CESAER Task Force Human Resources

Adapting Hiring Procedures to the Challenges of the Future

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Introduction

In the form of the 'ERA – European Research Area', the European Union's Horizon 2020 initiative includes a strong call for a unified European research space and in consequence for a common researchers' job market. Cutting-edge research and academic education of highest international standards largely depend on the willingness of researchers and academics to be mobile – at least in the earlier stages of their careers, which may include a substantial number of years before they will find a permanent position in an academic or research institution at a mid-career stage. Ever since the outbreak of the last economic crisis and its negative effects on many academic and research institutions in numerous European countries (such as budget cuts for personnel, but also reduction of resources for competitively awarded research funding), more and more highly talented young researchers are being driven to try and pursue their research careers elsewhere in better financed academic environments since the possibilities in their home country as well as within their academic and research institutions are becoming increasingly limited.

Therefore, aspects of mobility, fair and transparent, but also effective hiring procedures and easy availability of all information relevant to mobile researchers have gained in importance over the last years – just as the competition of academic and research institutions[1] for the most talented young people has become more competitive. In this context, it may also be noted that the financial situation in the US higher education and research system has opened a window of opportunity for European higher education and research institutions to either win back European researchers who started an academic career in the US or even attract US American citizens to Europe.

Therefore, the focus of this chapter will be on the strive for the balance between the interests and goals of research institutions such as the CESAER members to become leading players in academia on the one hand, while at the same time respect and support the call of researchers and academics for interesting and satisfying career perspectives as well as fair procedures and measures to ease the mobility of researchers on the other hand.

The main goals of this chapter are to list the challenges research institutions face today regarding the hiring of researchers and research leaders and to cite a number of best practice examples.

These opening remarks lead us immediately to a list of challenges research institutions face today to reach the above-mentioned balance.[2]

- restrictions on truly merit-based hiring procedures due to legal and institutional constraints
- language: English as research's lingua franca versus teaching in national languages
- low number of applicants, specifically internationally, and the required quality level
- limitations to or even exclusions of active search for talents
- true and open selection processes vs. rather formal procedures
- composition of hiring committees (external/international members, independent chair)

(1) Since this is a CESAER report, the term ‚research institution' is used in the sense of research universities with both academic training as well as high quality research on their agenda in contrast to pure educational institutions or research institutions strictu sensu such as the German Fraunhofer-Gesellschaft or the French CNRS.

(2) The following list is based on a simple questionnaire, which was filled in by roughly 35 institutions and persons and numerous exchanges of experience with a variety of colleagues over the last 10 to 15 years.

- lack of efficiency of hiring procedures (web-based tools)
- lack adequate tools to assess the quality of applications, including teaching competence and leadership skills as well as the applicants' personal skills
- low level of internationalization and diversity
- gender balance: low number of female researchers beyond the PhD level (leaky pipeline)
- too little focus on employer branding and attraction
- inadequate salary level or startup packages
- inadequate number of good PhD candidates
- missing career perspectives after initial position à retaining highly qualified researchers
- lack of tenure track specifically for junior faculty
- culture: making feel applicants and new hires welcome
- welcome packages for all mobile researchers not always in place
- lack of dual career opportunities
- lack of (also linguistically) qualified support staff who professionally organize and coordinate hiring procedures

Charter & Code

The European Union and the European Commission have addressed many of the above-listed aspects over the last years, foremost in the constitutive The European Charter for Researchers – The Code of Conduct for the Recruitment of Researchers' (in the following cited as Charter & Code) of 2005 which defines basic rules for procedures as well as fundamental rights and expectations of the individual researcher. More recently, they have emphasized on the issue in the 2013 Expert Group Report 'Recommendations on the Implementation of the ERA Communication'[3]. In order to render research and academic institutions fit for the goals of the Charter & Code, the Commission launched the 'Human Resources Strategy for Researchers' (HRS4R), which offers European institutions support to evaluate their own HR strategies and – while recognizing the different environments and needs of institutions - to adapt them to Charter & Code, awarding them the 'HR Excellence in Research' logo if they meet the basic requirements. It is good news that six CESAER members have so far successfully met these requirements[4]. Nonetheless, one of the major recommendations of CESAER's HR Task Force is to invite all remaining member institutions to go through the evaluation procedure before long.

