

**DEVELOPMENT OF A DATABASE ON INTERNATIONAL COMPARATIVE  
RESEARCHES ON HUMAN RESOURCE MANAGEMENT**

**Elizabeth Vatchkova**

**Marina Mladenova**

**INTRODUCTION**

In the global environment accurate analyses, reliable forecasts and efficient managerial decisions in the field of human resource management are only possible where sufficient high-quality information is available on the dynamics of the processes in this field. The need for systemic gathering, processing and use of such information motivates different international teams of experts to organize researches on people management practices in modern organisations.

A brief historical check of surveys in the subject area shows that the longest running and widest in scope HRM study is the Cranet Network survey which involves forty countries from all over the world. This survey provides the richest in content systematically gathered information on staff management practices in countries on five continents. There have been six rounds of the survey, each using a different questionnaire (see Table 1). The number of participating countries and of subjects surveyed keeps increasing, reaching 40 countries and 36,738 subjects in 2004.

Bulgaria joined the survey in its third round in 1996 and since then has been a regular participant, covering a total of 744 organisations. For Bulgaria, too, this survey of human resource management practices is the longest running and the widest in scope.

Literature describes a number of other surveys in the HRM subject area [4], but none is of such large duration and such wide scope. This fact gives us grounds to focus on how the data from the Cranet Survey is organised in a database.

**JUSTIFICATION OF THE NEED FOR DEVELOPING THE DATABASE**

To date the extremely valuable information from the Cranet Survey cannot be used easily and logically, neither by those who participated in its gathering, nor by others. This is due to two groups of reasons – firstly, the use of different software products and their various versions through the years, and secondly, the general disorderliness of data vis-à-vis the most frequent inquires of users. Besides, when information is extracted from sources of different format and when it is subjected to secondary and further processing (creation of

graphs, histograms, or comparative tables), technical errors may occur, thus creating potential for varying conclusions. With the help of a SWOT analysis (Figure 1) we will demonstrate the advantages of organising the information gathered through the Cranet Network survey in a specialised ontological system (database).

<b>Strengths</b>	<b>Weaknesses</b>
<ol style="list-style-type: none"> <li>1. Persistency of the countries participating in the survey.</li> <li>2. High expertise of the team in charge of the methodology, organisation and conducting of the survey.</li> <li>3. Expansion of the scope of the survey.</li> <li>4. The survey is enriched by new topical questions.</li> <li>5. "Core" questions are repeated in each round.</li> </ol>	<ol style="list-style-type: none"> <li>1. Long duration of one round of the survey, depending on the funding available in each country.</li> <li>2. Sporadic differences in the willingness of experts from different countries to include certain questions in the surveys.</li> <li>3. Terminological complications.</li> <li>4. Inability of all countries to participate in all rounds of the survey for financial reasons.</li> <li>5. Lack of unified commonly accessible system making it possible to use data from all surveys.</li> <li>6. No unit responsible for maintaining and developing the common database.</li> </ol>
<b>Opportunities</b>	<b>Threats</b>
<ol style="list-style-type: none"> <li>1. Satisfy the specific interests of individual countries by including additional questions for a given sector.</li> <li>2. Enrich the content and widen the functionality of the survey in each subsequent round.</li> <li>3. Organise the information gathered in a unified database on international comparative researches on HRM.</li> </ol>	<ol style="list-style-type: none"> <li>1. Excessive expansion of the network and slowing down of the survey cycle (outdating of information).</li> <li>2. Increased cultural diversity and cultural differences as the Europe-wide survey grows into a world-wide one.</li> <li>3. Some countries may drop out from future surveys due to lack of funding.</li> </ol>

*Figure 1 SWOT analysis of the Cranet Survey as a source of available information before it was organised in a database*

The above SWOT analysis helps identify the weaknesses of information availability in this type of surveys. It also helps use the opportunities for improvements through the development of a common database.

## **MAIN OBJECTIVES OF THE DATABASE**

The development of the common database on international comparative researches in HRM has the following objectives:

1. Merge the information from all surveys.
2. Provide a common point of access to information.
3. Make it possible to obtain standardised statistical indicators.
4. Provide varied opportunities for efficient and effective visualisation of information.
5. Eliminate the potential for errors in data entry and data transfer.
6. Facilitate various comparisons (national, within a specific field or sector benchmarks).
7. Create opportunities for continuous development and improvement of information availability by database modernisation.
8. Provide unified and complete information to all participating countries, including from rounds in which a specific country was unable to participate.
9. Commercialise the information.

## **DATABASE DESCRIPTION**

Further in the text we will adhere to the following definition of database: "A database is a structured collection of records or data that is stored in a computer system. The structure is achieved by organizing the data according to a database model. The model in most common use today is the relational model"<sup>1</sup>. We will complement this definition with the explanations that the database (DB)<sup>2</sup> is "a model of a subject area", "an aggregate of objects with common nature or common function". It is a collection of logically related data in a given subject area which is structured in a specific manner. A significant feature of the approach to data storage in a database is the acknowledgement that data is an important resource for any organisation. Data is considered not simply as incoming and outgoing information, but as a valuable asset requiring

---

<sup>1</sup> en.wikipedia.org/wiki/Database

<sup>2</sup> Todorov, V. Manual for database training, University of Forestry, Sofia, 1999, page 7

careful planning and management. The main characteristics of a modern database are as follows<sup>3</sup>:

- data is commonly accessible, thus servicing the requirements of many users and applications (it is “an integrated store”);
- it is structured in a manner that is logically meaningful to the organisation;
- there is minimal redundancy of data.

To summarise, the database is a software instrument for structuring and storing data related to specific subject areas, activities, processes, events. Such data is loaded with specific meaning, i.e. it occurs in a certain context. An important aspect is the use of software to handle access to the database. This software, which constitutes the database management system (DBMS), provides interface between the users and user applications and the database itself, thus enabling centralized data management.

The database described in this paper contains the processed results from six international surveys on human resource management in the period between 1990 and 2008 (in 1990, 1991, 1996, 1999, 2004 and 2008).

