

Tracking Learners' and Graduates' Progression Paths TRACKIT

Michael Gaebel, Kristina Hauschildt, Kai Mühleck, Hanne Smidt



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Foreword



Europe has set ambitious goals for broadening and widening higher education participation in response to societal demand and as a contribution to enhance economic competitiveness. More school leavers are entering higher education, and they are joined by growing numbers of lifelong learners and international students. It is of critical importance for universities to monitor the progression and success of their diverse student populations including also the entry of graduates into the labour market.

At the same time, in spite of the growing importance attached to data collection and increased transparency in policy debates across the EHEA, little attention has so far been paid to the importance of tracking student progress in this context.

Hence the present report on tracking addresses an issue that is of growing importance for both higher education institutions and national systems. The research that has been carried out shows the existence of a range of different approaches and also that considerable experience is being gathered across Europe. Not only do a growing number of institutions and countries track their students and graduates, but these approaches are steadily becoming more sophisticated as they consider the entire student lifecycle, and different student groups: from school leavers to graduates entering employment or seeking to continue their education, and also increasingly including international students and lifelong learners.

One of the clear conclusions of this report, in addition to the presentation of a range of recommendations to improve the practice and impact of tracking, is that this topic deserves more attention in the European and national debates as the European Higher Education Area moves into its next phase and prioritises a successful, more student-centred learning for growing numbers of increasingly diverse students.

EUA therefore hopes that this report will contribute to raising awareness of the importance of tracking by launching a European debate on this important topic and also – through the examples of good practice and the guidelines it provides – by supporting institutions in developing or further enhancing their own institutional tracking approaches.

Maria Helena Nazaré
President
European University Association

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The TRACKIT project had the ambitious goal of providing an overview of the activities developed to track students and graduates by higher education institutions (HEIs) and national bodies across Europe. This required the support and active contributions from both academics and university leaders from a range of higher education institutions and from many individuals who took time to answer questions and discuss and validate results. The project team is most grateful to all who gave their support to the project and in particular to:

- The universities, national rectors' conferences, ministries (including national education ministries), quality assurance (QA) agencies, and higher education experts that responded to a survey which enabled us to compile a first general summary of national tracking initiatives in 31 European countries. The comments received from participants in the two focus groups provided valuable feedback on the research approach adopted by the project and we are very much obliged to them.
- 23 higher education institutions which kindly hosted site visits, and specifically their leadership, staff and students who took time to respond to the questions and engage in discussions with our research teams. Without this information, the report would lack the depth of its institutional perspective.
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- The European Commission that provided the financial support without which the project would have been impossible, and in particular to those civil servants who took a great interest in the topic, and participated in project events and activities.
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Executive summary

The present study aims at providing an overview of the tracking initiatives of students and graduates in Europe. As a first study of this kind, its aim was to map the state of play, and provide factual information on reasons, uses and methods for tracking. While the study considers initiatives of both national/regional bodies as well as higher education institutions, the focus of the study was on the latter, considering also the impact of tracking with regards to improvement of learning provisions and student services, and its contribution to general institutional development.

Resulting from the study are some guidelines for higher education institutions, which intend to develop or enhance tracking, and a list of issues for follow-up at European level, where so far, despite the interest in transparency tools, tracking has not been considered.

Main research activities under the project were a survey among national rectors' conferences and individual higher education institutions conducted in 31 countries representing 32 higher education systems¹, expert interviews and focus groups, and site visits in 11 European countries (12 higher education systems) to 23 higher education institutions and other relevant organisations.

The study has been undertaken by a consortium consisting of the European University Association (EUA); the Irish Universities Association/UCD Geary Institute; Hochschul-Informationssystem GmbH (HIS); Lund University; the University of the Peloponnese/Centre for Social and Educational Policy Studies; and Aarhus University. It has been co-funded by the Lifelong Learning Programme of the European Union.

The main findings of the study are as follows:

1. Increased importance of tracking

The project results confirm a growing interest in tracking and also an increasing number of tracking initiatives both at national and institutional level, for different reasons:

- The changes that took place in higher education learning and teaching in recent years: specifically, a shift to student-centred learning in mass higher education environments and the growth of student numbers.
- With growing higher education participation, employability and entry into the labour market becomes a more important criterion for assessing higher education provision.
- Tracking is also impacted by general trends in public policy making, governance and management (new requirements for transparency, accountability and evidence-based policy making), the growing international competition and positioning of higher education institutions and systems (including international benchmarking and competitiveness, also as part of the national and regional economic capacity).
- Finally, the enhanced technical possibilities for data collection and management open new possibilities.

Evidently, these drivers and reasons for tracking are often interlinked and cascading. In individual countries and institutions, they weigh differently and appear in different constellations and combinations. The indication is that generally institutions and systems are moving towards tracking the student lifecycle, i.e. assess the different phases from application, during and after study into employment or further education. But this currently seems to be still an exception – due to technical obstacles, in particular for tracking of graduates, or legal limitations (data protection).

2. Understanding of tracking

While there is no common understanding of what tracking actually is, the study proposes a description deduced from the common practice, which should allow distinguishing tracking from other types of data collection or research projects.

¹ The EU member states: Austria, Belgium Flemish and French Communities, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, the United Kingdom; and Candidate and EEA countries: Iceland, Liechtenstein, Norway, Turkey.

- Tracking records information on students and/or graduates, with regard to their learning progress, skills acquired, perceptions, jobs, between at least two points in time, through aggregated or individual-level data, collected mainly via administrative processes and surveys.
- Tracking processes or instruments would require application of results, i.e. improvement of curricula, enhancement of student services etc.

3. Tracking Methods

- Administrative data is the main resource used for student tracking both at national level and in individual institutions, while graduate tracking mainly relies on surveys.
- A number of countries deploy a 'centralised approach' for student tracking by administrative data. Institutions collect data on their students (often mandatory) and deliver it to a central national database which is typically administered by a national body.
- Student tracking is often supplemented with quantitative and qualitative surveys, in order to capture student perceptions. Technically, graduate tracking can also be done on the basis of administrative data, which is the case in a few countries, where national-level databases combine student data with social security or labour market data, or even data from the school sector.
- In some countries 'shared approaches' are explored, where individual institutions participate in a centrally designed initiative/process (regarding method, schedule, etc.), usually initiated by a national body, occasionally as a joint initiative of a network of universities, or with a research institution. Data is collected via standardised questionnaires, which provide room for individual institutions to add specific questions.
- Institutions often complement tracking with other measures such as interviews, focus group meetings, student feedback sheets, etc. For graduate tracking, developing relationships with alumni can be useful.

4. Relation between national and institutional tracking

There are significant differences among countries that affect general approaches to data collection and use, and impact institutional tracking. National² conventions for data collection and for student care and mentoring play an important role in shaping tracking approaches and purposes. In some countries tracking is mandatory for institutions – either by law or as a requirement for funding allocation or external QA – or incentives exist for institutions to do it.

National-level and institutional-level approaches may interrelate in different ways:

- In a number of countries, student data is collected from the institutional administrative records and aggregated into central databases at system level (the 'centralised approach', as described above).
- In some countries, the national level prescribes one common approach which the higher education institutions (HEIs) cannot adapt individually; in others, universities are free to develop their own system for student or graduate tracking, which may better fit their needs but is also resource-intensive and limits the possibilities for comparing and aggregating beyond the individual institution.

5. National tracking approaches

Approaches that match this description appear to be widespread in Europe.

- Initiatives for national- or regional-level student tracking are in place in 23 of the 31 higher education systems³ considered by the project, and in 26 out of 32 higher education systems on graduate tracking.

² While here and in the following reference is made to 'national', this also extends to regional level, in countries which comprise more than one higher education system, and allocate key responsibilities for higher education at regional level, e.g. in Belgium, Germany and Spain.

³ No information was available for Iceland.

- While generally, implementation was found to differ considerably within and between countries, some common patterns exist: all countries which track their students do so regularly, whereas graduate tracking at national level is not as regular.
- Student tracking data at the national level was most commonly employed for planning and developing higher education policy. In several countries, student tracking instruments are for the allocation of funding to the individual HEI. National graduate tracking instruments are used for statistical and analytical purposes as well as for policy planning and development. Only few countries use graduate tracking data for the allocation of funding among HEIs.

6. Institutional tracking practice

The project's research found that in 30 out of 31 higher education systems⁴, at least some HEIs track their students; in 22 of these systems, all HEIs do so. In 28 out of 31 higher education systems⁵, some HEIs track graduates, whereas in seven of the systems, all HEIs track them.

All 23 institutions participating in the project track either students, or graduates or both. Many of them were found to be in the process of developing their tracking approaches, improving the methodology, or the technical basis; increasing the scope of existing initiatives or adding new ones. The main findings from visits to these HEIs are:

- Institutions track students and graduates with regard to their factual progression and their own subjective perceptions of the learning provision.
- Student tracking is critical in particular to the first year of study, and many of the measures relate to ensuring retention. This is also one of many motivations for institutions to include potential students into tracking: to provide information, allow early identification of students at risk, but also as part of the institution's marketing and recruitment initiatives. Assessing the reasons and devising measures for preventing dropout is another focus of student tracking. A challenge in some higher education systems is that institutions can only distinguish through surveys which students left the institution to study elsewhere, or dropped out.
- Graduate tracking requires substantial resources in order to ensure good response rates. Beyond gathering data, institutions develop platforms for matchmaking between students and employers and other novel approaches. Graduate tracking was also found to develop synergies with alumni relations, which is yet another area of activity and rising importance for institutions.
- There are major differences in the ways institutions are able to collect information on students' social and ethnic backgrounds, depending on national policies, and whether and how these extend to higher education. For example in some countries, questions on students' background are part of the enrolment procedures, whereas in others they are not. However, even in countries where it is not mandatory, individual institutions developed measures to gather information on these issues, e.g. through supplementary surveys.
- In most places, tracking does not include or does not identify lifelong learning, international and mobile students – but many institutions have recognised this, given the growing number and importance of these groups, and strive for inclusive approaches.
- Whether or not doctoral candidates are tracked, depends on the existence of doctoral programmes and schools, which have been developed or are under development in many institutions, in replacement of or complementary to the traditional apprentice model.
- Generally, students and staff were positive about tracking, and its impacts. Even staff members who admitted to being highly sceptical when tracking was initiated, acknowledged the benefits to be able to rely on data rather than only on anecdotal knowledge. However, there were also critical remarks, mainly regarding lack of resources for tracking, and insufficient follow-up on results.

⁴ No information was available for Iceland.

⁵ No information was available for Turkey.

7. Impact of tracking

Overall tracking was found to be useful in contributing to enhancing the quality of the institution, its learning and teaching, support services and its strategic development and management.

Tracking results are used for various purposes and in different contexts:

- Tracking was generally found to enhance awareness of teaching results, and to communicate and compare them throughout the institution. It helped, for instance, to better understand reasons for dropout, and to consider professional career prospects for the revision of curricula.
- Tracking is also of some use for identifying and targeting potential students, and for planning for the next intake.
- Tracking results were found to be instrumental for improving and devising better targeted student support systems that underpin all phases of the student's lifecycle, resulting in better quality of education and better student retention. It is also used for benchmarking within the institution or between institutions.
- Tracking results were used also for strategic dialogue between institutional leadership and the faculties, and to provide the basis for jointly agreed development goals and indicators.
- It enables interinstitutional comparison and benchmarking, as a means for building awareness among staff and to encourage further enhancement of management, teaching and services.
- It stimulated institutions to reform their data collection, and make better use of existing data.

Tracking is resource-intensive, and has to be well-coordinated and systematic. It is vital that it enjoys active support from institutional leadership and is closely linked to quality assurance.

- Results are also used for the overall institutional development, e.g. development of strategies and the enhancement of governance and management processes and structures.
- With growing competition between institutions, use for marketing and targeted student information is gaining popularity.
- Tracking also contributes to assessing the impact of higher education reforms, including the Bologna Process reforms.

8. Challenges and risks

A number of challenges and risks have been found, described and discussed throughout the report. None of them fundamentally question the importance and necessity of tracking, but it would be useful to confront them with regard to improvement and further development of tracking approaches:

- Complexity of results and comparability: The information derived from tracking was considered to be vital, both at system and institutional level, but it does not necessarily provide ready-made answers, as tracking of student dropout illustrates, and a similar complexity was found with regard to employability. Tracking can thus be considered to contribute to the enhancement of curricula and services, but is often just the starting point for further research and follow-up. This may also limit its value for comparison of data between institutions, at national and international level, as employment of graduates may depend on the local or national labour market.
- Poor management: Lack of coordination of tracking approaches (over-surveying), poor data management and analysis, and random use and ad-hoc application of tracking results are likely to do more harm than good.

- Results are not used: There were cases where tracking provided information and evidence, which were not followed up, e.g. due to insufficient resources at institutional level or due to national regulations. This tends to create a high amount of frustration among staff and students.
- Data protection issues: Increased technical means for data collection and processing open up new opportunities, but also arrive at the limits of what is feasible and useful regarding responsible use of resources and an effort-outcome balance, and also under ethical considerations, as well as with regard to legal frameworks.
- Resources and costs: A core question is still in what direction tracking should go: ever more comprehensive and extended data collection, also with regard to new technologies and approaches borrowed from commercial industries, higher frequencies of surveys and evaluations and faster evaluation. Obviously, a balance must be struck between effort and outcome. The cost issue has to be assessed: it does not make sense to develop comprehensive systems at institutional or national level if they are not sustained and implemented due to lack of funding or resources.

List of acronyms

BFUG	Bologna Follow-Up Group
DLHE	Destinations of Leavers from Higher Education
ECTS	European Credit Transfer and Accumulation System
EHEA	European Higher Education Area
ESGs	European Standards and Guidelines for Quality Assurance
EUA	European University Association
HEIs	Higher Education Institutions
HIS	Hochschul-Informations-System GmbH
INCHER-Kassel	International Centre for Higher Education Research
IUA	Irish Universities Association
QA	Quality Assurance

Introduction

The starting point for the TRACKIT study was the insight that, while a wide range of research work is being undertaken on tracking students and graduates, it has not yet led to a European debate on the issue. As a result, existing tracking practices – with few exceptions – remain widely unknown outside the actual institutional and national contexts in which they are used.

To our knowledge, this is the first exploratory study on tracking undertaken from an institutional perspective and covering a range of European higher education systems and institutions. It is the result of a mapping exercise on how tracking of students and graduates takes place in Europe both at the national and the institutional level. Beyond the insights that it provides, the study attempts to identify the open questions and clear knowledge gaps that need to be considered and addressed in follow-up activities.

The intention was to complement the ongoing work of researchers on tracking. Research on this topic tends to be much more detailed and precise in terms of the technical features involved in specific approaches in precise national contexts, but less interested in the actual impact of tracking on institutions.

A specific aim of this study is to provide inspiration to higher education institutions which are either starting to develop tracking, or in the process of enhancing their system and its use. In addition, the intention is to launch a European debate on the issue, which should bring to the table policy makers, representatives of higher education institutions, researchers and national and European data collecting organisations.

The report is structured as follows:

- **Chapter 1** introduces the topic, and presents the TRACKIT project;
- **Chapter 2** summarises the different approaches to tracking in Europe, concentrating on the various methodologies and data collection approaches;
- **Chapter 3** describes institutional tracking practices;
- **Chapter 4** discusses the benefits and impact of tracking activities on the institution, and provides some guidelines for development of comprehensive tracking approaches;
- **Chapter 5** provides conclusions and indicates further possible avenues for the exploration of tracking, mainly at European level; and
- **Chapter 6** comprises factsheets, listing the main tracking approaches that are in place in European countries.



The TRACKIT project

1.1 Why tracking?

European higher education can look back on a decade of reform under the Bologna Process and the European Union process for higher education modernisation⁶. As the structural aspects of the three degree cycles have been widely implemented, one of the core goals – the move towards student-centred learning – is receiving increased attention.

Given that higher education aims to achieve not only growing numbers of learners, but also learners with much more diverse backgrounds, changes in curricular content and teaching methods are overdue in attempting to provide both education and skills within a flexible framework. In other words, provision is increasingly planned to meet academic criteria and be research-based, and convey disciplinary knowledge and rigour, as well as generic knowledge and skills. Learning should enhance creativity and innovation, but also include the notion of 'training'. This process is still continuing, and the European reforms can easily be located in a global debate which stresses the importance of higher education learning for the development of economies and societies, and also relates to the changing patterns in research and academic production that require different types of skill and knowledge than in the past.

All this illustrates how complex the issue of learning in higher education has become. Compared to the past, higher education institutions today not only have to convey academic and professional knowledge and research skills, but a wider range of generic skills including the ability to learn on one's own initiative. In rapidly changing economic and social contexts, graduates will often work in jobs for which they have not been specifically educated or trained. As most of them will be employed outside the academic sector, their entry into and success in the labour market is of much more interest to students, the economy and the institutions than in the past. The notion of employability, already mentioned in the 1999 Bologna Declaration, is receiving greater attention in times of economic crisis and growing global competition, when governments have carefully to weigh up where best to invest scarcer public resources. While the original intention was to ensure that qualifications made graduates employable in terms of professional and labour market requirements, the notion of employability now seems to have become shorthand for them finding a job, and has thus become a highly controversial indicator for the value of higher education.

Universities therefore have to consider both how to provide flexible study paths and respond to the academic interests and skills needs of individual students, while also monitoring progress and assessing its impact. But how is this to be done?

This question has emerged at national and European levels as well as at institutional level. A concern for quality has been at the heart of both the Bologna Process and the EU Modernisation Agenda. Within a decade, a European dimension of quality assurance has been established, leading to the development of national and institutional quality assurance systems. The implementation of structural reforms (i.e. the three-cycle study system and European Credit Transfer and Accumulation System (ECTS), etc.) has been relatively easy to assess, but less so its actual impact. Are students better qualified because of the Bachelor/Master's system; do they have better skills due to the learning approach; are they more mobile because of ECTS and the Diploma Supplement? And how is the development of the social dimension and lifelong learning to be measured, beyond the ritual restatement of their importance at the regular Bologna conferences?

Towards the end of the first decade of the Bologna Process, it became evident that its reporting and monitoring instruments had to be improved. In 2009, a quantitative benchmark was agreed for mobility⁷. A reporting working group under the Bologna Follow-Up Group (BFUG) was established to gather information and develop indicators and recommendations for better data collection at national level.

⁶ See the 2011 Communication: *Supporting growth and jobs – an agenda for the modernisation of Europe's higher education systems*. It is following up on the 2006 communication: *Delivering on the modernisation agenda for universities: Education, Research and Innovation*.

⁷ By 2020, 20% of graduates in the European Higher Education Area (EHEA) should have had a mobility experience.

On this basis, a Bologna Implementation Report was presented for the first time at the 2012 ministerial conference⁸. This has also stimulated the discussion on how to assess institutional performance in the context of mission diversity, and provide reliable and comparable information on higher education institutions.

The EU Modernisation Agenda (2011)⁹ refers to the need to compete internationally in research and innovation, by increasing the number of graduates and ensuring that scarcer funding is allocated to the right goals. One of the explicit aims of the Agenda is to support the reform processes through evidence, analysis and transparency. Thus the European Commission Directorate-General for Education and Culture lists, on its 'Transparency in higher education – actions' web page, "several initiatives to make the comparison between different higher education institutions easier", and notes that these initiatives "should contribute to providing more transparent information about higher education in Europe and internationally"¹⁰.

The initiatives listed are the U-MAP Classification, the U-Multirank, the EUMIDA university census and the AHELO project on international comparison of learning outcomes. None of these initiatives seems to track the progression of students and graduates and, at this early stage, it is also difficult to see how far they would produce data that could be used for tracking or complement it.

The issue of existing and projected international rankings and classifications has also been addressed in the Bologna Process, leading to discussions on their usefulness and impact. In 2009, at the Bologna ministerial conference in Leuven and Louvain-la-Neuve¹¹, ministers decided not to add rankings to the Bologna agenda, but stated – obviously in view of the above-mentioned initiatives – that 'transparency tools' should be developed in line with Bologna principles and in close consultation with key stakeholders¹².

At the same time there has also been in higher education, as in other public sectors, a general move to improving governance, management and efficiency, including through attaching more importance to demonstrating outcomes. These efforts have gone hand in hand with an increased emphasis on data collection and the development of indicators that serve as a basis for planning, monitoring and assessing higher education and its outcomes and impact at institutional and system level, with the intention of enabling evidence-based decision-making by institutions and national bodies, and also to inform policy makers, students and the general public.

Interestingly, in all the debate about the assessment of impact and outcomes in higher education learning and teaching (and related data collection), the tracking of students and graduates has so far received little attention, at least at European level. This is particularly surprising, given the wealth of tracking approaches in use or under development in Europe that enjoy great interest nationally and in the international research community. Some of the tracking initiatives produce data and analysis that measure the outcomes of learning and teaching (student and graduate success and progression), as compared to the proxies used mainly by rankings or classifications for measuring teaching quality. Furthermore, tracking could provide information relevant for several of the priorities set for the further development of the European Higher Education Area such as access, the social dimension, skills, learning outcomes and employability, etc. So the question should be raised as to why, despite all the benefits, there has not so far been more discussion on tracking at European level. And, one may ask, has the focus on international rankings distracted people from paying attention to this potentially much more helpful approach?

⁸ In the past, there was no overarching report, but several thematic reports from the different working groups. www.ehea.info/Uploads/%281%29/Bologna%20Process%20Implementation%20Report.pdf

⁹ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2011:0567:FIN:EN:PDF>

¹⁰ http://ec.europa.eu/education/higher-education/doc1651_en.htm; the U-MAP Classification, the U-Multirank and the EUMIDA are priority initiatives of the European Commission, whereas AHELO is an OECD initiative supported by some individual governments and private foundations. All the initiatives are currently still under development.

¹¹ www.ehea.info/Uploads/Declarations/Leuven_Louvain-la-Neuve_Communique%C3%A9_April_2009.pdf

¹² Judging also from the literature (Rauhvargers, 2011; Hazelkorn, 2012), there is widespread agreement that the existing international rankings are not contributing to an enhancement of learning and teaching.

1.2 The rationale and aims of the TRACKIT project

In this context a two-year study project named TRACKIT was launched in the autumn of 2010. Supported by the EU Lifelong Learning Programme, it was initiated by the European University Association, the Irish Universities Association/UCD Geary Institute, Hochschul-Informationen-System GmbH in Germany, Lund University (Sweden), the University of the Peloponnese/Centre for Social and Educational Policy Studies (Greece) and Aarhus University (Denmark).

The starting point for the TRACKIT project was to understand how higher education institutions actually know how students fare during their studies and, after graduation, in employment or further education for another qualification. The project consortium imagined that most members of an institution, and its leadership in particular, would require information on this, given the reforms of the past decade, including the new Bologna degree structure, the focus on learning outcomes and the introduction of performance-based funding in many countries. It was expected that the project would not only be helpful in identifying and spreading institutional good practice, but that it might reveal approaches that would contribute to enhancing joint European understanding of the purposes and benefits of tracking.

The main aim of TRACKIT was to provide an overview of efforts to track the career paths of learners and graduates in 31 European countries, analysing the various methods developed by higher education institutions in their own national context. The project not only sought to identify how tracking is carried out by different universities in Europe, but also how the information and knowledge gained from it is used to enhance curricula, student services and other activities.

Consequently, further aims of the study were:

- to provide a first provisional mapping and impact assessment of tracking measures in the different higher education institutions and countries, while considering the benefits of tracking exercises but also potential challenges and risks related to them and their outcomes;
- to contribute to the development of institutional tracking practice; and
- to contribute to an informed debate on tracking in the higher education community and among policy makers and data collectors.

In the next sections, the report provides some answers to the following questions:

- What is tracking? Is there a common definition for use in future European discussion of it?
- How can tracking be done? What should be tracked? How can the information be used?
- Why do universities track students and graduates? What are the motivating factors, concrete benefits and outcomes?
- What are the experiences with tracking in different parts of Europe, and in different institutional environments? Is it possible to identify good practice?
- Given national and institutional initiatives, would there be any added value in joint European policies and even initiatives for tracking?

1.3 Project research methodology

Project activities were organised in three phases:

In **Phase 1** (October 2010-August 2011) background research was undertaken. Initially, it was planned as pure desk study, but very soon the team realised that it was not easy to find literature on the issues of central concern to the project. Most of the existing research tends to describe data collection methods and analyse data with regard to specific aspects, but does not explore how these results are used to enhance institutional practice. It was therefore decided to complement the desk research with a questionnaire (see Annex 2). This was sent to national rectors' conferences in 31 European countries and, in some cases, to individual higher education institutions, national bodies and Bologna contact points, as well as other experts on tracking, in order to establish a first overview of tracking activities. The information obtained was then supplemented by telephone interviews with national experts recommended by the national rectors' conferences.

Phase 1 resulted in a background report comprising country snapshots of national (and regional) tracking activities. This internal data collection was then used to develop further project research and, in particular, work to identify cross-cutting issues among different tracking initiatives, such as the different purposes and uses of the results of tracking. It also helped to identify countries and higher education institutions for the site visits. The findings of the background report have been included in the present report, and country factsheets are provided in Chapter 6.2. The purpose of the factsheets is not to provide an exhaustive inventory for each country, but rather to list some of the main approaches in use. This reflects the situation in 2011/2012, which can be expected to change rapidly in the coming years. The project partners developed also an overview of different tracking initiatives in the 31 countries, outlining their main purposes. The overview has helped to visualise the different processes, dimensions and variables that influence and are influenced by tracking initiatives (see Chapter 6.1).

Table 1: Visited higher education institutions

<ul style="list-style-type: none"> • Vrije Universiteit Brussel • Université catholique de Louvain • KU Leuven 	Belgium
<ul style="list-style-type: none"> • Tallinn University of Technology • University of Tartu 	Estonia
<ul style="list-style-type: none"> • Lille 1 University of Science and Technology • University of Paris Est Créteil Val de Marne 	France
<ul style="list-style-type: none"> • Technical University of Berlin • Freie Universität Berlin • University of Applied Sciences Leipzig 	Germany
<ul style="list-style-type: none"> • Semmelweis University • King Sigismund College 	Hungary
<ul style="list-style-type: none"> • Dublin City University • University College Dublin 	Ireland
<ul style="list-style-type: none"> • University of Bucharest • Dimitrie Cantemir Christian University 	Romania
<ul style="list-style-type: none"> • Autonomous University of Madrid • Carlos III University of Madrid 	Spain
<ul style="list-style-type: none"> • Lund University • University of Gothenburg 	Sweden
<ul style="list-style-type: none"> • Istanbul Technical University • Sabanci University 	Turkey
<ul style="list-style-type: none"> • University of Surrey 	United Kingdom

A focus group of selected experts from higher education institutions and organisations, policy makers, students, researchers and quality assurance experts served as an advisory body to the project (see Annex 4). The feedback from them confirmed the approach and rationale of the research, and highlighted the added value of the TRACKIT project for their organisations. It was also crucial in the discussion of preliminary research results.

In **Phase 2** (September 2011-March 2012), site visits to 23 higher education institutions in 11 countries took place (see Table 1). The selection of visits was based on the findings of the background research, and aimed also to provide a geographical balance and present different approaches to tracking by involving institutions from various parts of Europe. As a general rule, two institutions of different types were visited in each country¹³. Most institutions in the sample were comprehensive universities, with the addition of four technical universities, one specialised university, two colleges and three private institutions. With one exception, all of them were EUA members. In this report they will be referred to alternately as universities or (higher education) institutions. Most of them were located in the capital city or a large town nearby¹⁴, as the aim was to conduct at least two visits per country, back-to-back, by the same team. Each visit usually lasted a day, and allowed the teams to meet staff from different parts of the institution (leadership representatives of faculties and student services), as well as students and their representatives. In addition, and where feasible and useful, these visits were supplemented by visits to national bodies, research institutions and quality assurance agencies, etc. The teams usually consisted of two members from the project group, plus an additional expert.

Phase 3 (March-September 2012) was devoted to further fact finding and the discussion of the preliminary results. The findings from the site visits were collected, analysed and cross-checked with the information received during the background research. The preliminary results were presented at a European conference 'Tracking the Higher Education Student Lifecycle' during the Danish EU Presidency (Copenhagen, 5-6 June 2012), and attended by university leaders and members of the academic community from the institutions that had received site visit teams or been involved in the project in other ways, as well as by policy makers and researchers. The conference results fed into the preparation of the present report.

Finally, two dissemination events have been organised: one in Dublin hosted by the Irish Universities Association, on 13 September 2012, and one in Brussels on 19 September 2012, hosted by the Permanent Representation of the Czech Republic to the European Union, addressing the higher education community and policy makers.

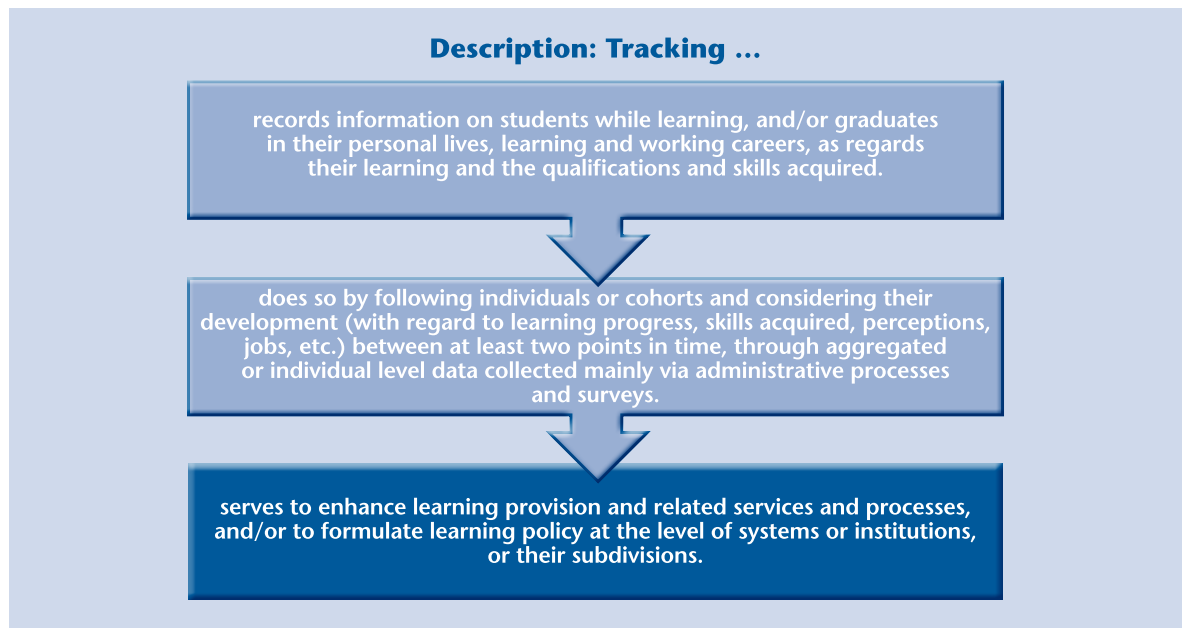
1.4 The concept of tracking

Because there is no agreed definition of tracking at European level, the project consortium could not embark on this exercise with a predefined notion. Instead it adopted an empirical, deductive approach, by analysing a wide range of monitoring and surveying initiatives related to institutional and national data collection and support services. In the first instance, it considered as tracking all systematic approaches that higher education institutions put in place to follow:

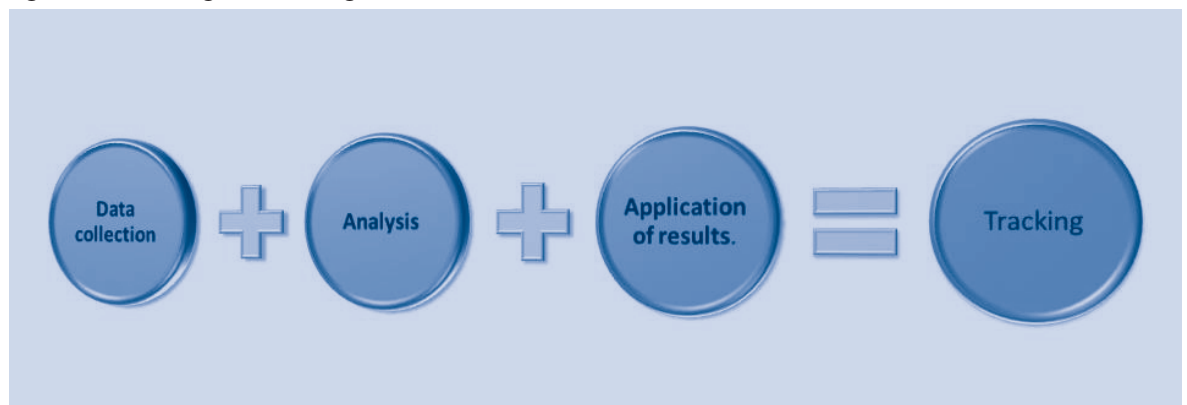
- student career paths during studies for a qualification;
- entry of graduates into the labour market and their progression within it; and
- entry and progression of graduates into other educational programmes.