Very often, the time and effort for this evaluation procedure is rather exaggerated and it would be completely wrong to look at HRS4R solely from this point of view. The benefits by far exceed the investment since two of the basic requirements of the evaluation are a self-assessment and the formulation of a HR strategy and action plan – which any leading research institution should have available at any given time anyway.

(3) For CESAER's comments on the report of the expert group v. http://www.cesaer.org/content/assets/docs/Documents_2014/CESAER_Comments_Open_Recruitment_July2014.pdf

(4) These are: Université Catholique de Louvain, Ecole Polytechnique (Belgium); Aalto University (Finland); University College Dublin (Ireland); Technion, Israel Institute of Technology (Israel, associate member); Politecnico di Torino (Italy)

The adoption of Charter & Code and meeting the requirements of HRS4R actually constitutes the first best practice that the present chapter recommends. Support and information in this respect may be provided by both the secretariat of CESAER as well as those member institutions that have already successfully completed the process. In this context, it was good to learn through the questionnaire that at least one institution explicitly mentioned having received and wishing to maintain the HRS4R logo as one of this institution's best practice.

Open and Merit-Based Recruitment

In many European countries, national legislation and regulations strongly inhibit the institutions' possibilities to advertise open positions in a way that they can effectively reach and attract an international pool of potential candidates and then select the best according to procedures that befit the specifics of the academic world. In view of the limited influence of academic institutions to change this inhibiting legal framework they should nevertheless try and present themselves as attractive working environments, e.g. by advertising the positions in English by all means. The above-mentioned legal and regulatory requirements may be limited in their full extent to the advertisement in the national arena (where this practice will be considered 'normal') whereas in the English text they could be included only by referring to them as available on the institution's web-based information. By no means should an advertisement come in the form of a legal text: no better way to put off potentially interested researchers from abroad. It is also crucial that all information on working conditions such as work contract, salaries, social security and career perspectives as well as the selection procedure and its timeline are available in English. The selection procedure should be transparent and fair and candidates should be given information on the status of their application either automatically or at least on request at any stage of the procedure. Above all, candidates should be informed as soon as possible if they are no longer pursued so they can look for other opportunities. The procedure should be coordinated by professional staff who are familiar with the procedures, guarantee the standards, professionally communicate with the candidates (and members of hiring committees) and are also able to adapt the procedures to the changes and new challenges of the academic job market. Most of these aspects are central elements of the principles outlined in the Charter & Code. At the Central European Institute of Technology (CEITEC) in Brno, Czech Republic, using EURAXESS Jobs as a standard for the publication of job openings is considered best practice.

In the end, academia is a small world and news travel fast and far. Therefore, it has to be noted that an institution's reputation can be easily and very quickly damaged if its job openings can be detected without effort as targeted at a specific person, preferably from inside this institution. Such openings by right will not result in a high quality, let alone international application list. However, there may be situations when a targeted opening is called for. If regulations require an advertisement, the call for applications should be kept low profile or, even better, the targeted nature of the call should be openly stated in the text. This transparency will be highly appreciated.