The said database was created using MS Access 2007 under WindowsXP UP. Microsoft Access is an entry-level database that offers a flexible environment for database developers and users. It makes use of the familiar Microsoft Office interface and allows for integration with larger-scale enterprise databases such as Microsoft's SQL Server and Oracle. Microsoft Access is a relational database management system which constitutes an aggregate of interrelated tables modelling the information flows. The relational database maintains the relationships between the tables (relations) it consists of. It is important to distinguish between the relation (or table), which is a term used as part of a relational model, and the relationship, which expresses the connections between objects reflecting naturally existing connections between parts of the functioning subject. An MS Access database may contain different objects: tables, queries, forms, reports, etc.

Data in the database is stored in tables which are theme-based lists of rows (records) and columns (fields). The record is a row and the field is a column. Tables contain data on a specific topic – In this case: data from the surveys from different years and the questionnaires used to conduct them. Each table models a specific information flow.

The database described here contains 24 tables summarising data from six rounds of the survey (held in 1990, 1991, 1995 - 1996, 1999, 2004 and 2008) and the respective questionnaires used to collect data on HRM practices. For certain years data has been distributed in several tables (Part 1, Part 2, etc.)

---

<sup>3</sup> Curtis, G. Business Information Systems, Sofia, 1995, page 174

Each record in the table contains information on one element – the respondents' answers to the questions. The record consists of fields and for each table the following fields were created:

- Identification number ID – data is of the „number” type;
- Respondent number – data is of the „number” type;
- Country – „text” data;
- Each of the questions is in a separate field of the "text” or “number” type.

The total number of records in the database is 36,738.

The total number of questions is 2,154.

### RELATIONAL MODEL OF THE DATABASE

Figure 2 shows the model of relationships in the database which illustrates the integrity of data from the different rounds of the survey.

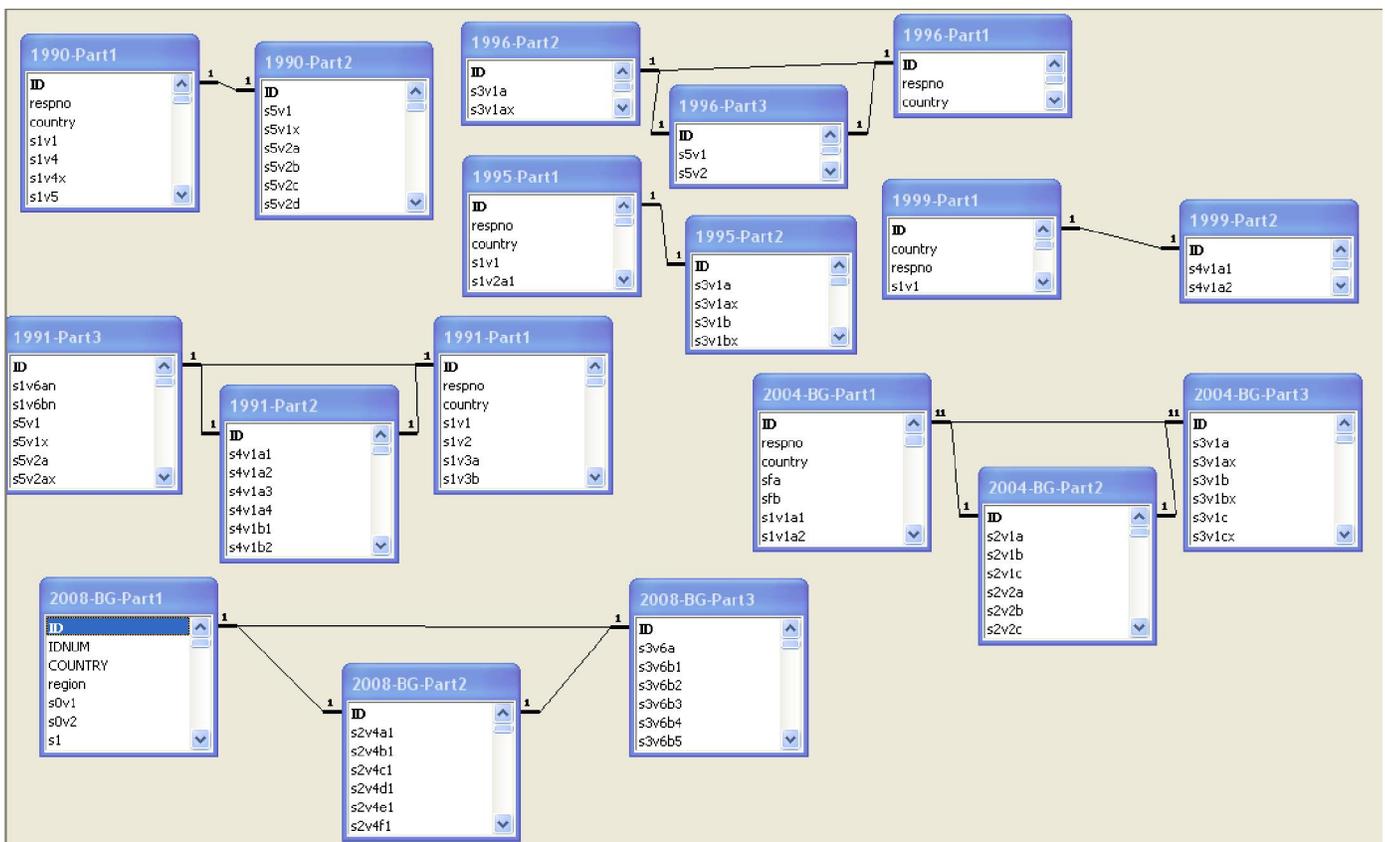
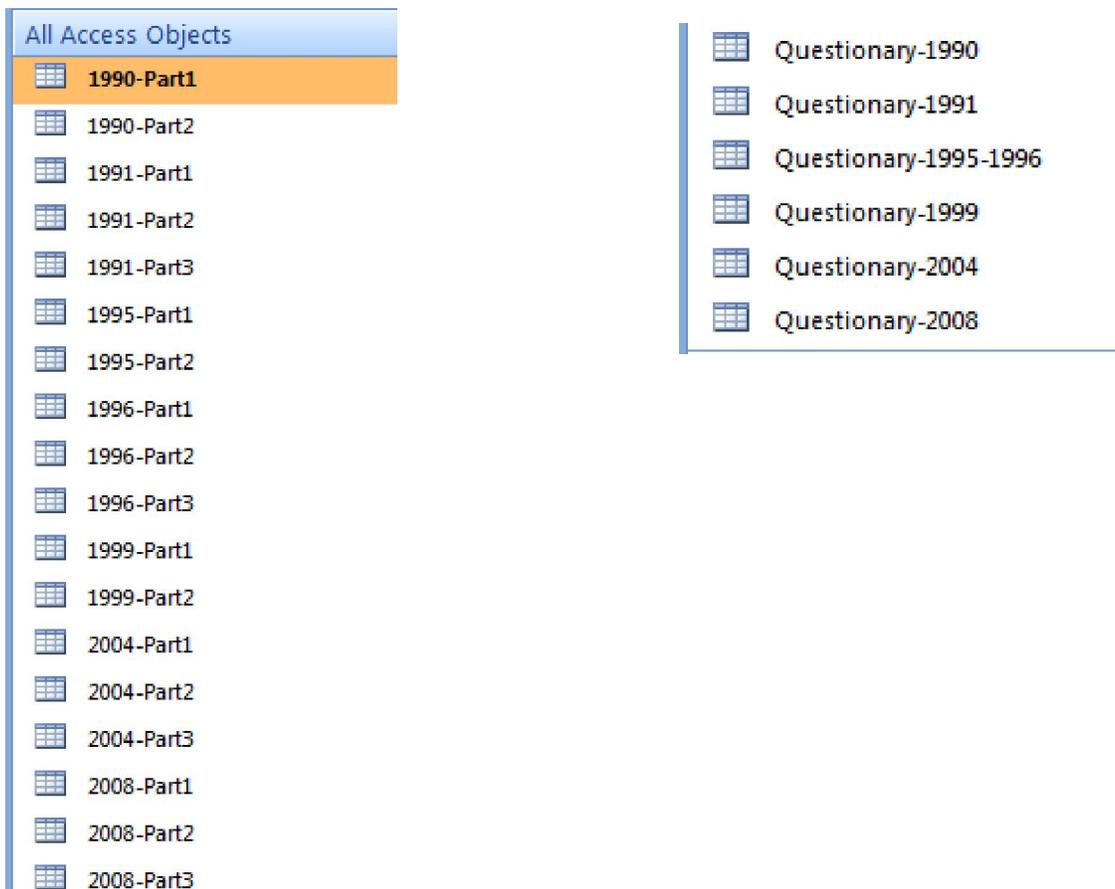