This wider approach was chosen in order not to exclude prematurely institutional and national responses about tracking activities during the background research. It also enabled the mapping and comparison of approaches adopted by different universities in different countries to arrive at a definition for tracking. This resulted in the description of tracking as outlined in Figure 1.

¹⁴ The question of varied locations within a country (i.e. large cities versus provincial areas) was considered in discussing the research plan, but did not seem relevant to the focus of the research.

Figure 1: Description of Tracking

It was also concluded that tracking processes or instruments require three stages as indicated in Figure 2.

Figure 2: Three stages of tracking

These three steps are not always necessarily carried out by the same actor. For example, tracking might use data established by other initiatives for other purposes, raising the important question of how it is shared within institutions, national bodies and beyond, and later published.

The way in which results have been used to improve teaching and learning processes, with better curricula and student services, etc., has been of crucial importance for this project and its insight into tracking. In our view, this use of the results distinguishes tracking from other types of data collection or research project, which are self-contained but can also contribute to tracking. Furthermore, we have assumed that the type of tracking discussed here is a relatively recent phenomenon, which has been driven by the 'massification' of higher education, along with new curricula and approaches to teaching.

Approaches to tracking in Europe: methodologies and data collection

At the heart of any attempt to track the progression paths of students or graduates lies the collection of relevant data. Professors, careers advisers or other staff members at a higher education institution may often have an idea about their students' progression or whereabouts after graduation, which is based on their own experience and observations. Indeed, informal contacts with students during and after their studies can provide a rich source of information that often surpasses the scope of more formal tracking instruments. However, such 'soft data' is not considered as tracking, simply because knowledge gained in this way is obtained more by chance than by any system.

By contrast, systematic efforts to collect tracking data on students and graduates typically strive to gather accurate information on more than a few students. Often, the goal is to develop an understanding about progression paths of either all students or students at a certain study level (Bachelor, Master's, a particular study year) in a particular study programme, department or faculty, or at the entire institution or even in the whole country.

Systematic tracking initiatives are of many kinds and can be conducted at different levels (institutional, regional, national, international) and with various purposes. They can occur at regular or irregular intervals in cycles of varying length that may be, for example, annual, biannual or semestral, and differ in terms of their surrounding legal framework which may comprise, for example, laws, guidelines or recommendations. Surveys and administrative data are the most common sources for tracking¹⁵. Survey-based student and graduate tracking instruments thus collect information from a group of students or graduates in order to describe the progression paths of all the students or graduates in an institution, country, region, etc., using quantitative indicators. Surveys can be administered via online or paper/pencil questionnaires, telephone or face-to-face interviews. Administrative data refers to information which is collected through or during the course of administrative procedures, such as exam registration, at an institution.

The attributes of tracking initiatives depend mainly on the underlying purposes and on those interested in the results of tracking.

2.1 Overview of national tracking activities in Europe

European countries vary considerably in their tracking of student and graduate progression paths. Some countries systematically track all of their students and graduates, whereas others have no tracking instrument for either group. This chapter presents an overview of student and graduate tracking in different countries at both national and institutional levels.

Research methods

The TRACKIT project group contacted experts in all 31 countries and 32 higher education systems eligible for the EU Lifelong Learning Programme in 2010, and conducted either written or telephone interviews asking about tracking instruments in each country and its higher education institutions (for more details on the research design, see Chapter 1.3).

Due to the method employed, the information in this chapter should not be considered exhaustive. Our respondents may not have been aware of all instruments, methods and uses, and the information collected was occasionally ambiguous. Although great care was taken to clarify ambiguities and additional desk research was conducted where possible, some instruments, methods and uses may have been overlooked.

¹⁵ For a definition and a methodological review of surveys, see Groves *et al.* (2009).

Three further points should also be noted briefly:

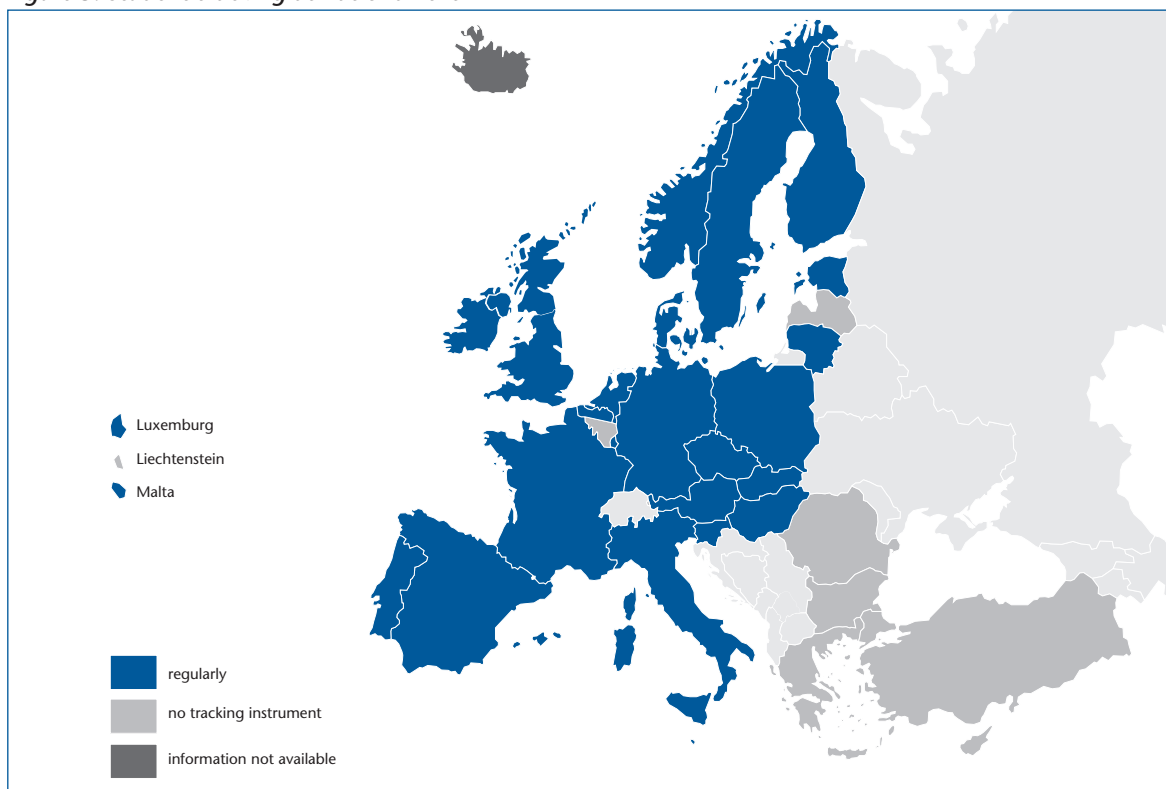
- The Flemish and French Communities of Belgium have different higher education systems and are therefore treated separately in this overview. All comprehensive tracking instruments are, to our knowledge, organised at regional level. Thus the cross-country analysis is based on information concerning a total of 32 higher education systems. Rather than referring to countries and regions, the report will simply mention countries¹⁶.
- Because most of the students studying in Liechtenstein, Luxembourg and Malta attend the single university in each of these three countries, tracking practices at each of the three institutions were taken to represent the national tracking approach, and also the entire higher education system.
- In several countries, student or graduate tracking has only recently been initiated, so that several instruments were under development or in the first stages of implementation during the data collection phase of this report. This is the case, for example, in Belgium/French Community, Luxembourg, Poland or Slovenia. Details on instruments under development can be found in the country factsheets (Chapter 6). Unless already at an advanced stage, such instruments are not included in the following presentation.

2.2 Student tracking at national level

Data sets

According to the project survey results, there is at least one national data set containing information on student progression in 23 out of 31¹⁷ higher education systems with data available¹⁸. Thus systematic student

Figure 3: Student tracking at national level



¹⁶ Note that, for specific issues, the number of countries with available information may be smaller due to a lack of data or inconclusive data.

¹⁷ No information was available for Iceland.

¹⁸ Participation in EUROSTUDENT was not counted as student tracking. While EUROSTUDENT covers tracking-relevant themes, such as mobility, the focus of the study is not study progress *within* the students' country. See www.eurostudent.eu.

tracking normally takes place in almost three quarters of the countries¹⁹. The tracking instruments were initiated by different bodies, including statistical offices and governments, research organisations and higher education institutions themselves. To our knowledge, eight countries have no data on student progression at national level, namely Belgium/French Community, Bulgaria, Cyprus, Greece, Latvia, Liechtenstein, Romania and Turkey²⁰. In each of the 23 higher education systems with a national student tracking instrument, new data is collected regularly, so that data on the current situation of students is available (see Figure 3).

Instruments

The majority of national student tracking instruments work only with data collected via administrative procedures (16 countries). In most cases, data is collected in central databases commissioned and financed by the ministry responsible for higher education and run by a national body, such as the national statistical office. Higher education institutions are often legally obliged to collect the data and forward it to these central databases. The Estonian National Student Information System (EHIS) is an example of such a system. All Estonian institutions are obliged to deliver data to this central database, which is managed centrally and supervised and financed by the Ministry of Education and Research.

Both surveys and administrative procedures are employed to gather data on student progression (although not necessarily by the same body) in five countries: Austria, France, Hungary, Ireland and Luxembourg. To our knowledge two countries – Germany and Italy – rely on surveys only to track their students at national level. The systematic decentralised collection of administrative data and its integration into a national or regional database is thus the most frequent method of student tracking.

Usage

Student tracking data at national level is most commonly employed in planning and developing (national) higher education policy. In several countries, student tracking instruments are relevant in determining the amount of funding granted to individual higher education institutions. Experts reported this to be the case in Belgium/Flemish Community, the Czech Republic, Denmark, Estonia, France, Ireland, Lithuania, the Netherlands, Norway and the UK. In Belgium/Flemish Community the Ministry of Education reinforces the control of study progress by funding institutions in accordance with the number of students with valid educational credits (students who study for too long or fail to meet the required standard may run out of ECTS credits). In all of these countries, relevant statistics are derived only from administrative data, never from surveys.

Data for student tracking is also frequently used to provide information to prospective students and the public. In some countries, data collection aims specifically to foster transparency in higher education, as in Denmark in which comparative figures for the different institutions are regularly made public.

2.3 Graduate tracking at national level

After completing their studies, graduates can continue their education, at the same or a different institution, or enter the labour market. For the following overview, the decisive criterion was whether the tracking instrument recorded their progression on to the labour market, as databases focusing solely on the progression of holders of a (first) qualification to a subsequent stage of education do not, to our knowledge, exist. However, most instruments collecting data on graduates cover both aspects, namely subsequent education and employment.

¹⁹ In Austria, it could not be determined with certainty whether the national collection of administrative data or the Student Social Survey are actually used for tracking. It was counted as tracking here. In Poland, a national initiative is currently under development; statistics covering information on student progression were previously collected at national level. Use of this data for tracking purposes could not be determined with certainty. In Finland, several national tracking initiatives are under development. Data for tracking at universities of applied sciences has been collected for many years.

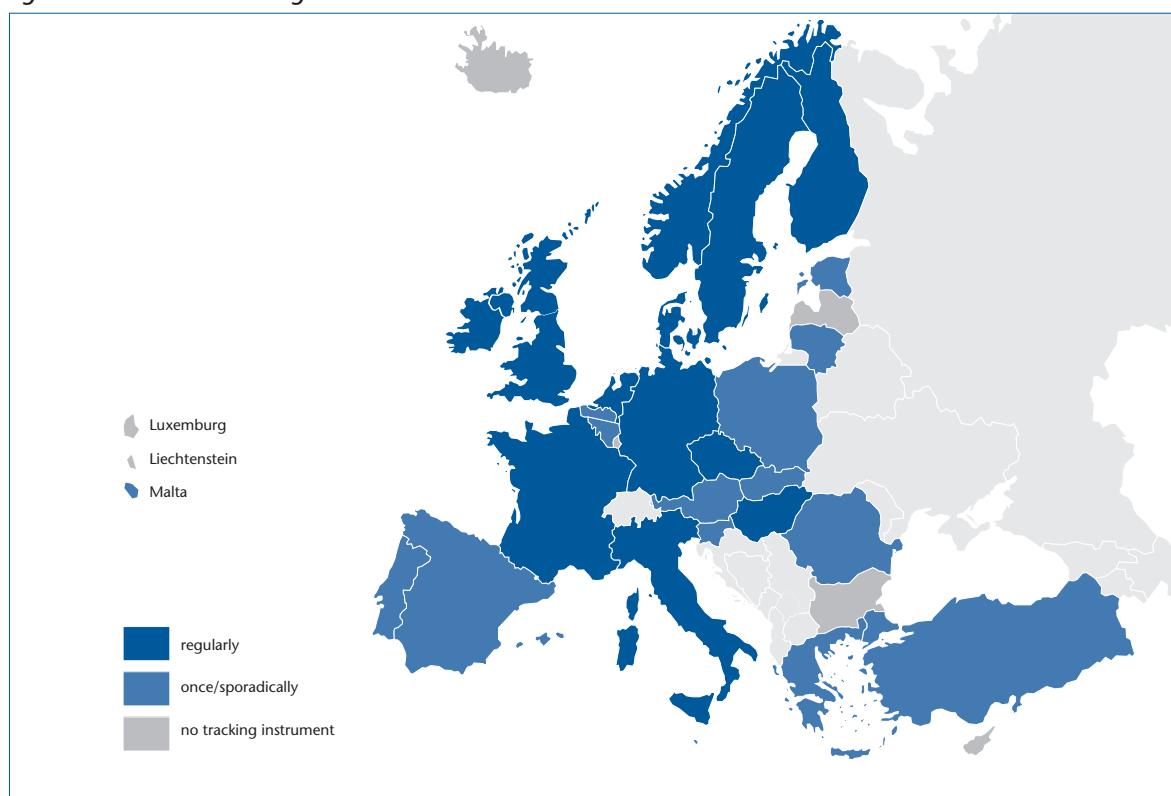
²⁰ In all these countries, administrative data on students is collected nationally, in most cases by the national Statistical Office. However, this data is either not used for tracking purposes, or does not include the aspect of progression.

Data sets

The tracking of graduates at national level is common among European countries. According to our surveys, data on graduate destinations exists in 26 out of 32 higher education systems. In almost half of them (12), data on graduates is collected regularly, typically at intervals of between one and three years (see Figure 4).

Sporadic tracking activities were reported for another group of 14 higher education systems (Austria, Belgium/Flemish Community, Belgium/French Community, Estonia, Greece, Lithuania, Malta, Poland, Portugal, Romania, Slovenia, Slovakia, Spain and Turkey). This comprises national activities conducted irregularly (as in Austria), or participation in one-off international tracking studies. In six countries no central data collection on graduate progression on to the labour market could be identified (Bulgaria, Cyprus, Iceland, Liechtenstein, Latvia and Luxembourg). In several of the countries which track graduates only occasionally, if at all, efforts are currently under way to install a sustainable graduate tracking instrument by improving the infrastructure. For example, it is hoped that the current national graduate tracking initiative in Romania 'University Graduates and the Labour Market - Romanian Tracer Study' (see Romania factsheet), supported by the European Social Fund, will provide a cornerstone for further regular national graduate surveys. As with student tracking, national-level graduate tracking data is of interest to a host of different bodies, including governments and research organisations, as well as employer organisations and trade unions.

Figure 4: Graduate tracking at national level



Instruments

Surveys are the main method of gathering information on graduate destinations. Almost all countries in which graduates are tracked use at least one survey, and 18 out of 26 countries with a national tracking instrument rely only on surveys. As discussed below, this reflects the fact that administrative data on graduates may be difficult to obtain. This is especially true in an increasingly international higher education landscape, in which mobility of students and graduates has increased. Nevertheless, an additional graduate tracking instrument based on administrative data exists in seven countries, namely the Czech Republic, Estonia, Hungary, Italy, the Netherlands, Sweden and the UK. Such instruments are based on the possibility of connecting student information from higher education institutions with other data sets, such as the national social security database. In the UK, for example, the 'Destinations of Leavers from Higher Education'

(DLHE)²¹ is a large-scale survey of graduates six months after their graduation, which can be linked to student records. In Denmark, administrative data is the only basis for the tracking of graduates.

Usage

Governments (and related bodies) use national graduate tracking instruments mainly for statistical and analytical purposes. Among the more specific uses, policy planning and development is the one most frequently referred to, showing that graduate tracking is indeed politically relevant. Furthermore, governments have been reported to draw on graduate tracking data as part of their quality assurance activities. Only a few countries use graduate tracking data for the allocation of funding to higher education institutions. To our knowledge, this is currently the case in the Czech Republic, Italy and the UK. In the Czech Republic, for example, data on the employability of graduates contributes to indicators for budgetary purposes in all types and at all levels of degree programmes. The Italian Ministry of Education asks universities to provide information on the effectiveness, efficiency and transparency of their education. These indicators are used to monitor implementation of the Bologna Process and the allocation of resources. Universities are able to deliver the required data on the basis of the 'AlmaLaurea' graduate surveys (see Chapter 3.3.1, 6.1 and the Italian country factsheet).

2.4 Student tracking by higher education institutions

Data sets

The collection of data on student tracking is quite common at higher education institutions in Europe. In 30 of the 31 higher education systems²² on which information was available, either all or at least some institutions have tracking instruments in place. Only Liechtenstein reported that its (single) university does not employ systematic student tracking as defined in this chapter.

However, student tracking is not equally widespread in all countries. To our knowledge, in four higher education systems only some individual institutions track their students (Belgium/French Community, Italy, Poland and Romania)²³. In another four countries many but not all institutions do so (Cyprus, Finland, Germany and Greece). In the remaining 22 countries, it was found that all institutions regularly collect tracking data on their students (see Figure 5). In most of them, institutions forwarded their data to a central national database or collected data for other reasons.

However, in some of these countries there were signs that not *all* institutions used the available data for tracking purposes, or the extent to which they did so was unclear (Austria, Bulgaria, the Czech Republic, France, Latvia, Lithuania, Norway, Slovakia, Spain and Turkey). In a number of countries, the collection of tracking data on students was reported to be mandatory for institutions (Austria, Belgium/Flemish Community, Czech Republic, Denmark, Estonia, the Netherlands and Sweden). Several countries reported strong incentives in the form of a link between tracking results and funding (see Chapter 3) or accreditation (Bulgaria, Denmark and Lithuania).

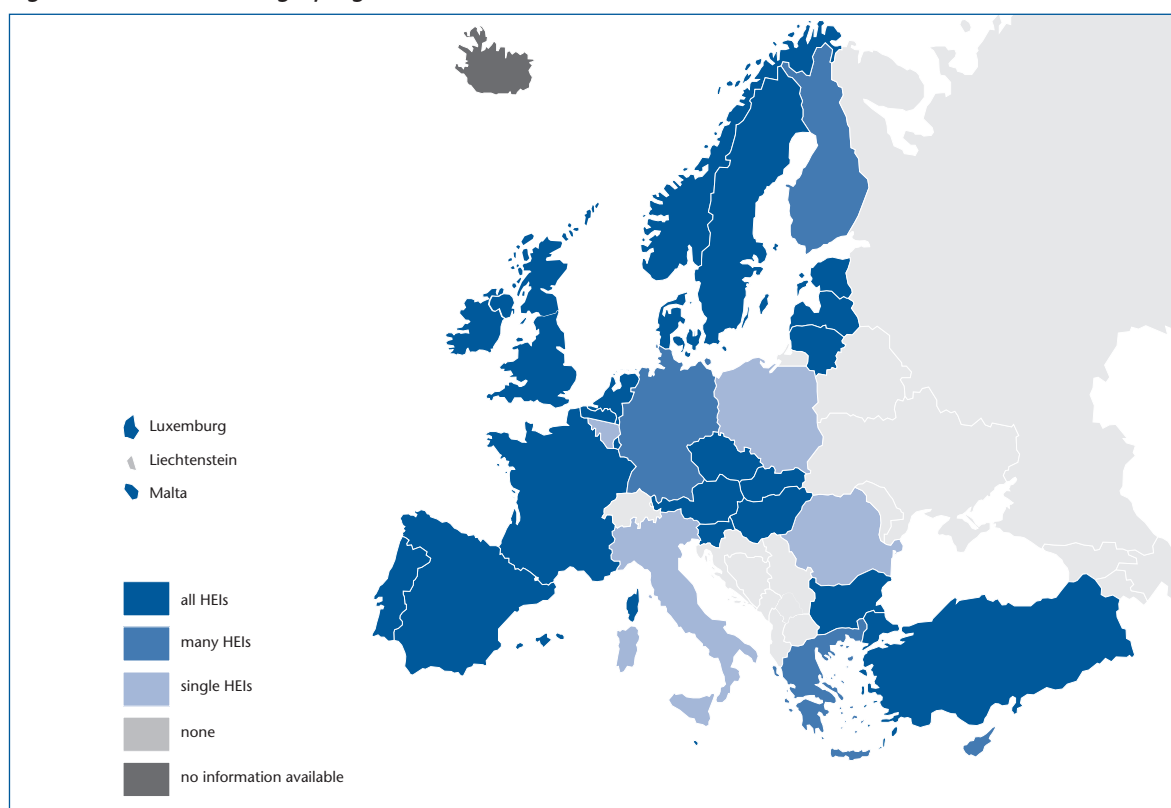
Instruments

The dominant method of student tracking practised by higher education institutions involves data collection through administrative procedures. In some cases, the electronic administrative systems used to track student progress are interactive in that students can also use them to follow their own progress. Such tracking instruments are usually combined with a multi-purpose tool which helps students to organise their studies, structure their timetable, apply for courses or hand in applications to the administration. Only in a few countries have institutions been reported to draw on survey data in addition to data collected via administrative procedures. It should be mentioned, however, that the distinction between surveys and administrative procedures can become blurred in practice. For example, short questionnaires may be handed out during administrative registration procedures. National experts may not have reported that, in such cases, both methods are used.

²¹ The survey was formerly known as the First Destinations Supplement (FDS): www.hesa.ac.uk

²² No information was available on Iceland.

²³ It can be assumed that all higher education institutions in these countries possess records of student progress. Country experts, however, reported that not all of them used these records for tracking.

Figure 5: Student tracking by higher education institutions

Usage

The experts reported that higher education institutions mostly used student tracking data to support general administrative and management tasks, or to produce statistics and analyses of student progression. The next most frequently mentioned use of institutional tracking data was quality assurance. Other specific management purposes that were mentioned included the allocation of resources within the institution, the reform of study programmes, or marketing. Furthermore, institutions in some countries used the tracking of students to identify those who were progressing slowly and suggest they seek counselling (see Chapter 3.2 for more examples of the use of student tracking data at institutions). Besides institutions or their students, the government or other bodies such as quality assurance agencies or statistical offices also used data collected at institutional level. In addition, such data was often incorporated in comprehensive national or regional databases.

Higher education institutions in the various countries differ in the extent to which they use data. For example, experts from Denmark said that the electronic study administrative system was a vital tracking device for institutions. Irish national experts said that the Student Record System was “invaluable within higher education institutions themselves, not only from a planning perspective but also as a tool for quality assurance, marketing, administration and the production of statistics”. On the contrary, the data from student information systems at Greek institutions was only used for administrative purposes although they might have other possible applications.

2.5 Graduate tracking by higher education institutions

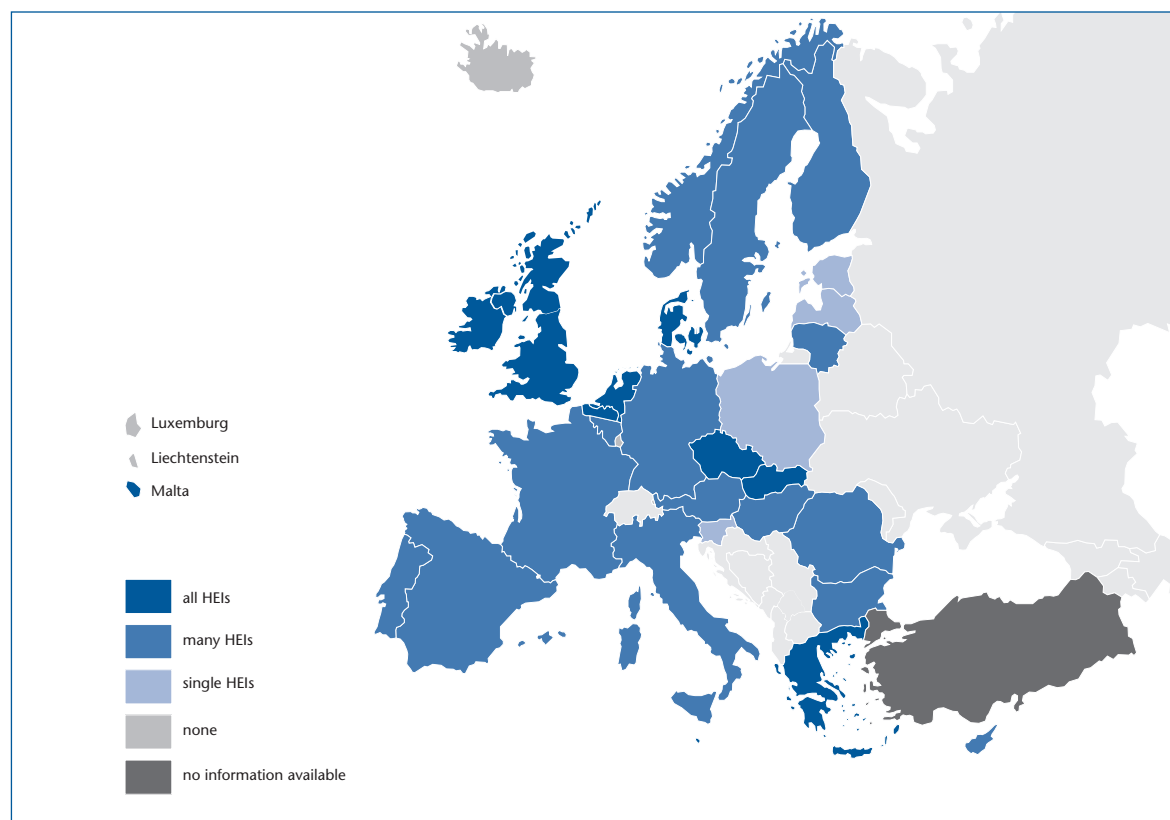
Data sets

In nearly all countries, there is at least some evidence that higher education institutions themselves track graduates. From the information available, this applies to institutions in 28 out of 31 higher education systems²⁴ (see Figure 6). Experts from nine countries reported that all institutions in their country tracked their graduates or could access institutional results from a national database (Belgium/Flemish Community, Czech Republic, Denmark, Greece, Ireland, Malta, the

²⁴ No information was available on Turkey.

Netherlands, Slovakia and the United Kingdom). In some cases such as Ireland and the Netherlands, this activity was related to a centrally organised national-level tracking instrument in which all institutions were involved. In others, such as Denmark and Greece, the institutions conducted graduate surveys of their own accord and independently of any possible national initiatives. In 15 higher education systems, many but not all institutions apparently tracked their graduates: Austria, Belgium/French Community, Bulgaria, Cyprus, Finland, France, Germany, Hungary, Italy, Lithuania, Norway, Portugal, Romania, Spain and Sweden. In some cases, this referred to networks of institutions (such as all universities) in a country, which shared a common approach to tracking, as in Finland and Italy. Only individual institutions were reported to be active in Estonia, Latvia, Poland and Slovenia. No graduate tracking activities at institutional level were reported in Iceland, Liechtenstein and Luxembourg. In several countries in which not all institutions track their graduates, proposed or forthcoming legislation aims to make graduate tracking mandatory.

Figure 6: Graduate tracking by higher education institutions



Instruments

As at national level, higher education institutions mostly use surveys to track their graduates. Only a few countries are reported to draw also on administrative data. In Austria, for example, four institutions use a similar technique to track their graduates by combining data collected by their administrative departments with anonymous social security data. Where surveys are conducted, this is usually done regularly every one to three years, although practice may differ at individual institutions within a country.

Usage

Higher education institutions use tracking data²⁵ for a variety of purposes. Besides contributing to general statistics, studies, and administrative and management activity, tracking data is reportedly used by institutions mainly for quality assurance, enhancement or reform of studies, and resource allocation. Compared to their use of student tracking data, graduate tracking data is more often associated with promotional activity, as graduate success in the labour market may boost the prestige or the national ranking of institutions. Several experts also reported that the results of graduate tracking were useful in counselling students, especially

²⁵ This paragraph refers to approaches in which data is collected at institutional level and combined with a national-level instrument. There is no clear distinction as to whether these are in fact national approaches built on institutional data collection, or institutional approaches using a common national framework which provides for the comparison and aggregation of data.

for career guidance purposes. Finally, graduate tracking instruments are reportedly used by institutions to gain funding (Czech Republic, Italy, Slovakia and the UK), or for (re-)accreditation (Austria, Belgium/Flemish Community, Bulgaria, Denmark, Germany and the Netherlands).

Summary

Student and graduate tracking appears to be quite widespread in Europe. The great majority of the countries surveyed follow student and graduate progression paths, and many higher education institutions do the same. Despite the enormous variability within and between countries, some common patterns emerge. All countries which track their students do so regularly, whereas graduate tracking at national level is not as regular.

Administrative data is the main resource used for student tracking both at national level and in individual institutions, while graduate tracking mainly relies on surveys. A number of countries were found to organise student tracking in a similar way, with data collected from the administrative records of institutions and fed into central databases at system level. Highly developed administrative databases can facilitate a variety of administrative tasks for both higher education institutions and governments. By combining social security or labour market data these databases can even be used for graduate tracking, if national legislation permits. Yet many institutions still supplement national surveys with their own questionnaires.

The following section takes a closer look at tracking methods and their relative strengths and weaknesses.

