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Improvement of Product Development in Serbia and Bosnia and Herzegovina
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UNIVERSITY OF MOSTAR
FACULTY OF MECHANICAL ENGINEERING AND COMPUTING

Required competences and learning outcomes of curriculums in field of Management of Product Development, Innovations management, Eco-product Development, and Industrial Product Development

REPORT

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In order to collect data about existing knowledge level in the area of the product development, innovative management, application of the product development strategy, needs of technologies improvement, technical legislation, latest trends in quality and human resources management, as well as about the relevant opinion of modern industrial companies in region of Herzegovina (BA), appropriate survey in was carried out.

Relevant questionnaires were sent to 10 companies and all of them responded, filled questionnaires and send back at short time. Faculty of Mechanical Engineering and Computing received very positive feedback from companies involved in survey. They all expressed a very a positive response and interest for strengthening these fields of mechanical engineering.

The review of the basic data about companies and respondents who were interviewed, are given in the tables from 1 to 7.

As a conclusion of this survey, data about knowledge which engineers who are engaged in the product development, innovations management, eco-product development, and industrial product development must have (according to interviewed companies), are presented in Table 8.

Table 1. Basic information about company/respondent

Total number of the companies	10
Number of the public companies	3
Number of the private companies	7
Total respondents	24

Table 2. Education level of respondent

Education level:	**Number of respondents:**
Secondary education	1
Faculty education	19
Master of science	2
Doctor of science	2

Table 3. Respondent position in company

Position in the company:	Number of respondents:
Top management	3
Middle management	6
Low management and other workers	9
Administration	0
Other	6

Table 4. The number of respondent's ages spent in companies

The number of respondent's ages spent in companies:	Number of respondents:
1-5	10
5-10	6
>10	8

Table 5. Sector of companies

Sector of companies:	Number of respondents:
Manufacturing	19
Servicing	0
Researching	2
Other	3

Table 6. The number of workers within companies

The number of workers within companies:	Number of respondents:
Do 9	2
10-49	4
50-249	3
>250	15

Table 7. Market place of companies

Market place of companies:	**Number of respondents:**
Countries from the whole world	15
Europe countries	8
Bosnia and Herzegovina	1

Table 8. Evaluation of the knowledge influential parameters at the product development

1.	Mechanical design	4,08
2.	Product development	4,04
3.	Technological analysis and product planning	3,91
4.	Product development methods	4,00
5.	Mechatronics	3,70
6.	Testing of the product	3,87
7.	Quality management	3,62
8.	Information systems	3,91
9.	Simulation	3,79
10.	Project management	3,87
11.	Innovative management	3,45
12.	Human resources management	3,54
13.	Creative potential and the elaboration skills	3,95
14.	Basics of economy	3,16
15.	Business finances	3,08
16.	Marketing	3,08
17.	Profitability analysis	3,45
18.	Patent rights and protection of intellectual property	3,41
19.	Economic law	3,00
20.	Foreign languages	4,00

Legend:

1 - Not necessary knowledge
2 - Basic level knowledge
3 - Medium level knowledge
4 - High level knowledge
5 - Expert level knowledge

According to results of conducted survey, general opinion of interviewed companies is that the types of knowledge in a fields “mechanical design”, “product development methods” and “foreign languages” are essential for development of a new product. It is very important to have very high level of knowledge or the expert level of knowledge in previously mentioned fields, in order to increase the quality of a new product and higher competition on the market place.

The types of knowledge from the field “economic law”, “marketing” and “business finances” got the lowest marks, which leads to conclusion that interviewed companies did not express high importance to this domain in process of industrial product development.

At the end, it could be noted that the survey was conducted in a variety of industry sectors, as well as people of different educational levels and different jobs. In order to obtain more specific information, our opinion is that it would be necessary to carry out surveys on target groups of professionals in related industry sectors.