Electronic application tools help to structure hiring procedures in many ways: applications have to be filled in in a standardized way, which makes it much easier to compare the information provided by the candidates. The dossiers are readily accessible to those involved in the hiring procedure regardless their geographical location, which in turn makes it easier to have external, international members on hiring committees. In addition, having external, preferably international experts on hiring committees should be a must at least for top level positions such as professors. A pre-selection helps to exclude those applications that do not meet the requirements very easily and at a very early stage so they can be given notice without further delay. Thus, the hiring committees can concentrate on their most important task that is the evaluation of the top candidates and the final and most crucial stage of the selection process. Many CESAER members use such tools to a varying degree and to various levels of academic staff. The Politecnico di Torino has gained vast experience over the years and lists its tools among the examples of best practice, citing as advantages for instance saving time to collect all documents online, stepping towards a dematerialization of documents and saving time and money for the members of selection committees who do not need to travel and are therefore more often willing to accept participating in these committees.

As mentioned before, such tools will make it easier to include external, international experts (or in engineering possibly from industry) in hiring committees at least for top academic positions. At many institutions, having international experts on hiring committees is considered an excellent idea in order to broaden the perspective of these committees and add to the transparency and quality control of hiring procedures. Including international experts will help with another matter critical for technical universities with their notorious low number of top female researchers: an adequate representation of women in hiring committees. Instead of overburdening the few female professors and group leaders in-house and calling them to work in yet another committee, external female experts may be invited to join hiring committees, thus complementing the regular old boys' network so well represented in these committees with old girls' networks.

Active Search for Candidates

A central aspect where legal restrictions often prevent academic institutions to play a more active role in attracting excellent researchers is the possibility to consider candidates beyond those who spontaneously applied, but can be brought into the hiring procedure through direct approach. RWTH Aachen University does so in general, but specifically with a clear focus on female academics for professorial positions. This direct approach is a crucial element of the RWTH's gender strategy and the goal is to raise the number of women in top academic positions. Also at ETH Zurich, with its faculty consisting of two thirds with a foreign background, the faculty's extensive international network is systematically used to generate additional candidacies of high standing. Over the last 15 years, around 50% of the new faculty with tenure did not apply to ETH Zurich themselves, but were approached by the departments and hiring committees at various stages of the hiring procedure.

This direct approach of top academics as used at RWTH Aachen University or ETH Zurich among others is a response to a challenge which was mentioned in many questionnaires: how to attract researchers of the desired quality level. Many institutions very often face a situation where the quality

of a list of candidates does not meet the institution's expectations and it is quite common that this lack of quality coincides with a very low number of applications from abroad.

How can research institutions present themselves as attractive employers with a truly international outlook offering an excellent working environment for a global academic work force? The key word cited in many questionnaire is employer branding. It seems obvious that this aspect in the academic world goes far beyond a simple marketing strategy, but asks for a large variety of answers and actions. The international standing of a research institution plays an important role in this respect, be it through the diversity and internationality of its faculty and research workforce, be it through the quality of its education and in consequence of the students. However, it is not easy to manipulate the various rankings, and not everybody has the means or is ready to establish offshore enterprises in low-wage areas of the world where the financial input per publication can be drastically reduced and thus optimized.

Again, Charter & Code offer a solid and easy first answer to this: advertising open positions internationally raises an institutions visibility over time. At ETH Zurich, open professorial positions are usually advertised in clusters twice a year. Hits on the webpage of the office which coordinates the hiring procedures for new professors are noticeably higher around the time of these cluster advertisements. The office also places ads in leading international scientific journals or important European weekly newspapers without referring to specific open faculty positions, but describing ETH Zurich as an attractive working environment, specifically for female researchers. Once more, a raise in the number of hits on the office's website where all the relevant information on becoming and being a professor at ETH Zurich is readily detectable. However, there is no need for a possibly costly campaign: placing open positions on EURAXESS Jobs has the same effect over time, especially if not just the 'dry' job description or at most the excellent lab facilities are mentioned in the advertisement, but if the institution demonstrates gender awareness or tries to offer its workforce an adequate work-life balance in two or three sentences. There is no doubt that placing information on such aspects as gender strategy or family-friendly working conditions on an institution's website in a manner that researchers hitting the site will stumble across them almost automatically will add to the institution's attractive image.