2.6 Tracking methods

Surveys

Surveys refer to questionnaires and interviews that countries and higher education institutions conduct in order to find out more about student and graduate progression paths. Many student and graduate surveys cover both factual information (e.g. the duration of study and semesters abroad) and subjective aspects, such as evaluations, motives and attitudes. The freedom that researchers have in designing questionnaires or interview guidelines means that surveys can be employed to investigate a wide range of questions. They are especially suitable for recording subjective evaluations, which are hard to obtain on a large scale in any other way. The main advantage of using surveys as tracking instruments is therefore their ability to reflect the subjective dimension of progress with studies and entry into the labour market.

At the same time, the inherent subjectivity of surveys can be a disadvantage. Certain students may choose not to answer, or be hard to reach, which poses the threat of response bias and thus a lack of representativeness. These and other issues are relevant in the design, execution and interpretation of surveys, and significant expertise is needed to be aware of and adequately handle them in order to ensure accurate information. In addition, maintaining an up-to-date database of contact information, mailing, calling or visiting respondents, and building a data set from the responses incur additional costs and are especially complex when mobile students or graduates are tracked. The effort and resources needed to conduct an informative survey may significantly limit the scope of survey methodology.

Administrative data

By contrast, administrative data is partly a by-product of administrative procedures already in place at higher education institutions. All students must undergo certain administrative procedures (e.g. matriculation, registration for exams, etc.), every instance of which is an indicator of student progress. Often, background information (e.g. sociodemographics, information on prior education) is available or can be additionally collected during the course of administrative procedures. In many cases, such data is consolidated and regularly updated in an electronic database, providing a rich source of potential tracking information. This is especially true when the system is interactive and also used by students to register for courses and exams. In this way, data on the entire student population can be gathered with relatively little extra effort. As typically data on all students is recorded in the course of administrative procedures, sample representativeness is not a concern. Because the focus of administrative data is on objective 'facts', the data gathered is generally

accurate. Administrative data also provides an opportunity to follow students. Collecting and analysing relevant administrative data can therefore be an economical way of following their study progress.

From an institutional perspective, however, administrative data on the progression of graduates is more difficult to obtain. As they move from one institution to another, and into the labour market or abroad, hardly any higher education institution has an opportunity to draw on administrative data gathered after they leave. In some countries, this limitation is circumvented at national level by assigning a unique identifier to each student. Administrative data is then pooled in one central national database, so that all students can be tracked through their entire lifecycle. In some countries, even tracking progression from secondary school or on to the labour market is possible by using social security numbers as identifiers and combining educational information with social security or unemployment data. At present, however, this is an exception and in many countries data protection laws would prevent such an approach.

A second limitation of administrative data is its rather restricted scope. Not much information is collected other than that immediately associated with university-related actions, such as enrolment or dropout. While, as already mentioned, additional information on, for example, the sociodemographic background of students is sometimes available, its provision is not normally compulsory and some national anti-discrimination and data protection laws explicitly prohibit the documentation of certain matters that might be of interest. Using administrative data to track student progress within a higher education institution therefore provides an economical way of following individual students, but often lacks the depth that would provide insights into underlying reasons and motives.

2.7 The relationship between national and institutional tracking

As discussed above, tracking data obtained by means of surveys and administrative procedures can focus on the national or institutional level. National-level instruments collect country-wide information on student and graduate progression. By contrast, institutional instruments collect data on the students or graduates of a higher education institution or its subdivisions. Often, national tracking instruments are developed by including the (mainly administrative) data collected at institutions into a single national database. A database constructed in this way enables data to be broken down to the level of individual institutions (or sometimes their subdivisions), and also used to draw conclusions at national level.

The initiative for such a database often lies with the (national) government. This is the case when indicators based on the results of tracking (such as the number of graduates who complete their studies within the allotted time, or success rates among non-traditional students) are used to allocate funds to higher education institutions. In these cases, the latter have to provide data for the central database. In such a system, it is vital for the indicators which support funding decisions to be fully compatible from one institution to the next. A further possibility when results or indicators are publicly available is that the general public can compare institutions (or their subdivisions).

With survey data, such comparisons may not be possible as national-level data will often not yield reliable conclusions at the level of individual institutions, let alone their subdivisions, because of the size of the samples involved²⁶. However some surveys, such as the Austrian Social Survey, have reportedly enabled data to be broken down to institutional level or even faculty and departmental level in the case of large entities. But even where this is not possible, surveys can still be a source of information for institutions as regards for example the enhancement of study programmes or conditions, and generate methodological approaches and themes for further research and analysis by institutions themselves.

Yet the fact that data cannot always be broken down to institutional level is a disadvantage of national surveys. They may be perceived as non-informative by higher education institutions because issues relevant to some of them may not be addressed, or because an institution wishes to achieve certain specific results. In such cases, institutions often conduct their own surveys. While these customised surveys provide highly relevant results for the institutions concerned, their specificity often precludes comparisons with other institutions. In order to prevent this, certain institutions base some aspects of their own survey on the national one

²⁶ However, this may not always be the case and depends on the size of the higher education institutions concerned. Other relevant factors are the overall size of the higher education system and the total number of its institutions.

for comparative purposes. Indeed, some national surveys offer them the possibility of commissioning an institutional extension to the national sample in advance, and even of adding their own questions.

In order to obtain reliable and valid results at institutional level, and especially the level of departments or courses of study, it is important for as many respondents as possible to take part in the survey. Institutions planning to implement their own student or graduate survey should therefore be aware of the risk of 'survey fatigue'. Students may be asked to participate in departmental, institutional and national surveys, and may also be approached by alumni or student organisations. This may lower their motivation to participate and thus result in low response rates and carelessly given answers. It may therefore prove helpful to keep track centrally of institutional and national surveys conducted at higher education institutions, and then either coordinate the surveys or combine them into one centrally administered operation.

Summary

Administrative data collections and surveys have different strengths and weaknesses when used to track the career paths of students and graduates. Administrative data collection is cost-effective and automatically representative when comprehensive. It poses few design and planning problems and can be collected with little extra effort. However, results concerning student progress obtained from administrative data may offer only limited insights. And it is difficult for higher education institutions to obtain similar data about graduates. Survey data, on the other hand, generally covers a much wider spectrum of information. Surveys may thus help to build a model for understanding the motivational and attitudinal factors which underlie the progression of students and their transfer to different programmes, as well as graduate entry to the labour market. However, they do so at the cost of greater effort and use of resources. And higher education institutions sometimes choose to conduct their own surveys despite the existence of national ones.

This usually happens because they consider the national approach to be inappropriate for their purposes in terms of content when for example questions do not relate to the specific institutional context, or of methodology if data cannot be related back to the constituent levels and parts of the institution. Given the relatively high costs of tracking, this is not an ideal situation as we shall discuss further in the next chapter.

In sum, two conclusions can be drawn:

- First, the 'perfect' tracking method does not exist. Whether it is better to get results by using administrative data or designing and conducting a survey depends on the questions asked and the resources available.
- Second, the pattern of tracking that emerged during the project seems to reflect a preference for administrative methods when tracking students, and for survey data when tracking graduates. This holds good at both national and institutional levels.

The practice of student and graduate tracking

3.1 Introduction

The previous chapter provided a structured overview of national and institutional approaches to tracking based on expert interviews in 31 countries. The present chapter draws on case studies gathered during visits to 23 institutions in 11 countries (for more details, see Table 1: Visited higher education institutions). The purpose is to present snapshots of how tracking approaches are developed and implemented, the institutional rationale and process for developing them, and their impact. The chapter contains examples of how institutions track the student lifecycle or stages in it, and also on the relation between tracking and institutional and national environments.

Following the normal progression of students, the chapter starts with a section on tracking the student experience (3.2), and describes some of the measures that universities put in place to reach out to prospective students (3.2.1), which are relatively recent. This is followed by a description of the special measures for first-year students (3.2.2) and an account of how tracking can contribute to understanding and preventing dropout (3.2.3).

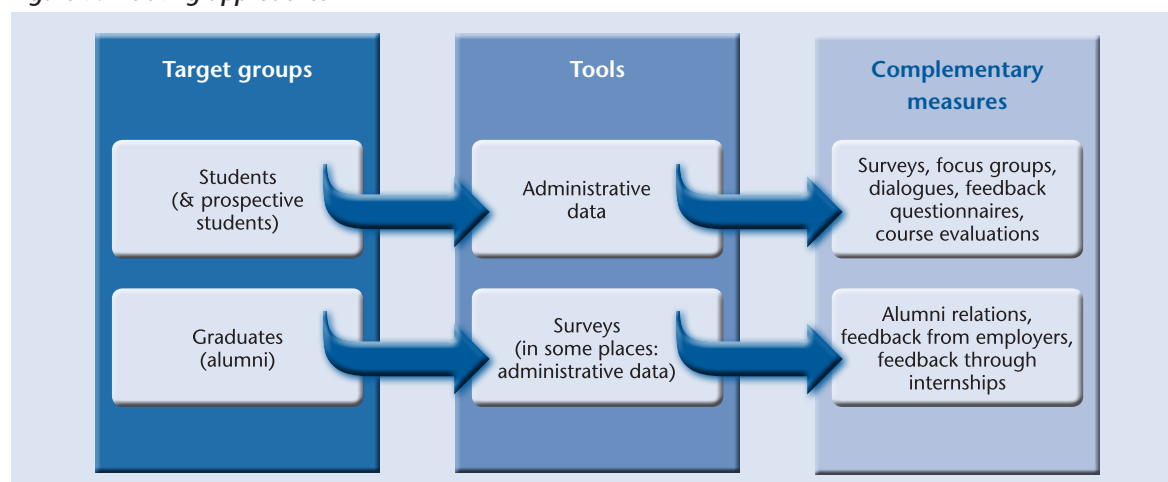
The following sections discuss the tracking of graduates (3.3) and focus specifically on how institutional initiatives relate to national ones, in particular with regard to 'shared approaches' (3.3.1), and how graduate tracking is linked to student tracking (3.3.2). A relatively recent field of activity for European institutions is alumni relations (3.3.3), and some examples are provided on how this can contribute to tracking.

While the report has a clear focus on student tracking, a section is devoted to tracking doctoral candidates (3.4) who, given their growing importance for institutional research agendas, tend to generate specific tracking approaches.

Finally, attention is drawn to the blind spots in current tracking practices. At least in the past, approaches to tracking excluded students with increasingly flexible study paths (lifelong learners, mobile students and international students) but this appears to be changing (3.5). The chapter concludes with a brief reflection on how university staff and students perceive tracking (3.6).

As mentioned in Chapter 2, graduate tracking is mainly done by means of surveys, whereas student tracking is mainly based on administrative data, although both were found to use a wide range of complementary methods. However, this chapter also refers to case studies comprising activities which are not tracking as defined for the project, but contribute to it. Student surveys, course evaluations, entry and exit polls, information services, internships and thematic studies are among the further methods used for tracking.

Figure 7: Tracking approaches



Another point is that methods of tracking, while similar, can be deployed in very different ways, as regards their frequency (regular or ad hoc), volume (total or sample coverage), and targeting and focus (e.g. specific disciplines, or degree cycles). Within institutions, tracking may be driven centrally, or by faculties, departments or programmes, and the precise way their efforts are organised and interrelate may differ. For example, some institutions have a strong participatory approach involving staff and students in tracking. Yet another way would organise tracking as a research project led by a small task force.

3.2 Tracking the student experience

The site visits showed that there is a wide range of common practices for tracking students during their studies. Many of the institutions highlighted the importance of tracking not only their progression path but also their experience, through surveys, course evaluations or focus group interviews. Beyond support to individual students or groups of students, there was a focus on institutional development in various areas, such as the development of teaching and learning (courses and programmes), improvement of services and facilities, and the enhancement of quality assurance, governance and management approaches. In essence, this amounted to improving the quality of the overall student experience, as well as of teaching and learning.

In many institutions, tracking of the progression path of students and of their experience were very closely interrelated and the distinction between the two activities was blurred. The student surveys usually covered both factual information (e.g. type and duration of study, semesters abroad and changes in the direction of studies) and subjective aspects, such as perceptions, evaluations, motives and attitudes, and typically also included sections on the socioeconomic situation of students.

At some institutions, a decentralised approach was adopted for surveys, which were carried out by faculties or departments, without much overall coordination. This was in contrast to institutions in which surveys were centrally coordinated and carried out regularly, for example after the first year, at the end of the first cycle, or at the end of the second cycle. Among the already-mentioned reasons for this are internal benchmarking, the development of longitudinal data collection, which would enable the assessment of development trends, and the need to avoid over-surveying and survey fatigue. As in the case of surveys involving coordination between national and institutional levels (see Section 3.3.1), the standard institutional questionnaire would be complemented by faculty-specific questions.

Three issues will now be described in more detail, as they illustrate the need for student tracking, but also its challenges:

- Most of the institutions visited emphasised the importance of student retention during the first year, which research has found to be essential for the success of any student, and in particular for non-traditional students²⁷.
- Another related critical issue is dropout tracking and associated follow-up measures for improving study programmes and services.
- Of growing interest for many institutions are their prospective students. An increasing number of initiatives aim to ensure that students who are attracted to specific courses in specific institutions are sufficient in numbers, with the right level of knowledge and skills.

3.2.1 Prospective student enrolment

Some institutions start tracking prospective students prior to their formal enrolment, for example by systematically collecting and assessing information provided in applications on study motives and previous education, etc. They also conduct 'welcome' or entry surveys, usually when students fill in their enrolment forms. In general, these tracking measures are part of a broader initiative to provide information about the institution and promote it, and not all of them correspond to tracking as defined for this project. Yet many institutions gather data, analyse it and link it to data from student tracking and – in some cases – graduate tracking.

Pre-entry tracking requires a dialogue with potential applicants who request information about the institution, or outreach activities for secondary schools or perhaps organisations concerned with lifelong learning. Typical measures are targeted study information and promotion campaigns, open days, partnerships with schools, 'high flyer' programmes and children universities.

The **University of Surrey, UK**, has a wide range of measures promoting access and outreach based on an analysis of the background information of its students. The activities offered range from a school's liaison programme to open house and special activities for children to visit the university and engage with a number of activities on campus; and an annual school's fair to enhance participation from secondary schools with pupils from diverse backgrounds. After initial enrolment, students are tracked throughout their degree programme as the success of students with specific diverse backgrounds is related to specific funding streams. The access data is then used by the university to correlate it with the students' performance and university placements.

Recruitment policies and mechanisms and admissions vary greatly between countries and individual institutions, and these differences condition the pre-entry tracking approaches chosen by each university, their purpose and use. For example, they may serve to promote the institution in order to attract more students, or students with specific qualifications or backgrounds, or to explain to prospective students the study requirements for a certain discipline, with the aim of enabling them to choose the right study course and prevent dropout.

The following is an overview of factors that stimulate, shape and condition pre-entry tracking:

Recruiting and selecting students: the research highlighted that the existence of pre-entry tracking is not dependent on the particular national admissions system²⁸; even in systems that do not formally allow institutions to select students, some institutions chose to develop means of influencing their intake.

- A common approach is to track individual students and use the data for devising recruitment strategies. Several of the universities visited indicated that they systematically collect data on the achievement of students and relate it to their educational background (individual secondary schools, types of secondary schools, regions, social and ethnic backgrounds) in order to target their recruitment further.
- This information is used to target certain kinds of students, but also to provide information and advice to students who encountered difficulties as they might not have acquired sufficient knowledge and skills for their chosen studies.
- Interestingly, these measures are applied by institutions, both in systems that do and those that do not allow for selection.

In Spain, all students who obtain the average pass score at the entrance examination (*selectividad*) are in principle entitled to admission at the university of their choice. In practice, given its reputation, the **University Carlos III** applies a certain degree of selection enrolling those students with the highest entrance examination scores who indicated '**University Carlos III**' as their first choice. It also targets individual secondary schools or certain regions in its marketing, based on its own statistical records of higher achievers from previous years.

Ensuring equal access: higher education systems or institutions with developed access policies usually have measures for identifying, targeting, encouraging and supporting the participation of 'at-risk groups'²⁹, either before or at the entry point.

²⁸ University access and admissions systems vary greatly all over Europe. In some systems, admission is partially or fully regulated by national authorities, granting general open access to all applicants who successfully graduated from secondary school. Some study programmes impose a *numerus clausus* based on grade averages, or allow for weighting of core subject grades. In other systems, universities are free to set their own admissions criteria. Generally, institutions enjoy more autonomy at Master's than at Bachelor level. The majority of systems also enable adults to make an application based on prior learning or passing an aptitude test.

²⁹ See Bologna Implementation report, 2012, p. 82. While most European countries signed up to widening participation, not all of them enforce affirmative action through regulation and incentives at the level of their institutions. National systems differ significantly regarding the privacy protection that would limit data collection on individual students, or even in anonymous surveys for aggregation purposes.

- Institutions invite students to provide information on their social and economic background at entry. This is usually voluntary, but if it is part of the application or enrolment procedures, it achieves a high response rate. When students were aware of affirmative action measures, they often chose to provide this information in their applications.
- Institutions target prospective students with specific qualifications or backgrounds, in line with either their own institutional priorities or national measures (for example, through outreach activities to schools in their target catchment area, in response to a national policy for broader access).

The **Vrije Universiteit Brussel, Belgium**, conducts a voluntary survey at entry, on backgrounds, attitudes and expectations. As the survey is offered to students when they fill in the enrolment form, the response rate is quite high. The survey is anonymous, and therefore does not allow the identification of individuals, but only of general trends. Higher education in the Flemish Community of Belgium provides an example of a system combining open access with measures to widen participation, in that a funding stream is provided to the institution to enhance the access and success rate of minorities in higher education.

Ensuring application numbers: Declining applicant numbers, due to demographic trends or competition, require that institutions should understand the qualifications, background and motivations of prospective students better. This is usually done by surveying study intentions, the preferences of secondary school students at information events, or applicants or students who have turned to another institution.

Depending on the national application process and data collection system, national bodies may be in a position to track students from school into university education, and benchmark schools and higher education institutions on entry and success quotas for example. This is the case in Belgium/Flemish Community. As the system is still under development, no actual experience could be shared.

3.2.2 The first-year hurdle

Some of the previous examples already pointed to the challenging first step in the student lifecycle. Retention during first year is considered to be the most critical phase for student success, in virtually all systems and countries. Again, the project results confirm that there is no striking difference in tracking practices between systems that select and those that do not, provided that targeted support services are in place. Highly prestigious institutions are certainly in an exceptional situation, as they tend to attract a higher percentage of well-prepared school leavers. However, the reality that most higher education institutions face is quite different. An article dealing with the situation at US colleges underlines the universality of the issue. It refers to the importance for students of “gaining and maintaining momentum” as a precondition of completion and concludes that, if they do not get started in the first year or even the first weeks of their course, it is unlikely that they will make it to graduation³⁰.

Many institutions conduct surveys during the first phase, which address issues of particular importance for first-time students, such as:

- transition from school into the academic learning environment which puts a high premium on student autonomy;
- determining an academic subject that is appropriate to each student, provided that the system still permits change after entry;
- supporting students in their new social environment, who are living alone for the first time with all the new freedom and responsibility implied.

University of Paris Est Créteil Val de Marne, France, organises specific courses before classes start for those students deemed at risk of failure on the basis of the information given at the time of enrolment and 'positive steering' contacts. Since the open admissions policy does not allow selection, UPEC uses specific activities at the beginning of the year to guide students towards the fields that seem to suit them best. Through records of achievements these students can be individually tracked, further counselled if needed, and the efficacy of this approach can be evaluated. Tracking becomes an essential tool for active steering. It is difficult to convince students to aim for a different profession or another study field than the one on which they had set their sights. So the university highlights results and successes as arguments to steer these students towards the fields that offer them the best chances of success.

Naturally, an analysis of student retention in the first year and of the main reasons for failure and dropout is crucial. It is usually achieved by examining administrative data (student records) and surveys (in particular on dropout). In many of the universities visited these activities were called 'early alert initiatives'. Customer Relationship Management systems are introduced in some universities, which can track student performance and activities across the institution, including registration for courses and exams, participation in exams, course records, involvement in extracurricular activities and the use of library cards. The active engagement of academic staff and student support services plays a crucial role in putting the results of tracking to use and in the design and implementation of follow-up actions.

At **Tartu University of Technology, Estonia**, the Office of Academic Affairs has initiated a pilot survey to develop a more comprehensive understanding of the challenges students face in their transition from upper secondary school to university, as this is a crucial aspect of retention. The pilot survey is currently being developed with a group of students from two faculties and contrasts students' experiences in upper secondary school with their performance at university. This involves comparing students' study results during their first two semesters with their admission results, and their use of support services provided by the university. This survey is centrally organised but aims to explore general guidance services as well as challenges linked to specific departments.

As a consequence, many of the universities visited offer various types of initiatives for easing the transition from secondary education to higher education learning cultures. They do so by using information gathered on incoming individual students or the entire student cohort, with regard to socioeconomic background, personal situation, entry qualification, and expectations of study and services, etc. The initiatives typically consist of entry information sessions, 'supplemental instruction', introductory bridging or zero courses³¹, aimed either at developing skills or providing qualifications not offered at secondary school, most commonly in mathematics and natural sciences.

In addition, provision of academic writing courses seems to be of growing importance, both for domestic and international students, and many institutions provide mentoring ('buddy' support) by older students. Some of these activities are conducted throughout the first year, while others are organised before the start of the academic term.

At the **University of Applied Sciences Leipzig, Germany**, admission is based on the average score of the secondary school results; for some courses, school subjects are weighted (e.g. mathematics and natural sciences count double). Thus the institution has limited means of actively selecting applicants. It therefore runs a survey for applicants in order better to understand students' motivations for choice of study and institution. This also includes applicants who decided in the end to study elsewhere.

Administrative data from applications and enrolment contains little information on social backgrounds. However, the institution runs surveys among first-year students, in order to assess expectations and degree of satisfaction with study courses and support services. A particularly vulnerable group has been identified – students who have been working for a number of years – and special measures have been launched to support them.

³¹ Preparatory courses for students who have been admitted, which carry no academic credits.

The University Carlos III, Spain, offers 'zero courses' before the academic year to first-year students in basic sciences, in order to compensate for insufficient school knowledge. The impact of the zero course is tracked through analysis at the end of first year, taking into account individual students' progress regarding knowledge, skills and satisfaction. The results prove that students who take part in this zero course perform better in mathematics, physics and chemistry and tend to have a lower dropout rate.

While student services in many places have existed prior to tracking, the universities visited confirmed the importance of the results of tracking in identifying student needs and in the development and calibration of various types of support measure, ranging from student guidance and counselling to the provision of specific academic or social activities (see Chapter 4).

Some institutions reported that the results of tracking confirmed that first-year students who participate in targeted support measures are more likely to succeed in their studies. In some cases, institutions tracked the progression of these students through their studies and related their study attainment to their prior educational level. Some institutions linked entry to exit surveys, conducted in the last year of study. Survey comparison has become a means of evaluating the experience and progression path of students, often with a specific focus on non-traditional students, who are particularly at risk if no special support is available.

However, some institutions have realised that support measures attract students who are actually doing quite well but who use the optional offer for further improvement, whereas the intended target group – students at risk of failing courses and dropping out – are more difficult to reach. Given the results of tracking, some institutions have decided to discontinue certain measures, as they did not lead to improved retention rates, and to shift resources to more targeted initiatives.

Overall, and whatever the consequences, these measures demonstrate the importance of early attention and alert systems that some institutions have been firmly building into their study environment.

Due to low interest in studies in physics and a relatively high dropout rate, the **Freie Universität Berlin, Germany**, launched an intensive three-step panel study among first-year physics students (active and dropout) in order to identify risk factors in study failure. In addition to course content and study conditions, it also assessed physics knowledge acquired at school, prior information on the subject and the study requirements, and the impact of work during the academic year. As a follow-up, bridging courses are offered to all students to improve entry from secondary school in physics. In addition, targeted measures for the identified 'at-risk groups' have been arranged and enhanced information is provided to study applicants and beginners.

University College Dublin, Ireland, developed a specific analytical tool for early alert during the first semester called 'academic analytics'. The aim is to identify at an early stage students that may experience difficulties with their studies and to improve student support services and thus enhance student retention. The tool establishes a 'student footprint' comprising information collected at enrolment, workload taken and study results. It also considers student engagement with the offers and facilities of the university, such as use of the library (via the electronic library card) and the virtual learning environment.

3.2.3 Dropout

In recent years, dropout has become an indicator for assessing the provision of learning and services in higher education, not that this is easy to interpret or act on. Dropout was found to prompt student tracking in almost all universities visited. It generally involved the use of administrative data supplemented with surveys. From site visits and interviews, it appeared that some systems such as those in Belgium/Flemish Community, Denmark, Germany, Ireland and the UK placed considerable emphasis on tracking, especially for external quality assurance and funding allocation, whereas others (Hungary, Sweden and Turkey) did not.

As commonly understood, 'a dropout' refers to a student who does not conclude his or her studies. Dropout can have a wide range of reasons and motivations, which require careful analysis and consideration, if measures for students to continue learning are to be successful.

However, it can be quite challenging for institutions to generate accurate data on their dropout rate. Depending on the higher education system, institutional administrative data may consider the following as cases of dropout:

- students excluded because of their low study attainment;
- students who discontinue their enrolment;
- inactive students who have not taken exams for a certain period of time;
- applicants to an institution who were admitted but have decided not to enrol (usually because they have been accepted elsewhere);
- students who change their academic subject, and take up a new one at the same institution; and
- students who transfer to another institution, within the higher education system or abroad.

National and international (OECD) statistics do not generally take into consideration the last three points in calculating dropout rates. They are of limited practical use for institutions, as they do not provide data on individual departments and programmes³².

Institutions, however, often reported that they cannot track what students do after leaving, and often do not know whether they dropped out of higher education entirely or changed institution. Thus for institutional-level statistics, student transfer may be counted as dropout. From the institutional point of view this is to some extent correct – but it suggests also that a push for student mobility eventually resulted in increased institutional dropout rates.

Administrative data usually provides only the dropout figures and not the reasons for dropout, unless students were excluded because of low attainment, which again points to the need for further information. Many institutions therefore complement administrative data with surveys, which typically include questions on:

- the socioeconomic background of students, as well as their age, sex and prior education;
- their current occupation and living conditions;
- their study motives, study behaviour and study satisfaction; and
- the reasons for dropout.

Some institutions said that their surveys tend to yield a relatively low response rate and also somewhat biased responses, which is not surprising, as this group of students would probably not be expected to relate closely to their institution. Once they leave, they may feel disinclined to answer a questionnaire.

KU Leuven, Belgium, conducts a short online survey among students leaving the university. The response rate is very high, probably due to the fact that it is part of the exit procedure.

Another technical problem is that students may have very personal reasons for leaving, which are hard to capture in a questionnaire with predefined answers. It would have to cover personal, financial, social or other problems potentially prejudicial to retention. Some students might feel uneasy about disclosing these personal reasons, or cornered into finding an 'objective' reason for not continuing (rather than admitting that they are uncomfortable).

The surveys are carried out to determine the reasons for student dropout or changes of study programme. The information collected is then used to develop measures which aim to reduce dropout rates, for example by improving student academic and social services and counselling.

³² At national level, dropout rates are usually based on the number of graduates in a given year, compared to total student enrolment in the year most of them entered higher education (Heublein *et al.*, 2012, p. 7 ff.).

In 2007 the **Freie Universität Berlin, Germany**, surveyed all former Bachelor students who dropped out in a certain period. In addition to collecting the reasons for dropping out, information was sought on the students' socioeconomic background, their living conditions, study motivations, study behaviour, prior education and current occupation. The reasons for dropping out have been clustered and adequate intervention strategies for improvement of student counselling services before and during studies and study programmes have been developed. It is planned to repeat the survey in order to measure the effectiveness of the implemented measures.

It remains to be seen how to improve further the accuracy of data on dropout at national or institutional level³³. Institutional administrative data provides figures that would, at the very least, allow differentiation between students who left due to insufficient or low attainment, and a probably larger number who left for unknown reasons, including transfer to other institutions. Surveys may provide insight into the different reasons or arguments for dropping out, but hardly unambiguous and quantifiable results. Overall, institutional efforts may point to issues needing attention, such as very high dropout rates in certain programmes, and contribute to increased overall awareness of dropout.

National-level data can clearly be enhanced by conducting a census or broadening the survey coverage of dropout to differentiate between types of institution, study disciplines, degree programmes and gender, etc. If broad surveys are carried out on a regular basis, they can also indicate development trends. While such an approach does not enable the results to be broken down to the level of individual institutions, this may not matter. If the national average dropout rate of male undergraduate students from natural sciences reaches a certain percentage, particularly in large higher education systems, this could be taken as an alert and compared with the institutional dropout rate.

Dropout is therefore a good example of how data and analysis cannot always produce clear solutions for enhancing retention, instead pointing the most promising way forward and raising questions for further inquiry. Dropout also illustrates the need to combine different approaches which, in this case, use national statistics and institutional administrative data and surveys. This in turn should stimulate discussion of dropout within the institution and raise awareness of the importance of improving retention, leading to an improvement-oriented review of learning provision, services and management. Any such review should also cover the social study environment at the university. The provision of information to prospective students and targeted support during the early stages of study should certainly be among the concrete measures considered.

The **University of Surrey, UK**, participates with 90 other higher education institutions in the national initiative 'back on course', a major research project with UCAS (the organisation responsible for managing applications to higher education courses in the UK). The project carries out a large-scale longitudinal study on the reasons for students leaving before the end of their studies, and what works to get them back into higher education.

3.3 Tracking graduates: linking higher education and the labour market

Institutions taking part in the project were generally keen to determine the impact of learning on their graduates' careers, particularly because of the recent focus on learning outcomes and employable skills.

Unless they track their graduates, institutions and their staff have relatively little chance of assessing the real impact of study programmes, and their relevance for the labour market. Larger graduate numbers, flexible and modularised study programmes, less personal relations between teachers and students, and wider professional and geographical employment opportunities mean that individual academic teachers are unlikely to see how their former students are faring professionally unless they work in higher education. In academic disciplines

³³ Heublein *et al.* 2012 say that relating several data sets of the same individuals (e.g. by combining data from higher education enrolment and graduation with social security and employment data) offers the only possibility of achieving fully accurate data. They point out that, while technically possible in several countries, Austria and Finland are the only countries in which data protection laws allow this approach.

with fewer students, it might still be easier. Thus the size of institutions may be significant, and there can be differences between faculties and departments, at least in systems where these are highly autonomous.

For five years, the **University of Bucharest, Romania**, has been tracking graduates in order to enhance the quality of study programmes. Tracking students and graduates is required by law, and part of external quality assurance. Recent Bachelor and Master's graduates, when receiving their diploma, are obliged to fill in a questionnaire. In addition, individual faculties have developed their own approaches for tracking graduates, depending on the size of the faculty, the teacher/student ratio and the relation with the industry in which graduates are usually employed. For example, the faculty of history reaches out to graduates via its academic association, while the faculty of sociology has been carrying out for several years a tracer study following the INCHER approach (see Section 3.3.1).

However, even academics from small faculties with an emphasis on training for the labour market generally stated during interviews that, despite their initial scepticism towards tracking, their previous information on graduate employment was patchy and anecdotal. In particular, they would not have known which of their graduates were unsuccessful, or which of them turned to fields of work or study outside the professional discipline in which they were first trained.

The interviews indicated that business schools and engineering faculties in institutions were often pioneers in developing the tracking of both graduates and students. This was due to their commitment to national and international standards and their openness to benchmarking, international accreditation programmes and international marketing in general.