Figure 2 Model of relationships in the database

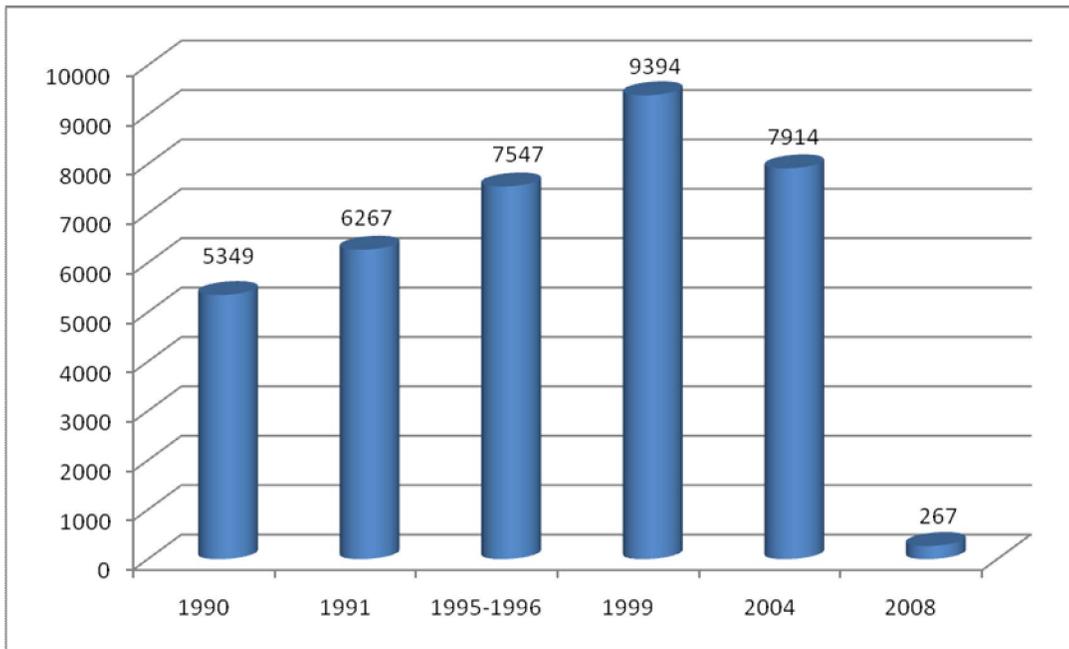
Figure 3 shows a list of the tables in the database which contain the questionnaires and the results from the surveys.



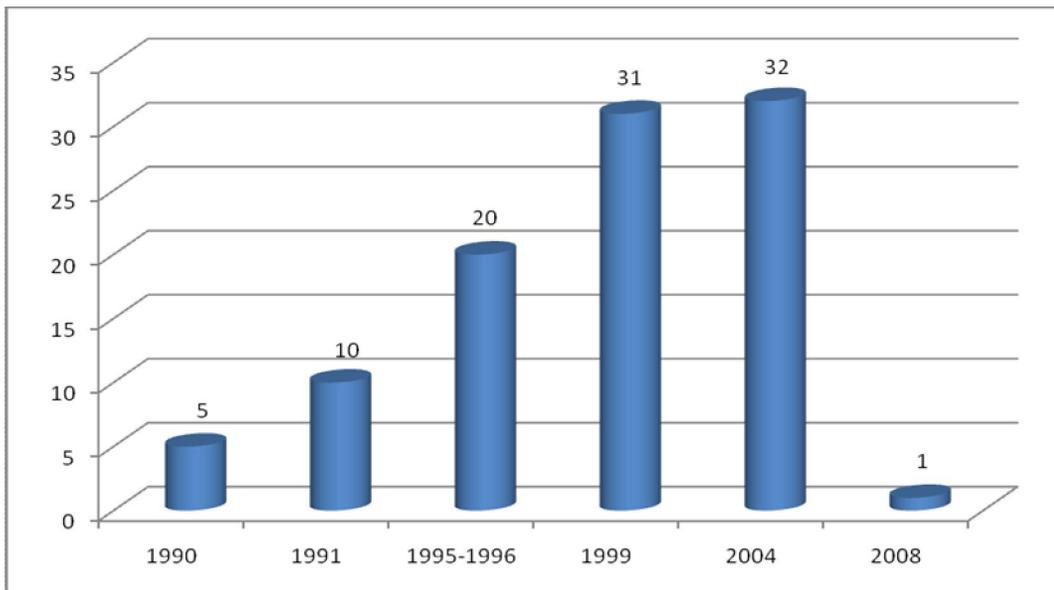
*Figure 3 List of tables created in the database*

## **SUMMARY DATA**

The next few tables and figures present the main characteristics of the database on international comparative researches in HRM.