Assistant Professors with Tenure Track

Especially to younger researchers, an institution can become very attractive if it has a job category to offer at a rather early stage of career when at other institutions they would simply be too young or would be considered lacking certain regulatory requirements, such as the *Habilitation* in Germany or Austria. While it is very common in the US university system that an academic career will lead you from your PhD right into a professorial position as an assistant professor (usually with tenure track) at a very early age, this instrument is not yet widely used in Europe. This has to be deplored since it is a wonderful instrument for both the individual researcher and the institution for a variety of reasons.

This was most impressively shown in the 'Recruitment' workshop at the CESAER's HR Conference in the spring 2014 in Delft. Two speakers from Aalto University in Finland and the Ecole polytechnique fédérale de Lausanne (Swiss Federal Institute of Technology in Lausanne, EPFL) in Switzerland presented their tenure track

system, the reasons those systems were introduced and the experience that could be gathered in the two versions. First of all, it has to be stressed that in our understanding assistant professor positions are truly professorial positions with a limited work contract (as a rule 6 to 8 years) which offer the possibility of a promotion to a tenured full professor position - and not some kind of second rank professorship - through a fair and transparent evaluation procedure with clearly defined quality standards. Assistant professors are independent academic units – which are not attached to some more senior professor – with freedom in teaching and research and resources of their own to pursue their research goals. Assistant professors as a rule are hired in their early to mid-thirties (at least in science and technology, other academic fields may have other guidelines) and they may expect a tenure decision, that is a promotion to a full professor position at the age of give or take 40 years. While they do some teaching, which will be evaluated as well in the tenure procedure, but hardly no administration at all, the focus clearly is on research output and career development. At Aalto University, there is an explicit recommendation that assistant professors should divide their time in a ratio of 65% research to 30% teaching, with a very low 5% in administration, primarily in view of an excellent integration in the daily life of their department. While it is true that hiring young researchers involves a certain risk since there is just a limited track record to judge from (but it is the main feature of the tenure track process that their abilities can be tested), it is an excellent chance to hire talents not only in their most productive phase of the academic career, but also at a stage when they as well as their partners and families are still quite mobile and will also easily adapt to the culture of the new institution. Further, by filling a certain portion of professorial positions on the assistant professor level with tenure track, you have good chances to directly compete even with leading US universities since you will offer attractive job opportunities for young European researchers who are willing to move back to Europe after performing first steps of their academic career overseas – or, in view also of the present condition of the US university system or the waning resources available to granting agencies – possibly even American citizens themselves. Thus, assistant professor positions offer a good opportunity to internationalize an institution's faculty, even if primarily in a European context – which would fulfil one of the goals of ERA. Further, the medium hiring age of assistant professors in the early to mid-thirties will help to lower the average age of an institution's faculty, not a bad feature in the sense of role models as technical universities are badly in need of students who do not wander off to industry, but decide to pursue an academic career. Again, also compared to the US system where according to most recent figures, the average age of tenured faculty is alarmingly close to 60. And finally, and in some sense most importantly: in view of the existing pyramid of female researchers, assistant professorships provide an excellent opportunity to attract young female researchers and offer them valid job perspectives if they perform well.[5]

EPFL was one of the first, if not the first university in Continental Europe to introduce this system just before the Millennium. Ever since the introduction of assistant professors with tenure track at EPFL, around 130 persons were appointed, 47 of whom successfully went through the tenure procedure, while many more are still in the procedure. From the experience gained over the years, the system has been adapted continuously, and without doubt there is much to be learned from the EPFL example. Some of the most important features are the clearly defined and communicated evaluation criteria or the regular interaction of the deans with the assistant professors. One of the major changes was made regarding a clear distinction between mentoring

(5) At ETH Zurich, almost 30% of the assistant professors are female – opposed to just a bit over 10% on the full professor level. At EPFL, of the roughly 130 assistant professors hired over the last years, 21% are female. At Aalto University, finally, 26% of the new hires are female, compared to 20% on the associate and a low 14% on the full professor level.

and academic feedback. While deans and mentors, usually senior professors, are mainly responsible for a smooth integration of the assistant professor's activities within EPFL, the assistant professor's performance is judged in a mid-term review by a group of external experts, which helps the assistant professors to self-assess their status and career perspectives. This distinction clearly resulted in more objectivity and transparency.