The employment observatory at the **Autonomous University of Madrid, Spain**, was started as an initiative of the faculty of economics and business and is now part of the central student services. It monitors the labour market entry of graduates via online and telephone surveys, first 12 to 18 months after graduation and then again after four years. Telephone interviews were reported to be staff-time intensive, and the response rate to the online surveys remains low. They interview the same persons, so longitudinal individual tracking is possible.

Other examples confirm that, in the wake of a successful pilot initiative, other parts of the institution often follow it.

The **Istanbul Technical University, Turkey**, undertakes a wide range of activities at the central and faculty levels to monitor students' progression through their studies and into industry or subsequent studies. Traditionally, these practices have fallen under the remit of faculties, but the introduction of systemic tracking procedures through an engineering accreditation process (American Accreditation Board for Engineering and Technology – ABET) has recently led to efforts to centrally coordinate practices and share experiences across the university. The university has begun to place greater emphasis on tracking students' transition into the labour market, despite the fact that its graduates find work easily and there is no pressure in Turkey from national bodies to introduce tracking procedures. Gathering information on students' employment experiences is clearly seen as a means of improving the educational offer and perhaps of marketing and positioning the university better.

As mentioned in Chapter 2, there are a host of external reasons for tracking graduates, such as legal requirements, funding incentives, quality assurance and national and international accreditation rules. The relative importance attached to tracking graduates is also linked to the specific national or regional context, as is the case in systems which incentivise graduation after the regular study period, have a high emphasis on the economic impact of higher education, or in countries with relatively high graduate unemployment rates. One should mention the existence of league tables, in particular in the UK, which monitor not only the employment of graduates but also their salary levels. While these tables are more a consequence of existing graduate employment data and its treatment by the media, they are instrumental in keeping universities committed not only to tracking employment, but also to supporting the entry of graduates into the labour market.

3.3.1 National, institutional and shared approaches

As stated in Chapter 2.3, most countries covered by the project have national graduate destination surveys already in place or under consideration. In most systems, they are either supplemented by or combined with efforts at institutional level (see Chapter 2.5). During the site visits, institutions that were asked about national-level survey results stated that they were useful for general information purposes, as they provided statistical overviews and allowed for consideration of changes in education and its relation to macroeconomic developments. They also reportedly contributed to forecasting and policy development. But unless they were constructed to enable data to be traced back to an institution, faculty, department or even a programme, they were of limited relevance for institutional follow-up. Some universities that had national graduate surveys said they were important for quality assurance and marketing.

But higher education institutions that wish to track graduates face considerable challenges. The development of a tracking approach is time- and resource-intensive. It involves drafting and testing a questionnaire, deciding on the target groups and how to reach them, and collecting and processing results, etc. The quality of responses is also a concern, as the answers of graduates are subjective and could be affected, for example, by an economic crisis or high unemployment rates. The survey may not produce results that can or should be immediately applied. Another drawback is the lack of readily comparable data, given that other institutions might use different questionnaires, indicators and methods.

While there is no remedy to all these problems, the project came across collaborative or shared approaches which seemed to have several advantages compared to purely national or institutional ones. The blueprint is as follows: a national body, a research initiative or a consortium of higher education institutions provides a standard survey scheme and supports institutions in implementing it. The standard questionnaire could usually be augmented by the individual institutions. While they have a major role to play in ensuring a high response rate, the data would be collected and evaluated centrally. An institution would receive its own data, but could also benchmark itself (or ask to be benchmarked, depending on the approach) against institutions of a similar kind. Aggregated data could be published, and used for research or other purposes.

One of the drawbacks is that institutions might feel too restricted by the questionnaire, as it does not fully respond to their purposes. Through additional questions, it might thus become too long so that response rates could diminish. On the other hand, institutions which surveyed graduates over a longer period of time said that questionnaires tended to become more 'pragmatic'. They were simpler, shorter and focused on the core data needed to enhance response rates, but also more appropriate as institutions realised what data they actually used. A common development in graduate tracking along these lines is apparent in Finland, France, Germany, Hungary, Italy and the Netherlands.

Early initiatives have been launched in Italy, in which AlmaLaurea and Stella have been established as non-profit membership schemes supported by the Ministry of Education, University and Research. They offer their university members standardised questionnaires and prepare the data analysis. AlmaLaurea, launched in the 1990s, involves 78% of Italian graduates from 64 Italian universities. Students in their last year complete an online questionnaire, and update it regularly after graduation. The data is used for institutional purposes, but also for research. Another feature is a graduate portal that employers can use for recruitment. This may be one reason why graduates update their CVs, as the initiative reports a high response rate (90% in the graduation year and 70% after several years).

The INCHER graduate study developed by the International Centre for Higher Education Research (INCHER), Kassel, Germany, is an example of how a survey can be implemented and developed in collaboration with institutions. The approach has been used in Germany and several other countries in Europe and beyond. INCHER organises the survey, provides implementation support to the institutions, and collects and delivers the data to them. The Centre is in charge of ensuring participation in the survey, and also of the final analysis and follow-up. Standard questions in the graduate survey concern the current employment situation of graduates, their transition to first employment, job satisfaction, the assessment of studies in view of their career development, and the compatibility of their employment with the knowledge and skills acquired.

The institution contacts its graduates one to two years after graduation and invites them to complete an online or paper questionnaire. Three reminder emails are sent. Most institutions include all their graduates irrespective of the level of their degrees. INCHER processes the institutional data to form a database, which it uses for

comparative studies, including research into the impact of the Bologna degree system on study behaviour and employability in Germany. German higher education institutions also have an opportunity to commission an extension to the sample of the HIS Graduate Panel, providing them with institutional-level results, as well as the possibility of benchmarking against a representative national sample.

The **Freie Universität Berlin, Germany**, which in the past conducted its own surveys, has for several years taken part in the INCHER initiative (2008, 2009, 2010 and 2012). The survey is designed as a census of 3 000 to 4 000 graduates with a response rate of 40-50%. The main purpose is to collect information for improving study programmes with regard to professional competences and employability of graduates. Graduates are invited to evaluate the study programmes with regard to applicability of qualifications and competences in the job. The data is analysed at different levels for a variety of interest groups. Each department receives a report, while special reports are prepared on subject groups and old and new degree levels are compared (i.e. *Diplom and Magister* with Bachelor and Master). In addition, INCHER benchmarks against other universities which participate in it and have received awards under the German Excellence Initiative. The results are published on the intranet and are presented and discussed with several boards. They are found useful for quality management processes, student counselling, career service and alumni relations, and generally for enhancing institutional governance and management. Departments use the results for the information of potential students.

The low staff resources available for this initiative were mentioned as a challenge. In addition, in very small departments tracking is conducted on a personal basis. Similarly, the various graduate schools, one of them shared with another university, have developed their own tracking approaches as part of quality assurance, in order to keep contact with alumni, and also as they have a more international profile.

An approach similar to that of INCHER is used in Hungary. Under the Social Renewal Operational Programme (TAMOP) supported by the European Structural Funds, the government has launched an operation in which all public higher education institutions participate in tracking students and graduates.

The two institutions visited in **Hungary** agreed that generally the national initiative has helped to initiate and consolidate institutional tracking approaches, and also stimulate additional initiatives. They also reported clear benefits, albeit in different ways.

Semmelweis University, a medical school, uses graduate feedback for improvement of courses. This is particularly important for its international programmes in order to ensure compliance with international labour market demand. Another concrete application has been the employability assessment of a new study programme (sport and healthcare management and services). While the intention of medical graduates was to seek work abroad given the low salaries for doctors in Hungary, the actual figures that the survey provided were much higher than assumed. **King Sigismund College** is clearly professionally oriented, and sees the project as an opportunity to further enhance its graduate survey activities. It has also been confirmed that the publication of individual institutional data on a central website enables informal benchmarking. At the time of the research, it was uncertain whether the government would continue the initiative. While individual institutions seemed keen to sustain it, the question is how to ensure coordination and comparability in the future.

3.3.2 Linking graduate and student tracking

Higher education institutions often expressed regret that, due to national legislation, they were not allowed to track graduates via administrative data, connecting student data with employment data. However, in several countries this is already possible or planned at the level of higher education systems.

Belgium/Flemish Community is preparing a database that links school records to university records, and potentially could be linked to employment data. However, there are strict data protection regulations to be observed. The UK DLHE links student data to destination data. In these cases, institutions are provided with limited access to the aggregated results, enabling them to assess students and student backgrounds, including courses taught and employment. In Austria and Estonia, cases have been reported in which universities have linked administrative student data with employment data. This has been done through a third-party agency

that returned anonymised data sets. As this is a rather complex initiative, it is too early to identify its benefits and state whether it will be continued on a regular basis.

In a few countries, a national study also looked at longitudinal aspects of the progression paths of graduates. These studies – Future Track in the UK is one example – tend to adopt a holistic approach, looking at employment early on and then a set number of years later. These types of study tend to look at panels of students and have a very research-oriented approach. They can be carried out at national or institutional level.

Some of the higher education institutions visited also examined the career paths of graduates from the point of transition to longitudinal success on the labour market, while also covering continuing education. This was reported by the two French institutions that took part in the study.

The **University of Paris Est Créteil Val de Marne, France**, established an observatory, the DEVE (Direction des études et de la vie étudiante) in order to develop indicators for tracking students and graduates. DEVE conducts a large number of tracking surveys, either in response to national requirements, or at the university's own initiative, on the basis of statistical data (student numbers, entrance characteristics, student records, etc.) and information and satisfaction surveys and quality surveys (on study courses, success rates, labour market entry). Some cover the whole institution and all students, while others are designed to evaluate individual programmes or address specific topics.

The Centre of Entrepreneurship at the **Autonomous University of Madrid, Spain**, is heavily engaged in the promotion of entrepreneurial initiatives among students and academic staff, and has succeeded in supporting the creation of more than 200 business initiatives. It systematically surveys students' attitudes to assess the capacity of programmes for fostering entrepreneurship. An online tool has been established to track the success of students and graduates who become entrepreneurs.

One question remains, namely what financial and staff resources should be invested in tracking, and what is the optimal cost-benefit ratio. Most institutions report low response rates and, where higher rates are achieved, they are usually the result of a high resource investment, with follow-up through emails and phone calls.

Some researchers say that a good sample survey, including contextual information, might be more useful than the large amounts of data from censuses. Yet this is probably not an 'either/or' issue, but a question of balance, which depends on the aims pursued.

Yet another relevant aspect might reflect a broader cultural change in continued relations with graduates and their participation in tracking. This is that European higher education institutions are interested in their former students as alumni, as well as respondents to graduate surveys.

3.3.3 The emergence of a European alumni culture

The ability to communicate with graduates is a precondition for tracking, and a frequent problem with university graduate surveys is that the response rate tends to be low. This is to some extent due to technical aspects. Questionnaires are sent in paper form to the last known home address, or to an email address, both often no longer valid. Giving students lifelong email addresses is one of the means increasingly used to overcome the problem. However, there remains the question as to why graduates should wish to communicate with their former university.

In 2006, the **University of Gothenburg, Sweden**, started to establish an alumni database, which up to now has records on 10% of its graduates, with contact details but also employment data. The main motivation was quality assurance, to enable more systematic analysis of careers of graduates. In addition, the database also supports the organisation of social events, and is a means of using graduates as ambassadors of the institution.

Until very recently, higher education institutions in Europe, with few exceptions, did not maintain close contact with their graduates. In most of them, alumni relations – if they existed at all – were a very minor concern.

The site visits indicate that this attitude is changing rapidly. Most institutions reported that they had launched alumni initiatives, or were planning to do so. Most of them had to build alumni facilities from scratch, by establishing an office, deploying staff and, most importantly, gathering addresses and establishing a database. As a result they reported considerable lead time and limited success. While the existence of 'institutional alumni associations' was clearly an exception, some alumni facilities existed in several institutions but were not necessarily linked to them. They were usually subject-based or professional associations, such as those of engineers who tended to be organised at programme or subject level, and belong to larger country-wide associations. Certain institutions reported rather loose decentralised groupings of alumni, some of which brought together graduates from a particular programme or year. Thus institutions have to find ways to interact and collaborate with these groups, without interfering in their dynamics – a difficult balance to strike.

At the majority of institutions, which had just started alumni relations, their precise aims had still to be explored. Fund-raising was sometimes cited as a motivation for such work. However, more tangible benefits were achieved through alumni contributions to the enhancement of study programmes and information on career paths. This included the provision of information to prospective students, the development of labour market links, information on employment opportunities and internships, and on mentoring programmes for former students, as well as other voluntary alumni initiatives. Alumni can play a role in collecting feedback, either in person at the institution, or via surveys. A well-established alumni database is of course an important source of information, especially on graduate careers.

Dublin City University, Ireland, established an alumni database in order to keep in contact with its graduates, to enhance study programmes and bridge the university with the labour market. It maps the outcomes from each programme, identifies gaps and includes new skills. Operations are based on the DCU student records, personal and contact details (address, telephone number, DCU email address, course, graduation year, and LinkedIn are also used). The alumni office involves current students (e.g. through a mentoring programme), which they hope develops the concept of an alumni relationship to DCU among the current student body. The alumni office updates graduate profiles, and also gathers information on achievements of graduates, e.g. through newspaper articles. Meetings with the graduate groups are organised regularly, not only in Ireland, but also in a number of international alumni chapters.

Aside from the personal and altruistic commitment of some graduates, a central question was how to ensure the continued interest of alumni in their institution. Why should graduates maintain lifelong email addresses, if the only mail they received was an (annual) graduate survey? If alumni receive other benefits, such as information on events and opportunities for continuing education and on job vacancies, and can also exchange messages with former peers, there is a greater likelihood that they will answer surveys. Thus aspects of social and professional networking, underpinned by information events, seminars or even the provision of continuing professional education, seem to be increasingly significant. Social media such as Facebook and LinkedIn were cited by many institutions as potentially important, and several said they had started to use them or intended to. Many universities mentioned the work they were doing in following the career paths of alumni, and said that professional social networks, like LinkedIn, allowed them to understand graduate career paths better. But it is definitely too early to assess how useful these networks really are³⁴.

The alumni association of the **Istanbul Technical University, Turkey**, dates from almost a century ago, and is a very powerful rather independent association. While graduate tracking has not been a strong focus of the institution in the past, and the role of alumni was mainly to provide advice and support fund-raising, it recently started enhancing and modernising its alumni relations. Registration in the online alumni database has been made compulsory upon graduation. The data collected includes name, date of birth, programme studied, Turkish ID, current employment (position and sector), CV, Facebook and Twitter information. Only some contact information is required, and users control their privacy settings. 40,000 names are now in the database, although 100,000 alumni are thought to be alive.

³⁴ A further issue is whether an institution should rely for data collection and management on commercial services under conditions which are beyond its control. Some institutions refuse to do this, or are prevented from doing so by legal regulations.

3.4 Tracking doctoral candidates

Doctoral education is fundamentally different from the first and second study cycles, as it is based on research practice. It is thus usually more complicated to integrate it into tracking approaches, particularly since the formal enrolment of doctoral candidates has been sporadic in many higher education systems. Many of the questions put to Bachelor and Master's students might not make sense to doctoral candidates, as they work in a very different context, similar to that of research staff. The traditional 'apprenticeship' model, that involves individual doctoral candidates working with one supervisor, has meant that tracking was difficult. However, more recently established doctoral schools and structured programmes often include a 'built-in' tracking mechanism.

The doctorate was formally incorporated as the third cycle in the Bologna Process in 2003, and is considered to be one of the success stories of the European Higher Education Area. "Even if nothing else were happening in European higher education the speed of change within doctoral education would amount to a mini-revolution" (Crosier *et al.*, p. 26). The core of this 'mini-revolution' resulted in replacing or supplementing the traditional apprenticeship model for doctoral education and its exclusive purpose of educating future researchers and academics. Across Europe this has led to new organisational patterns such as doctoral programmes and doctoral schools, some of which are based on collaboration with industry and society.

Internationally, doctoral education has become a key element in institutional and governmental strategies because they link higher education, research and innovation and are strongly related to the economy. In the competitive context of knowledge-based economies and societies, it is seen as both one of the drivers and indicators of the ability of systems and institutions to attract international talent. Doctoral education thus has a special role in bridging the European Research Area and the European Higher Education Area. For this reason it is generally receiving increased strategic consideration which involves a wide variety of initiatives, ranging from visa and work permits to the provision of attractive family-friendly study and living conditions. Like students in the other two cycles, the number of doctoral candidates has been steadily growing, and the majority of doctoral degree holders are now employed outside academia.

Naturally, the shift away from the apprentice doctorate has had consequences for quality assurance and tracking. This issue has been addressed by the Salzburg principles, which in recent years have reflected and supported the changes in European doctoral education³⁵:

In order to be accountable for the quality of doctoral programmes, institutions should develop indicators based on institutional priorities such as individual progression, net research time, completion rate, transferable skills, career tracking and dissemination of research results for early stage researchers, taking into consideration the professional development of the researcher as well as the progress of the research project. (Salzburg II, 2.7)

The preliminary results of a survey carried out under the EUA project Accountable Environments for Doctoral Education (ARDE) confirm the trend towards establishing doctoral schools and developing tracking measures. Currently, 87% of the participating higher education institutions monitor doctoral candidates through progress reports and 50% use milestones (e.g. the submission of papers at regular intervals). While tracking the career paths of doctoral degree holders seems to be increasingly common, so far only 23% of the participating universities do so systematically, generally within three years after graduation³⁶. The universities said that their goals for creating a more systematic approach to tracking doctoral candidates and degree holders included the development of closer links with their stakeholders, contributing actively to a Europe of Knowledge, developing and enhancing a systematic quality assurance approach, and improving accountability.

The site visits during the TRACKIT project confirmed that not all universities that tracked students in the first and second study cycles had introduced the tracking of doctoral candidates and even fewer tracked doctoral degree holders. The development of new structures to provide and support doctoral programmes (doctoral schools) clearly motivated the establishment of tracking approaches, as did the setting up of new data collection systems and warehouses, which usually included the third cycle.

³⁵ The Salzburg principles I and II (EUA, 2005; EUA, 2010) have been developed by the European University Association and the EUA Council for Doctoral Education.

³⁶ 112 universities from across Europe took part in the survey. In all, they enrolled over 100,000 doctoral candidates: www.eua.be/eua-projects/current-projects/accountable-research-environments-for-doctoral-edu.aspx

The **University of Applied Sciences Leipzig, Germany**, has recently launched a competence centre (Kompetenzschule) under a project supported by the European Social Fund. The centre offers courses on communication and soft skills for doctoral candidates preparing them for leading positions in both academia and enterprises. The project has a strong evaluation component through questionnaires and structured interviews. The goal is not only to assess the programme, but also to encourage participating doctoral candidates and their supervisors to contribute to its development and future enhancement. The institution plans to sustain the approach beyond the duration of the project, as a means of ensuring continuous quality improvement. The data will also be used for institutional policy planning as well as for marketing (attraction of doctoral candidates). It is worth noting that the approach involves five Saxonian institutions.

The introduction of research or doctoral schools and structured doctoral programmes has prompted some countries to introduce national tracking systems, often in collaboration with higher education institutions. As the careers of the majority of doctorate holders are outside academia, career entry support and career development have become increasingly common.

In Estonia doctoral studies are organised through inter-university doctoral schools, so the administrative support is shared between universities. While basic tracking is done by institutions through their research administration office, more general tracking is done nationally by the EHS. The national database is managed by the Ministry of Education and Research in cooperation with the higher education institutions and the Estonian Science Foundation, and includes data on research activities, such as all ongoing research projects, researchers (including doctoral candidates, regardless of their source of funding), and various research findings. At institutional level, doctoral candidates are included in the data collection system and the research administration office uses this data to exclude students who have not completed their studies within what is determined to be a reasonable amount of time.

KU Leuven, Belgium, has created a doctoral school database for all applicants and candidates at its three doctoral schools. Its purpose is to monitor the progression of PhD candidates better with regard to key milestones. Additional data collected includes nationality, academic background, supervisor, the source of PhD funding and the type of contract with the university. Through the database, the management of the doctoral school can track whether and when a student passes the milestone, and if necessary alert and consult programme administrators and supervisors in the event of delay, in order to enable PhD students to progress. So far, the focus is clearly on doctoral candidates and the completion of their degree within the set time of four years. No information is collected on the graduates and few services exist for career support, although employability of doctoral degree holders is a growing concern. A goal is also to arrive at a common data collection standard that would enable the establishment of a larger portal for the entire university.

3.5 Blind spots in tracking: lifelong, mobile and international students

So far this report has considered whether and how students and graduates are tracked. But are we discussing all types of student? A special focus on lifelong learners, mobile and international (full degree) students and graduates can help determine whether tracking is geared to the reality of student-centred and increasingly flexible learning paths in the 21st century. One of the observations from the 23 site visits is that, for various reasons, these three categories are often not tracked, or are tracked separately from more conventional students.

In the past, very few students belonged to the above groups, whereas at several of the institutions visited they reportedly made up 20% of the total student population³⁷. They may also be problematic from an administrative

³⁷ See also the EUROSTUDENT Report 2011, which points out that the 'normal' student population comprises a growing number of students from non-traditional backgrounds (p. 41), official and de facto part-time students (p.74), and mobile and international students (p.75). The EUA SIRUS report makes the point that despite their growing numbers, non-traditional students tend to be regarded as exceptions and are not fully integrated (Smidt, Sursock, 2011, p.78).

point of view. If included in the central data collection of universities, they may appear as dropouts because they leave after one or two semesters or do not take exams, and thus distort the data and its consistency. In addition, their academic achievements may be assessed differently from those of (domestic) full-time students. These groups of students have therefore not been included in the results of tracking the overall student body, as they are regarded as atypical or temporary, and usually the responsibility of the international office and a special unit dealing with the EU Lifelong Learning Programme. In addition, they may fall under a different funding mechanism, and thus not need to be tracked in the same way as domestic students. They may not even have been registered as students, as is often the case for example with mobile students. A number of institutions visited were changing their activities to include international students and lifelong learners in tracking, which also often meant translating questionnaires into English.

The lack of a clear definition for these categories complicates things further. Lifelong learning at university can include a wide variety of learners, from children in outreach courses to part-time students, second-chance learners, university graduates in continuing education or courses for professional upgrading, and participants of courses targeted at senior citizens. The definition of 'lifelong learner' differs widely both within and between European countries. A similar problem arises with the definition of 'mobile' and 'international' students. While Eurostat and national data collections aggregate international degree students and short-term mobile students under the 'mobile students' label, at many universities international students are not regarded as mobile, as they stay for a full degree. A recent EUA report also points out that the current UOE definition of student mobility has so far not been very successful in enhancing clarity³⁸.

The EUA report also confirms not only that European and national data is unclear about the exact number and definition of international and mobile students, but that approaches – where they exist – to data collection concerning these students at most universities are rather fragmented. For example, they may include Erasmus Programme mobility, but not free movers or mobility funded by other programmes.

In some countries, it is difficult to identify international full-degree students as a group. This is because the national system does not distinguish between international students and resident students from migrant backgrounds, or precludes identification of foreign students at national level. For example, in Sweden, which has recently introduced tuition fees for international students, the national rectors' conference has nevertheless decided that, in order to protect its students, the joint student registration system (LADOK) will not register nationality, even if this makes it more difficult for universities to identify international students and track them³⁹.

There are two main scenarios for tracking international or mobile students and lifelong learners, which often seem to depend on the national environment:

1. If these groups are tracked separately, this might be due to specific national and institutional interest in them, as reflected in distinct policies, legal frameworks and funding systems. In such instances, special attention is paid to the precise needs of these groups, the particularities of their study paths, and the fact that mainstream tracking procedures would not work in their case. For example, the study progression of lifelong learners and mobile and international students, as well as the time they take to graduate, may have to be defined differently, as they often follow a different time frame. For this reason, they also require forms of tracking and data collection procedures that are different from those used for mainstream students and graduates. The question then remains whether the results of tracking these special groups can be included in the analysis of mainstream tracking. For example, can the results be used to develop student services for all students, which take account also of groups with distinctive needs?
2. If lifelong learners and mobile and international students are included in mainstream tracking, they may not be distinguishable in the data collection. It will thus be difficult to interpret the data with a view to understanding their particular needs and conditions.

However, there are strong indications that change is on the way. The number and importance of mobile and international students and lifelong learners has grown in recent years, as a result of economic and demographic developments, enhanced international competition and increased policy pressure. This trend is

³⁸ While the joint definition of UNESCO-OECD-EU (UOE) offers improved criteria for establishing 'genuine mobility' in referring to non-residency, location of prior education and non-citizenship, some reporting countries regard these as alternatives (Colucci *et al.*, 2012).

³⁹ However, LADOK registers the country in which the qualifying degree was taken.

likely to continue. The EU and Bologna higher education ministers both consider that 20% of graduates should eventually have experienced some form of mobility, and the ministers adopted a strategy for learning mobility at the 2012 Bologna conference in Bucharest. However, the Europe 2020 benchmark of 40% participation in higher education⁴⁰ and a 'Europe of knowledge' is unlikely to be reached without more lifelong learners experiencing higher education. There is also an implicit consensus between institutions, national governments and the EU regarding the strategic importance of international students, even though until now there has been no coordination of strategic approaches⁴¹.

In a country where both legislation and funding promotes widening participation and lifelong learning, the **Vrije Universiteit Brussel, Belgium**, is monitoring the progress and completion rate of mature students. As a result of legislation and a new funding regime, there is an internal commission that monitors student progression and intervenes when it is inadequate. The commission offers advice or can exclude students from the programme.

In this respect, the growing number of lifelong learners has to be taken into account, and tracking can help to highlight their specific needs and challenges. The examples from the site visits indicate that institutions and countries have identified this group as a priority, and launched initiatives to track them. The development of policies and strategies for lifelong learning is often related to the declared purpose of the university concerned, in accordance with its national, regional, social and economic context.

Situated in an economically challenging region, **Lille 1 University of Science and Technology, France**, aims at establishing a holistic approach to excellence, which links academic study and research with lifelong learning, professional training and regional engagement, and with a strong internationalisation drive. In the past 10 years, the number of international students has increased from 4% to 20%. In addition to 19,000 traditional students, it has 12,000 lifelong learners, thus responding to the needs of the region, but also making up for a demographic decrease resulting in lower student numbers. Most of the domestic students come from the region and more than half of them receive need-based scholarships.

This radical change in the composition of the student community has resulted in additional tracking activities. As Lille aims to mainstream lifelong learners into the regular study programmes, it tracks their progression and success, and their need for skills and knowledge compensation measures, and also assesses teaching provision by means of tracking. Thus tracking is also used to assess whether the actual process of integrating lifelong learners is successful.

Except in the case of Erasmus students and for various reasons, incoming and outgoing student mobility is usually not well documented, either at institutional or national level. If mobility occurs in exchange or joint degree programmes, responsibility for it usually lies with the programme coordinators. Incoming mobile students are only temporarily at the institution and, depending on its rules and the exact period of time, they may not even be registered as students. Instead, they may still be registered in their home institution, or on leave and therefore not formally recognised as active students anywhere. In many systems, a high percentage of 'on leave' cases or inactive students correspond to outgoing mobile students. But except in the case of the occasional free mover who prefers to take leave and does not request recognition of credits and study periods, the impression is that institutions would track most incoming and outgoing mobility if there were incentives for collecting the data. Besides the technical challenges involved, the reason that this does not commonly occur is precisely that there have been few such incentives, either at institutions or national bodies. Yet the site visits and the EUA project on mobility⁴² indicate that this is changing, in the same way as the trends observed in lifelong learning. Universities throughout Europe are developing more strategic approaches to mobility, and improving data collection with regard to mobile and international students. The reasons are diverse, ranging from European and national mobility policies which have been launched or are under development, to benefits from mobility in learning and employment, the need to ensure better quality, and the belief that mobility should be fully visible in the wider framework of institutional transparency and data collection.

⁴⁰ See Europe 2020 Strategy, 40% of 30- to 34-year-olds should have a tertiary degree or an equivalent qualification by 2020.

⁴¹ For the first time, the EU will launch strategies for internationalisation of research and higher education in 2012 and 2013 respectively.

⁴² Colucci *et al.*, 2012

At the **Université catholique de Louvain, Belgium**, 25% of students graduating at Master's level have had an international mobility experience. In order to enhance the quality of partnerships and exchanges, the international relations office launched an *ex-post* evaluation in 2010, based on students' reports from their outward mobility experience. It considers academic, practical and personal experience. Subject to students' consent, anonymised individual reports are made available to other students. The tool helps to evaluate the quality of partner institutions by faculty and identify problems to be addressed. An attempt to devise a similar tool for incoming students has been discontinued, mainly due to a low response rate.

Similarly, the number of international full-degree students is increasing. In some of the universities visited they make up a quarter of the total student body. In combination with international and interinstitutional competition, this has resulted in systems to assess and improve the student experience, and consider the particular needs of sub-groups of international students. These students are also a clientele that can be expected critically to scrutinise and compare conditions and experiences. They are also likely to communicate their insights to other potential students and influence their study decisions. Institutions therefore have to track their performance and progression paths for quality assurance purposes, but tracking also supports market analysis and promotion. A number of the universities visited tracked the experience of international students, on the basis of student reports.

At the **Tallinn University of Technology, Estonia**, full-time international students are included in the student database (SIS) that centralises the record of all student educational activities. In addition, the international relations office conducts surveys on the reasons why Erasmus and degree students choose the university and on their satisfaction with study and living conditions. Participation is voluntary and relatively low. Results are circulated among faculties, although no mechanism is currently in place to enforce follow-up. Another survey targets the outgoing mobile students, and is for student counselling but also for identifying new partners.

At the **University of Bucharest, Romania**, international students – mainly Erasmus and degree students – are tracked during their studies. Testimonials are used for international marketing. Tracking also involves the student associations, and procedures such as mentoring which are used to support foreign students and collect their feedback.

Many universities mentioned the difficulty of tracking international graduates, as they often leave the country. Domestic students might also increasingly embark on an international career or further study abroad, and be similarly difficult to track. Systematic alumni relations (see Section 3.3.3) have been found to be the most effective way of tracking international students after graduation, which is currently the biggest challenge as regards this particular group.

The **Technical University Berlin, Germany**, which has a long tradition of enrolling full-degree international students, has been running for many years an international alumni programme, which organises continued professional education courses in different parts of the world, and also contributes to fund-raising. In their last semester at the university, international students are encouraged to register at the alumni organisation.

The technical possibilities of tracking have also been improved. More of the universities visited have recently introduced new tracking measures and practices, or are about to do so. Such approaches seem better suited to tracking special groups and communicating with them.

Lund University, Sweden, a newcomer in the field of international degree student recruitment, is initiating an ambitious student lifecycle tracking system based on a customer relationship management system intended to track students from the application stage through admission to graduation and employment. The initiative also covers international exchange students.

National-level approaches to tracking increasingly include international students, as in the case of the UK DLHE, which can now link data on students and on their destinations. A HIS study on dropout in Germany, which has been conducted regularly in past decades, included international students for the first time in 2012. They are subdivided into 'real' foreign students (Bildungsausländer) and those who have a foreign passport but are resident students (Bildungsinländer)⁴³.

Finally, as the concept of the 'normal' student becomes increasingly devoid of meaning (EUROSTUDENT 2011), greater numbers of mobile and international students and lifelong learners will need to be tracked, with their mobility experiences recorded and assessed. Many students are mobile, or study part-time and in distance and blended⁴⁴ learning arrangements – yet another aspect that the future development of tracking would have to take into account.

