

**EMPLOYMENT POSSIBILITIES OF THE BUDAPEST UNIVERSITY OF TECHNOLOGY  
AND ECONOMICS GRADUATES**

**SURVEY ON THE GRADUATED IN 2003**

**SUMMARY**

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The sample of the survey are Hungarian graduates of the Budapest University of Technology and Economics (BME), who obtained the university degree in basic, full-time training in 2003. Obviously some external sources (Hungarian Ministry of Education, Public Employment Service, Hungarian Central Statistical Office) have also been used for the comparison. The answers show the experiences on the employment market till 31 December 2004 of engineers, mathematicians, engineer-physicians and technical managers graduated in 2003. The follow up survey has been made for the 7<sup>th</sup> time, so that longer and longer periods are on disposal, which makes possible the comparison with the results of earlier, identical subject studies and the stress of noticed trends.

Abbreviation	Faculty	Graduates
ÉPK	Faculty of Architecture	architect
ÉMK	Faculty of Civil Engineering	civil engineer, land surveying and geoinformatics engineer
GTK	Faculty of Economic and Social Sciences	technical manager
GPK	Faculty of Mechanical Engineering	energetics engineer (college degree), mechanical engineer, mechanical engineer (college degree), industrial design engineer
KSK	Faculty of Transportation Engineering	transportation engineer
TTK	Faculty of Natural Sciences	mathematician, engineer-physist
VEK	Faculty of Chemical Engineering	bioengineer, chemical engineer
VIK	Faculty of Electrical Engineering and Informatics	engineer-informatics, electrical engineer

**Chart 1: Abbreviation used for the faculties**

#### DATA, REPRESENTATION

In 2003, in all faculties, there were 1579 people graduated in BME, 107 of which obtained a college degree, 22 were foreigners. In the same year 2550 degrees were issued for qualifications, which can be obtained in BME as well (college: 630, university: 1920), so the ratio of BME degrees is 61.92% (college: 16.98%, university: 76.67%). On the base of these facts, it can be affirmed, that the ratio of the BME degrees among institutions offering similar programmes has increased according to all index in comparison to year 2002.

Graduates	Faculties								Total
	ÉMK	ÉPK	GPK	GTK	KSK	TTK	VEK	VIK	
Number of person	96	152	215	35	88	29	150	477	1242
Ratio [%]	7.73	12.24	17.31	2.82	7.09	2.33	12.08	38.40	100

**Chart 2: BME graduates in basic training in 2003, per faculty**

Out of the 1242 persons graduated this year, 1233 obtained the questionnaire and 374 replied, meaning 30.33%. This is the highest score since the survey process started seven years ago. The sample composition - with the weighting process used by statisticians - was adjusted to the faculty and gender composition of the basic sample. The weighting process assured the representative character of the survey regarding the gender and faculty as variables of the repliers. The following most important statements are made for the engineers who graduated in 2003.

## **FAMILY BACKGROUND**

On the grounds of the repartition of graduates and their parents it can be established, that the migration between the settlement types has been keeping on increase. While in case of the parents, those living in Budapest are 35.42%, this ratio is 73.82% for graduates. The ratio of graduates living in stable partnership (marriage, companions) is 43.28%, the highest till now. 36% of the graduates owned a flat on the 31 December 2004.

## **STUDY FINANCING**

Since the education is financed by the government, the study financing will be examined in relation to the cost-of-living this time, as it was in the previous studies. Among the different income resources, the family support is clearly the most important. 98.94% of the graduated were supported by the family, 84.83% received State subsidies, 47.03% had earnings from a job, 20.46% requested student credit, and 6.78% obtained other support. Compared to the previous year, the number of graduates who had student credit increased by 13%, which shows the growing popularity of this kind of support.

## **STRENGTHES OF BME EDUCATIONAL PROGRAMMES**

The graduates see primarily the strength of the education in the learning of engineering approach and way of thinking; almost three fourths of the answers have indicated these aspects (70%). Great proportion of answers has also been given to the offer of strong theoretical basis. As the strength of the education, the technical engineers indicated in the greatest proportion the transfer of knowledge beyond the vocational ones.

