

Reports and Articles – can They be Considered as a Successful Result of Research?

U. Viesturs¹, D. Kārklīņa², A. Zilevica³

¹ Latvian State Institute of Wood Chemistry, ² Latvia University of Agriculture, ³ University of Latvia

Technical progress is the main way for the creation of prosperity. Everybody knows that the main lever of development lies in the intellectual field – both technical and artistic creation, and technology transfer of results in marketable products by innovative methods.

Besides, a part of the population (10–15%) must feel aspiration for creation (inventions, innovations). The task of universities is to foster this aspiration. The educational system, first of all, higher education system plays a considerable role in establishing the above-mentioned approach. We have to teach students to become not only skilled employees, but also innovative employers. Actually, we shall assure the continuity in the ERTDI(+I)P line, where: E – higher education; RTD – development of technologies/products/services; I – implementation; + I – special methods for commercialisation of RTD results; P – production.

The commercialisation of RTD results (I, +I, P steps) could be facilitated mainly by the interactions between the driving forces of progress: technology performers, private/public investors, independent experts (technological/financing auditing), the public, and policy-makers (state and municipal levels), keeping in mind sustainable development, especially environmental issues.

The interactions could be enterprise-driven, when the ERTDI chain meets industrial needs:

- the state, facilitated by the financial and legislative intervention at different steps of the chain, for example, the support of well-known instruments such as bioincubators, science parks/centres etc.;
- collaboration between universities and enterprises (very versatile relation).

In reality, the above-mentioned interactions at universities and research institutions are far from the ideal situation. Practically, the majority of research projects finish only with written reports, low quality publications, rarely found in widely accepted data bases, for example, in Scopus etc.; students do not tend to become entrepreneurs. We do not teach students of all levels to create, fix, and sell intellectual property.

The situation shall be changed. Especially important it is now, on conditions of the global economic and financial crisis. Universities should amend the study curricula, and improve teaching of students with the goal to develop creativeness and entrepreneurship. Students shall understand how to become employers in order to develop new/improved products and, consequently, incomes for ourselves and the society all in general.

Obviously, we have to start with ourselves. The following typical existing (A) and suggested (B) functions and activities performed by teachers, first of all, professors are suggested:

- A – Professors and scientists, well known in the corresponding scientific field; authors of monographs, scientific articles etc.; leaders of scientific research projects.
- B – Professors, high-quality specialists in a professional field. Experts and advisers in a profession, heads of professional associations and other leaders of practical projects. Owners of SME. Criteria for nominating to the post of type B professor: everything as for A, patents, certificates, licensing of IP, the spin-off process, IPO in the stock market, expertise in relevant branches of industry or other practical applications etc. An optimum is a combination of A and B.

However, competitiveness and globalisation are currently hot key words and reality in the job market. Therefore, extending of expertise (A + B) is very desirable. Consequently restructuring of study curricula is among the most important measures to ensure the continuity and working linkages from E to P. Therefore universities, firstly, have to reshape the competence and professional standards for the university (higher education institution) teachers. Secondly, the compatibility among graduates and also

the university teachers shall be a very strong concern. Thirdly, professors (all teachers) shall have an industrial (or other practical) competence. Of course, new additional duties seem rather unrealistic due to the specific Latvian situation (the current dramatic decline in wages).

In order to increase the compatibility on the university level, especially after graduating:

1. We have to start with amending the study curricula to teach creativeness; to teach entrepreneurship as well; to suggest/advise/teach students to become employers.
2. To change the attitude (climate) at universities, and to declare that their concern is the full formula ERTDI(+I)P, not only E and R, as it is, unfortunately, now in the majority of European universities.

As a result, we could expect an increase in new high-tech products, and simultaneously IPO and other innovative indicators.

Key words: higher education, RTD, innovations.