3.6 Tracking from a staff and student perspective

Staff interviewed during the site visits were generally positive about the tracking of students and graduates, and listed a wide range of benefits, including the following:

- Many staff said that, as a result of tracking, generally more attention has been paid to students, and to the quality, content and methods of teaching and learning.
- Academic and administrative staff confirmed that they gained a better understanding of students and their experiences at the institution, but also learned about reasons and motives for what would usually be noted only as 'disengagement', 'dropout', 'failure' or 'mistaken attitudes', or even pass completely unnoticed. It also provided them with an important tool for identifying 'students at risk'.
- Tracking – whether via data collection and analysis, or surveys and questionnaires – helps to identify and address gaps in student services. It also supports retention and student learning needs, and provides feedback for student and career guidance officers.
- Through tracking, staff could exchange experience, which was useful for identifying particular problems and ways to address them. It also demonstrated the diversity within their institution, as regards student performance and attitudes, but also the internal rules and protocols used in departments and faculties. At some institutions, this led to informal benchmarking between faculties and departments. There was general agreement that this sharpened the reflection on subject-based or social particularities. National tracking initiatives also enabled benchmarking between institutions.

However, certain aspects of tracking were criticised. Some staff said that there were insufficient resources to analyse data, or follow up on the results of tracking, or that the information it provided was not sufficiently circulated.

Students were mainly positive about tracking, and student representatives confirmed their interest and readiness to contribute to it. There were, however, also complaints that they were not sufficiently informed about and involved in tracking, and that its results were not followed up on.

The perceptions of staff and students are not just concerned with tracking, but common management and communication issues. However, they agree on the need for inclusive approaches to tracking and broader institutional development, and on the importance of communicating the results widely, and the way in which they will be translated into new initiatives and policies.

⁴³ www.his.de/pdf/pub_fh/fh-201203.pdf

⁴⁴ i.e. an approach that combines class room teaching and distance learning.

4

Assessing the impact of tracking on higher education institutions

4.1 Tracking – more than a tool

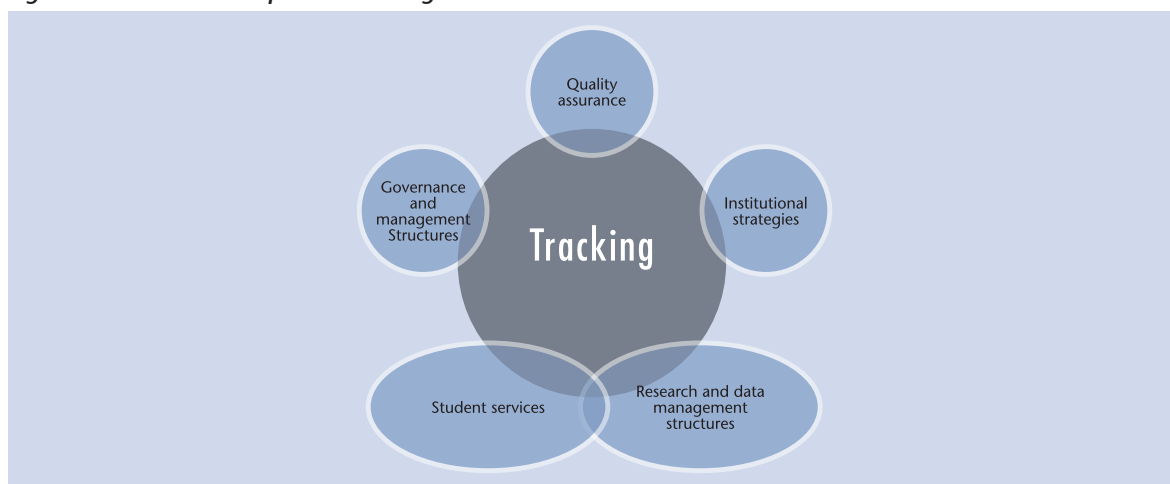
The previous chapter sought to explain how, aside from the main approaches, models and techniques involved in tracking, it is not a standard assessment tool to be rolled out at any time, in any higher education institution. Instead, it is a coordinated combination of specially adapted measures that have to be developed and attuned by institutions in line with their goals and strategies to respond more effectively to the changing demands and conditions of higher education. It enables institutions and their staff to identify the need for action and structural change in order to enhance the student experience. However, in order to be successful and sustainable, tracking initiatives require collaboration between different parts of the institution, and results need to be clearly communicated to stakeholders both within it and beyond.

This chapter will therefore assess the impact of tracking on institutions as a whole (4.2), concentrating on how tracking contributes to developing and enhancing institutional strategies (4.2.1), strengthens governance and management structures (4.2.2), the development of institutional structures for data collection and research (4.2.3) as well as student services (4.2.4), and underpins quality assurance processes (4.2.5).

Figure 8: Developing a coordinated tracking system



Figure 9: Institutional impact of tracking



The site visits to universities were valuable in providing first-hand experience of approaches to tracking, their use in different types of institutions located in different countries, and a better understanding of the wider impact of tracking on them.

4.2 How can tracking be used for institutional development?

4.2.1 Developing an integrated approach to tracking

While, as already explained, some form of tracking occurs in almost every higher education system and institution, only a few of the institutions visited have a holistic approach to tracking which tracks the entire student lifecycle – before, during and after their studies.

In adopting this approach, institutions combine administrative data with the results from different initiatives that track the progression of students and graduates, and the general student experience. These initiatives can include targeted surveys, feedback sheets or course evaluations, face-to-face contact or focus group interviews (see Chapters 2 and 3). Such an approach would also normally encompass a strategy for communicating the results, and a targeted follow-up. Tracking should lead to the enhancement of teaching and learning, and be linked to student services. Relevant results would also be made available to staff and students, prospective students, policy makers and employers.

The importance of creating an integrated and holistic approach to tracking, both within institutions and between them and the national level, was clearly promoted by the universities that had worked on developing their own approach to tracking student careers. The project revealed that there are similarities in the development of a consistent approach to doing so and other transversal issues such as internationalisation, lifelong learning or quality assurance. With reference to the observation of Middlehurst (2009) on internationalisation, three development stages can be distinguished:

- At an adaptation stage, tracking is left up to individual actors on an ad-hoc basis.
- At an organisational stage, initiatives and policies have become coordinated by a unit within the institution, such as an institutional research unit, an evaluation unit or a strategic development unit.
- At the third stage, encompassing strategies are developed and engage a much wider range of staff at different levels within the institution, and tracking initiatives are coordinated so that they complement one another. Thus tracking becomes embedded in the institutional culture.

The site visits found institutions at all three stages, with some moving very quickly through them because of external pressures for accountability and efficiency, or because the leadership had defined clear strategic goals for the use of tracking to evaluate the quality of teaching and learning or the student experience.

4.2.2 Using tracking for evidence-based institutional decision-making

Greater institutional autonomy also means that leadership needs to pay more attention to internal governance and management, and external accountability. The site visit interviews revealed a number of interlinked purposes served by tracking which can enhance internal strategic development and management and promote quality assurance. Tracking results were also important with regard to the allocation of funding by national bodies to institutions.

In many institutions tracking was seen to promote better communication and collaboration. In universities with highly independent faculties, tracking has enabled a strategic dialogue on the quality of teaching and learning between institutional leadership and individual faculties. The tracking of student retention and throughput rates, and the results of student surveys are analysed by leadership and feed into systematic follow-up measures. The same information also enables comparison and benchmarking between faculties and departments within the institution, but also with those of other institutions.

Some examples of the positive impact of such actions in improving relations between different parts of the institution and the overall institutional leadership include better information flow and improved understanding, identification of special needs, mutual learning and the spread of good practice. There is also some indication that the benefits could include movement towards defining a common core or minimum offer of support services for all students within an institution, even though routines and practice at its faculties might vary.

Some institutions indicated that they would consider tracking results for the definition of key performance indicators (KPIs), and use them for monitoring retention targets, dropout and graduate employment, and for identifying required actions such as tutoring and mentoring. However, only a few of the institutions visited have started to operate in this way, which should probably not be a surprise as the use of KPIs is far from universal⁴⁵.

The introduction of an institution-wide approach for the tracking of students and graduates seems to be a starting point for some universities in emphasising the development of a more general evidence-based institutional strategy, and in reviewing their data collection. Data collection in the universities visited was often fragmented, and confined to individual faculties which did not follow up on or circulate their results. Indeed, from the site visits it emerged that scarce resources were often used at faculty level to develop similar but incompatible approaches. This sometimes led to duplications in surveys carried out, while in other cases, groups such as international students or lifelong learning students were for the most part left out.

4.2.3 Data-rich systems and institutional research capacity

As highlighted in Chapter 2, a student administration system is at the core of most tracking operations, including surveys, and there is an ongoing trend towards overhauling and upgrading systems so that they manage the lives of students from the time of their application for higher education, to their graduation. Examples of this were evident during site visits in Belgium, France, Germany, Ireland, Spain, Sweden and the UK. However, such practice is certainly more widespread and generally on the rise.

In line with the business and service sectors, some institutions have based their administration system on CRMs⁴⁶. Typically this entails the integration of various data collection operations within the institution into a 'seamless system', which compiles student data including personal data and study records, etc., from application to graduation, but also recorded information on alumni and staff. They promise to provide highly integrated data administration, with ubiquitous access, targeted communications and versatile applications, such as a 360° view on students, easy generation of data, statistics and information for internal management purposes and transfer to both internal and external stakeholders (authorities and agencies). As in other areas, there are of course privacy and data security issues to be considered.

Another technical innovation is the use of data centres or warehouses at institutions, in which their databases and collections can be uploaded and incorporated into new databases containing both information on individual students and aggregated data for statistics and reports. The advantage of this approach is that it interrelates disparate data sources, rather than building a holistic system for data collection. As a result, the raw data can be preserved and (re-)interrogated at a later stage.

Besides their technical innovation, these measures are likely to have a much broader impact if implemented properly. Universities need professional staff capacities for data administration, and also educational research capacity to assess and reflect on their institutional development, including the enhancement of teaching and learning. In addition, a central message is not that 'more data' needs to be gathered. Some institutions surveyed said they eventually realised that they had plenty of data available but that it was probably not used. However, they did mention that it was often hard for the institutional leadership (for example) to access their administrative data quickly and conveniently if this material was collected via different offices or programmes, or at faculties or departments. Thus some institutions stated that their data warehouse was not just integrating the data sets, but contributing to better coordination of the different institutional tracking initiatives.

Data protection is a crucial issue in tracking. Institutions have to take precautions by arranging levels of authorisation for accessing personal student data. In addition, some universities indicated that legal regulations made it difficult to get a consistent overview of student careers. For instance, institutions in Belgium/Flemish

⁴⁵ Only half of more than 200 higher education institutions that took part in the survey stated that they would use KPIs (Loukkola and Zhang, 2010).

⁴⁶ For a description of CRMs in the university context, see Grant and Anderson <http://net.educause.edu/ir/library/pdf/pub5006f.pdf>

Community, Germany and Ireland mentioned that data protection regulations prevented or restricted the use of administrative data for tracking.

A common limitation encountered by institutions in several countries is that regulations prevent the identification of students from disadvantaged social and ethnic backgrounds, with the result that they cannot be tracked. This has spurred the development of parallel voluntary surveys designed to collect student background information other than age, gender and prior education. New students receive questionnaires when they register, so that institutions can develop a clearer picture and target their information concerning student support services. The response rates are usually quite high, probably because these students trust and expect much from their institutions, and often do not know whether participation in such surveys is mandatory or not.

4.2.4 Development of student services

The success of student-centred, flexible learning is highly dependent on the existence of effective student services. Tracking systems can boost them and ensure that they are efficient and targeted.

Tracking enables the identification of potentially at-risk student groups and thus an evaluation of the impact of the services required, for example by correlating the extent to which students engage in the life of the institution by using the library, attending classes, etc., with their retention and throughput rate. Tracking can also contribute to forward planning; for example surveys of applicants and new students may contribute to identifying the needs of future cohorts and improving the support offered. As demonstrated by the case studies that have formed the basis of this report, it was at times hard to draw the line between tracking progression paths, assessing the student experience and the actual support provided to students, as they go hand in hand.

A number of universities pointed out that students at risk were often the most difficult to reach and that the impact of some remedial measures was limited. Few of the students most in need of preliminary remedial courses enrolled for them before beginning their main courses, which raises questions about their motivation and incentives. The immediate impact of measures such as mentoring is also very difficult to evaluate. Nevertheless, there are some signs that tracking results in more evidence-based student support services which could both make use of the data gathered and help to collect it.

4.2.5 Quality assurance

In some respects, tracking is closely related to both internal and external QA. The European Standards and Guidelines for Quality Assurance (ESGs) refer to the development of 'institutional self-knowledge' as "the starting point for effective quality assurance" and state the need for institutions to set up information systems:

Institutions should ensure that they collect, analyse and use relevant information for the effective management of their programmes of study and other activities. (p. 7 and p. 19)

and that, in addition to the internal use of information:

Institutions should regularly publish up-to-date, impartial and objective information, both quantitative and qualitative, about the programmes and awards they are offering. (p. 19)

The ESGs provide examples by referring to the following: student progression and success rates; employability of graduates; student satisfaction with their programmes; a profile of the student population; the need for the institution to establish its own key performance indicators; and the possibility of comparison internally or with other institutions (p. 19).

Tracking of students and graduates has become a requirement of external QA in some countries. It may either be prescribed as an activity (in particular, the tracking of graduates) or implicitly through the requirement to provide certain information and data. It could either – as is usually the case in accreditation schemes – comprise desirable procedures and standards (such as the time taken to obtain a degree, throughput rates, employment rates of graduates within a specified period after graduation, and student feedback on the quality of study programmes and facilities), or it could leave it to the institution to develop ways of demonstrating its quality.

Tracking, however, should not be limited to the fulfilment of external QA requirements. It should also be instrumental in internal QA, as it generates information and data useful for its systems and processes. Tracking can be instrumental in identifying the root causes of problems and the conditions for enhancing quality. They might include combined analysis of data on student entrance qualifications, course evaluations, and provision of a basis for discussion between academic staff, student services and QA staff. Similarly, tracking can help in analysing the relevance of institutional learning provision for employment.

The site visits revealed examples of different approaches to the linking of tracking with QA:

- Tracking was used to establish indicators for quality management. The quality management system ensures that the collected information is used in a systematic way and that follow-up measures are implemented.
- Tracking student data (statistics on retention and throughput rates) is used as the basis for a quality dialogue on teaching and learning between the institutional leadership and the leadership of the faculties. The information collected from different tracking activities was combined and used in a circular quality assurance system in which it is systematised and follow-up measures that can be monitored are introduced. The philosophy behind the quality dialogues is 'How do you know?' and 'How do you act?'
- Tracking at institutional level is linked with participation in national and international accreditation schemes, which requires (for example) the provision of information on the employment situation of graduates (including the transition period between graduation and entry into the labour market, and occupational data).

Thus while tracking can and should contribute to QA, it is not identical with it, and not necessarily linked explicitly to the institutional QA functions. Tracking is one of many instruments available to ensure and enhance quality. The overlap between the two functions depends upon:

- How the institution defines both tracking and QA. If both are seen as two dimensions of control or its opposite, enhancement, then there may be overlap between the two functions. If tracking is used for enhancement purposes and QA as a controlling process (or vice versa) then tracking would be used for different purposes in different parts of the institution.
- The scope of tracking as opposed to that of QA: several institutions are using tracking for QA purposes. Beyond providing evidence for internal or external QA reports, it appears to be closely linked to governance and strategic management, while QA is often focused on the evaluation of study programmes.

Interestingly, among the universities visited, there was no case in which the QA office was in charge of tracking. However this may have to do with the different professional abilities needed for the two functions. Also significant is the fact that, at many institutions, QA has become a task for the entire institution, with the QA office in a supporting and coordinating role including its activity in preparing for external QA.

Regardless of how tracking is approached, institutions need to establish explicit feedback loops, which would ensure systematic use of the results of tracking and their contextualisation. The latter is important with regard to overall institutional strategic goals, but also in preventing tracking measures from leading to simplistic conclusions, which could do more harm than good.

4.3 Guidelines for the development of institutional approaches to tracking

The following guidelines are intended to help institutions to develop and implement a comprehensive approach to tracking:

1. Establish a coordinated and appropriate set of tracking measures, combining different approaches (analysis of administrative data, census or panel surveys, feedback questionnaires and focus groups, etc.). It should be 'fit for purpose', and collect only essential data in order to avoid 'survey fatigue' among students.
2. Ensure that the tracking approach covers the entire student lifecycle, to include prospective students, active students and graduates, and that it also takes account of their backgrounds and specific needs; full-time, part-time, lifelong, mobile and international learners are mentioned here as examples of an increasingly varied student community.
3. Ensure that tracking supports the overall governance and management of the institution, and its strategic goals. It should also consider the needs and interests of centralised services, faculties and departments.
4. Assess how tracking can contribute to establishing institution-wide key performance indicators. These would typically include application rates, enrolment, retention and throughput rates, dropout, and graduation rates.
5. Consider how the tracking measures correspond to external drivers such as the demand for accountability and transparency, and to requirements for external QA and the allocation of funding.
6. Make use of already existing external approaches to tracking, rather than creating others that compete with or duplicate them. Where possible, engage together with other institutions for the improvement of external approaches.
7. Ensure the active participation and engagement of different sectors of the institution, including its academic and administrative staff, students and leadership. This is essential for the implementation of approaches to tracking, and for circulating the results and following up on them.
8. Take account of the institutional capacities and means, particularly as regards research and data management, in the development and implementation of measures, but also the analysis and presentation of results. The results of tracking do not usually indicate immediately how to act. A rigorous analysis of results should include contextual information from other sources and complementary measures, and also the validation of results, for example by discussing them in focus groups with staff and students. This should also consider lessons learned of other institutions.
9. Communicate and use the results for a variety of purposes, such as enhancing study programmes and student services, generating dialogue on strategic development between different institutional sectors and between leadership and faculties, for intra- or interinstitutional benchmarking, and in information material for students and other external stakeholders. Tracking only makes sense when the results are known and followed up on.
10. Ensure that tracking is anchored in quality assurance.

Conclusions: prospects and outlook

This study has presented the current trends across Europe regarding tracking by mapping out national and institutional practices and approaches⁴⁷. Alongside the many benefits of tracking, the study has also pointed to some of the shortcomings of current approaches such as insufficient or hasty understanding and implementation of results, their limited ability to include non-traditional and international students, or issues of data protection, all of which would require follow-up. At the same time there are also areas of potential cooperation at national and European level that would merit further elaboration such as the questions of how tracking results can be used for data collection at European level, and whether collaborative models between universities and other partners could be developed.

The following section presents a non-exhaustive list of issues that emerged from the research carried out in the course of the project. Some of these issues should be followed up on by EUA with its members and partners. Others require action from governments and national bodies, and generally would merit further investigation and discussion, at institutional, national and European level:

1. A European level discussion on tracking

With regard to the further development of the EHEA, and the European discussion on higher education learning and teaching, it would be essential to establish a shared understanding of tracking. While a comprehensive definition such as the one that has been proposed in this project for research purposes, may not be necessary, it would be helpful to consider a generic term that would cover all systematic approaches put in place by higher education systems and institutions to track students and graduates. This would also make sense from the perspective of the EU's Modernisation Agenda, and in the context of the Bologna Process, both of which advocate more and better data collection and more transparency. However any such definition should also be useful for institutions as well as for QA agencies and other stakeholders when discussing tracking or related issues.

2. Exchange of good practice

Promoting exchange of good practice between institutions as well as between national bodies and data collectors would help to improve tracking approaches but also to encourage – where appropriate and feasible – collaboration and convergence. Such collaboration could also be useful in facilitating joint national or European agreements on data collection parameters and indicators, which are under development both in the framework of EU data collection and the Bologna Process.

3. Boost the inclusiveness and international outlook of European higher education

One of the key challenges for both, higher education systems and institutions, is to ensure that tracking systems keep pace with the growing diversity of the student body and the development of flexible learning paths. Tracking offers an opportunity to enhance and demonstrate the preparedness of European higher education with regard to broadening and widening participation, and to boosting mobility and internationalisation. This is crucial given the importance attached at European level both to promoting flexible learning and increasing mobility, and given that non-traditional students are no longer a minority.

4. The impact of tracking

This project raised the question of the impact of tracking, and reported some encouraging findings with regard to enhancement of learning provision and services, and the improvement of institutional governance and management. However, it was beyond the scope of the present project to explore this in more detail. It would therefore be important to carry out a more systematic impact assessment of tracking, both at institutional and national level. Similarly, it will be vital to ensure a wide distribution and discussion of the project findings, also for a better understanding of how to develop further tracking approaches and where to allocate scarce financial and human resources. A future initiative organised among institutions could, for example, compare tracking initiatives and also assess expected and actual outcomes.

5. Shared approaches

One important question of principles is whether and how better synergies could be developed beyond the level of individual institutions, in order to combine the advantages to be derived from both institutional and national approaches to tracking. This could help institutions to make best use of limited resources, to ensure that well-designed and sustainable approaches are in place, are visible and recognised, with a relatively high response rate and good data quality. Such shared approaches could also contribute to data collection at national level, and allow for interinstitutional benchmarking and collaboration in various areas, including joint research initiatives. In addition to the common approach followed, each institution could develop complementary measures that address their own specific needs. The success of such joint ventures depends to a large extent on the quality of the respective collaborations or partnerships, how they are developed, and to what extent they respect institutional autonomy and support each institution in reaching their goals. As the report demonstrates, there is the possibility of partnering with national bodies, but also through networks of universities or with research institutions. These existing initiatives should be further investigated.

6. Risks and perils of tracking

There is a danger of overburdening tracking, e.g. through incentive funding that may have perverse effects, and fail to achieve its purpose of quality enhancement. However, without any external pressure, it may be difficult for an institution to maintain and resource tracking. Overall, there could be a danger that in those cases where tracking is obligatory it leads to tension between the national and the institutional level rather than to a common understanding and the development of collaborative approaches, as suggested above. Linking tracking more closely to quality assurance might be an appropriate solution.

There is little doubt that the increased possibilities offered by tracking will also enhance the possibilities for misuse. As soon as data is published it falls in the public domain, receives attention and can be ranked and rated. Pressure for 'transparency' is growing, but figures resulting from tracking cannot provide clear and easy answers, and have to be looked at in context and interpreted: e.g. are employment rates and salary levels related to the quality of teaching, or rather to the overall employment situation and the social background of students. This is not an argument against tracking but in its favour, because – if applied properly – it would contextualise results, and complement them with additional information, and thus contribute to explaining the complex realities behind the numbers.

There are open questions as to what are the limits of tracking, in particular given the new technological possibilities linked to mass communication and commercial media. These issues have not been addressed by this project, and are certainly not yet at the top of the agenda, at least not in Europe. A few examples, however, indicate that many of the techniques applied by the consumer industry are principally also being applied by or to universities: e.g. some institutions are experimenting with 'electronic advisory tools' which propose courses on the basis of historic data of other students with a similar profile⁴⁸. Student performance and study habits can be tracked via their computer access, and their electronic student cards, for example.

⁴⁸ Parry 2012.

Thus, the final chapter on tracking most certainly still has to be written, given the fast development of and trends in data collection and management, the growing use of social media, and the increasing role that data use and data protection will play in the future.

While the frontline was traditionally between the individual on the one side and the state and institutions on the other side, commercial enterprises that draw on voluntary data provision are playing an increasingly important role. The report considered mainly tracking initiatives conducted by national bodies and universities themselves. However, there are a few private providers that started offering their services. This is an issue that needs careful monitoring with regard to the consequences (e.g. regarding ownership of data, increasing dependency of the institution on external services and cost implications). It is worth noting that while the focus of the project was on Europe there were occasional examples both of cutting-edge technical developments and new business models originating in the US, and also words of warning. These initiatives are not yet widespread in Europe as European higher education remains in the first instance a public responsibility as does its funding.

As this report has tried to demonstrate, tracking is not only about numbers and factual information, but relates to the many issues that are vital for higher education at institutional and policy level; it also raises the question of which indicators institutions and policy makers should be considering. From this perspective it is to be very much hoped that the results presented here will contribute to a broad European debate on the issue, and stimulate collaborative action between institutions and between public authorities and institutions ultimately in the interests of improving the educational experience of present and future cohorts of students.

Factsheets

The following factsheets aim to provide a brief overview of the main tracking initiatives, which are usually national or at least widespread throughout the country concerned, and their key purposes.

The overview is not exhaustive and only presents a snapshot. Furthermore, the factsheets reflect the situation in 2011/12, and in many places changes are on the way. Even during the preparation of these sheets, the project team was confronted with new data overruling information received only a few months earlier.

Generally, the factsheets have been sent for verification to the national rectors' conference in each country. Where this was not possible, other experts have been consulted⁴⁹.

The following categories have been used to classify the aims of tracking:

- institutional or national quality assurance (QA);
- benchmarking performance/ranking (*benchmarking*);
- administrative and statistical purposes (*administration & statistics*);
- providing information for current and prospective students and counselling (*information & counselling*);
- allocation of resources to higher education institutions (by national bodies) and within higher education institutions (by the institution itself) (*resource allocation*);
- supporting policy planning and the design of higher education policy (*policy planning*).

6.1 Overview of national-level tracking initiatives and their purposes

The following table lists some of the national-level tracking initiatives and their main purposes. They are described in more detail in Section 6.2.

Country	Initiative	Main tracking purposes					
		Institutional or national quality assurance (QA)	Benchmarking performance/ranking (benchmarking)	Administrative and statistical purposes (administration & statistics)	Providing information for current and prospective students and counselling (information & counselling)	Allocation of resources to higher education institutions (resource allocation)	Supporting policy planning and the design of HE policy (policy planning)
Austria	Student Social Survey			X			X
Belgium/Flemish Community	Databank Hoger Onderwijs (DHO)			X		X	
Czech Republic	Associated Student Information Register (SIMS)			X		X	
Czech Republic	Education Policy Centre, Charles University in Prague (EPC)	X		X		X	X
Denmark	STADS	X		X			
Denmark	Database at Statistics Denmark	X		X	X		X
Denmark	Danish University and Property Agency	X	X				X
Denmark	Database at Universities Denmark		X				X
Denmark	Danish Confederation of Professional Associations				X		X

⁴⁹ The national ministries in Bulgaria and Liechtenstein have confirmed the information provided in the factsheets.

Country	Initiative	Main tracking purposes					
		Institutional or national quality assurance (QA)	Benchmarking performance/ranking (benchmarking)	Administrative and statistical purposes (administration & statistics)	Providing information for current and prospective students and counselling (information & counselling)	Allocation of resources to higher education institutions (resource allocation)	Supporting policy planning and the design of HE policy (policy planning)
Estonia	EHIS (Eesti Hariduse Infosüsteem)			X	X	X	X
Estonia	National graduate surveys				X	X	X
Finland	Government Forecasting Exercises						X
Finland	OPALA	X			X		X
Finland	Aarresaari Network (Network of Academic Career Services)	X	X	X	X		X
Finland	YOPALA	X					X
Finland	RAKETTI				X		X
France	Panel des Bacheliers (High school graduate panel study)			X			
France	SISE (Student Tracking information System)	X		X		X	
France	'Generation' surveys			X	X		X
Germany	Studienberechtigtenpanel (School leavers panel)				X		X
Germany	Studienanfängerbefragung (Survey of first-year students)			X			
Germany	ProFile – Promovierendenpanel (PhD student panel)	X					
Germany	KOAB: Study conditions and professional success – cooperation project graduate studies	X		X	X		
Germany	HIS Graduate Panel	X		X	X		
Germany	Higher education and the transition to work, a sub-study of the National Educational Panel Study (NEPS)	X		X			X
Greece	Data collection through student information system in each HEI			X	X		
Greece	Collection of data concerning students at national level	X	X	X	X	X	
Greece	Careers Offices in all HEIs				X		X
Greece	Initiatives for graduate tracking at national level		X		X		X
Greece	Graduate surveys		X		X		X
Hungary	Career Tracking Program (CTP)	X		X			X
Hungary	Higher Education Information System (HEIS)			X			
Ireland	Student Record System (National)					X	X
Ireland	First Destination Report (FDR)						X
Ireland	Irish Universities Study			X			X
Ireland	Secondary Analysis of Quarterly National Household Survey			X			
Italy	ISTAT survey on the educational and work experiences of leavers of upper secondary education	X		X	X		

Country	Initiative	Main tracking purposes					
		Institutional or national quality assurance (QA)	Benchmarking performance/ranking (benchmarking)	Administrative and statistical purposes (administration & statistics)	Providing information for current and prospective students and counselling (information & counselling)	Allocation of resources to higher education institutions (resource allocation)	Supporting policy planning and the design of HE policy (policy planning)
Italy	STELLA graduate surveys			X	X		X
Italy	AlmaLaurea	X		X		X	
Lithuania	Register of Students	X		X		X	X
Lithuania	Graduate surveys	X					
Netherlands	CRIHO Central Registration Attendees Higher Education			X		X	X
Netherlands	1cijferHO - One number for higher education		X	X	X		X
Netherlands	WO Monitor and HBO Monitor	X	X		X		X
Norway	United Student System (FS)	X		X	X		
Norway	National register at Statistics Norway			X			
Norway	National graduate survey from Nordic Institute for Studies in Innovation, Research and Education (NIFU)				X		X
Norway	Database for Statistics on Higher Education (DBH)	X		X			X
Norway	Student plans	X	X		X		X
Norway	Study on dropout rates and study progression			X			X
Romania	University Graduates and Labour Market Tracer study	X	X				X
Spain	UNeix database				X	X	
Spain	Los procesos de inserción laboral de los titulados universitarios en España	X			X		
Spain	Observatorio de Inserción Laboral de los Jóvenes				X		
Sweden	LADOK (Lokalt Adb-baserat-DOKumentations-system)			X	X		
Sweden	NU-statistik database	X	X	X	X		X
Sweden	National higher Education agency (HSV) annual reports			X	X		X
Sweden	The Swedish National Audit Office	X					X
Sweden	NyA database		X	X	X		
Sweden	HSV Occasional reports		X	X	X		X
UK	Student Record			X		X	X
UK	National Student Survey	X	X				
UK	Destinations of Leavers from Higher Education (DLHE)		X	X	X		X
UK	Post Grad Research Experience & Post Grad Taught Experience Surveys (PRES & PTES)	X	X				
UK	Futuretrack						X
UK	On Track				X		X
UK	UK Graduate Careers Survey			X			X

6.2 Country factsheets

Austria

The conditions for student and graduate tracking in Austria are quite favourable. All Austrian universities collect administrative data on their students and report the information to public authorities dealing with education statistics. Matriculation numbers are assigned at national level, facilitating the tracking of students through programmes and institutions. In contrast to most other countries, higher education institutions (HEIs) have the possibility of linking – in anonymous form – administrative data on their students and graduates to social security data, which allows them to analyse the educational and professional career of their graduates.

In addition, many HEIs carry out independent graduate surveys. The universities of applied sciences appear to be especially active in this respect. Beyond these communalities, institutional approaches, in particular for student tracking, seem to vary greatly.

There have been sporadic efforts to track graduates at national level. In 2009/10, a one-time national graduate survey was conducted. Since 1973 the Student Social Survey has provided information on graduates. Yet no initiatives at national level aim specifically to track students. Only the Student Social Survey contains several items which aim to portray student courses.