## **WEAKNESSES OF BME EDUCATIONAL PROGRAMMES**

As in the last six years, this time also the absence or not satisfied ratio of internships in the educational process was mentioned as the principal weakness of the university education. The graduates at the Faculty of Architecture gave the most positive evaluation in this answer category, while the most unsatisfied were the graduates at the Faculty of Economic and Social Sciences. More and more economical organization emphasizes the lack of experience of job starters. During the technical formation, the employers are looking more and more for institutions by which they can involve students in the enterprise work in the frame of the compulsory, half-year-long internship, which is part of the curriculum. There is great demand for such students, who are also remunerated. The program structure at BME needs to be changed in order to satisfy on the one hand the expectations of the students entering in the market competition as employees and on the other the expectations of the of companies's searching for graduates of the university. The category *Lots of knowledge cannot be utilized in the practice* (17.73%), had the first place last year, and this time the second, although there are sharp differences in the faculties. While the architects hardly meet unutilizable knowledge (they have indicated the most favourable answers to the use of studied matters), in case of the transportation and civil engineers it is the greatest – against the education indicated – critic.

## **THE MORAL AND FINANCIAL APPRECIATION OF THE PROFESSION**

Nearly 70% of graduates feel that their profession is morally appreciated. The graduates's reply at the Faculty of Electrical Engineering and Informatics (particularly at the Field of Electrical Engineering) showed from this result an important positive, the graduates of the Faculty of Economics and Social Sciences a negative divergence. Among the repliers, 3.72% is the representation of those who feel that they are badly or minimally appreciated. Nearly 10.79% of the graduates at the Faculty of Economics and Social Sciences feel that their profession is badly appreciated.

Almost 44% is the total ratio of those who judge that their profession is financially well or very well appreciated, which, beside the GTK graduates missing the moral appreciation, at the Faculty of Electrical Engineering and Informatics (especially at the Field of Engineering-Informatics) deviate

significantly in the positive direction. The architects and graduates from the Faculty of Civil Engineering broke the negative records, since their answers in the two first categories hardly exceeded 11 and 20%.

Important to stress, that both appreciation index are the highest by the graduates of the Faculty of Electrical Engineering and Informatics, which may be explained by their monthly average wages in 2004, which are by 220 € higher than the average wages of the other graduates. The opinion changes since last year is minimal. The ratio of answers indicating the lack of the financial appreciation exceeds significantly the ratio of answers showing the deficiency of the moral appreciation, so the graduates think that their profession is rather estimated morally than financially.

#### **POSTGRADUAL EDUCATION AND TRAINING**

The request for post graduation has been observed for seven years, on this base, it can be affirmed, that the determination of the repliers has never been so important than this time. Contrary to the earlier level of demand, which was 95-96%, the index among the graduates is 97.41% in 2003, in several faculties, 100% of the graduates are willing to follow postgraduate courses. Beside the post graduation in the professional orientation (37.03%), a great ratio of the graduates wishes to participate on economics and management related (24.54%) courses and language courses (27.48%). The cause is, that the majority of the graduates have recognized the fact that the acquirement of business knowledge in the mother tongue and foreign language is nowadays not an „advantage” any more, but rather a requirement. The business-economics knowledge is indispensable for becoming a manager, a leader with breadth of view, who is able to orient in all fields of the profession. The language knowledge can be mentioned as a basic requirement after the country has joined the European Union. In the postgraduate courses in economics-management were the graduates at the GTK – who have related matters in the curriculum also – the most interested.

The demand for the post graduation in the same profession is the most significant among the graduates at Faculty of Architecture, and directly after them by civil and chemical engineers, while post graduation not in the same profession, but in the technical fields is attractive for transportation engineers. Regarding the language post graduation, all the faculties have marked high scores, but emphasis has to be put on the Faculty of Transportation Engineering and on the Faculty of Chemical Engineering, near 37% of the graduates at these faculties have indicated the language courses. The repliers have not shown great interest in law courses, although the opinion of graduates at the Faculty of Architecture has been marked out from the average, since they have indicated this type of training more than three times more often than the average (9.66%).