*Figure 4 Number of records in the database by year*



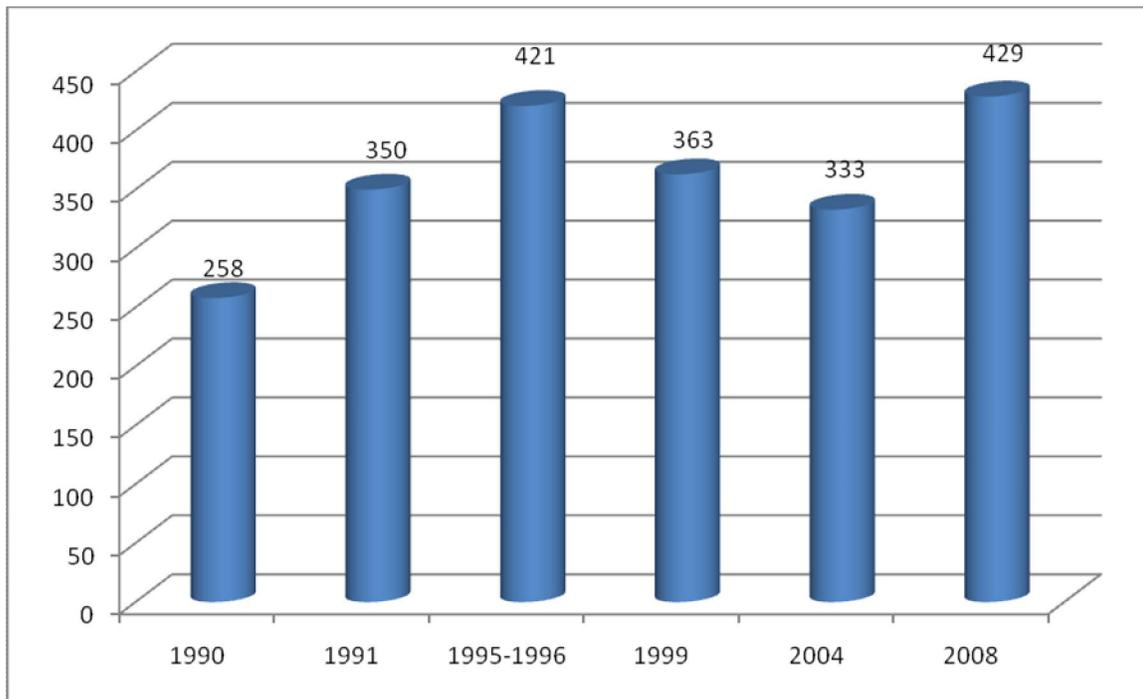
*Figure 5 Number of countries participating in the survey by year*

The survey has been conducted in 40 countries. Table 1 shows the participants in each of the six consecutive rounds and the respective years.

Table 1. Countries which participated in different rounds of the survey and which are included in the database

	2008	2004	1999	1995-1996	1991	1990
1		Australia	Australia			
2		Austria	Austria			
3		Belgium	Belgium	Belgium		
4	Bulgaria	Bulgaria	Bulgaria	Bulgaria		
5		Canada				
6		Cyprus	Cyprus			
7		Czech Republic	Czech Republic	Czech Republic		
8		Denmark	Denmark	Denmark	Denmark	
9		Estonia	Estonia			
10		Finland	Finland	Finland		
11		France	France	France	France	France
12		Germany	Germany	Germany	Germany	Germany
13			Germany E	Germany E		
14		Greece	Greece	Greece		
15		Hungary		Hungary		
16		Iceland				
17			Ireland	Ireland		
18		Israel	Israel			
19		Italy	Italy	Italy	Italy	
20			Japan			
21		Nepal				
22		New Zealand				
23			Northern Ireland			
24		Norway	Norway	Norway	Norway	
25				Poland		
26			Portugal			
27		Philippines				
28			South Africa			
29		Slovakia				
30		Slovenia	Slovenia			
31		Spain	Spain	Spain	Spain	Spain
32		Sweden	Sweden	Sweden	Sweden	Sweden
33		Switzerland	Switzerland	Switzerland	Switzerland	
34			Taiwan			
35		The Netherlands	The Netherlands	The Netherlands	The Netherlands	
36		Tunisia	Tunisia			
37		Turkey	Turkey	Turkey		
38		Turkish Cypriot Community	Turkish Cypriot Community			
39		United Kingdom	United Kingdom	United Kingdom	United Kingdom	United Kingdom
40		USA				

	Greatest number of surveys
	Balkan countries
	Former socialist countries
	One survey skipped



*Figure 6 Number of questions by year*

## **PROCESS OF DATABASE DESIGN**

The process of designing the database included the following steps:

### **(1). Determine the goal of the database**

The database was created with the goal of obtaining information on the dynamics and trends in the development of individual HRM indicators, grouped by different features both for individual countries and for groups of countries. It makes it possible to draw comparisons in various combinations (of countries or indicators). It also makes it possible to calculate and extract statistical indicators, as well as to present all variables (with their minimum, maximum and average values) easily and clearly (in diagrams and reports).

The database structure allows the fast and easy inputting of the results from new international surveys, as well as the database's further development to track any indicator to meet specific research goals.

The start-up form with command buttons (Figure 7) enables the direct extraction of information from the questionnaires for specific years and countries (Figure 8), and the results for specific indicators (Figure 9) in three different cross-sections: a) for a selected year/all countries/one question/EU - average, with possible visualisation in a diagram allowing to select all countries or a group of countries; b) for a selected year/group of countries/one question/EU – average, with possible visualisation in a diagram allowing to select all or one of the possible

answers; for all years/selected country/one question/EU – average, with possible visualisation in a diagram allowing to select all or one of the possible answers), the results for all countries in sections in one year (Figure 10), the results for one question for all countries in one year (Figure 11), with possible visualisation in a diagram allowing to select all or one of the possible answers, as well as the results for all questions for one country in one year (Figure 12), taking into account the size of the organisations (more than 200 and less than 200 people) in order to make the answers comparable and obtain an objective snapshot of the current situation (database was developed for organisations with a staff of more than 200 people).