Student Social Survey	Focus Students	Main purpose(s)
<p>A Student Social Survey has been conducted in Austria since 1973. Since 1999 it has been carried out by the Institute for Advanced Studies in Vienna (Institut für Höhere Studien, IHS). The main purpose of the Student Social Survey is to gain insight into the current position of Austrian students as regards their housing, financial situation, living costs, total period of study, employment and international mobility. Since 2009, the survey has been based on a full sample of all students enrolled at a public university, a university of applied sciences or a university of education. The survey is implemented at national level; however, conclusions can also be drawn at institutional and even departmental level. Higher education institutions can request special reports focusing on themselves, but reportedly rarely take advantage of this possibility. The Student Social Survey was not created to follow the progression paths of students during their studies, but it is the only initiative at national level that allows tracking of students to some extent.</p>		<p><i>policy planning administration & statistics</i></p>

ARUFA graduate survey	Focus Graduates	Main purpose(s)
<p>In 2009/10, the Austrian Ministry for Science and Research (Bundesministerium für Wissenschaft und Forschung, bm.w_f) commissioned the German International Centre for Higher Education Research Kassel (Internationales Zentrum für Hochschulforschung INCHER Kassel) and the Department of Sociology at the Alpen-Adria Universität Klagenfurt to conduct a national graduate survey. The study analyses the job situation of graduates of universities and universities of applied sciences (e.g. employment situation at the time of the survey, employment and coherence between studies and employment) and additionally encompasses different aspects of the graduates' course of education, personal characteristics (e.g. sociodemographic background) and open questions related to studies and the higher education institution. The study was conducted once and it is not currently planned to develop it into a regular survey. The overall aim of the survey is to get an overview of the Austrian graduates' educational and professional progression paths. It cannot be determined how the results are actually being used.</p>		<p><i>n/a</i></p>

Links/Further Reading	
<p>Student Social Survey (German): ARUFA:</p>	<p>ww2.sozialerhebung.at/Uebersicht/ www.incher.uni-kassel.de/content/view/243/85/lang,english/</p>

Belgium

In Belgium, responsibility for higher education lies with the Flemish and French Communities. As the federal state assumes no responsibility for it, there are no national tracking initiatives. Neither is there any cooperation regarding such initiatives, or any exchange of higher education data between the Communities. Tracking in Belgium thus occurs at Community and institutional level. In both Communities the focus is clearly on student tracking. Graduate tracking has started recently at institutional level, but is still undergoing development.

Students experience a significant challenge in successfully completing their first year in higher education. The recent development of more flexible higher education programmes in the Flemish Community as a result of the Bologna reforms makes it harder to identify underperforming students at an early stage. Dropout is a problem, as almost one in five university students (18%) discontinue their courses. The majority of them switch to a study programme in professionally-oriented university colleges. Those who pursue academic studies often transfer to other academic programmes (with 55% of the student population staying at university). Thus tracking focuses primarily on the success rate of first-year students rather than on graduates. Recent legislation makes it compulsory for higher education institutions (HEIs) in the Flemish Community to track their students' progress (especially in relation to the first-year failure/success rate). But the HEIs are free to develop the type of tracking instruments that allow them to monitor study progress. Furthermore, the Vlaamse Interuniversitaire Raad (VLIR) organises surveys on the quality of individual academic disciplines and publishes the results. In order to obtain accreditation for study courses and for quality assessment and evaluation, universities provide the VLIR with data concerning the progress of their students, as well as their support services and graduates.

In the French Community of Belgium, tracking initiatives are less developed than in the Flemish Community. The Observatoire de l'Enseignement Supérieur produces reports, analyses the data collected at institutional level, and is planning to provide tracking data in the future. At institutional level, no common practice exists but single universities do regularly collect tracking data on their students, and most universities organise counselling and monitoring activities that cover all students and disciplines. In addition, the Conseil des Recteurs (CREF) collects data from universities and provides them with an overall picture of higher education in the French Community. The Quality Assurance Agency for the French Community (AEQES) also carries out evaluations of higher education courses and study programmes, which require tracking-related data, such as student success rates, graduation rates and graduate employment.

Databank Hoger Onderwijs (DHO)	Focus Students	Main purpose(s)
<p>The Flemish Community Ministry for Education and Training operates the DHO database for which all universities annually collect data related to the progress of all individual students. Data collection is based on the Belgian ID card, which makes it difficult to track foreign students. The data is available to the Flemish Community government at the level of individual students. Universities have access to their own data, a selection of which is made public. The main purpose of this database is to assess the academic attainment of students in determining the 'primary budget' that universities receive from the Flemish Community and which covers the major part of their educational staff and operating costs. By means of this database, the Community can also correlate the results of students at secondary school with their choice of studies, their destination and their credit point average per semester.</p>		<p><i>resource allocation administration & statistics</i></p>

Links/Further Reading

Vlaamse Interuniversitaire Raad Conseil des Recteurs (CREF) Databank Hoger Onderwijs (DHO) L'Observatoire de l'enseignement supérieur	www.vlir.be/ www.cref.be/ www.ond.vlaanderen.be/hogeronderwijs/databank/ www.oes.cfwb.be/
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Bulgaria

Initiatives for the tracking of students and graduates are still being developed in Bulgaria. At national level, administrative student data is collected by several bodies such as the Ministry of Youth, Education and Science, the National Statistics Institute and the National Evaluation and Accreditation Agency (NEAA). This information is, however, not used for tracking purposes. While all higher education institutions collect information on their students, its use for tracking purposes varies from one institution to the next.

A national plan to track graduate progression paths after graduation has not yet been implemented. However, for purposes of ranking, the Ministry of Youth, Education and Science analyses the unemployment rate of young graduates and the percentage of permanently employed graduates working in the professional field from which they graduated. The Bulgarian University Ranking System was implemented in 2010. The 2012 updated version contains information on 511 accredited universities offering education in a variety of majors, classified into 52 professional fields. The system is designed to help users of education services to find comparative information on universities in Bulgaria. As user priorities and interests will vary greatly, the system provides for rankings of different scope and type in each professional field.

Most higher education institutions conduct some kind of graduate tracking, as the accreditation criteria of the NEAA require universities to track the progression paths of their graduates. To gain accreditation, there must be a system “to follow up on alumni’s professional realization” (NEAA criteria). How the universities fulfil this requirement varies.

Links/Further Reading

Bulgarian University Ranking System

<http://rsvu.mon.bg/>

Cyprus

Neither student nor graduate progression paths are tracked at national level in Cyprus. However, the Statistical Service of Cyprus collects information administratively on the Cypriot higher education system. The data is annually published in a report on the system and contains information such as the number of students and graduates, the number of new entrants, the level of education, age, gender, field of study, participation in the Erasmus Programme, type of institution, and community/religious group. Developments are monitored through the comparison of cohorts, but the data is not used for tracking in the narrow sense.

The majority of higher education institutions maintain a student register but its use for tracking purposes varies from one institution to another.

While most higher education institutions conduct their own graduate surveys, no overarching approach can be identified.

Czech Republic

In the Czech Republic, both student and graduate tracking takes place at national level. The Ministry of Education, Youth and Sports (MoE) collects student data as part of its Associated Student Information Register (SIMS). The MoE Strategic Plan 2011-2015 calls for the evaluation of data concerning the employability of higher education graduates. The overviews, which are required on the national situation as regards the transition of graduates from education to work and their progress on the labour market, are produced by the Education Policy Centre (EPC) of the Faculty of Education at Charles University in Prague. Also based on the MoE Strategic Plan, the data on graduate employability has since 2011 been included in the indicators for budgetary purposes, on all types of higher education programme at all degree levels. Some universities also carry out their own tracking activities, often at faculty or programme level, which cover their students or graduates.

Associated Student Information Register (SIMS)	Focus Students	Main purpose(s)
<p>The SIMS is an MoE database established by the Higher Education Act⁵⁰. Higher education institutions provide the study records of all students, which are then collected in this database by the MoE. Various statistical reports are produced (e.g. on the number of students, dropout rates, the number of alumni and foreign students) for a particular study field, faculty, university or the higher education system. The database is used mainly by the MoE for budgetary and statistical purposes.</p>		<p><i>administration & statistics resource allocation</i></p>

Education Policy Centre, Charles University in Prague (EPC): Database and projects	Focus Graduates	Main purpose(s)
<p>The transition from education into employment is systematically recorded and processed by the EPC. Twice a year, it analyses the data on unemployed graduates (two years after graduation). It compares data from jobcentres with the data on graduates from the SIMS register (covering the higher education system as a whole, as well as particular universities and faculties). There is a publicly accessible database which can produce different comparisons, such as the progression from one study cycle to the next and the employment of graduates. The EPC has also been involved in the CHEERS and REFLEX projects, and feeds data into a joint database on the educational tracks of graduates, their opinions about their HEI, transition from school to work, as well as on employment and job satisfaction. The EPC also carried out the REFLEX 2010 project which is co-funded by the Czech government and the European Social Fund and tracks the labour market entry of Czech graduates.</p>		<p><i>QA administration & statistics resource allocation policy planning</i></p>

Links/Further Reading	
<p>Ministry of Education and its strategic plan REFLEX 2010 Study (Czech) EPC database employability of graduates (Czech)</p>	<p>www.msmt.cz/file/12261 www.strediskovzdelavacipolitiky.info/default.asp?page=reflex10 www.strediskovzdelavacipolitiky.info/svp/</p>

⁵⁰ Act No. 111/1998 Coll. on Higher Education Institutions and on Amendment to other Acts.

Denmark

In Denmark the tracking of students is carried out by government agencies as well as higher education institutions. The latter are able to track the progress of students by means of administrative systems. From 2013 all higher education institutions will use the same administrative system (STADS). Furthermore, they carry out student and graduate surveys for several purposes including quality assurance and accreditation. At national level, several government agencies and interest groups carry out tracking of students and graduates primarily through the use of information from the national statistical database (Statistics Denmark).

STADS	Focus Students	Main purpose(s)
STADS is an administrative system that enables HEIs to gather and update information on students and their progress. The system also enables students to follow their own progress and sign up for classes and exams, etc. Among other things, the system is used to identify students at risk of dropping out and to take preventive action.		administration & statistics QA
Database at Statistics Denmark	Focus Students	Main purpose(s)
All HEIs are obliged to transmit information on students and their progress to the national statistics agency, where the information is combined with other information on the individual students identified by their social security number. The information is used for reports from Statistics Denmark but also by other agencies, in particular the Danish University and Property Agency.		administration & statistics information & counselling QA, policy planning
Danish University and Property Agency	Focus Students and Graduates	Main purpose(s)
This agency collects information on student enrolment and dropout rates as well as graduate employment. The information is used for policy planning, benchmarking and promoting transparency in the education system. Higher education institutions use the information on graduate employment for accreditation purposes.		QA benchmarking policy planning
Database at Universities Denmark	Focus Student	Main purpose(s)
The Danish universities are organised in Universities Denmark. The organisation collects information from its members on student dropout and completion rates. The information is maintained in a database and used for policy planning and transparency.		benchmarking policy planning
Institutional graduate surveys	Focus Graduates	Main purpose(s)
HEIs all carry out surveys to track their graduates. There is no national survey but sometimes several HEIs cooperate. The surveys are primarily used for quality assurance and improving curricula.		QA
Danish Confederation of Professional Associations	Focus Graduates	Main purpose(s)
The confederation collects and publishes employment numbers for graduates using information from trade unions. The information is used for public debate, e.g. highlighting problems and progress in graduate employability.		information & counselling policy planning

Links/Further Reading

The Danish University and Property Agency Universities Denmark Statistics Denmark Danish Confederation of Professional Associations	www.ubst.dk/en www.dkuni.dk www.dst.dk/en www.ac.dk
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Estonia

Estonia has an elaborate system of student tracking that allows the tracking of individual students at the level of each higher education institution, or its faculties or departments, and at national level. The student information systems at HEIs feed into the national database, Eesti Hariduse Infosüsteem (EHIS), which covers all students. The combination of EHIS with other registers, such as the Estonian Tax and Customs Board database, enables the tracking of graduate income levels and other job-related variables. Such data exchanges have been carried out several times, but they are not (yet) a regular process. EHIS is therefore mainly used for student tracking, whereas graduate tracking is mostly done by surveys. National graduate surveys have been undertaken three times (in 2005, 2006 and 2009). Besides these national initiatives, individual HEIs (or parts of them) have conducted graduate surveys.

EHIS (Eesti Hariduse Infosüsteem)	Focus Students at all levels (including school)	Main purpose(s)
<p>All Estonian HEIs are obliged to transfer data from their student information systems to the EHIS. The EHIS is centrally run and funded by the Ministry of Education and Research. EHIS was implemented in 2005 and collects data on virtually all aspects of the education system. It thus covers all levels of the system from primary to higher education and all kinds of education, including formal education, vocational education and youth education. It contains information on the people (schoolchildren, students and staff) and the institutions (schools and HEIs, etc.) associated with education, as well as on the curriculum and qualifications awarded. EHIS thus contains information on the progress of students at all levels and in all programmes, and enables detailed tracking of their progression paths. The scope and type of data to be provided are regulated by law.</p>		<p><i>administration & statistics resource allocation policy planning information & counselling</i></p>

National graduate surveys	Focus Graduates	Main purpose(s)
<p>National graduate surveys were carried out in Estonia in 2005, 2006 and 2009. The 2005 and 2006 graduate surveys were conducted by the participating universities in cooperation with the Ministry of Education and Research and funded by the European Social Fund (ESF). The 2009 survey was conducted by the University of Tartu. The ministry was involved in the assessment of the project proposal. The project was funded by the PRIMUS Programme which is again financed by the ESF and administered by the Archimedes Foundation, an independent body established by the Estonian government in 1997. The national surveys targeted all graduates from the HEIs involved. All surveys covered information on graduate employment characteristics, as well as on evaluation of different aspects of higher education provision (e.g. the curriculum, counselling, etc.).</p>		<p><i>policy planning administration & statistics information & counselling</i></p>

Links/Further Reading

EHIS (Estonian) National graduate survey 2009 (results)	www.ehis.ee/ www.ace-economics.fi/kuvat/Eamets.pdf
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Finland

The Ministry of Education and Culture, in cooperation with the Finnish National Board of Education and Statistics Finland, produces statistics, evaluations and indicators for education on the entire educational system on an annual basis. A central student application and registration system covers both universities and universities of applied sciences. The aim of the reporting services is to support educational planning and decision-making related to education and training at both local and national level.

Statistics Finland executes the nationwide data collection on students and graduates for both the universities and the universities of applied sciences, and provides official statistics and international data. Statistics Finland bases its database on information collected from the student registers of universities and universities of applied sciences. This information is collected partly for statistical purposes and partly for the educational forward planning exercise that the Ministry of Education and Culture carries out.

The data collection systems generate data, for example on applications, new and enrolled students, exams passed, subject choices, employment and continued studies, and education costs, as well as on the educational and age structures of the population.

The Ministry of Education and Culture and Finnish National Board of Education together are developing a new reporting system for statistics called 'Vipunen' that should be in operation in 2012. The new system will cover statistics from preschool to higher education.

In general, Finnish universities and universities of applied sciences carry out two types of survey related to tracking. The first is a survey based on questionnaires sent to students after their first, third and/or fifth year. It mainly focuses on the quality of their experience. The second type of survey is the tracking of Master's degree holders five years after their graduation. These surveys are designed at institutional level and carried out on a yearly basis. The results are used to improve teaching and learning, and in connection with quality enhancement. The two higher education sectors have different traditions and practices when it comes to data collection, which may converge in the future.

The Aarresaari Network (Network for Academic Career Services) has developed graduate tracking and career follow-up that can be used for benchmarking. The network offers information for university students, graduates and employers, as well as statistics for its member universities. Another focus of the network is to facilitate the 'building of bridges' between students and employers. The Network has expanded over the years and now includes most Finnish universities.

The universities of applied sciences have had a feedback system (called OPALA) since the 1990s. The OPALA survey gathers information especially on the employment of graduates. For the university sector, a national student feedback system known as YOPALA for tracking student experience and the views of students on their learning outcomes is to be fully developed by 2015.

A scheme to create a national information system called RAKETTI has also been launched by the Ministry of Education and Culture.

Government Forecasting Exercises	Focus Students and Graduates	Main purpose(s)
The Ministry of Education and Culture makes forecasts about the number of expected university graduates, on the basis of information from Statistics Finland and the Finnish National Board of Education. The forecast is carried out at the beginning of a new term of government approximately every four years.		<i>policy planning</i>

OPALA	Focus Students	Main purpose(s)
OPALA is a joint student feedback system for universities of applied sciences, which is administered by the Rectors' Conference of Finnish Universities of Applied Sciences (ARENE) and the Ministry of Education and Culture. It has been in use for many years. With the OPALA questionnaire, real-time information is gathered on the employment of graduates from the universities of applied sciences, on educational performance and on student opinions about the practical placements. The Ministry of Education and Culture takes advantage of the student feedback in planning education and in evaluating it, comparing universities of applied sciences and different educational fields. OPALA also includes elements of tracking graduate entrance to the labour market.		<i>policy planning QA information & counselling</i>

Aarresaari Network (Network of Academic Career Services)	Focus Graduates	Main purpose(s)
<p>The Academic Career Service Network is a national network of 19 Finnish universities, which produces a nationwide career and employment survey with both nationwide and separate institutional results that can be related back to programme level. It provides information about the type of degree, satisfaction with the education received, the entry of graduates into employment or another type of education, their current situation on the labour market and their career development, but no personal information other than age and gender. It reveals details about job characteristics and job satisfaction and the usefulness of the degree. The survey has a bottom-up approach, and is being used by institutional leadership as well as student information services.</p>		<p><i>policy planning administration & statistics information & counselling benchmarking QA</i></p>

YOPALA	Focus Students	Main purpose(s)
<p>A national student feedback system for universities (YOPALA) is being prepared by Universities Finland (UNIFI). The outcome will be a questionnaire that maps out students' views on their learning outcomes and study satisfaction. The results of the YOPALA survey will be used by universities to improve the quality of teaching and learning. The goal is to have the system in place by 2015. At that point, the revised funding model for universities will allocate 3% of their core funding on the basis of their feedback. UNIFI is thus also developing mechanisms by which the results of the survey can be converted into an indicator for use in the funding formula.</p>		<p><i>QA policy planning</i></p>

RAKETTI	Focus Students	Main purpose(s)
<p>Launched by the Ministry of Education and Culture, the RAKETTI project seeks to improve the quality, compatibility, and usability of information and IT solutions in the steering and monitoring of higher education and in the management of higher education institutions. The project consists of three sub-projects, one of which seeks to increase collaboration among Finnish HEIs in study administration and related information systems. Together, the Ministry and HEIs are defining a joint architecture and harmonising the concepts to be used. New student information systems could be based on this work. It is too early to predict what the outcome of the project will be in terms of tracking, but one of the expected results is that it will be possible to track student progression paths. A common system architecture in all Finnish HEIs would ensure comparable data and could guarantee data exchange between the different databases and systems.</p>		<p><i>policy planning information & counselling</i></p>

Links/Further Reading	
Central application database	<p>www.yliopistohaku.fi/yshjHakija/jsp/aloitussivu.jsf www.universityadmissions.fi/ www.admissions.fi/vierashaku/prod_index.html</p>
Aarresaari Network	<p>http://aarresaari.net/english/index.htm</p>
OPALA	<p>https://opala.pkamk.fi/main.do</p>
RAKETTI	<p>http://raketti.csc.fi/en/opi</p>
YOPALA	<p>http://www.rectors-council.helsinki.fi/english/organisation_and_activities/working_groups.html</p>

France

In the French higher education system, many different approaches to tracking the progression paths of students and graduates exist at national, regional and institutional level. The most extensive action aiming to track students is the national Student Tracking Information System (Système d'Information sur le Suivi de l'Étudiant, SISE). This is commissioned by the Ministry of Higher Education and Research and the University Monitoring Centres and implemented at institutional level. In SISE, the administrative data which higher education institutions are obliged to provide is aggregated and analysed at national level. The University Monitoring Centres, (Observatoires de la Vie Etudiante, OVEs), are organisations within universities which analyse administrative data and conduct student surveys. They exist at almost all French universities but vary greatly. Several regional student and graduate tracking initiatives also exist, as well as instruments for specific types of institutions, such as the universities of technology (see below) or the grandes écoles.

Most French tracking initiatives focus on the transition of graduates into the labour market. A focal point is the comparison of the labour market entry of graduates from different educational levels, such as Master's degrees, the licence professionnelle (professional degree) or the university degree in technology, on which there are several national surveys. The majority of French HEIs conduct graduate studies, either under national or regional systems or a wide variety of other initiatives.

Panel des Bacheliers (school leaver panel study)	Focus Entry of school leavers into higher education	Main purpose(s)
The Division for Information Systems and Statistics (Systèmes d'Information et des Études Statistiques, SIES) has undertaken a regular national panel survey of French school leavers, which has been conducted to date in 1996, 2002 and 2008. The survey follows the progression path of school leavers into the higher education system or the labour market. The latest survey (2008) was commissioned by the Ministry of Higher Education and Research (MESR). School leavers are surveyed annually up to the point at which they either leave the higher education system, or receive a degree (ISCED 5A or 5B) at a level corresponding to five years after the 'baccalauréat'. The study covers their current situation, personal characteristics (e.g. age, sex, socioeconomic background, migration background, prior education and family situation), study course, study satisfaction and satisfaction with information services.		<i>administration & statistics</i>
SISE (Student Tracking Information System)	Focus First-year students	Main purpose(s)
In 1994, the Ministry of Higher Education and Research issued a decree on the creation of a national system of automated processing of personal data, named SISE. The SISE holds administrative data on the personal background and circumstances of students, as well as information on their prior education and courses of study. It provides for detailed study of the efficiency of the post-secondary education system, with respect to different student cohorts, different subjects and different types of institution. It is used to evaluate post-secondary educational programmes, and for the allocation of funding. The data is provided by the universities, collected and aggregated by the ministry and analysed and published by a ministerial department known as the Assessment, Prospects and Performance Directorate (DEPP).		<i>administration & statistics QA resource allocation</i>
'Generation' surveys	Focus People leaving the education system	Main purpose(s)
Since 1998, the Centre for Study and Research on Qualifications (CEREQ) has carried out a survey of all people who have left the vocational and educational system in the preceding three years, irrespective of their level and type of education. Every third year is surveyed and subsumed under the title 'Generation'. Comparable data now exists for Generation 1998, Generation 2001, Generation 2004 and Generation 2007. Participants report retrospectively on their professional and personal situation. More detailed information on their first job and all jobs they had during the survey period is collected by guided telephone interviews. Some generations are questioned again after five, seven or ten years. Regions and ministries can commission an extension of the survey. The results are used by many different institutions. In addition, there are enquiries from different economic branches and different regional administrations. The Ministry of Education and Research uses the data to determine education policy.		<i>administration & statistics policy planning information & counselling</i>

Graduate surveys of the Ministry of Higher Education and Research	Focus Careers of professional or technology degree holders	Main purpose(s)
<p>The Ministry of Higher Education and Research implemented two national graduate surveys investigating the progression paths of graduates with a professional degree (licence professionnelle) or with a university degree in technology (diplôme universitaire de technologie). Since 2007, a survey of Master's graduates has also been carried out. The three surveys have a similar questionnaire and identical methods are employed. They are conducted by the Observatoire de l'insertion professionnelle within universities. Universities which have developed tracking initiatives in recent years, often add specific items to the national surveys, which inform the particular policy of HEIs. It is also planned to implement surveys of Bachelor and doctoral graduates. Thirty months after graduation, all graduates with French nationality and a first degree in one of the surveyed categories who were not enrolled at a university in the two years after their graduation are surveyed. The basic questionnaire contains 27 questions on the current situation of the graduates and the kinds of job they hold. The results can be analysed by institution, field of study and/or subject. The surveys are an important element of programme evaluation by the national quality assurance agency, AERES.</p>		<p><i>administration & statistics</i> QA <i>policy planning information & counselling</i></p>

Links/Further Reading	
Student statistics, including 'Panel des Bacheliers'	www.education.gouv.fr/cid5498/les-etudiants.html
Ministry surveys (French)	www.enseignementsup-recherche.gouv.fr/pid24624/taux-d-insertion-professionnelle-des-etudiants.html
'Generation' surveys (CEREQ, English)	www.cereq.fr/index.php/sous-themes/Transition-to-Work-and-Occupational-Trajectories-DEEVA
National survey on the future of graduates with a technical university degree	www.iut-fr.net/formations-diplomes/insertion-professionnelle.html

Germany

Tracking of students has a long tradition in Germany. However, in contrast to other countries, the prevailing method of national student tracking is surveying. Several national panel studies for student tracking exist. Other student surveys containing information on student progress are not considered here because their main focus is not on tracking (as in the case of the Student Social Survey, or the Student Survey by the Research Group on Higher Education in Konstanz). Several national panel studies also track graduates entering the labour market, while some German states (Länder) carry out their own student or graduate studies, as in Bavaria and Saxony. At institutional level, no common approach to tracking students exists. Many institutions conduct independent surveys and studies of administrative data, as well as their own graduate surveys.

Studienberechtigtenpanel (School leavers panel)	Focus Prospective students	Main purpose(s)
<p>The Studienberechtigtenpanel is a longitudinal national study conducted by the Hochschul-Informationen-System Institute for Research on Higher Education (HIS-HF). Funded by the German Federal Ministry for Education and Research, it surveys school leavers with an upper secondary education qualification, who are thus eligible for higher education. Since 1976, 15 cohorts have been surveyed using a paper-and-pencil questionnaire. Respondents are questioned up to four times (during the final year in upper secondary education, six months after obtaining their qualification, three years after doing so, and then 10 to 20 years after doing so).</p>		<p><i>policy planning information & counselling</i></p>
Studienanfängerbefragung (Survey of first-year students)	Focus First-year students	Main purpose(s)
<p>Since 1983, HIS-HF has regularly surveyed at national level first-year students enrolled at German universities and universities of applied sciences. The survey is commissioned by the Federal Ministry of Education and Research. Biannually, first-semester students are surveyed in two rounds. In the first, they are surveyed in the middle of the first semester with a paper-and-pencil questionnaire; in the second round an online questionnaire is used. The survey targets first-time first-year students at around 70 German universities and universities of applied sciences. Its aim is to gather information on the motivations and circumstances of students underlying their choice of academic subject and higher education institution, their prior educational and subsequent professional career, and evaluation of their initial experiences during study. The results are used by HEIs and ministries.</p>		<p><i>administration & statistics</i></p>
ProFile – Promovierendenpanel (Doctoral student panel)	Focus Doctoral candidates during and after studies	Main purpose(s)
<p>ProFile is a three-phase online panel study by the Institute for Research Information and Quality Assurance (iFQ) with an annual short questionnaire during the doctorate, a second main questionnaire on its completion, and a third survey four years after graduation. Its scope is currently restricted to students either funded by specific foundations, including the German Research Foundation (DFG) and the German National Academic Foundation (Studienstiftung), or studying at one of eight currently participating HEIs. Additional institutions and funding organisations are expected to take part in the future. ProFile was implemented with a twofold purpose: for the initiating institution iFQ, it serves primarily scientific ends, while for participating institutions and foundations it is a means of evaluation and quality control.</p>		<p>QA</p>

KOAB: Study conditions and professional success – graduate research cooperation project	Focus Graduates	Main purpose(s)
<p>The Kooperationsprojekt Absolventenstudien (KOAB) is a research project in which 60 German HEIs have cooperated in the implementation and conduct of graduate studies. Coordinated by INCHER-Kassel, the project is funded by these institutions and the Federal Ministry for Education and Research. The first survey involving students who graduated in 2006 was conducted in 2008. To date, four graduate cohorts have been surveyed using either an online or paper-and-pencil questionnaire. The study is designed as a full-sample survey. Graduates are surveyed with a standardised core questionnaire which can be extended by each institution. The project aims to analyse the academic and professional career paths of graduates and, in particular, the impact of study conditions and different kinds of course on their further life and career success.</p>		<p><i>administration & statistics</i> QA <i>information & counselling</i></p>
HIS Graduate Panel	Focus Graduates	Main purpose(s)
<p>Funded by the Federal Ministry of Education and Research, HIS-HF has conducted a regular graduate survey at national level since 1989. Every fourth graduate class is surveyed with a written questionnaire using a panel design, with questionnaires one, five and ten years after graduation. The first phase (one year after graduation) focuses on the study course, study satisfaction, the skills level, transition into the labour market, characteristics of the first job and job satisfaction. In the follow-up surveys, graduates provide information on their activities since the preceding survey, an assessment of their own skills profiles and their integration into the labour market, job characteristics, further studies, personal situation and future plans.</p>		<p><i>administration & statistics</i> QA <i>information & counselling</i></p>
Higher education and the transition to work, a sub-study of the National Educational Panel Study (NEPS)	Focus Students and Graduates	Main purpose(s)
<p>The National Educational Panel Study (NEPS) is a research consortium that collects longitudinal data throughout the period from birth to mature adulthood. It thus includes the stage between entry to higher education and entry to the labour market. Commissioned and funded by the Federal Ministry of Education and Research, this study took as its initial cohort randomly selected new entrants to higher education in the 2010/11 winter term, with an additional focus on students at private higher education institutions, trainee teachers and non-traditional first-year students. During their first year, students are asked to complete a questionnaire covering, for example, study characteristics and experience with their introductory courses. Later, they are asked in yearly computer-assisted telephone interviews to provide information on their personal progression and development and their circumstances. Annual online surveys aim to gather information on their situation and experiences during studies. In addition, general and subject-specific competency tests are conducted. No results are available yet.</p>		<p><i>administration & statistics</i> QA <i>policy planning</i></p>
Links/Further Reading		
<p>Studienberechtigtenpanel (German) Survey of first-year students (2009/10, German) ProFile doctoral student panel (German) KOAB HIS Graduate panel (results 2009, German) Higher education and the transition to work</p>	<p>www.his.de/abt2/ab21/projekte/stuf015 www.his.de/pdf/pub_fh/fh-201106.pdf www.forschungsinform.de/profile/start.html http://koab.uni-kassel.de/en/ www.his.de/pdf/pub_fh/fh-201117.pdf www.neps-data.de/en-us/datacenter/studydocumentation/startingcohortstudents.aspx</p>	

Greece

While tracking of students or graduates by higher education institutions is not a legal requirement in Greece, there has been national action to stimulate HEIs to develop their own initiatives for tracking, with the result that it exists at institutional level. The development of student information systems in all HEIs is one such initiative. The rationalisation and further improvement of these information systems and their integration into a compatible system at national level is another one which is currently undertaken by the Hellenic Quality Assurance Agency. Currently, the main weakness of the institutional tracking of students is that it is used only for administrative and informational purposes, and not combined with systematic surveys.

The establishment of career offices in all Greek HEIs was another important initiative, which was guided by the Ministry of Education (MoE) and supported by the European Structural Funds in the late 1990s. Currently, the MoE is taking action specifically to develop a systematic structure inside all Greek HEIs, in order to improve the employability of graduates and strengthen the links between higher education and the labour market. The lack of related surveys is also a weakness with regard to the tracking of graduates. The only graduate survey at national level was conducted during the period between 2004 and 2006.