In contrast, assistant professors with tenure track were introduced at Aalto University four years ago. While for obvious reasons it is too early to draw final conclusions after this period, the Aalto example shows some other characteristic features and effects of the system. Aalto University is the result of a merger of three universities located in and around Helsinki in 2010. Instead of just managing the merger with the academic personnel available at the three former independent institutions, Aalto decided to inject some dynamics into the new institution right from the start and introduced the tenure track system as one of the central 'glues' for the merger. This opened the opportunity to fill a higher number of professorial positions (compared to just replacing retiring faculty) und thus implement the strategy of the new institution at a higher pace. At Aalto, it can also be shown that not only the number of applications, but also the quality of the applications could be successfully raised. Thus, assistant professor positions with tenure track clearly heightened the appeal of Aalto University as an attractive workplace on an international scale and thus also the number of non-Finnish researchers applying: since 2011 around 30% of the new hires are foreigners, which eventually will help to make the faculty of Aalto University more international and more visible in the global arena. Even without the complex and challenging merger situation Aalto had to face, assistant professor positions can constitute an instrument of dynamics, for instance if a department faces a collective retiring of a high number of full professors at more or less the same time several years down the road. Hiring a few assistant professors as soon as possible will ease the strain in the system and smoothen the generation transition.

In this context, attention should also be drawn to the *Technische Universität München* (TUM), Germany, where it was possible to overcome the regulatory obstacles inherent in the German W-system and establish TUM Faculty Tenure Track most recently.[6]

In sum: if well designed and properly managed, assistant professor positions with tenure track will add to the diversity of academic institutions both in terms of nationality/internationalization as well as gender. Further, it will help to lower the average age among the institution's faculty, thus providing – and not only in terms of the female assistant professors – positive role models for students deliberating whether to go for an academic career or not.

In the context of attracting more female researchers for technical universities as well as internationalization of its academic workforce, the *Technische Universität Berlin* (TU Berlin), Germany, has adopted a very promising program called International Post-Doc Initiative (IPODI)[7], which offers two year fellowships for female researchers from abroad. Within ERA and Horizon 2020, the inter-sectorial mobility between academia and industry is one of the focus areas within the HR Strategy. TU Berlin most recently established another program to attract female researchers above all in the area of engineering. In a similar mode, however without the international scope, female researchers are actively targeted within the German TU9 Network, the network of German technical universities.

(6) For details see http://www.tum.de/en/about-tum/working-at-tum/faculty-recruiting/tum-faculty-tenure-track/

(7) See http://www.ipodi.tu-berlin.de/

Dual Career and Integration Services

ERA and EURAXESS are a lot about mobility and lowering the obstacles to mobility. Despite all developments in communication devices and skills, geographical mobility still constitutes a major aspect of an individual's career development in academia even though the classical postdoc period of several years preferably overseas may have become somewhat outdated. In contrast, research institutions depend on mobile researchers, and not only for the sake of diversity and internationalization. This is especially true for technical universities in smaller countries where the talent pool is by nature rather limited so even in the best of all times, hiring from abroad is a pure necessity. In comparison, large countries can much more rely on their own pool - whether this is to their advantage in the long run would have to be debated in detail.