The image displays two screenshots of the CRANET web application interface. Both screenshots feature a blue header with the CRANET logo and the title "International Comparative Researches on Human Resource Management Cranet Network".

The top screenshot shows a search form with a "YEAR" tab selected. It is divided into four panels:

- 1990**: Filtered by "Size of Organisation not indicated". Buttons include "Questionary", "Respondent Number", "All", "Selectet country", "Selectet section", and "Selectet question".
- 1991**: Filtered by "ALL" and "200+". Buttons include "Questionary", "Respondent Number", "All", "Selectet country", "Selectet section", and "Selectet question".
- 1995-1996**: Filtered by "ALL" and "200+". Button includes "Questionary".
- 1999**: Filtered by "ALL" and "200+". Button includes "Questionary".

The bottom screenshot shows a search form with a "YEAR" tab selected. It is divided into three panels:

- Selected year/all countries/one question/EU-AVG**: Buttons include "2004-Organisations with personnel/HR dept" and "2004-Does the organisation have a Corporate strategy".
- Selected year/group countries/one question/EU-AVG**: Button includes "2004-Managerial - special tasks to stimulate learning".
- All years/selected contry/one question/EU-AVG**: Buttons include "BG-Does the organisation have a Corporate strategy" and "UK-Does the organisation have a personnel/HR strategy".

Figure 7 Start-up form





# Organisations with personnel/HR dept-2004

Wednesday, June 03, 2009

10:44:32 PM

BACK



Show diagram

ID	Country	Total	Yes	No HR Dept
1	Australia	175	97.14	2.94
2	Austria	237	92.41	8.22
3	Belgium	185	98.92	1.09
4	Bulgaria	148	85.81	16.54
5	Canada	363	97.52	2.54
6	Cyprus	54	72.22	38.46
7	Czech Republic	67	100.00	0.00
8	Denmark	303	91.42	9.39
9	Estonia	56	89.29	12.00
10	Finland	278	75.18	33.01
11	France	124	100.00	0.00
12	Germany	261	100.00	0.00

Organisations with personnel/HR dept-2004

Drop Filter Fields Here

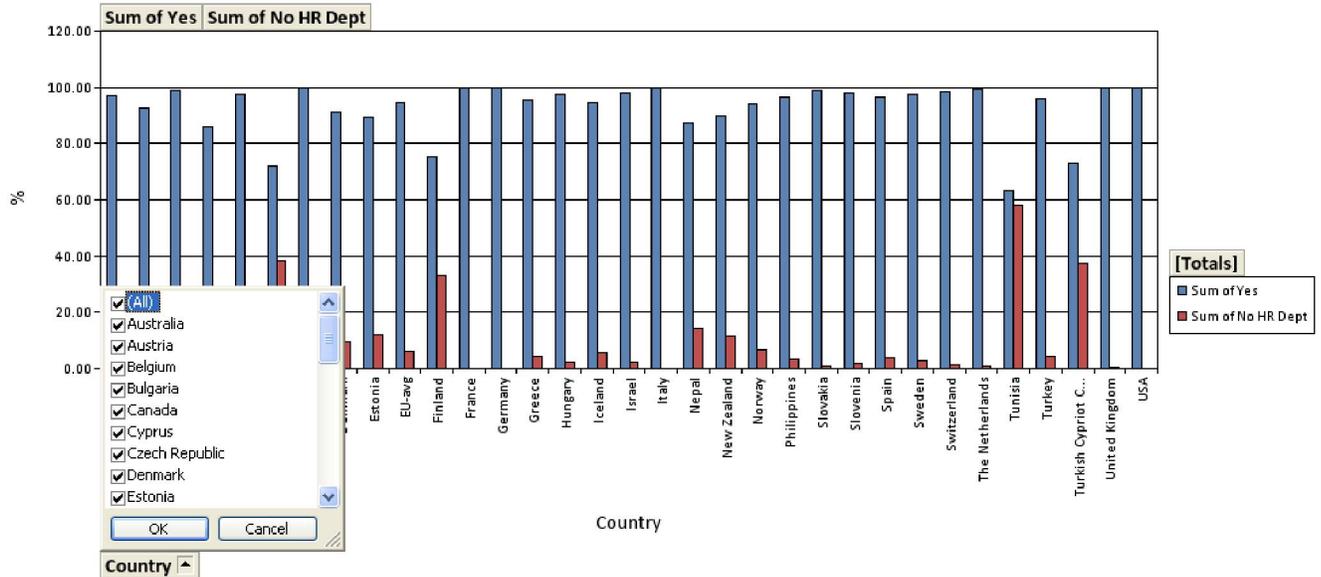


Figure 9 a



# 2004-Managerial - special tasks to stimulate learning

Wednesday, June 03, 2009

10:32:27 PM

Back



Show diagram

Answer	Bulgaria	Cyprus	Greece	Turkey	Turkish Cypriot Community	EU-avg
Missing	17.57	7.41	12.73	12.80	54.55	4.52
Entirely	2.70	5.56	3.03	4.00	0.00	2.98
Not at all	29.05	11.11	16.36	16.80	9.09	21.63
To a large extent	16.22	27.78	35.15	16.00	9.09	25.88
To a small extent	34.46	48.15	32.73	50.40	27.27	44.99