Data collection at institutional level through student information systems	Focus Students	Main purpose(s)
Student information systems exist in all Greek HEIs. There is not a common structure or methodology for the operation of these systems. They vary from one HEI to another but also within institutions, as they are organised at the level of individual faculties or study programmes. The systems contain data on the personal and educational background of students and on their academic progress. Generally, this data is not used at institutional level, but only to respond to external inquiries from national authorities.		<i>administration & statistics information & counselling</i>
Collection of data concerning students at national level	Focus Students	Main purpose(s)
At national level, there is no central student information system collecting information electronically from the institutional systems. However, there are two public authorities that conduct annual surveys collecting statistical data from HEIs: the Hellenic Statistical Authority (ELSTAT) and the Statistics Department of the MoE. The two surveys overlap in some respects and are conducted in parallel but independently in line with different methodologies. For this reason, discrepancies between their results are quite common. The Hellenic Quality Assurance Agency for Higher Education (HQAA) is currently taking action to establish compatible information systems in all HEIs (which will integrate the existing student information systems), in order to ensure comparability of the information and data collected, as well as compliance with the ESGs.		<i>administration & statistics information & counselling QA benchmarking resource allocation</i>
Careers Offices in all HEIs	Focus Students and Graduates	Main purpose(s)
Careers offices exist in all Greek HEIs, either as independent operational units or as part of the central administration of the institution. In both cases, the establishment of careers offices is undertaken by each individual institution. The role of the offices is to link studies with employment (a) by informing and counselling students on the opportunities the labour market offers graduates in the various study fields, and (b) by informing the labour market of the qualifications and skills that they obtain during their studies. A further role of the offices is to inform students of study opportunities at the higher levels of Master's and doctoral courses. The careers offices also deal with the tracking of graduates, but with difficulty for various reasons (including the lack of any graduate databases or systematic graduate surveys, or of any alumni tradition).		<i>information & counselling policy planning</i>

Graduate tracking at national level	Focus Students and Graduates	Main purpose(s)
<p>The MoE has recently introduced an important measure to improve the links at all HEIs between study and employment. Funded by the EU, it aims to identify and map systematically graduate employment opportunities via the careers offices, and to improve the employability of students through related activities such as oriented practical training and internships. It includes the development of a new information system, which will focus on the relationship between studies, practical training, labour market needs and employment opportunities, and is expected to strengthen institutional graduate tracking and related measures.</p>		<p><i>information & counselling policy planning benchmarking</i></p>
Graduate surveys	Focus Graduates	Main purpose(s)
<p>Only one graduate survey (2004-2006) has been conducted so far at national level in order to analyse the employment of graduates from all Greek HEIs. It was a horizontal action by their careers offices in the form of a joint research project, and not undertaken or coordinated by any national authority. The survey, which has not been repeated, involved interviews and covered all universities except three. Its target group consisted of graduates from the years 1998, 1999 and 2000. The final report of the survey was published in 2008. However, from 2005 onwards it stimulated several HEIs to organise and conduct their own surveys based on the same methodology. They too are focusing on graduates and may be conducted by the careers offices or as part of independent research.</p>		<p><i>information & counselling policy planning benchmarking</i></p>
Links/Further Reading		
<p>Ministry of Education, Lifelong Learning and Religious Affairs Hellenic Statistical Authority Hellenic Quality Assurance Agency</p>	<p>www.minedu.gov.gr www.statistics.gr www.hqaa.gr</p>	

Hungary

Graduate tracking appears to be a high priority in Hungary, as the 2005 higher education act made it compulsory at all universities and colleges. Consequently, a national graduate career tracking system involving shared approaches with higher education institutions has been established.

However, there is less emphasis on student tracking. The monitoring of student progression seems to depend essentially on centralised action by the ministry, which in turn sometimes inspires voluntary action by institutions. A national data warehouse gathers information from different sources, including a standardised student enrolment and administration system and standardised student and graduate surveys conducted by HEIs.

Career Tracking Programme (CTP)	Focus Students and Graduates	Main purpose(s)
<p>The CTP is a Hungarian government scheme under the Social Renewal Operative Programme (TAMOP) supported by the European Structural funds. Almost all Hungarian universities and colleges are involved. They survey their students and graduates using standard online questionnaires, which can be supplemented with individual questions. The results are fed into a central database.</p> <p>The survey on active students collects data on their satisfaction, education plans, further studies and international mobility, as well as socioeconomic data and information about work experience during their studies. The survey on graduates provides national agencies, universities and the general public with information about their success on the labour market, and how they apply their knowledge and skills.</p> <p>CTP has also established a continuously updated centralised career tracking database. It gathers a wide range of information about students and graduates, including pre-2009 data from other TAMOP projects. The umbrella project includes 30 sub-projects involving 50 HEIs and 80% of the national student population. The national and institutional results are available to the public. The third part of the project is the incorporation of its results into other official statistical databases (such as those on tax, social insurance and unemployment). This is carried out by Educatio Nonprofit Llc, the agency of the Ministry of National Development. Its database contains material on all domestic graduates from higher education in 2009 concerning their educational background, personal situation, type of degree, further education, income, statistical codes, type of work and employment sector, occupational status and unemployment benefits. Educatio Nonprofit Llc intends to pursue this data integration as a recurrent future activity.</p>		<p><i>policy planning administration & statistics QA</i></p>
Higher Education Information System (HEIS)	Focus Students	Main purpose(s)
<p>The HEIS is based on information provided by all higher education institutions in Hungary. It contains data from active students regarding their personal and regional background, their institution and study programme, and their academic progress. This database is continuously updated.</p>		<p><i>administration & statistics</i></p>
Links/Further Reading		
<p>Educatio Public Service non-profit company – National Higher Education Information Centre (OFIK) Graduate Career Tracking System (GCTS)</p>		<p>www.felvi.hu/for_foreigners/research http://www.felvi.hu/pub_bin/dload/DPR/DPR_GraduateCareerTrackingInHungary.pdf</p>

Iceland

Statistics Iceland, the Icelandic statistical office, has collected data on students and their employability since 1975, but no systematic tracking or analysis of the data is carried out. A few comprehensive national studies have been conducted on completion and dropout rates, but these were self-contained initiatives not carried out regularly. While Statistics Iceland does labour market surveys that include attainment in higher education, the data has not been analysed to focus specifically on graduates. The Icelandic Student Loan Fund (LÍN) is the official body that registers most information about students, including the large group who study abroad.

All higher education institutions in Iceland have their own student registry system. However, there is no legal obligation to track students in accordance with requirements other than those of the registry, and funding is unrelated to throughput or graduation rates.

The 2006 university law introduced an accreditation system run until 2012 by the Ministry of Education, Science and Culture. A new agency is now being set up but is not specifically concerned with employability or student progression rates. Current negotiations on the key indicators to be used as the basis for evaluations are based on the indicators of the European Association for Quality Assurance in Higher Education (ENQA).

Ireland

Student tracking in higher education institutions was made compulsory in universities in 2004 and in Institutes of Technology in 2007. The Student Record System (SRS) was established by the Higher Education Authority (HEA)⁵¹ enabling the tracking of students on an annual basis. All 28 HEIs (funded by the HEA) are required to record student information upon enrolment and make it available to the HEA year-on-year. The socioeconomic element of the SRS is provided by students on a voluntary basis. Traditionally they were tracked using their HEI-specific identification number, which made it difficult to track those who moved from one institution to another (external transfer students). However, the SRS now holds 70-85% of national Personal Public Service (PPS) numbers making future tracking of students easier. Among its many uses, data from the SRS determines the allocation of funding to each HEI. It is also used to track groups who traditionally did not attend third-level education. The data helps to identify students who might need extra support, or teaching practices that require improvements.

The second obligatory form of tracking is the First Destination Report (FDR). The HEA also maintains this database with the HEIs administrating the questionnaire. The FDR is conducted nine months after graduation and provides a snapshot of the graduates' situation. This information not only assists policy and planning in higher education and at national level; it also informs potential and current students of the progression paths of previous students. Additional tracking procedures are implemented at the discretion of HEIs. In some cases, they take the form of satisfaction surveys, withdrawal forms, tracking graduates beyond the FDR and tracking student use of HEI online tools (as in the case of library searches). The Irish University Association⁵² commissioned a three-year online survey in all seven universities in 2007. This Irish Universities Study used a representative sample of students to provide information on all aspects of university life. For the first time, it incorporated questions on student experience, opinion and well-being, as well as demographic and academic information.

Student Record System (SRS) (National)	Focus Registered Students	Main purpose(s)
The HEA manages the SRS. All registered students attending the 28 HEA-funded institutions are included in the SRS. Most HEI encourage students to register online. There is a 100% response rate as enrolment is mandatory. The Central Applications Office (CAO) ⁵³ provides student data to each HEI. Once the students are enrolled, the data is gathered at each HEI in the relevant department, usually by the student record or examination department, from which it is uploaded to the SRS by a given deadline. Information is given for each individual student, but data is aggregated before being published by the HEA.		<i>resource allocation policy planning</i>
First Destination Report (FDR) (National)	Focus Graduates	Main purpose(s)
The FDR is an annual survey of graduates conducted nine months after they have completed their studies. It has been compiled annually since 1982. It gives a snapshot of the labour market or further study situation of those who graduated in the previous academic year, after completing a full-time course of study. Graduates from all levels of higher education are surveyed. The survey targets graduates in employment, those seeking employment and those participating in further education. Respondents who have moved abroad are also included in the analysis. Data is gathered by the career department at an individual level in each HEI. The HEA aggregates the data and produces the First Destination Report. The HEA in turn reports to the Department of Education and Skills.		<i>policy planning</i>

⁵¹ The Higher Education Authority (HEA) is the statutory planning and policy development body for higher education and research in Ireland. There are 28 HEIs registered under the HEA, which are known as the Higher Education Institutes. The HEA has wide advisory powers throughout the third-level education sector.

⁵² The IUA is the representative body of the Heads of the Universities. Its aim is to contribute to Ireland's social, cultural and economic well-being by advancing university education and research through the development of collective policies and actions on behalf of the universities of Ireland.

⁵³ The HEIs in the Republic of Ireland have delegated to the CAO the task of processing centrally submitted applications to their first-year undergraduate courses. The participating institutions retain the function of making decisions on admissions.

Irish Universities Study (IUS) (seven universities)	Focus Students and Graduates	Main purpose(s)
<p>The IUS is a university-wide online survey of third- and fourth-level students. This three-year project enabled the development of a large web-based survey system targeted at undergraduate, postgraduate, doctoral and post-doc students and researchers in the seven Irish universities. Methods: the IUS is a web-based survey based on representative sampling.</p>		<p><i>administration & statistics policy planning</i></p>
Institutional Initiatives	Focus Students	Main purpose(s)
<p>Students who are thinking of withdrawing from an HEI are encouraged to seek support from the relevant body (in University College Cork this is the student's supervisor/course coordinator, while in Trinity College Dublin students are asked to speak to their college tutor). Support is available to students in all HEIs. When students decide to leave an HEI, they are usually asked to complete a withdrawal/de-registration form. This is a short paper-based questionnaire. There is no generic withdrawal form – each HEI has its own but the information gathered is quite similar.</p>		<p><i>administration & statistics information & counselling</i></p>
Secondary Analysis of Quarterly National Household Survey (National)	Focus Graduates	Main purpose(s)
<p>The government forecasting group, the Expert Group on Future Skills Needs, uses the Quarterly National Household Survey (QNHS) produced by the Central Statistics Office, to assess the labour market for graduates. The QNHS began in September 1997, replacing the annual April labour force survey. Its purpose is the production of quarterly labour force estimates (microdata) and occasional reports on special social topics (modules). Information is collected continuously throughout the year, with 3 000 households surveyed each week to give a total sample of 39,000 households in each quarter. Households are asked to take part in the survey for five consecutive quarters.</p>		<p><i>administration & statistics</i></p>
Links/Further Reading		
<p>Student Record System First Destinations Report Irish Universities Study Expert Group on Future Skills Needs Quarterly National Household Survey</p>	<p>www.heai.ie/en/statistics www.heai.ie/en/fdr www.iua.ie/iua-activities/studentfeedback.html www.skillsireland.ie/ www.cso.ie/en/qnhs/</p>	

Italy

The Italian National Statistics Institute (Istituto nazionale di statistica, ISTAT) conducts regular surveys to track the professional and educational development of upper secondary school leavers. The focus of tracking is on monitoring the transition to the labour market. Several instruments for tracking graduates are implemented at national level. Most Italian universities track their graduates as part of the national surveys, so individual approaches are most uncommon. The national surveys provide detailed information at university, faculty or even programme level.

At institutional level, there is no readily apparent common approach to tracking the progression paths of students during their courses.

ISTAT survey on the educational and work experiences of upper secondary school leavers	Focus Upper secondary school leavers	Main purpose(s)
<p>ISTAT conducts a regular survey at national level called 'survey on the school and work experiences of those who have left upper secondary education'. In this survey, upper secondary school leavers are questioned three years after obtaining their final school leaving qualification. The survey has been conducted every three years since 1998, and covers school leavers who enter the labour market or higher education.</p> <p>The survey is part of the system developed by ISTAT to monitor the transition from education to the labour market. Survey data is expanded with information obtained from the Ministry of Education, Universities and Research and published in an online data warehouse, as well as in the form of research reports. All this material is used for statistical purposes and student counselling. The results contribute to evaluation of the Italian education system and benchmarking of the labour market performance of school leavers and graduates. They are also used to explore the influence of social background on the educational and professional career of students and graduates.</p>		<p><i>administration & statistics information & counselling QA</i></p>
AlmaLaurea	Focus Graduates	Main purpose(s)
<p>Founded in 1994, AlmaLaurea is a nationwide information service for and about Italian university graduates, which is run by a consortium of Italian universities with the support of the Ministry of Education, Universities and Research. Graduates are monitored for five years from just before graduation. The main aim of AlmaLaurea is to contribute to the assessment of the Italian higher education system. The second aim is to facilitate the transition of graduates to the labour market by offering those seeking a job an opportunity to meet prospective employers. AlmaLaurea provides Italian and foreign employers with information on graduates with or without work experience. Its database contains administrative data from the universities (e.g. exam results, courses of study and prior education), and data provided by graduates themselves before and after graduation in the form of self-ratings and self-evaluations. Graduates are also encouraged to keep their CVs updated and asked to provide information on any further training, their employment conditions, transition into the labour market and job characteristics.</p>		<p><i>resource allocation QA administration & statistics</i></p>
STELLA graduate surveys	Focus Graduates	Main purpose(s)
<p>Introduced in 2001, the graduate and employment statistics scheme (STELLA) surveys the transition of graduates from member universities to the labour market. It also provides a platform for them to submit their CVs to potential employers who in turn can seek qualified employees. STELLA is similar to the AlmaLaurea service but has a more regional focus with at present some 10 member universities, most of them in Lombardy. The scheme aims to standardise and coordinate institutional surveys at regional level. It undertakes several studies including surveys and analysis of administrative data. Among them are an annual study of the background and qualifications of graduates from the three preceding years, a regular survey of graduates 12 to 15 months, 36 and 60 months after they qualified, and a regular survey of doctoral graduates 12 months after getting their doctorate.</p>		<p><i>administration & statistics information & counselling policy planning</i></p>

ISTAT Graduate Survey	Focus Graduates	Main purpose(s)
<p>Since 1998, ISTAT has conducted a national survey on the transition of graduates to the labour market every three years. In this survey, they are questioned three years after graduation with regard to their educational and professional careers. The survey includes information on their transition to other educational programmes. It is part of the system developed by ISTAT to monitor the transition from education to the labour market. For analytical purposes, information from the surveys is supplemented by administrative data from the Ministry of Education, Universities and Research. In 2009, all doctoral graduates in 2004 and 2006 were also surveyed. The material from the surveys is used for statistical purposes and student counselling.</p>		<p><i>administration & statistics</i> QA</p>
ANVUR/CNSVU doctorate survey	Focus Doctoral candidates during and after studies	Main purpose(s)
<p>The National Agency for the Evaluation of Universities and Research Institutes (ANVUR), known until 2010 as the National Commission for the Evaluation of the Higher Education System (CNSVU), has begun a project to assess, collect and analyse data for surveying the professional integration of doctoral graduates. Its aim is to develop a regular monitoring system at national level. At present, a pilot survey is being carried out with four universities. Almost all Italian universities have taken steps to support the doctoral survey, which seeks to evaluate course provision for doctoral students, portraying them and tracking their progression paths before and after graduation. Furthermore, it is intended to identify the potential labour market for doctoral graduates. The ultimate aim is to evaluate the impact of the reform of doctoral studies and to support the development of career paths comparable to those abroad. This goal is driven by increasing competitiveness among universities and evaluation is also seen as a means of enhancing the quality of research.</p>		<p>QA <i>policy planning administration & statistics</i></p>
Links/Further Reading		
ISTAT AlmaLaurea Stella graduate surveys (Italian) ANVUR	<p>www.istat.it/en/ www.almalaurea.it/en/ http://vulcanostella.cilea.it/ www.anvur.org/?q=en</p>	

Latvia

The progression paths of students and graduates in Latvian higher education have not yet been tracked at national level. However, higher education institutions have been legally obliged to collect administrative data on their students and graduates and report annually to the Central Statistical Bureau of Latvia (CSB) and the Ministry of Education and Science. This data includes the number of newly enrolled students (by sex, level of study programme, state budget or tuition fee, and year of birth), the total number of students (by study programme and level, sex and year of birth), and the degrees or qualifications awarded (by sex, study programme, state budget or tuition fee, and year of birth). It contains no information on the progression of students or graduates. At least some HEIs use the data to track their own students and graduates. Several universities also conduct individual surveys to follow them.

The tracking situation is currently undergoing development. Recent legislation is expected to result in changes in national and institutional tracking practices. Since August 2011, HEIs have been legally required to provide the Ministry of Education and Science with data on student progress, and on the employment and professional development of graduates over the three years following graduation.

Liechtenstein

Liechtenstein has a small higher education system consisting of just three accredited higher education institutions: the University of Liechtenstein, the International Academy of Philosophy and the Private University Liechtenstein. There is no systematic tracking of student or graduate progression paths at either institutional or national level, although administrative data is systematically collected by the National Statistical Office.

Student tracking in Liechtenstein is problematic because 90% of upper secondary school leavers move abroad to study, mainly in Switzerland and Austria. The National Statistical Office therefore collects data on students and graduates in Liechtenstein and receives data on students and graduates from Liechtenstein enrolled in Switzerland and Austria. The database contains information on all of them concerning their personal details (sex, place of residence and nationality) and study characteristics (institution attended, type of degree, subject, country and region of study). As student data received by Liechtenstein from the Swiss and Austrian statistical offices is anonymous, it cannot be used to track the progression paths of students through different HEIs or their entry to the labour market after graduation. However, the Schulamt (national office in charge of schools) and the National Statistical Office are planning to develop a national tracking system.

Lithuania

Since 2010, information on the courses of study chosen by students has been collected and processed in a central national level database called the 'Register of Students'. The data is used to track the progression paths of students during their courses.

Different independent surveys have been carried out. The government has conducted several graduate surveys as part of a plan to evaluate study programmes and to close those that do not meet set requirements. The higher education system has expanded considerably and the government wants to control and survey this expansion. A national project to create a high-quality career services management system has been implemented and funded by the European Social Fund. It will include a graduate career monitoring system. The project started in April 2010 and will run for three years. Commissioned by the Ministry of Education, it is implemented by a university consortium.

Individual universities also maintain their own student tracking databases. Several of them conduct graduate surveys but with no discernible common approach.

Register of Students	Focus Students	Main purpose(s)
<p>The Register of Students has been commissioned by Statistics Lithuania and the Ministry of Education and Science. It contains information on the prior education of students, their courses of study (e.g. course changes, dropout and final degree) and personal characteristics (e.g. sex and socioeconomic background). Data is regularly provided by higher education institutions and aggregated, analysed and circulated by Statistics Lithuania and other statistical offices. The main aim is to collect reliable and up-to-date student data for decision-making bodies. The data also enables individual higher education institutions to draw conclusions about their student population. At present, the register is still at a developmental stage.</p>		<p>administration & statistics policy planning resource allocation QA</p>

Graduate surveys	Focus Graduates	Main purpose(s)
<p>Several independent studies on graduates have been carried out by different bodies. The Ministry of Finance commissioned a study on the successful integration of university graduates into the labour market and its determinants, which lasted from May 2009 to May 2010. The Institute for Labour and Social Research carried out two studies on graduate progression paths in 2003 and 2004, both based on surveys of graduates and employers. In addition, two more specialised studies were conducted on the situation of specialists with higher education (2005/06) and law graduates in the labour market (2007/08). Here too, graduates and employers were questioned. The Public Policy and Management Institute (PPMI) carried out a study on 'Competencies of graduates of Master studies and the needs of the Lithuanian economy', commissioned by the Science Council of Lithuania. It analysed the labour market integration of students who graduated between 2001 and 2005. The PPMI conducted a second study in 2010 in which 2 500 graduates were surveyed. They were questioned about matters such as employment prospects, their opinions on the knowledge and experience gained during their studies, and their salary and career progression.</p>		<p>QA</p>

Links/Further Reading	
<p>Institute for Labour and Social Research Public Policy and Management Institute</p>	<p>www.dsti.lt/index_en.html www.vpvi.lt/en/institute/</p>

Luxembourg

The Luxembourg higher education system consists of one main institution, the University of Luxembourg. The university was founded in 2003 and incorporated four existing institutions: the University Centre of Luxembourg, the Higher Institute of Technology, the Higher Institute for Educational Studies and Research, and the Institute of Educational and Social Studies.

The University of Luxembourg has developed a regular survey to track the progression paths of its students before and during their studies, with the help of administrative data. The project was only recently implemented and is still undergoing development. The data collection is commissioned by the Vice-Rector for academic affairs and the data is supplied to the Ministry of Higher Education and Research. The university also conducts regular surveys on student satisfaction with the quality of study conditions and life in general.

The University of Luxembourg is in the process of implementing a system to survey the progression paths of its graduates. An online alumni database has been developed, and the university and the International University Institute of Luxembourg (IUIL) are jointly conducting a survey of graduates from several study programmes. Its aim is to assess their employability, with the first results expected at the end of 2012.

Several foreign universities maintain local branches in Luxembourg, but no information is currently available regarding their student or graduate tracking activities.

Malta

In accordance with the Education Act, Article 68 (1) and (2), all Maltese higher education institutions are required to collect information and provide statistics on their students to the National Commission for Higher Education (NCHE) and the National Statistical Office of Malta (NSO). The NCHE and the NSO aggregate the data and use it to publish key statistics on the size and development of Maltese higher education. Some of the data relates to study progress, including the number of entrants, the number of students per year of study, and the number of dropouts. However, there are no statistics on the progress of individual students. In terms of academic career monitoring, there is no systematic national level tracking of students.

At institutional level, the University of Malta (UoM) has implemented a system to monitor its students during their courses.

While no national instrument for tracking graduates exists, the UoM carried out surveys of its graduates in the years 2001, 2003, 2005 and 2007. As the vast majority of Maltese students are enrolled at the UoM, the surveys give a good indication of the progression of graduates in Malta (and have thus been counted as national level material for the tables and maps in this report). The UoM graduate surveys collect some of their information by investigating the activities of graduates nine months after their final examination.

Netherlands

The Dutch higher education system consists of research universities (Wetenschappelijk Onderwijs, WO) represented by the Dutch Association of Research Universities (VSNU) and universities of applied sciences (Hoger Beroeps Onderwijs, HBO) represented by the HBO-raad.

The Dutch educational system has several different databases for tracking students. They focus on students and their progression paths in higher education, student satisfaction, and the tracking of graduates as they enter the labour market.

Universities are obliged to register their students in the Central Registration of Students in Higher Education (CRIHO), a database run by the Ministry of Education, Culture and Science (OCW), and by its agency Dienst Uitvoering Onderwijs (DUO), the executive agency for education. In addition, the '1cijferHO'-database (One number for higher education) provides information about student social and educational backgrounds.

Since 2000, a national survey on student satisfaction (NSE) has provided the universities with information on this subject in a number of areas. Universities use the findings for policy planning and benchmarking and are not obliged to let their students respond to the survey. The survey is funded by the Ministry through the research agency ResearchNed.

Higher education institutions (HEIs) regularly monitor how their graduates progress to the labour market. Research universities use the WO Monitor survey, while universities of applied sciences use the HBO Monitor survey, although the questions in both surveys are similar.

Central Registration of Students in Higher Education (CRIHO)	Focus Students	Main purpose(s)
<p>CRIHO is the database which collects details on the registration of students at universities. It is used by the Ministry of Education, Culture and Science to fund HEIs on the basis of their student enrolments and for determining provisional student grants.</p> <p>Once students are registered at university, CRIHO continues to collect information on whether they continue their higher education and is thus instrumental in the award of student loans and grants. The system provides information on previous enrolment and tracks students when they move to other educational programmes. The data is then used to determine government funding to universities for student financial support.</p>		<p><i>administration & statistics</i> <i>policy planning</i> <i>resource allocation</i></p>
One number for higher education (1cijferHO)	Focus Students	Main purpose(s)
<p>Since 2005, the CRIHO database has also been the foundation for the '1cijferHO'-database (One Number Higher Education). In this latter database, the official attendance of students is registered during their progression path through higher education, regardless of whether or not they graduate. Besides containing basically the same information as CRIHO, it also holds personal data on students (including age, sex, prior education, and regional and ethnic background). The database is expanded with further information on their educational background, secondary schools, and results in the secondary school leaving examinations.</p> <p>The '1cijferHO'-database also enables the Ministry of Education, Culture and Science, the National Statistical Agency (CBS), VSNU and HBO-raad to monitor the whereabouts and backgrounds of students in higher education. The universities use the data for policy planning and benchmarking.</p>		<p><i>administration & statistics</i> <i>policy planning</i> <i>information & counselling</i> <i>benchmarking</i></p>
WO Monitor and HBO Monitor	Focus Graduates	Main purpose(s)
<p>These two graduate surveys, WO for universities and HBO for university colleges, examine the relationship between graduates and the labour market approximately one year after graduation. The surveys provide HEIs with information on the whereabouts and success of their former students. The statistical analysis of survey findings is carried out by the Research Centre for Education and the Labour Market (ROA), which also conducts surveys of school leavers at several educational levels, on the subjects of employability, and educational and job satisfaction. HEIs use the (raw) data for their own policy making and for benchmarking.</p>		<p><i>QA</i> <i>benchmarking</i> <i>information & counselling</i> <i>policy planning</i></p>
Links/Further Reading		
<p>Dienst Uitvoering Onderwijs (DUO) Centraal Bureau voor Statistiek (CBS) Research Centre for Education and the Labour Market (ROA)</p>		<p>www.duo.nl www.cbs.nl www.roat.nl</p>

Norway

Several schemes at both national and institutional level are designed to monitor the progress of Norwegian students and graduates. Many of the national initiatives are funded and commissioned by the Ministry of Education and Research and carried out by other organisations. Higher education institutions (HEIs) track their students through surveys and a shared administrative system connected to the two national government databases, the national register at Statistics Norway and the Database for Statistics on Higher Education (DBH).

United Student System (FS)	Focus Students	Main purpose(s)
With few exceptions, all Norwegian HEIs use the same study administrative system (FS). The system is used to keep up with the progress of students and their education plans. HEIs also use the system to pass on information to various governmental agencies.		<i>administration & statistics QA, information & counselling</i>
National register at Statistics Norway	Focus Students	Main purpose(s)
The national statistics agency, Statistics Norway, receives information from HEIs on the progression of students and combines it with information from the national database. The agency uses this material to publish reports and key statistics on higher education. Information in the database is also used by others involved in the tracking of students and graduates.		<i>administration & statistics</i>
National graduate survey from Nordic Institute for Studies in Innovation, Research and Education (NIFU)	Focus Graduates	Main purpose(s)
NIFU has a long history of carrying out graduate surveys in Norway and has been instrumental since 1972 in analysing the employability of Norwegian graduates. The survey concerned collects general information on employment and investigates key obstacles in job-hunting. The results are used by the Ministry of Education and Research for policy planning and by HEIs for study counselling.		<i>policy planning information & counselling</i>
Database for Statistics on Higher Education (DBH)	Focus Students	Main purpose(s)
The database contains information from HEIs on key areas of education, such as grades, student progress and completion. It is currently undergoing changes in order to improve its content and provide the Ministry of Education and Research with more adequate information. It is commissioned and funded by the Ministry.		<i>QA policy planning administration & statistics</i>
Student plans	Focus Students	Main purpose(s)
All students must prepare education plans which specify their expected educational progress. The plans are maintained in the FS and enable HEIs to monitor the expected and real progression of their students. The information is also aggregated and benchmarked at the DBH.		<i>QA, benchmarking policy planning information & counselling</i>
Study on dropout rates and study progression	Focus Students	Main purpose(s)
With funding from the Ministry, NIFU carries out a study on student progression. The study uses information taken from the database at Statistics Norway and is carried out on an ad hoc basis.		<i>administration & statistics policy planning</i>
Links/Further Reading		
National Database on Higher Education Statistics Norway Information on the United Student System (Norwegian) Information on the different NIFU initiatives		http://dbh.nsd.uib.no/omdbh/about.action www.ssb.no/utdanning_tema_en/universitet.shtml www.fs.usit.uio.no www.nifu.no/English/Pages/default.aspx

Poland

National data is collected and managed by the Central Statistical Office (GUS). As regards employability, a labour market survey (LFS) for the whole population is carried out as specified by Eurostat. Other than the internationally prompted survey, there is no systematic national data collection concerned with graduate employability. GUS intends to start collecting data systematically in the near future.

Statistical data currently collected at national level includes the number of students and graduates by university, their study profiles, age, sex and countries of origin. On the basis of the data provided annually by universities, the government publishes a book (in Polish and English) on higher education institutions and their finances. It contains information on the higher education system, including some of the data on the progression of students within the system. The same material is also used by the government for policy and strategic planning. National funding is related to student enrolments, but not so far to dropout rates or other aspects of progression. Tracking has traditionally been a bottom-up process in which, according to a 2010 research study, around one quarter of the universities carry out some kind of student and graduate tracking. The regions are responsible for conducting labour market surveys, but it is not clear whether all graduates are included.

Since the autumn of 2011, new regulations in the Law on Higher Education require all higher education institutions to collect data on the progress of their graduates into the labour market (their employment status three and five years after graduation). The effectiveness of the HEI graduate career monitoring system is to be assessed by the State Accreditation Committee as part of the institutional audit. The system is thus currently in a state of flux. It is intended to create a system which will be able to track the progression paths of students and graduates, and also track students from elementary and secondary education into higher education.

Portugal

There is no national policy for tracking students in Portugal. However, higher education institutions (HEIs) are requested to send detailed information on their students and graduates to the Ministry for Education and Science and to the national quality assurance agency (A3ES). Each institution enters the data through a national information collection system. Data is not collected at institutional level but at programme level. Data analysis also occurs at programme level and, more specifically, in the pedagogical councils with the aim of improving studies in line with responses to student questionnaires (for programme and teaching assessment). Until 2005, all HEIs had to engage in this process as part of their internal QA procedures monitored every five years. Since then it has become part of their accreditation procedures, which means that the development of an internal information system in every programme aims to ensure both improvement and accountability.

Similarly, there is no national system for tracking graduates. However, data on the number of unemployed graduates from each study programme who registered at the local unemployment services (IEFP) is held by the Ministry for Education and Science. However, this system has many weaknesses, the most serious being that it provides no information about employed graduates and that not all unemployed graduates register at IEFP.

One of the reasons why there is no national policy for graduate tracking is that graduate unemployment was not until recently considered a serious problem.