#### **LABOUR MARKET STATE**

The unemployment ratio (2%) is less than the result of last year – which may be considered as the most unfavourable till now – additionally it is a good sign, that employment in labour relation providing more security is by 7% higher (78%) than by the results of graduates in 2002, measured after being on the manpower market during similar long period. Among university graduates the unemployment ratio is 2%, but “only” the graduates at the Faculty of Chemical Engineering (4.93%), at the Faculty of Architecture (2.38%) and at the Faculty of Electrical Engineering and Informatics (2.24%) have indicated this labour market state. It is worth noticing that while the unemployment ratio is 7% among chemical engineers, it is “only” 3.6% among bioengineers, which exceed the 2.4% national unemployment rates among university graduates for 2004. Among the PhD students, the most represented were mechanical, civil engineers, architects and transportation engineers.

#### **FINDING AN EMPLOYMENT**

33.26% of the graduates have found a job with help of circle of acquaintance, so it keeps on being the most successful channel for finding an employment: the ratio of this category has been in the 28-38% band for years. The role of the job searching web pages has been dynamically increasing

for three years. The importance of the university contacts and job fairs has moved from the deep point established by the graduates in 2002. The graduates who have found a job by study contract and by employment offices have still the lowest ratio. It is notable, that beside the other categories, where the results are similar, the women use the online agencies, and men the newspapers advertising significantly more often than the representants of the other gender.

**LENGTH OF TIME SPENT WITH JOB SEARCH**

The average time for finding the first employment decreased from 2.42 month measured by graduates in 2002 to 2.09 months, additionally from 45.55% to 61.6% increased the number of those who succeeded in finding an employment within 1-2 weeks. Unfortunately it is still 10% the ratio of those who could not find a job within 6 months. It is worth noticing, that among repliers living in the countryside, the period for finding the first job is 1.5 times longer. Regarding the average duration, the situation is significantly worse than the average by the technical managers and graduates at the Faculty of Electrical Engineering and Informatics, 17% and 11% managed to find an employment only after more than half a year.

**EXPECTED ASSISTANCE WHILE FINDING AN EMPLOYMENT**

65.4% of the graduates (one year ago 71.81%) (would) have conceived it as necessary to get some help in the job searching. They are still the architects who (would) have called the less and the transportation engineers who the most for assistance (46.9% and 73.8%). The repliers expected several kinds of help, the chart 3. shows their repartition among all forms of assistance. Most repliers claim for employment intermediation, company presentations and factory visits (this last one is among technical managers the most popular) and it is worth stressing, that the demand for the personal carrier planning has significantly increased.

Form of assistance	Year of the graduation	
	2002.	2003.
Job intermediation	25.32	22.00
Company presentations, factory visits	18.59	19.85
Personal carrier planning	11.89	7.74
Publications helping the job searching	10.88	9.41
Preparation for interviews	10.08	12.62
Personality development trainings	8.67	9.88
Pilot interviews, simulated ACs	7.75	9.80
Cover letter writing	4.75	6.62
Other	2.07	2.08

Chart 3: Expected assistance from the institution by year of graduation [%]

**MOBILITY**

When the sites of companies employing the graduates have been analysed, it could be established, that the ratios set during the precedent years have not been changed on university level, those working in the capital make up to 70% of the repliers. While last year the highest ratio of graduates finding an employment by companies having the site in Budapest was among the graduates at the Faculty of Chemical Engineering, this year it was among the graduates at the Faculty of Economic and Social Sciences. This year also the graduates at the Faculty of Mechanical Engineering and at the Faculty of Transportation Engineering were the less who were working in the capital.

Important differences can be stated when examining the time passing by going to work. Those, who have the permanent address in a parish, spend 102 minutes daily with journey, while it is only 31 minutes by those living in a town having the county rights. The repliers travel averagely 60 minutes a day. 42% of women and 57% of men would move if their work demanded it, which broadly

corresponds to the 55% willingness established last year. According to the obtained data the mobility willingness does not depend on the income.

