

## Skills gap analysis: Summary of interviews

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## Interviews summary (Slovakia)

The following document provides a short insight into outcomes of series of interviews carried out with employers of PhD holders, sector experts and PhD holders working in the life science sector in the region of Bratislava and Trnava.

### WHO DID WE TALK TO:

- 18 interviews with 21 interviewees participating in them,
- Sectors covered: pharmaceuticals, diagnostics, health applications and devices, environment, and agriculture,
- What interviewees do: 9 were top managers or co-founders (majority of them also PhD holders), 4 were functional managers, 5 were employees – PhD holders, 2 were independent consultants.

### WHAT DO EMPLOYERS EXPECT WHEN HIRING PHD HOLDERS:

Why employers hire PhDs for certain positions varies. However, in general they search for:

- Employees for R&D positions who will contribute with in-depth knowledge of certain field/problem,
- Or employees for other types of positions for which experience with doing research and research skills is an advantage. These positions might but do not have to include any R&D activities.

### HOW EMPLOYEES FOR THESE TYPES OF POSITIONS ARE RECRUITED IN THE INTERVIEWED COMPANIES:

- Small companies rely on references and networking, but more structured recruitment tools are also used as they grow,
- Larger companies use more formalised recruitment processes, but significant share of positions is occupied through internal hiring and references,
- (PhD) students are active in reaching out towards companies, asking about the internship opportunities or possibility to carry out research for their master or PhD theses.

### BENEFITS OF EMPLOYING PHD GRADUATES:

PhD is an advantage but not a requirement for majority of positions discussed during the interviews – this also concerns R&D positions. Interviewees emphasised that PhDs degree as such is not enough, it must be accompanied by other skills and competencies. Some respondents pointed out to different perception of PhD graduates in Slovakia and abroad, with Slovak companies understanding less how PhD holders could contribute to their growth. There were also several sceptical voices mentioning negative experience with individual PhD holders. Nevertheless, most of interviewees perceived benefits of employing PhDs. They saw the added value of PhD holders for companies mainly in:

- In-depth knowledge of specific problem/expertise,
- Ability to do research independently and ability to work independently in general,
- Ability to analyse and interpret scientific literature and data (this is e. g. considered to be a big advantage for positions in pharmaceutical industry),
- Ability to see things in wider context,
- Thanks to teaching experience, many PhD holders also have good presentation skills,
- Those abilities are also reflected in better quality of outcomes not related to R&D (e. g. better quality of reports compiled by PhDs, better communication with other experts...),

### TRANSITION FROM ACADEMIA TO PRIVATE SECTOR:

Most interviews did not experience any major problems in transition of employees with PhD from academia to private sector. However, they pointed out what tend to be the main challenges for PhD graduates in this process. These include:

- PhD holders are used to concentrate on very specific topic in academia. In private sector they will be involved in the solution of complex problems (the academic perfectionism is not always possible and useful in this context),
- PhD graduates have to adapt to different dynamics in the private sector, learn how to prioritise the tasks, manage their time more efficiently and understand their own role within the team (the work of somebody else depends on their timely input),

- PhD graduates are not used to dealing with failure and therefore sometimes a bit stuck when confronted with the need to search for alternative solutions quickly,
- They lack business orientation and need to learn how business works. E. g., they need to realise that business values different outcomes than academia. What matters are application and impact, not publications (although employers support their employees in publishing scientific outcomes, if possible)
- PhD holders who moved to private sector appreciated that, they have more structured working time (compared to academia where working during evenings and weekends is common).

#### SKILLS FOR CAREERS IN PRIVATE SECTOR:

Interviewees were asked about the skills in different contexts: we inquired about the skills that are the most important for the positions occupied by the PhD holders, the skills that are most important for working in their company as well as about the skills PhD holders usually have or do not have. The answers varied but there were several skills that were highlighted by interviewees across many interviews:

- The skills and abilities that were most mentioned as crucial for private sector included:
  - ✓ Ability to work in/manage/build the team,
  - ✓ Ability and willingness to learn, adapt to changes and search for new solutions,
  - ✓ Ability to communicate scientific information to non-scientific audience, and in general, ability to communicate scientific or expert knowledge clearly,
  - ✓ Ability to collaborate with people with different backgrounds (from different departments, disciplines, sectors, cultures), including collaboration with regulatory authorities.
- PhD holders emphasised that it would be nice to have some knowledge of finance/understanding of how business works before they started working in private sector,
- Knowledge of IPR – PhD graduates do not need to be experts, but regardless the sector they work in, they should be aware of the basic principles so they can protect their own results,
- Regulatory (legal) affairs were extensively discussed in several interviews as it is important part of the doing business in the sector. The question that remains open is to what extent do PhDs graduates starting their career in private sector need to be familiar with this and how to address this topic,
- Basic project management and coordination is an integral part of many positions. Shift to agile approaches in project management and organisations need also be mentioned in this regard,
- Companies usually offer extensive support for professional development of their employees (structured on boarding programmes, soft skills trainings, team development, individual coaching and mentoring). They would however, welcome more focus on the above-mentioned skills within the PhD training,
- Need to develop job search skills was also mentioned (writing a CV, preparing for interviews etc.).

