

What are Industrial PhDs Worth in the Labour Market?

By Nour-eddine Labiad

Not all PhD graduates can work in the academic labour market. It used to be that a PhD degree qualifies its holder to teach and conduct research at an academic institution but that is no longer true. As the academic labour market cannot absorb all traditional research PhD graduates; the demand for specialized researchers in industry/business has increased; and enrollment in traditional doctoral education has also risen (<http://www.oecd-ilibrary.org/docserver/download/9211041ec012.pdf?expires=1369752729&id=id&accname=guest&checksum=ED06BFED9056511104EB2BCCC65E48AC>), new forms of doctoral programs, such as industrial and professional PhDs, have emerged to diversify and enhance the career prospects of doctoral graduates in a variety of non-academic fields and to boost research and innovation at the organizational and national levels. Nowadays, there are well-established industrial doctorate programs in many countries such as Australia, Denmark, Finland, France, Japan, and the United Kingdom. These PhDs are the result of close university-industry partnerships. In an era of knowledge economy, research collaboration between universities and enterprises has become of high importance as it is an essential producer of knowledge (Borrell-damian, L., 2009. http://www.eua.be/fileadmin/user_upload/files/Publications/DOC-CAREERS.pdf).

Data on the distribution of researchers (PhD holders) by the type of work organization indicate that a high percentage of them work in industry, not in academia, and this is the case in many developed countries. In 1999, over 60% of researchers worked in industry/business in OECD countries while the rest worked in higher education, government, and non-profit sectors (Main Science technology Indicators, 2010/1, <http://stats.oecd.org/Index.aspx?QueryId=33210>). This is why it is not surprising that about 60% of Research and Development (R&D) in Europe is conducted by business not higher education. Therefore, more effective university-business relationships need to be fostered by training PhD candidates in business, particularly in countries where such relationships are weak (http://ec.europa.eu/research/era/pdf/contributions/philips-research-contribution_en.pdf).

Investment in Industrial Doctorates (IDs) is invaluable and beneficial for all three partners involved: the doctoral candidate, university, and enterprise. Doc-Careers and CODOC (Cooperation on Doctoral Education) are projects that assessed the impact of IDs which they found very beneficial for all three parties. At the individual level, doctoral candidates gain research experience and skills in the private sector where they spend about 50% of their time (duration varies from program to another); develop greater knowledge of different sectors; gain better understanding of the industry and, thus, boost their employability. At the institutional level, IDs allow enterprises to develop their human resources by hiring highly qualified research staff and allowing their full-time staff to pursue their doctoral education. Consequently, enterprises enhance their research

profit. IDs facilitate knowledge transfer between enterprises and universities and contribute heavily to advancing innovative R&D and stimulating the growth and competitiveness of enterprises.

One of the successful programs of industrial PhD programs is the case of France. Since 1981, the number of industrial doctoral graduates has reached 20500, involving 7500 companies and 4000 research groups and laboratories in many sectors and scientific domains. Surveys conducted on these graduates have pointed out that 96% of graduates access labour market in one year or more, and 76% in less than three months (Ministry of Higher Education, <http://www.enseignementsup-recherche.gouv.fr/cid22130/les-cifre.html>). ID graduates are highly valued and demanded in the labour market for the skills and competencies they gain through their dual doctoral training in universities and enterprises. Alongside their high employability, ID graduate have reported their satisfaction of their doctoral training. According to a survey conducted in 2008 on the professional career of former industrial doctorate graduates, 86 % (1769 of 2061) of those who defended their theses and 77 % of those who did not (95 of 124) consider that their doctoral training served their professional ambitions. Companies that hosted ID candidates are satisfied to a great extent and this is reflected in the fact that more than 6 PhDs out of 10 have been recruited by companies or laboratories where they conducted their research and the rest are recruited in other types of governmental and non-governmental organizations (http://www.anrt.asso.fr/fr/pdf/resultats_enquete_cifre_2009.pdf).

Similarly, the Industrial PhD Programme in Denmark, which was launched in 1970, has been reported to be highly successful. A survey conducted on the alumni of the Danish Industrial PhDs found that they have a higher average employment rate than regular PhDs. One year after the end of the PhD project, the employment rate for Industrial PhDs was 90.1% and 84.4 % for regular PhDs and this rate increases through time. Another survey (2011) indicated that:

- Industrial PhDs earn approximately 7-10 % higher wages than regular PhDs;
- Industrial PhDs are more likely to be found at the top levels of their organization than regular PhDs. (<http://fivu.dk/en/publications/2012/files-2012/introduction-to-the-danish-industrial-phd-programme-incl-q-a.pdf>).

IDs are highly demanded and valued by employers in the labour market. As today's labour markets are marked by a high degree of skill mismatch, IDs are one of the best practices in reducing the mismatch of skills supplied by universities and those demanded by enterprises. The high employability of ID graduates and the growth of enrollment point out to the success and promising future of this type of doctoral education. Doctoral programs such as the PhD in Human Capital Formation and Labour Relations, offered jointly by the University of Bergamo and ADAPT, Association of International and Comparative Studies in Labour and Industrial Relations is a good example in Italy for a well-established industrial PhD that has attracted over 200 candidates.

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