#### **SIZE, COMPANY FORM AND OWNERSHIP STRUCTURE**

Regarding the total ratio, the ratio of small enterprises (employing 0-20 people) has decreased by 5% in comparison to the earlier studies. This decrease has brought along the increase of ratio of companies having more than 101 employees. Even more architects have found a job in micro enterprises, although is not too surprising, when knowing that the majority of firms in the architecture sector are small. The graduates at the Faculty of Chemical Engineering and the technical managers were those who have found a job by big companies of over 500 employees the more often. The ratio of graduates finding a job in the public sector has been by chemical engineers the highest for three years continually. 6.41% is the ratio of those who have set up their own business or are working in a family run company.

#### **RAISON FOR CHANGING WORKPLACE**

63.46% of the repliers work in their first workplace, which corresponds to the result received last year. It is worth to note, that the ratio of this category has decreased by 15% since the first survey. Parallel to this, the proportion of those who work in their second workplace after one and half years of the graduation, increased by 11% during this seven-year-period. On the grounds of these facts, we can state unequivocally, that the graduates dare to change workplace more and more.

The technical managers, architects and graduates at the Faculty of Electrical Engineering and Informatics are the most likely to change the workplace. The motivation for the changes may be the possibility for higher wages. Those who have changed the workplace at least once earn in average more than those who work in the first workplace, and graduates who work in their third workplace have higher average wages than those who are in their second workplace.

#### **PROFESSIONAL SIDE OF THE WORK**

When analysing the data of the seven years, it can be observed, that the ratio of those who do not work in their profession (after 1-1.5 years the graduation) has increased from the initial 4% to 9%, and that furthermore the ratio of those who work partly in their profession decreased from 24% to 17%. The architects have the highest ratio as working in their profession (89.3%), and the technical managers the lowest (27.7%).

#### **CARRIER DEVELOPMENT POSSIBILITIES**

47.32% of the graduates - by their own admission - will have the possibility for professional or managerial career development in one- or two-year time. It is still true, that there is a great difference between the carrier expectations of executives and employees, while 42.56% of the employees, 80.81% of the executives feel to move forward in the hierarchy in one-two years.

#### **SATISFACTION**

The satisfaction with the workplace shows in the whole little increase in comparison to the data of last year: 79% of the graduates are satisfied, 21% are not. The graduates at the Faculty of Transportation and at the Faculty of Mechanical Engineering are the most, the architects and the technical managers are the less satisfied. It is interesting, that workers in the capital are the less satisfied with their workplace, while it is known, that the biggest proportion of graduates at the BME find a job in Budapest.

#### **SUPPLEMENTARY OCCUPATION**

15.97% of the graduates have a second job. The decrease lasting for ages may be in connection with the growing requirements at the workplace. The ratio of graduates having a second job is still high by the architects (25.98%) and by the graduates at the Faculty of Electrical Engineering and Informatics (19.83%).

## FOREIGN LANGUAGE SKILLS

At the time of the survey there were 1.36 language exams (intermediate and superior level) per capita (one year ago it was 1.35). It merits noticing, that 30.98% of the repliers speak two, 4.34% speak three languages. The biggest proportion of the graduates have proven knowledge in English: 60.27% speak this language in intermediate or superior level (one year ago it was 62.5%), furthermore, 29.36% of repliers have the same level in German (one year ago it was 32.57%).

## LEVELS OF EARNINGS

The methodology definition of Hungarian Central Statistical Office are applied by the communication of earnings and income data, furthermore, only the data of regular employees, the employees with mandate and the entrepreneurs have been analysed, because the data of those who do not or only partly dispose an income would have distorted the conclusion. In the table, the average of other allowances is the average of those data, where the repliers have not made any declaration about the other allocation, and their value was not zero. The euro data have been calculated with the middle course of 250 Ft/€.