Page 1 of 1

## 2004-Managerial - special tasks to stimulate learning

Drop Filter Fields Here

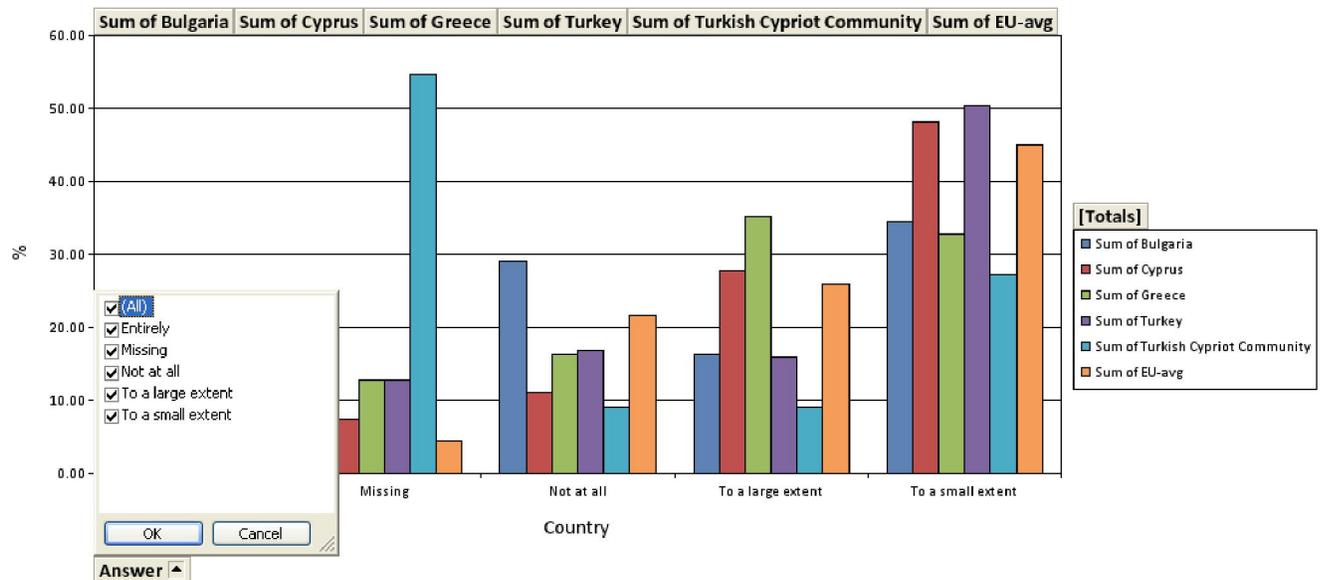


Figure 9 b



Back



Show diagram

ID	Answer	1996	EU-avg-1995-1996	1999	EU-avg-1999	2004	EU-avg-2004	2008
1	Missing	22.31	2.47	16.89	3.08	13.51	4.18	0
2	Don't know	9.23	1.28	12.16	1.71	15.54	5.24	19
3	No	25.38	9.14	22.30	8.95	11.49	22.51	19
4	Yes, unwritten	19.23	22.19	18.24	18.28	28.38	15.24	39
5	Yes, written	23.85	64.92	30.41	67.99	31.08	52.83	23

Page 1 of 1

BULGARIA - Does the organisation have a Corporate strategy

Drop Filter Fields Here

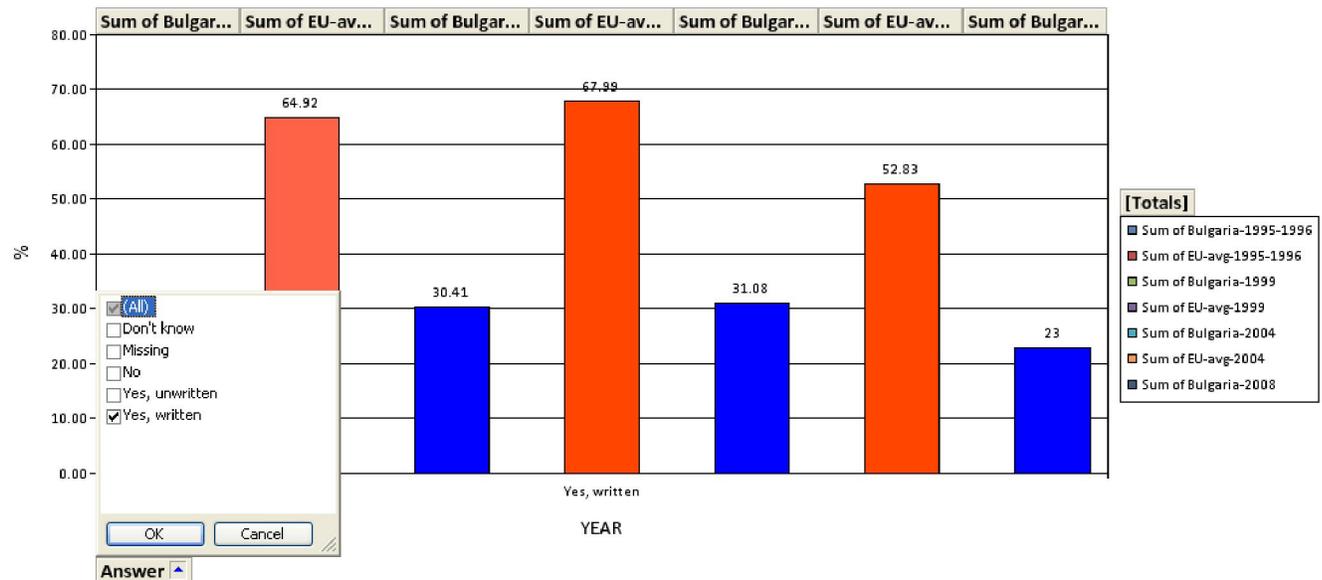


Figure 9 c

Figure 9. The results for specific surveyed indicators (a – for a selected year/all countries/one question/EU - average; b – for a selected year/group of countries/one question/EU - average; c – for all years/selected country/one question/EU - average)

