

IPROD

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Improvement of Product Development Studies in Serbia and Bosnia and Herzegovina



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WP 1.1

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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With a goal of investigation of knowledge about the product development and the innovative management, application of the product development strategy, needs of novel technologies, standards, quality and human resources managements follow-ups, as well as informing about the skills and knowledge which have to have modern engineers according to the industrial staff opinion, survey of the companies in Serbia and Bosnia and Herzegovina.

Questionnaire concerning mentioned topics has been sent to the great number of companies. However, only ca. 40% filled questionnaires' have been returned back.

University	Number of questionnaire
University of Niš	44
University of Belgrade	10
University of Novi Sad	11
University of Kragujevac	29
University of Mostar	24
University of East Sarajevo	27
Total	145

From total number of questionnaire 54 % are from private companies.

The significant number of eminent foreign companies working in Serbia and Bosnia and Herzegovina - BENETTON-Niš, JURA-Leskovac, LEONI-Prokuplje, FIAT AUTOMOBILI SRBIJA-Kragujevac, TIGAR TYERS - Pirot, as well as the domestic companies: KABLOVI – Jagodina, GOŠA-Smederevska Palanka, RTB – Bor, haven't respond to our survey.

Mainly smaller private companies or state own enterprizes responded to the survey and in generally this companies had some contacts with members of working teams.

Questionnaire was divided in five parts:

- I. Product development and innovative management knowledge as well as the consciousness/needs about/of innovations within the company
- II. Strategy of the product development (marketing, concurrence, orientation of the company to the customer etc.)
- III. New technologies, planning, organization and human resources
- IV. Quality – standards - ecology
- V. Which knowledge product development engineers need to have (basic knowledge and time dependent knowledge)?

According to results of all questionnaires following can be conclude:

Only one-third of all surveyed persons gave answer that all employees have adequate trainings. This means that there is huge space for the seminars for people working in industry. Especially since the highest grades had workshops/conferences/seminars on the question "If you had a chance to have creativity development training, which tool would you like to learn?".

One-third of surveyed companies cooperate with scientific-expert institutions and only 40% have connections with local universities. This leads us to the conclusion that there is no good cooperation between industry and universities. There is great space for universities to offer more expert assistance as well as to be much more persistent to make companies understand that they should cooperate with academic institutions.

About 40% of surveyed companies answered that their companies have some certain ideas about the future, but have no precise planning. Less than 25% of surveyed considers that their company has plans to develop a vision of the company in a form of a business plan for at least midterm time period. This means that companies in Serbia and Bosnia and Herzegovina do not have precise idea about their future and that universities need to focus more on planning and marketing activities.

Also, more than 30% of surveyed do not check their concurrence, while the percentage within manufacturing companies is only, 15%. People who answered yes on a question „Company does not evaluate its market position versus concurrence” (about 15%) and „The market is monitored only when some issues appear” (about 10%) exclusively come from manufacturing companies. This implies that manufacturing companies have bad market concurrence assessment.

Overall of ca. 50% is certain that company tries to find resources for development, but they are not sufficient, one-third has opinion that development of the company is useful but they cannot afford it, and only ca. 15% has a stable budget planned for the development. This implies that management in companies is aware that they should invest in the product development but there is a lack of resources for that.

One-third is certain that responsibility for the product development is a matter of higher management, while one-fourth considers general manager responsible for the product development process. Some ca. 15% has no clear picture about the hierarchy in the product development process. This means that people in industry do not know where is position of product development and who should be responsible for that.

About 40% of surveyed think that the team gather only at the startup of the project and organized meetings, one-fifth think that teams are always assembled wrongly. Only ca. 10% of people think that their company has a high-tech approach in team management. This implies that people are not aware of importance of team work and that they don't have enough experience in team work.

About half of surveyed gave answer that praxis and quality procedures of the company are as in the standards; that people tries to follow up standards, regulation etc; they has knowledge about the ecological regulations; and that their company continuously follow up regulations and standards. This means that second half is sure that they have no adequate knowledge here and that education system should more focus in this area.

Based on the answers of the people the highest importances have expert technical knowledge: product development, mechanical design, information systems, technological analysis and production planning and testing of products. Only mechatronics received lower grades.

Methodological knowledge (project management, quality management, product development methods, innovation management, simulation, while human resources management has lowest grade) is ranked as the second highest after technical knowledge.

The lowest importances for surveyed are economic and legal knowledge: profitability analysis, marketing, patent right and protection, business finances, basics of economy and economic law.

There is a significant difference in grading between large/medium and small/micro companies. The highest difference is in simulation and human resources management: large/medium companies higher grade give to simulation versus small/micro companies.

Small and micro companies gave higher grade for economic and legal knowledge.