#### COLLABORATIONS WITH ACADEMIA:

- Majority of companies represented in the interview have a collaboration with academia,
- Several of them are directly located in the same premises as academic institutions or have employees who are employed in academia,
- The collaborations are mostly on the informal basis
- The benefits of collaborating with academia are mostly in access to state-of-the art knowledge / talents / research infrastructure,
- Majority of respondents would be ready to engage in other CARLIS activities (trainings, matchmaking).

#### ADDITIONAL INSIGHT:

- PhDs often do not understand why their research is meaningful and important for society, how their research could make an impact. E. g. they are often not able to identify the issue that needs to be solved to increase the quality of life in the society and that could be addressed by their research.

## Interviews summary (Austria)

The following document provides a short insight into outcomes of series of interviews carried out with employers of PhD holders, sector experts and PhD holders working in the life science sector in the region of Vienna

### WHO DID WE TALK TO:

- 16 interviewees, out of them 6 were owners, members of management of R&D manager (several of them PhD graduates themselves) and 8 were employees with a PhD degree working in the private sector
- Majority of interviewees worked in the field of pharmaceuticals and health, more specifically in pharmaceutical companies and pharma-consulting but also in the life science media (journals) or NGOs. Biotechnology and agricultural sector (veterinarian) were also represented. The size of companies ranged from small companies (with 4 employees) up to medium sized companies. The number of PhD holders employed in those companies ranged from 1 up to 25.
- PHD holders had a scientific background in disciplines such as molecular biology, marine biology, pharmacology, cognitive biology, biotechnology etc.

### WHAT DO EMPLOYERS EXPECT WHEN HIRING PHD HOLDERS:

- Employers stated that they mostly search PhD holders for research related positions. However, in the most companies PhD holders can be found in all types of positions, e. g. in regulatory affairs, pharmacovigilance, quality assurance, medical affairs, marketing, sales but also as members of management board and as CEOs.
- The most common tasks PhD holders carried out in their current positions included research, project leadership, project management, personal management or scientific communication.

### HOW EMPLOYEES FOR THESE TYPES OF POSITIONS ARE RECRUITED IN THE INTERVIEWED COMPANIES:

- Employers use various channels to fill in the positions. The channels and approaches mentioned include labour market services (AMS - Jobservice Austria), LinkedIn, general online job platforms (Standard.at, StepStone etc.), sector-specific online platforms focusing on jobs in the life science, newspaper advertisements and personal contacts.
- Similar to that PHD Holders indicated that they applied for jobs offers at LinkedIn or online general job (Standard.at, StepStone etc.) and sector specific online platforms, newspaper advertisements as well as personal contacts. On the top of that some of them were headhunted for their position.
- Some of the companies prefer to hire master level students with the possibility that they would do their PhD in affiliation with the company.

### BENEFITS OF WORKING IN PRIVATE SECTOR

- Benefits PhD holders see in working for company compared to working in academia include higher salary, less demanding working hours and more structured working time (compared to academia where working during evenings and weekends is common) as well as more focus on teamwork and higher job security.

### TRANSITION FROM ACADEMIA TO PRIVATE SECTOR:

- When asked about their experience with the transition from academia to private sector, PhD holders mentioned it was not easy because of the different structure within the private sector companies and more hierarchy and less independence compared to academia. Nevertheless, all mentioned that they got support from the employers as well as colleagues.
- Employers also referred to more rigid company structure, less independence, more restriction in the field of work as factors contributing to a little culture shock PhD experience compared to academia. To handle this, PhD holders need to change their mindset and accept new type of responsibility is necessary. They should avoid comparison to academia.

#### SKILLS FOR CAREERS IN PRIVATE SECTOR:

- Skills and competencies PhD holders indicated they need for their current work the most include ability of working scientifically and doing research, multiple technical skills (labour, machines, bioinformatics) project management, scientific communication
- On the other hand, the skills they were missing included project management, time and self-management, presentation techniques, scientific communication, leadership. They would also appreciate more information about self-employment and entrepreneurship and basic knowledge in finance and legal issues within the field.
- Employers indicated that PhD were often missing practical skills such as project management, basic knowledge of finance and/or legal issues (patent law, regularities of drug licensing, industry standards like ISO etc.), self and time management and presentation techniques.
- To develop those skills employers would suggest training on project management, basic courses in finance and law and patent regulations. They also referred to training focusing on development skills such as presentation techniques, self-management, self-coaching for wellbeing.
- Whether employees had access to training/support provided by their employers depended on the size of the company they were working for. But almost all had the possibility to get (external) trainings throughout their HR development departments.

#### COLLABORATIONS WITH ACADEMIA:

- Some of the companies were founded by university members and cooperate in projects via research assignments.
- Employers would appreciate easier access to industrial PhDs and possibility to co-mentor PhD candidates.
- When asked about the possibility to become mentors for PhD students, all interviewed PhD holders indicated they would be interested in such activity.