**CRANET**

# International Comparative Researches on Human Resource Management Cranet Network

2004

ALL 2004

Questionary

Respondent Number

All All

Selectet country Selectet country

Selectet section Selectet section

Selectet question Selectet question

2008

ALL 200+

Questionary

Respondent Number

All All

Selectet country Selectet country

Selectet section Selectet section

Selectet question Selectet question

**Enter Parameter Value**

Enter section number

OK Cancel

2004/200+ Section

Thursday, June 04, 2009 4:40:15 AM

ID	Question/Text	Answer	Australia	Austria	Belgium	Canada	China	Denmark	France	Germany	Greece	Hungary
451	Need of HR on Board	Missing	1.71	1.70	1.70	1.61	1.71	1.61	1.71	1.60	1.61	1.61
452	Need of HR on Board	No	48.40	48.24	38.38	37.30	48.53	33.61	48.33	33.13	33.00	3.00
453	Need of HR on Board	Yes	50.60	47.76	59.62	62.70	51.47	66.39	51.67	66.89	67.00	97.00
454	Whether HR Director is recruited	Missing	1.24	1.54	1.00	1.00	1.00	1.00	1.44	1.00	1.00	1.00
455	Whether HR Director is recruited	HR Director is outside of organization	58.40	57.80	40.00	48.80	7.40	53.57	38.80	41.07	38.00	44.00
456	Whether HR Director is recruited	HR Director is within organization	41.60	42.20	60.00	51.20	92.60	46.43	61.00	59.00	62.00	56.00
457	Whether HR Director is recruited	HR Director is outside of organization	12.20	13.20	1.40	1.00	1.00	1.00	38.00	41.00	38.00	44.00
458	Whether HR Director is recruited	Other	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
459	Whether HR Director is recruited	With the organization	87.80	86.80	98.60	99.00	98.60	99.00	62.00	59.00	62.00	56.00
460	Change in use of external practices - internal	Missing	1.24	1.54	1.00	1.00	1.00	1.00	1.44	1.00	1.00	1.00
461	Change in use of external practices - internal	Decreased	2.48	2.28	7.07	4.11	1.49	2.81	3.29	1.00	2.00	1.00
462	Change in use of external practices - internal	Increased	13.71	13.86	20.15	12.33	20.07	20.61	14.33	13.00	12.00	11.00
463	Change in use of external practices - internal	Not used	83.81	83.86	72.83	83.67	78.53	76.19	84.67	87.00	87.00	88.00
464	Change in use of external practices - internal	Same	13.71	13.20	20.15	12.33	20.07	20.61	14.33	13.00	12.00	11.00
465	Change in cooperation - external	Missing	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
466	Change in cooperation - external	Decreased	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
467	Change in cooperation - external	Increased	14.20	13.00	11.00	10.00	14.00	10.00	10.00	10.00	10.00	10.00
468	Change in cooperation - external	Not used	84.80	86.00	78.00	80.00	86.00	86.00	79.00	80.00	80.00	80.00

Page 1 of 9

2004/ALL Section

Thursday, June 04, 2009 4:40:15 AM

ID	Question/Text	Answer	Australia	Austria	Belgium	Canada	Cyprus	Denmark	Greece	Hungary	Germany	France	Italy
451	Need of HR on Board	Missing	6.96	10.27	1.01	11.20	11.76	1.00	1.00	1.00	1.00	1.00	1.00
452	Need of HR on Board	No	48.36	49.36	35.00	38.33	44.71	34.71	33.63	30.31	38.00	3.71	42.36
453	Need of HR on Board	Yes	47.40	48.67	65.00	61.67	55.29	65.29	66.37	69.69	62.00	96.29	57.64
454	Whether HR Director is recruited	Missing	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
455	Whether HR Director is recruited	HR Director is outside of organization	52.07	57.01	41.33	48.71	7.06	37.70	33.63	38.31	35.01	31.70	21.07
456	Whether HR Director is recruited	HR Director is within organization	47.93	42.99	58.67	51.29	92.94	62.30	66.37	61.69	65.00	68.30	78.93
457	Whether HR Director is recruited	HR Director is outside of organization	10.01	10.20	41.67	48.00	7.00	37.70	33.63	38.31	35.01	31.70	21.07
458	Whether HR Director is recruited	Other	5.41	5.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
459	Whether HR Director is recruited	With the organization	47.93	42.99	58.67	51.29	92.94	62.30	66.37	61.69	65.00	68.30	78.93
460	Change in use of external practices - internal	Missing	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
461	Change in use of external practices - internal	Decreased	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
462	Change in use of external practices - internal	Increased	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
463	Change in use of external practices - internal	Not used	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
464	Change in use of external practices - internal	Same	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
465	Change in cooperation - external	Missing	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
466	Change in cooperation - external	Decreased	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
467	Change in cooperation - external	Increased	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
468	Change in cooperation - external	Not used	1.00	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Page 1 of 9

Figure 10. The results for all countries in sections in one year

# International Comparative Researches on Human Resource Management Cranet Network

The interface displays filters for '2004' and '2008'. A modal window 'Enter Parameter Value' is open, showing 's1v5a' as the quest number. Below the filters are buttons for 'Questionary' and 'Respondent Number'. The main data area shows a table with columns for 'Answer' and various countries.

2004/ALL Question s1v5a Mission statement Thursday, June 04, 2008 5:05:41 AM

Back Show diagram

Answer	Australia	Austria	Belgium	Bulgaria	Canada	Cyprus	Czech Republic	Denmark	Estonia	Finland	France	Germany	Greece	Hungary	Iceland	Israel
Missing	1.16	0.87	1.20	17.82	2.51	0.00	41.7	1.26	0.85	1.71	2.85	2.59	7.22	0.00	0.88	5.14
Don't know	0.29	2.21	0.42	12.10	0.22	9.41	5.56	1.26	1.89	0.24	2.14	1.15	5.00	0.00	0.00	0.00
No	6.56	7.78	9.70	10.82	6.58	7.06	1.29	7.56	10.17	1.71	21.42	12.10	12.22	15.25	52.6	14.86
Yes, unwritten	5.79	11.49	6.52	26.11	2.07	21.18	140.6	7.56	16.10	5.12	20.00	15.27	17.22	15.25	10.53	28.57
Yes, written	85.10	78.15	82.04	33.12	85.61	82.25	70.92	82.17	71.19	91.13	52.57	69.89	58.22	65.49	42.32	51.42