		Faculties								
		ÉMK	ÉPK	GPK	GTK	KSK	TTK	VEK	VIK	Total
Earnings in February 2005	Average	796	692	872	962	927	936	902	1252	1010
	Standard deviation	324	320	354	287	410	250	285	911	668
Monthly gross average earnings in 2004.	Average	790	758	790	833	907	895	835	1193	963
	Standard deviation	273	628	299	189	401	184	286	988	716
Monthly other benefits in 2004.	Average	190	90	151	106	73	247	67	145	129
	Standard deviation	212	90	191	108	84	175	78	216	180
Monthly average income in 2004.	Average	933	781	895	927	933	1027	897	1258	1035
	Standard deviation	398	634	412	228	474	76	301	1014	749

Chart 4: The income levels of BME graduates per faculty [€]

The last-year survey has shown a nearly 100 € diminution of the real wages. On the grounds of this year facts, it can be affirmed, that the situation has improved. Taking into account the inflation of 6.8%, a slight, 40 Euro average **real wages increase** can be determined in comparison to the data of graduates in 2002. The average gross earning of white-collar workers - calculated according to the HSCO terminology - was 853 € in 2004. So, as compared to the national average situation, the average graduates of BME are still in better condition, i.e. that this university degree assures better earnings than the average even in the very beginning of the carrier.

Beside being significantly lower than of the graduate's at other faculties, the earning of graduates at the Faculty of Architecture, have further decreased by 35 €, in comparison to the value of the precedent years. On the grounds of the survey of last and precedent years, it can be affirmed, that the condition of the graduates at this faculty has kept on decay. According to the PES survey, the average earnings of graduates at the Faculty of Electrical Engineering and Informatics exceed both the average earnings of softver developers, informatitiens, both of weak- and strong electricity engineers's (1185, 1034 respectively 1185 €/month).

548 visitors of the BME Job Fair in spring 2005. expected gross average earning of 828 €. The repliers would like to earn 1520 € after three year professional experience. This would mean after 1.5 years of professional experience – supposing linear growing – 1174 €. It can be concluded, that **the entrants on the manpower market are too optimistic** regarding the earnings growing.

A woman gets only 72% of the earnings of her man colleague. This ratio was still 80% last year. The deviation of women earnings is 29% of their man colleagues's, which may lead to the

conclusion that the wages of women are in almost all cases certainly much lower than of men. The PES statistics do not show so great difference between the genders, the earnings of women are nearly 88% of the earnings of men. This points to the fact **that women have less chance** than men to make the same carrier; the employers fix this well ahead - in the first one and half years of the work - in the earnings conditions (as well).

The monthly average wages of graduates with an intermediate language exam (917 €) is only 70% of those disposing a superior language exam (1314 €). 90% of graduates with a superior language exam make use of their language knowledge in the work, while this ratio is 64% by graduates with intermediate exam. So, it can be determined that **the employers honour** in significant measure **the practical language knowledge**.

One financed the studies in the greater proportion with work earnings, i.e. the more professional experience he/she got, the higher is the income after the graduation.

Contrary to the popular belief, those working in smaller towns and in parishes earn more than those who have found a job in a town with county rights or in Budapest.

Average earnings	Budapest	Town with county rights	Other towns	Parish
Graduates in 2003	946	813	1128	1116
Graduates in 2002	873	731	962	1008

Chart 5: Average earnings of repliers after 1-1.5 years of graduation, according to the company site [€]

The correlation between the professional side and the wages has been also examined. According to the experience, those **who work in their profession earn significantly more than those who have left** it. Those who work partly in the profession earn 95% and those who do not work in the profession earn only 85% of the wages of those who work in the profession. The reasoning appearing more and more frequently in the media, according to which the technical graduates leave the profession because of the hope in higher earnings has not come through recently.

In accordance with the expectations, **the wages of executives are higher than those of not executives's**. The executives earn in average by 256 € more than the employees. In the last-year survey this amount was 264 €.

The difference was 128 € in average between the wages of people being satisfied and unsatisfied with their workplace, in favour of the satisfied. The graduates who were satisfied with their workplace obtained 992 € as average monthly gross earning in 2004.