It is a truth generally acknowledged that with age the willingness to be mobile will be decreasing since the best are well established and overall quite happy where they are. What is more, their private and family situation will turn the move to another institution, maybe even in another country, into a major undertaking where the researcher no longer can decide on his or her own, but just has a share in the family corporation, but most likely not the majority. So if the hire is on the level of well-established researchers, it is not just the researcher, but also a partner and possibly children and their needs and professional or academic aspirations one has to take into account when negotiating. Offering relevant services to new faculty members has become quite common at many European research institutions. Again, TUM was a pioneer and in its wake and in the context of the German *Exzellenzinitiative* (for instance RWTH Aachen University, where services will vary according to the seniority of the position to be filled) many such services were established at German universities, generally known as Dual Career Services or – if there is a stress also on sustainability of the effects of such services – Dual Career and Integration Services (DCIS). In the same line, the Politecnico di Torino, Italy, – with particular reference to gender issues and balancing family and work – offer a variety of schemes available to both scientific and administrative staff, among them flexible working hours, child care, babysitting services, but also support services for elderly family members or counselling for staff in temporary difficult situations. Some of these services are also available to students. For its pioneering work in the area of equal opportunities and work-life balance, the Politecnico has received wide recognition and some awards. Very broad practical support in a large variety of personal aspects are offered to international visitors and staff by the Politecnico's Foreign Citizens Office (FCS).

A major debate in this context is the level of support offered to partners of new researchers regarding their own professional career. This support may range potentially from providing information on the job market and the specific ways the local job market is functioning (writing a good cv) to networking and actively establishing contacts with potential employers to finally even creating jobs within the institution, at least on a temporary basis which will help the partner to put a foot in the door and then pursue a career elsewhere, as it is done for instance at TU Delft or ETH Zurich. This is a very delicate subject and a complex matter with legal, financial and cultural implications.

However, also younger researchers, starting from the PhD and up to pre-faculty level, for instance Marie Skłodowska-Curie Fellows or ERC Starting Grants Awardees who went through highly competitive evaluation processes and are great potentials and thus future professors, may expect some support and to a growing extent it is their right to do so. Within the EURAXESS Initiative, grants are competitively awarded to projects which analyse the challenges and border conditions of mobility in Europe and within ERA and come up with strategies and actions to meet these challenges. Coordinated by ETH Zurich, a consortium of five partner institutions from Greece, Slovakia, Estonia, Denmark and Switzerland called TANDEM (Talent and Extended Mobility in the European Innovation Union)[8] analysed the conditions of present-day mobility of researchers in Europe and came up with a modular tool kit which will help research institution to establish Dual and Integrations Services according to the specific needs, but also the resources available. Again, this project worked very closely along the line drawn by Charter & Code: no need to reinvent the wheel again since many services are already offered by most institutions; however, they have to become systematized and relevant information, e.g. regarding housing, schools, child care, health and other insurance, way of life, etc., has to be made easily accessible for mobile researchers. Overall, once established, DCIS will be considered a definite plus for research institutions, and even globally top institutions can no longer just rely on their 'natural charm' to be sufficiently attractive for the best in today's competitive academic job market.

A major aspect of well-functioning Dual Career and Integration Services is clever expectation management. While institutions are willing to offer certain services, it is vital that they leave no doubt as to what these services include and where they stop. Unquestionably, learning Estonian or Basque is a demanding endeavour (which can be eased by offering language courses right from the start), and in many countries dealing with public administration can be difficult and time-consuming (and frustrating). Changing from a school system in one country to one in another is a challenge for the children, but maybe they will succeed much more easily than their parents. Apartments and houses in most European metropolitan areas are expensive and difficult to find, but there may be apartments owned by the research institution, which can be used for an initial period, or, once familiar with the workings of the market, it is not that difficult in the end. Many more aspects could be cited, but if they are addressed in a transparent way and if in addition some support can be offered, all these obstacles will not deter the researcher from joining another research institution.

