2,27
4	263	VUPIK d.d.	54.701.848	1,24

BOSO fell to rank two due to a fall in efficiency and Sladorana (sugar plant) made it rank one. PIK Vinkovci climbed one step higher in comparison to last year as did Vupik.



Intellectual Capital a Base for Economic Activity

«Thanks to joint efforts of county government and State Agency for Deposit Insurance and Bank Rehabilitation, positive results have been achieved with regard to finalising bankruptcy procedures and creating prerequisites for economic activity of stumbling companies.

Analysing everything that was going on in our economy during the past years, we have come to conclusion that intellectual capital is one of the key factors that out county lacks. Therefore we have introduced concrete measures to create strong and productive intellectual capital in this area. The VAIC™ analysis represents a stimulus for future actions and valuable feedback whether we are on the right way.«

Nikola Šafer, prof.
Vukovar-Srijem County Executive

We would like to thank our sponsors:

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