## Mission statement

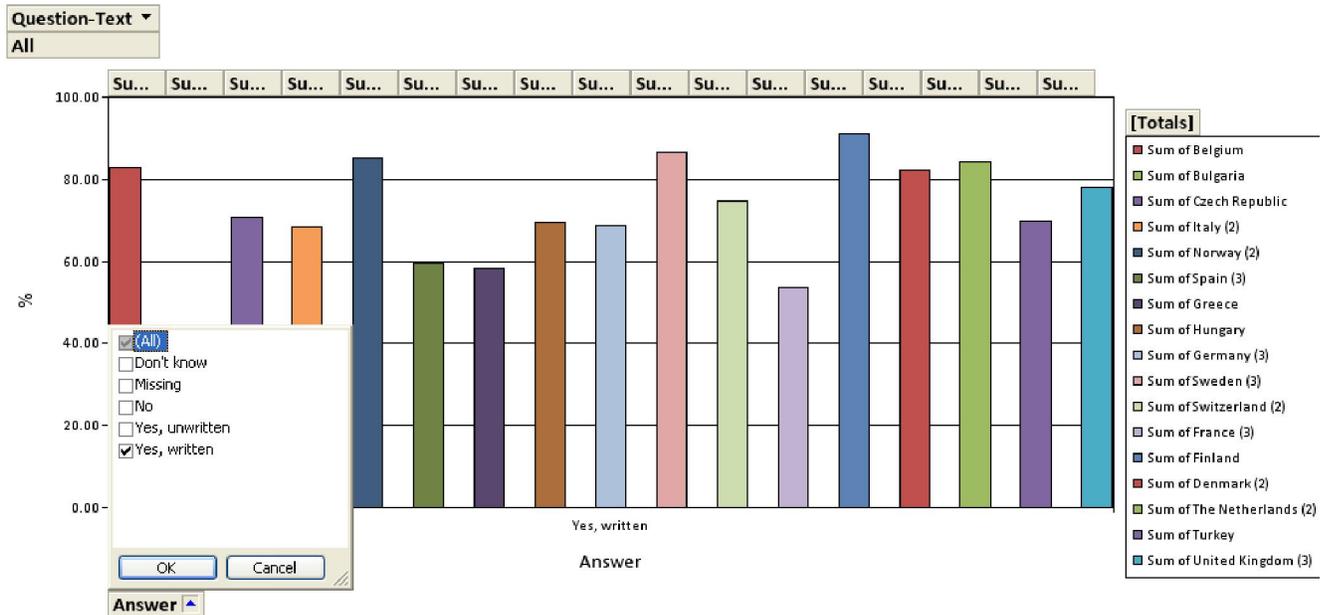


Figure 11. Results for one question for all countries in one year

## International Comparative Researches on Human Resource Management Cranet Network

2004

ALL      200+

Questionary

Respondent Number

All      All

Selectet country      Selectet country

Selectet section      Selectet section

Selectet question      Selectet question

2008

L      200+

Questionary

Respondent Number

All      All

Selectet country      Selectet country

Selectet section      Selectet section

Selectet question      Selectet question

Enter Parameter Value

Enter Country

Bulgaria

OK      Cancel

2004/200+ Bulgaria

Thursday, June 04, 2009 5:09:53 AM

N	Question-Text	Answer	%	EU-avg	EU-MIN	EU-MAX
1	Number		148.00			
s1v10	Stage at which HR involved in development of business strategy	Through consultation	16.22	20.24	10.26	36.54
s1v10a	World Wide Web Access to Information System	Missing	72.97	44.68	0.00	67.86
s1v10a	World Wide Web Access to Information System	No	16.22	35.99	0.00	86.54
s1v10a	World Wide Web Access to Information System	Yes	10.81	19.33	2.60	74.36
s1v10b	Access by client server network	Missing	33.78	32.23	8.96	100.00
s1v10b	Access by client server network	No	2.70	4.84	0.00	36.54
s1v10b	Access by client server network	Yes	63.51	62.93	0.00	89.55
s1v11	Stage of EHRM web deployment	Don't know	2.70	3.22	0.00	7.69
s1v11	Stage of EHRM web deployment	Missing	31.08	31.55	8.96	53.70
s1v11	Stage of EHRM web deployment	One way but with some access	25.68	16.48	3.70	35.44
s1v11	Stage of EHRM web deployment	One way communication	24.32	38.37	24.19	66.88

*Figure 12 The results for all questions for one country in one year*

**(2). Identify and organise the required information**

Information is obtained after processing the results from the international surveys (using SPSS or MS Excel).

### **(3). Distribute the information in tables**

The information components are divided into main units and each main unit is represented in a separate table. Depending on the number of questions for the respective year, 1, 2 or 3 tables are compiled.

### **(4). Convert the information components into columns**

A decision is made concerning what information will be stored in each table. Each question becomes a field and is shown as a column in the table. Each of the respondent answers is a record in the table. Information is summarised by grouping countries and counting identical answers to specific questions and then converting them into percentages of the total number of surveyed participants in a given country.

### **(5). Set up the primary keys**

A primary key is selected for each table. The primary key is a column which is used to identify each row uniquely. It is the ID.

### **(6). Adjust the relationships between tables**

Each table is reviewed and a decision is made on how to connect data from one table to the data from other tables. New fields are added to the tables or new tables are created to clarify relationships, if necessary.

### **(7). Refine and normalise**

The database is analysed for errors and adjusted, if necessary. The rules of data normalisation are applied to see whether the tables are structured correctly. Where required, corrections are made in the tables.

## **DATABASE STRUCTURE**

The structure was devised and designed in a manner allowing the easiest access to information and its simple extraction. The buttons take into account which information is most frequently required by experts, for example: What changes occurred over an eighteen-year period in the practice of HRM strategy development in companies in leading European countries? What are the trends in this field in Bulgaria before and after its accession to the EU? What are the differences in the dynamics of strategic HRM in former socialist countries?

## **CONCLUSION**

The database presented in this paper was developed with a view to meeting the urgent need for providing information on international comparative researches on human resource management and with a view to making this information more easily accessible to a wide range of users in academic and business circles. This is its first basic version which will be subjected to careful scrutiny and analysis by all countries participating in the Cranet Network. The further development and improvement of the database will continue through new records in areas suggested by the new needs of the global labour market and of international business.

## **Bibliography**

1. CRANET Survey – International Executive Report, 2005. IBS “Transbusiness –E”, Sofia, 2007.
2. Vatchkova, E Survey on Comparative Human Resource Management. National Report for Bulgaria, 2006. IBS “Transbusiness –E”, Sofia, 2007.
3. Vatchkova, E. Human resource management in Bulgarian organizations. Results from the sociological survey – 266 organizations. International business school “Transbusiness-E”, Sofia, 2008
4. Strack,R. Caye,J,Leicht,M, Villis,U, Bohm,H, McDonnell,M. The Future of HR in Europe. Key Challenges Through 2015. BCG, June, 2007
5. Todorov, V. Manual for database training, University of Forestry, Sofia, 1999, page 7
6. Curtis, G. Business Information Systems, Sofia, 1995, page 174