With this in view, the Technical University of Denmark (DTU) combines the actual job interview with a comprehensive program established by the International Faculty Services (IFS) where such questions are addressed to make sure that the potential new researchers know what to expect at DTU as a workplace, but also what they and their partner and children should expect from local and Danish society. These meetings provide an opportunity for both DTU and the candidates for postdoctoral and higher positions to focus the decision-making process on both work-related and private aspects involved in a possible move from abroad to DTU and Denmark.

(8) V. http://www.euraxess-tandem.eu/

Assessing Skills

In contrast, research institutions too have certain requirements they want the new researcher or professor to meet. In order to secure this, all institutions have their procedures which have evolved over time, most likely varying to the nature of the position to be filled. When a long-term investment is involved as with a full professor position, this procedure will be more refined and including well-established quality measures. It is no secret that with most positions (apart from the real administrative jobs) it is the research aspect and the track record in research which will be primarily considered for the decision in the end. With research, citations and number as well as quality of research projects, hiring committees usually feel quite confident; some things can even be measured and expressed in tangible numbers.

However, all institutions struggle alike when it comes to evaluating the teaching competence of a candidate, let alone their leadership or soft skills. In this respect, again Scandinavian institutions seem to lead the way. At Chalmers University of Technology, Sweden, the teaching competence of future academic teachers will be evaluated by external experts. Over the years, Chalmers has built up a pool of potential pedagogical assessors, from other Swedish universities with either a strong background in pedagogy or in other fields in science and engineering, knowledgeable in pedagogical and educational development in academia in general and their own organization. The scientific track record of candidates is evaluated by external scientific assessors, thus providing the hiring committee with independent assessment reports from the pedagogical as well as the scientific perspective as a good basis for the committee´s decision-making.

At the Swedish Lund University and the Norwegian University of Science and Technology just as at Chalmers, experts from the institutions' own HR office are an integral part of hiring committees and will voice their opinion on the leadership skill of the candidates invited. As the comments in the questionnaire suggest, including true HR perspectives beyond the mere administrative in hiring procedures seems to be a major challenge for very many institutions.

At Lund University, the term 'suitability' is explicitly used and refers to Lund's aim to hire people who meet the HR standards formulated by the university or in more general terms the leadership culture of Lund University. When interviewing candidates, the HR office uses so-called 'competence-based interviews' to evaluate the candidates' skills such as ability to co-operate, leadership skills, independence, creativity and more in order to assess the candidate's previous behaviour regarding these skills. A member of the Appointments Board will always be present in these interviews for faculty positions. HR will then report the results of this assessment to the Appointments Board, thus the assessment constitutes an integral part of the final decision apart from scientific and pedagogical skills.

Since assessment, but also the development of skills beyond the merely scientific competencies is also a very important aspect at later steps in a researcher's career, for instance when moving from a temporary to a permanent/tenured position or when being promoted, this aspect will additionally be dealt with in other chapters of the Task Force's report.

Conclusion

With regard to recruitment, there are no easy answers, let alone simple truths - academia and the academic job market are just too complex. What works in one context, may not be effective at all or at least on a much lower level in another. Many questions are raised, and when looking at the CESAER members all of these questions are addressed at various times, to various degrees and with regard to various types or levels of research positions. Not all of them can be tackled at the same time and with immediate results, this would surpass the possibilities and resources of any institution. However, it is good news that to most questions one or several CESAER member institutions have found convincing answers and, despite differences in systems and border conditions, with some ingenuity they are transferable and can be adapted to another institution's specific needs. Some of these answers were considered most promising and worthwhile to share by the HR Task Force and were therefore highlighted in this chapter. And, a final remark: over regular universities, the technical universities as represented in CESAER have one advantage: that of focus. Also in the area of HR in general and recruitment in particular, technical universities are dealing with a clearly defined clientele, engineers and scientists, but they do not have to bridge the enormous cultural differences of fields so wide apart such as theology and philosophy on the one side and medicine and business administration on the other. This makes the quest for talent on an international scale at least slightly easier.

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