By contrast, HEIs have made significant efforts and launched various initiatives in this area. Their action is expected to intensify as data on employability – for example, the percentage of graduates employed in a given period of time following graduation – is required for programme accreditation. In addition, the tracking of graduate employability is required by law, as described in the 2008 National Bologna Report: “Measures were implemented to analyse the employability of graduates, following them for a period of five years after graduation and publishing information about the levels of employability of each programme of each HEI. This requirement for higher education institutions was included in the new legal status of higher education institutions.” (Law 62/2007 of 10 September)

For these reasons, observatories have been established in several HEIs, although their activities do not ensure strict comparability of results at national level. Indeed, in many HEIs graduates are not surveyed on a regular basis. However, it should be mentioned that these actions are undertaken for broad statistical and administrative purposes and do not track the path of each individual graduate.

Links/Further Reading

GPEARI (Gabinete de Planeamento, Estratégia, Avaliação e Relações Internacionais, Portuguese)
A3ES (Agência de Avaliação e Acreditação do Ensino Superior)
IEFP (Instituto do Emprego e Formação Profissional, Portuguese)

www.gpeari.mctes.pt
<http://www.a3es.pt/en/>
www.iefp.pt

Romania

Formal tracking activities at national level are a recent development in Romania. They focus clearly on graduate tracking mainly for quality assurance purposes. This is encouraged by the 2011 National Education Law which states that “in order to promote the monitoring ... of ... managerial efficiency and equity, as well as of ... higher education relevance for the labour market, a system of ... statistical indicators for higher education will be developed and correlated with similar ones at European level”. In addition, the Romanian Agency for Quality Assurance in Higher Education (ARACIS) uses two performance indicators for external quality assurance, which make the tracking of graduates necessary. These indicators concern employability within the field of the academic qualification and require that:

- at least 50% of graduates are employed at the level of their academic qualification within two years of their graduation date;
- at least 20% of the last two cohorts of graduates with the *diplomă de licență* are admitted to Master's programmes, regardless of the field of study.

There are no national schemes for collecting data on the progression paths of students during their courses. While administrative data is collected by most higher education institutions on their student admissions each year and passed on to the Ministry for Education, Research, Youth and Sport, in most universities there is no systematic tracking of the progress of their students. Through funding from the Executive Agency for Higher Education, Research, Development and Innovation (UEFISCDI), the Ministry is using European Social Fund support to conduct the first national tracking project on graduates (see below). Once the project is over, universities will be expected to cover the costs of annual surveys on graduate employment.

While formal tracking activities at HEIs are also quite recent, informal and often ad hoc, tracking involving personal contacts between graduates and their former professors is quite common at faculty and programme level. Graduate surveys at individual HEIs have so far been carried out by alumni associations or within faculties or even programmes. Alumni associations use the data mainly for marketing and it is also used for ranking. In order to achieve high feedback rates, the completion of graduate surveys at the time of graduation was until recently compulsory at many universities. Many of them carry out such surveys when graduates actually collect their diploma.

University Graduates and Labour Market Tracer study	Focus Graduates	Main purpose(s)
<p>Conducted by the UEFISCDI, the University Graduates and Labour Market Tracer study is the first national project to track the relationship between university studies and professional activity. Its aim is to increase the institutional capacity of the universities for developing permanent monitoring studies. The project provides HEIs with monitoring instruments which enable them to correlate study programmes with employer requirements. The study covers 55 HEIs, each conducting a survey on graduate employment and employability.</p> <p>The main purpose of the study is to get an overview of how the knowledge, skills and abilities of graduates enable them to enter the labour market or to continue their studies. It also aims to develop tools at national level for 'tracer studies' which monitor the careers of graduates in the labour market.</p>		<p><i>benchmarking</i> <i>QA</i> <i>policy planning</i></p>

Links/Further Reading	
University Graduates and Labour Market Romanian Tracer study	www.absolvent-univ.ro/home.aspx

Slovakia

Tracking of students occurs in all higher education institutions (HEIs) in Slovakia. The main instruments used are data collection, surveys and student feedback.

All HEIs have a database on their students and maintain student registers which also record their academic achievements for budgetary and statistical purposes. Some of this information is sent to the Ministry of Education, Science, Research and Sport. Two further bodies are involved in national level data collection, namely the national statistical office and the Institute of Information and Forecasting in Education. The data concerns the preferences of students when they apply for higher education and all relevant details about them during their courses (including access, fields of study, examinations and results). Surveys on their satisfaction with study conditions are conducted at least once a year. At many HEIs, student feedback for course and teaching evaluation purposes is obtained from anonymous paper-and-pencil or electronic questionnaire surveys on the completion of courses. Though not strong generally, participation in feedback is higher at HEIs with more active student councils.

Data from student tracking collected by the central administration of HEIs is used mainly for budgetary purposes. At national level, tracking occurs mainly for state monitoring purposes, with accreditation only a very minor consideration.

The scale, thoroughness and quality of data analysis are determined by legislation. No clear relation is apparent between such data and policies for improving student progress, for example through support or counselling. Neither is it clear whether institutional strategic policy development is a further reason for the tracking of students, although it may be at some HEIs.

Tracking of graduates in Slovakia is mainly a national level issue. Graduate tracking at HEIs varies depending on the institution concerned and is in most cases considered a task of the alumni clubs. At national level, two ministries are involved, namely the Ministry of Education, Science, Research and Sport through the Institute of Information and Forecasting in Education, and the Ministry of Labour, Social Affairs and the Family through the Central Office for Statistical Data on Employment.

Three national level surveys conducted in 2004, 2008 and 2009 focused on student employment after graduation. Graduate tracking is mainly conducted for state monitoring and budgetary purposes, and the above-mentioned bodies associated with the two ministries which make use of tracking are responsible for its instruments and analysis of its results.

As in the case of student tracking, it is not very clear how the results of graduate tracking are used by individual HEIs, and participation rates in their own graduate tracking surveys are generally low.

Slovenia

While there is as yet no instrument for tracking students in higher education in Slovenia, such a system is in preparation. The Ministry of Higher Education, Science and Technology has taken steps to implement a Record and Analytical Information System for Higher Education (eVŠ). In principle, this will be a comprehensive database and web-based service resource covering information on higher education institutions and study courses, as well as statistics on students and graduates. The data will be gathered on individual students through national surveys, via the higher education institutions and the eVŠ web portal (from 2011/2012 on). Applications for study places and enrolment will also be centrally organised through the portal.

All universities except for the University of Ljubljana have implemented central electronic student information systems to track their students. The tracking of graduates is not systematic at either national or institutional level. However, Slovenia took part in the international project Higher Education as a Generator of Strategic Competences (HEGESCO), which in 2008 conducted surveys among graduates five years after the end of their studies.

Spain

In Spain, there are many public and private national initiatives providing overviews of the situation of higher education students and graduates. Some of them focus either on students or graduates, such as the Campus Vivendi-Observatory of Student Life and Participation, and the Graduate Employment Observatory of ANECA (the national quality assurance agency), while others including those of the National Statistical Office, the Fundación CyD, and the Spanish Rectors' Conference (CRUE), cover both groups.

The 2007 law on quality assurance in higher education (updated in 2010) requires universities to provide information on whether graduate employment matches their study programmes, as part of their quality assurance and accreditation. ANECA uses this as one of the quality indicators for programme accreditation.

As the autonomous regions are responsible for higher education policy, regional tracking initiatives supplement the overviews at national level. The use of tracking varies significantly between the regions, some of which are particularly active, such as the Basque Country, Canary Islands, Andalusia, Catalonia and Galicia.

Despite national and regional activities, the bulk of tracking is carried out directly by HEIs. Some of it is in response to external requirements, but much of it is undertaken on their own initiative. These activities fall into three main categories: (1) tracking before students enter university, for example to examine the reasons for their choice of studies and their expectations; (2) tracking during their studies, as in the case of surveys concerning their level of satisfaction with the quality of programmes, degrees or teachers; and (3) tracking after graduation, for example to examine aspects of their labour market integration.

Because of the labour market situation, most tracking focuses on graduates and the issues of employment and employability. Employment observatories are an integral part of the structure of many universities. Since 2009, a CRUE working group has organised several meetings between university and regional employment observatories, forming the Employment Observatories Network, with the main aim of enabling all parties to exchange methodologies. A sub-working group chaired by the Universidad Complutense de Madrid has also issued a report describing and analysing the structures and methods of institutional employment observatories at Spanish universities. The Canary Islands are an example of how collaboration between universities and regional bodies can work. Its regional government employment service department allows the universities to access data on graduate employment, enabling them to analyse in detail the employment situation of all graduates, and to carry out targeted studies. For example, the exchange of data with social security records has provided the University of Las Palmas de Gran Canaria with a detailed analysis of self-employed graduates, with due regard for their study path, personal backgrounds and entrepreneurial achievement, published in 'Aproximación al perfil del emprendedor de la ULPGC' (see Links/Further Reading below).

UNEix database	Focus Students	Main purpose(s)
<p>Since 2001 the regional government of Catalonia has shared the UNEix database with the universities which can access their own data, data from other universities within the region and aggregated data. Some of the data collected is publicly available through the website, as a source of information for future students to decide on their courses. In Catalonia, some of the data is used for basic funding (e.g. number of students, registered credits and number of graduates) or performance indicator-related funding (e.g. level of fulfilment, dropouts and number of new students).</p>		<p><i>information & counselling resource allocation</i></p>
Observatorio Universitario de Inserción Laboral (University Observatory for Employment)	Focus Graduates	Main purpose(s)
<p>ANECA in collaboration with several regional QA agencies and other higher education related organisations has established the University Observatory for Employment. This platform is designed to accommodate documents, links to institutional websites related to graduate job placement, and information on events linked to the same subject. The Observatory also includes a search engine enabling the display of specific results via several options.</p>		<p>QA</p>

Los procesos de inserción laboral de los titulados universitarios en España (Labour market entry processes of university graduates in Spain)	Focus Graduates	Main purpose(s)
This ANECA report examines the situation of young graduates entering the labour market. The study outlines the factors that facilitate and obstruct their labour market integration, using data based on focus groups with recent graduates.		QA <i>information & counselling</i>

Observatorio de Inserción Laboral de los Jóvenes (Observatory of young people's transition to the labour market)	Focus Young people entering the labour market	Main purpose(s)
This Observatory is a databank of the Economic Research Institute in Valencia (IVIE) based on panel sample surveys carried out every three years since 1996. Its focus extends beyond higher education graduates and includes all young people who have entered the labour market for the first time in the preceding five years. It studies characteristics of their access to it, and the data is publicly available on the IVIE website.		<i>information & counselling</i>

Links/Further Reading	
The ANECA report 'Los procesos de inserción laboral de los titulados universitarios en España' (Spanish)	www.aneca.es/content/download/10357/115911/file/publi_procesosil.pdf
CyD Annual reports on Spanish universities and graduates	www.fundacioncyd.org/wps/portal/
National statistical office (INE)	www.ine.es/jaxi/menu.do?type=pcaxis&path=/t13/p405&file=inebase
Ministry of Education Observatory (Spanish)	www.campusvivendi.com
CRUE report 'La Universidad española en cifras' (Spanish)	www.crue.org/Publicaciones/UEC.html
IVIE Observatory of young people's transition to the labour market	www.ivie.es/banco/insercion.php?idioma=EN
Estudio da inserción laboral dos titulados en el Sistema Universitario de Galicia (Spanish)	www.acsug.es/webs/ficheros/C-InLab07-08.pdf?PHPSESSID=0a357a302e0877386d863c123c47f4ee
Spanish university law of 2007 and 2010 (Spanish)	www.boe.es/boe/dias/2007/10/30/pdfs/A44037-44048.pdf www.boe.es/boe/dias/2010/07/03/pdfs/BOE-A-2010-10542.pdf
Observatorio de Empleo de la ULPGC, 'Aproximación al perfil del emprendedor de la ULPGC' (2011, Spanish)	www.observatoriodeempleo.ulpgc.es/descargas/aproximacionperfilemprendedorULPGC.pdf

Sweden

The Swedish National Agency for Higher Education (HSV) is the main national public agency for monitoring the development of the Swedish higher education system. It is responsible for collecting statistics on the system and its higher education institutions. It also collects statistics on students and staff, and university funding. The information is gathered mainly in collaboration with the national statistics office, Statistics Sweden (Statistiska Centralbyrån - SCB), and the HEIs. The basic student data is compiled by the HEIs using the common database LADOK. LADOK is a data system jointly developed by all of them in order to register students and their results. The data is reported to SCB which compiles it for use by HSV and other national and foreign or international bodies. The students can access and use LADOK interactively. HSV and SCB jointly administer data and gather information on nationality, the social and economic background of students or specific student groups, which individual HEIs are prohibited from collecting. HSV also runs the NU-statistik database containing information based on the statistics concerning HEIs, staff and students. The database can be searched externally. Higher education statistics are published by HSV in a yearly report on universities and university colleges, and in thematic reports and studies. HSV regularly publishes reports on the expected employability of university graduates, which are based on forecasts from the SCB, and on the employability of graduates one and a half years after graduation, as required by the government. There are no regular national tracking systems based on surveys, but many occasional national studies on students and graduates are published every year. Recently there have been discussions on changes to the remit of the HSV, and responsibility for statistical studies may change in the near future. The majority of Swedish HEIs regularly carry out student and alumni surveys as well as course evaluations. The progression paths of students can be followed via LADOK. Data management systems are being introduced in universities to facilitate the use of data from LADOK. Swedish HEIs are currently discussing whether it will be possible to define a set of common indicators for benchmarking.

LADOK	Focus Students	Main purpose(s)
A common database 'Lokalt Adb-baserat DOKumentationssystem' (LADOK) owned by the Swedish higher education institutions accumulates data on students and staff. It is centrally coordinated, and is administered locally at HEIs which can add their own parameters. It is considered to be the basis of all student data collection.		<i>administration & statistics information & counselling</i>
NU-statistik database	Focus Students and prospective students	Main purpose(s)
The information concerning higher education is collected by Statistics Sweden (SCB) from the HEIs (for example through LADOK). HSV also runs a central database called NU Statistical database. The database is searchable and used for publishing statistics on the number of applicants, regional recruitment, the economic situation and dropout rates, etc.		<i>administration & statistics information & counselling QA, benchmarking policy planning</i>
National Agency for Higher Education (HSV) annual reports	Focus Students and graduates	Main purpose(s)
HSV publishes an annual report on the higher education system. The Swedish Universities and University Colleges Annual Report contains information on the development of applicants and students over time. Another report concerns the employability of graduates one and a half years after graduation and is required by the government.		<i>administration & statistics information & counselling policy planning</i>

The Swedish National Audit Office	Focus Graduates	Main purpose(s)
The Swedish National Audit Office has in recent years published a report entitled 'Employability of university students', on how the government and the individual universities address employability and their efforts in this respect.		QA <i>policy planning</i>
NyA database	Focus Prospective students	Main purpose(s)
NyA is a database run by the Swedish Agency for Higher Education Services (VHS) that coordinates a centralised application and admissions system for all universities and university colleges. The database supplies LADOK with data on student admissions.		<i>administration & statistics information & counselling benchmarking</i>
HSV Occasional reports	Focus Students and graduates	Main purpose(s)
HSV bases its reports on statistical data from SCB and the HEIs. In 2012 a report on student study patterns since 1977 (including some older data) was published.		<i>policy planning administration & statistics information & counselling benchmarking</i>
Links/Further Reading		
The Swedish National Agency for Higher Education, publications The Swedish National Agency for Higher Education, statistics Statistics Sweden	www.hsv.se/publikationer www.hsv.se/statistik www.scb.se	

Turkey

In Turkey, there is no national systematic tracking of students or graduates. There are, however, collections of data which cover variables that could be used for tracking purposes. An example is the data gathered by the Measurement, Selection and Placement Centre (Ölçme, Seçme ve Yerleştirme Merkezi, OSYM) responsible for admissions to higher education. The OSYM has data on all secondary school leavers who apply to Turkish universities. This data contains information on their personal characteristics, prior education, higher education programme preferences and course characteristics, such as the higher education programme allocated and type of degree. The data is at present mainly used for resource allocation and statistical purposes.

National incentives for higher education institutions to track students or graduates are similarly lacking. While some do so for the purpose of international programme accreditation, many of them were founded only recently and have not yet found the time to develop such activities. Several have some kind of alumni association which collects information on graduates in ways that may be structured up to a point.

Through Hacettepe University (Ankara), Turkey took part in the international project Higher Education as a Generator of Strategic Competences (HEGESCO).

United Kingdom

Students are tracked at national and institutional levels during their studies and after graduation. The Unique Learner Number is used by those over the age of 14, to access their personal learning record. A number of national projects incorporate the entire student population: the Higher Education Statistics Agency (HESA) Student Record, National Student Survey, the HESA Early Destinations of Leavers from Higher Education (DLHE) and the HESA Longitudinal DLHE.

Single cohort studies have also taken place with Futuretrack (National survey) and On Track (in Scotland). Agencies such as HESA and the Higher Education Careers Service Unit (HECSU) maintain the databases generated from these surveys.

HESA is the central source for the collection and dissemination of statistics about publicly funded higher education at higher education institutions (HEIs) in the UK. On behalf of HEIs and statutory funding bodies, HESA also maintains the Student Record, which is the main database providing information on students at HEIs. Through the DLHE surveys, a subset of the student record is linked to graduate activities six months and three and a half years after completing their course of study. HESA data can also be linked to school data to get a clearer picture of progression from school and college to higher education.

Additional data for publicly funded higher education provision at further education colleges is also collected by the Data Service. HECSU is a registered charity that conducts research on behalf of its members into graduate employment and career decision-making. The Universities and Colleges Admissions Service (UCAS) collects data on full-time undergraduate students at the point of application; this also feeds into the HESA Student Record.

Student Record	Focus Students	Main purpose(s)
Applications to publicly funded undergraduate courses in UK HEIs are made via UCAS. When an HEI accepts students it receives their details from UCAS. Upon enrolment these details are expanded with additional information provided by the student, generating a Student Record. The Student Record collects data for more than 200 fields, including address/term-time accommodation, ethnicity and domicile, highest qualification on entry, first-year indicator, expected duration of study, level of qualification, mode of study, etc. HESA has also developed a higher education information database for HEIs, named Heidi. This web-based tool allows HEI staff to access and analyse institutional data from a range of sources for planning and reporting. Heidi is run on a subscription basis for HEIs and approved non-profit higher education sector bodies. A more restricted public version is also available.		<i>administration & statistics resource allocation policy planning</i>
National Student Survey	Focus Students	Main purpose(s)
The survey is commissioned by the Higher Education Funding Council for England (HEFCE) on behalf of the Higher Education Funding Council for Wales (HEFCW), the Department for Employment and Learning, Northern Ireland (DEL), the Training and Development Agency, and Skills for Health. HEIs in Scotland are responsible for their own involvement. The survey is completed online between January and April each year. Emails are sent inviting eligible students to take part. A selection of the sample is telephoned to validate the survey. All final-year students studying for undergraduate credits or qualifications are surveyed each year.		<i>QA benchmarking</i>
DLHE	Focus Graduates	Main purpose(s)
The DLHE Survey tracks graduates into the labour market. The project is split into two parts: the 'Early DLHE' (a survey conducted six months after graduation) and the 'DLHE Longitudinal Survey'. The Early DLHE has taken place annually since 1961. The second component is carried out every two years on a sample of people who graduated three and a half years previously, and has occurred three times to date. All HEIs in the UK are obliged, by law, to supply data on their graduates six months after they have completed their programme of study. The Early DLHE survey covers all full-time and part-time courses and qualifications from Higher National Certificate (HNC) level and above for UK and EU nationals. From 2011/12, the DLHE will also include non-EU students who graduate from UK HEIs. Unlike the Early DLHE survey, the DLHE Longitudinal survey is managed, funded and administered centrally: the HEIs do not carry out the fieldwork and HESA provides the sampling frame, as well as overall coordination and administration. This ensures comparable data.		<i>administration & statistics benchmarking information & counselling policy planning</i>

Post Grad Research Experience & Post Grad Taught Experience Surveys (PRES & PTES)	Focus Postgraduate students	Main purpose(s)
<p>The postgraduate experience surveys are a service provided by the Higher Education Academy to all UK HEIs. The PRES commenced in 2007 and the PTES in 2009. A fee must be paid by the participating HEIs in order to obtain a Bristol Online Survey (BOS) licence and an additional cost is incurred to run the survey. Conducting PRES is each HEI's own decision, and the BOS team provide support where needed. Each HEI nominates a PRES officer to administer the survey within that institution. BOS is a web-based tool to conduct surveys which enables publication of the survey and generates results instantly, with an in-built reporting tool.</p>		<p>QA <i>benchmarking</i></p>
Futuretrack	Focus Students and graduates	Main purpose(s)
<p>Futuretrack is a large single cohort tracking study, monitoring a sample of students from their UCAS application in 2005/06 up until 2011, when the majority had graduated two years earlier. The project is managed by the Warwick Institute for Employment Research and is funded by the HECSU. The Futuretrack pilot study was completed in 2005 and involved 3 500 respondents. All UCAS applicants were encouraged to complete the survey, regardless of whether they decided to go into higher education. UCAS asked for applicants' email addresses and sent the survey out on Futuretrack's behalf.</p>		<p><i>policy planning</i></p>
On Track	Focus Graduates	Main purpose(s)
<p>The Scottish Funding Council commissioned On Track, a longitudinal survey of a sample of graduates from Scottish HEIs. The first project looked at the 2004 cohort from 2004 to 2009, and the second follows the 2007 leavers until 2012. The 2004 project consisted of a postal survey. All 66 higher and further education institutions in Scotland were invited to participate. The population was based on SFC's figures for UK domiciled⁵⁴ graduates from 2002-2003, in this case 149,869.</p>		<p><i>information & counselling policy planning</i></p>
UK Graduate Careers Survey	Focus All final-year students	Main purpose(s)
<p>The UK Graduate Careers Survey is conducted and funded privately for and by employers and sold to interested industries or businesses. The survey provides employers with data on the supply and qualifications levels of new graduates in the following year and the kind of employment they are most interested in. Compared to the DLHE (see above), which informs users about the types of jobs held by graduates, the UK Graduate Careers Survey is designed to provide information on what kinds of job these same graduates really want as their first employment. HEIs cannot subscribe to the survey and have to rely on employers to provide them with data. The survey asks final-year students about the business areas or job functions they are applying for. Approximately 30 universities in the UK (and one in Ireland) are included in this survey, with a sample of approximately 16,000 students.</p>		<p><i>administration & statistics policy planning</i></p>

Links/Further Reading	
National Student Survey	<p>Surridge, P. (p. 3), The National Student Survey: 2005-2007: Findings and Trends. A Report to the Higher Education Funding Council for England, July 2008. www.hesa.ac.uk/index.php?option=com_content&task=view&id=141&Itemid=171</p>
DLHE	<p>Review of Destinations of Leavers from Higher Education (Early DLHE) Survey 10/02 September www.hesa.ac.uk/index.php/content/view/1892/128/</p> <p>Destinations of Leavers from Higher Education Institutions Longitudinal Survey 2004/05, HESA 2009.</p> <p>Destinations of Leavers from Higher Education (DLHE) Longitudinal Survey. Technical Report prepared for the HESA by IFF Research, 2007.</p>
Post Grad Research Experience & Post Grad Taught Experience	<p>What is PTES? Leaflet www.heacademy.ac.uk/assets/York/documents/ourwork/postgraduate/what_is_ptes_intro_leaflet_2011.pdf</p>
On Track	<p>Longitudinal Survey Of Learners Sweep One: 2004, p. 4, MORI Scotland, Critical Thinking and Scottish Funding Councils for Further and Higher Education, 2005 Scottish Higher Education Funding Council.</p>

⁵⁴ Non-UK domiciled students were present in the sample and were unsuccessfully removed; 5% of those in the sample indicated they were from outside the UK.

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Annexes

Annex 1 – TRACKIT project consortium

European University Association (EUA)



The European University Association (EUA) represents and supports higher education institutions in 47 countries, providing them with a unique forum to cooperate and keep abreast of the latest trends in higher education and research policies. Members of the association include over 800 European universities, 34 national associations of rectors, and other organisations active in higher education and research. EUA plays an essential role in shaping tomorrow's European higher education and research landscape, thanks to its unique knowledge of the sector and the diversity of its members. The association's mandate in the Bologna Process, as well as its contribution to EU research policy making and relations with intergovernmental organisations, European institutions and international associations, enable it to debate issues which are crucial for universities in relation to higher education, research and innovation. EUA is the result of a merger between the Association of European Universities (CRE) and the Confederation of European Union Rectors' Conferences, which took place in Salamanca, Spain, on 31 March 2001.

www.eua.be

HIS – Hochschul-Informations-System GmbH



The Higher Education Information System (HIS) is a service institution for German institutions of higher education (universities and universities of applied sciences), their administrations, and higher education policy makers. Within HIS, the TRACKIT project was carried out by the HIS-Institute for Research on Higher Education (HIS-HF). The institute has long-term expertise in a range of subject areas relevant to higher education, focusing primarily on applied research. Main topics include the transition from school to higher education, study conditions, the economic and social condition of students, their transition into work and the career paths of graduates, as well as governance, steering, and funding issues in higher education. Through its research, HIS-HF actively contributes to the academic discourse in the area of research on higher education. More than 80 people work for HIS-HF, making it the largest research institute in the field of higher education in Germany. HIS-HF also plays a major role in systematic reporting on education in Europe, as witnessed by its role as international coordinator of the EUROSTUDENT project and its participation in the Bologna Follow-Up Group.

www.his.de



LUND UNIVERSITY

Lund University

Lund University in Sweden is a world-class university that works to understand, explain and improve the world and our human condition. The university is ranked as one of the top 100 in the world. Lund University tackles complex problems and global challenges, and works to ensure that knowledge and innovations benefit society. Lund University offers education and research in engineering, science, law, social sciences, economics and management, medicine, humanities, theology, fine art, music and drama. The university has 47,000 students and 6 800 employees and is based at campuses in Lund, Malmö and Helsingborg. It has a turnover of around 700 million euros (or 900 million dollars), of which two thirds is in research and one third in education.

Lund University is an international university with global recruitment. It cooperates with 680 partner universities in over 50 countries, and is the only Swedish university to be a member of the strong international networks, the League of European Research Universities (LERU) and Universitas 21.

www.lunduniversity.lu.se



Aarhus University

Aarhus University in Denmark is a leading European research university with education and research activities in all academic fields. The research is organised in departments and centres with a research staff of more than 6 000. The university attracts 25% of Danish research funding and is home to more than 30 internationally recognised research centres, including 14 Centres of Excellence supported by the Danish National Research Foundation.

Aarhus University is one of the most rapidly advancing institutions ranked among the top 100 universities worldwide. One reason for this progress is the inclusion of research talent development as a core activity in its strategy. Currently, over half of the 42,000 plus students at Aarhus University are enrolled at postgraduate level, and the university maintains a consistent focus on the recruitment of talented international students and early career researchers. Aarhus University takes pride in its close connections with the business community and is committed to societal development.

www.au.dk/en/

UNIVERSITY
OF THE
PELOPONNESE

University of the Peloponnese

The University of the Peloponnese (UoP) in Greece was founded in 1999. It comprises ten faculties in the areas of social sciences, arts, sciences and technology, economics, humanities, sports and nursing. It offers study programmes in all three Bologna degree cycles. It has 4 500 students, 150 teaching staff and 120 administrative and technical staff. The UoP is considered a multi-site institution operating on a network basis and spread over the whole administrative region of the Peloponnese, with its faculties, centres and activities located at the capital cities of the five prefectures that constituted the region in the past. The administrative seat of the UoP is in Tripolis which is the capital city of the region, and the UoP is considered a regional university. The aim of responding effectively to regional needs is high in the mission and strategic priorities of the university.

<http://pelopas.uop.gr/UK/>



Irish Universities Association (IUA)

The Irish Universities Association (IUA) is the representative body of the seven Irish universities. It is a non-profit-making body with charitable status. The IUA seeks to advance university education and research through the formulation and pursuit of collective policies and actions on behalf of the Irish Universities, thereby contributing to Ireland's social, cultural and economic well-being. IUA's main activities are aimed at contributing to the development and implementation of a long-term strategy for higher education in Ireland. This includes developing and sustaining a dynamic research environment, promoting wider participation in Irish higher education by under-represented target groups, the enhancement and development of teaching and learning for undergraduate and graduate students, and the establishment of sustainable and stable finance and funding mechanisms across Irish universities.

www.iua.ie

Annex 2 – Survey questionnaire

The questionnaire was sent mainly to national rectors' conferences, but in some cases also to individual universities and national bodies.

A) The background and progression paths of students into and during their studies at an HE institution towards gaining a qualification		
Questions	Institutional level	National (regional) level
<p>1) Are there any existing or proposed systematic initiatives to track the background and progress of students before and during their studies? (e.g. surveys or collections of administrative data on access, types of studies (full degree, part-time or LLL degrees, study progress, exams, changes of programmes, dropout, etc.)</p> <p>Could you briefly describe them? (e.g. regularity, coverage of student population, spread among HEIs, other characteristics)</p> <p>Are there specific examples you would like to mention?</p>		
<p>2) How is the data underlying these instruments obtained? (Who commissions the collection of data? Who carries it out? What mechanisms are used (e.g. administrative procedures within the HEIs, national or regional student surveys, etc.)? Is institutional data aggregated at national or regional level?)</p>		
<p>3) What type of information is covered by these tracking initiatives? (e.g. changes during studies (change of institution, change of study field, etc.), satisfaction with the quality of study, socioeconomic background, prior course of education, problems during the course of study)</p>		
<p>4) For what purposes is the collected data used? (e.g. institutional or national quality assurance, marketing, administrative and statistical purposes, student counselling, student retention, allocation of resources within or across HEIs, policy planning, design of HE policy, etc.)</p>		
<p>5) How would you evaluate these tracking initiatives? What are their benefits, what are their disadvantages? Do you see barriers in the implementation or conduct of tracking initiatives?</p>		
<p>6) Are there sources of further information on these tracking initiatives you would like to hint us to (e.g. reports, web sites, etc.)?</p>		

B) The progression paths of holders of a qualification/ graduates into the labour market		
Questions	Institutional level	National (regional) level
<p>1) Are there any existing or proposed systematic initiatives to track the progress of graduates into employment <i>after</i> their studies? (e.g. surveys or collections of administrative data on time between graduation and employment, job characteristics, etc.)</p> <p>Could you briefly describe them? (e.g. regularity, coverage of graduate population, spread among HEIs, other characteristics)</p> <p>Are there specific examples you would like to mention?</p>		
<p>2) How is the data underlying these instruments obtained? (Who commissions the collection of data? Who carries out the data collection? What mechanisms are used (e.g. administrative procedures within the HEIs, national or regional graduate surveys, etc.)? Is institutional data aggregated at national or regional level?)</p>		
<p>3) What type of information is covered by these tracking initiatives? (e.g. time spans between access to higher education, graduation and employment, vertical and horizontal adequacy of employment, prior education, problems during the course of study)</p>		
<p>4) For what purposes is the collected data used? (e.g. institutional or national quality assurance, marketing, administrative and statistical purposes, student counselling, student retention, policy planning, design of HE policy, allocation of resources within or across HEIs, etc.)</p>		
<p>5) How would you evaluate these tracking initiatives? What are their benefits, what are their disadvantages? Do you see barriers in the implementation or conduct of tracking initiatives for graduates?</p>		
<p>6) Are there sources of further information on these tracking initiatives you would like to hint us to (e.g. reports, web sites, etc.)?</p>		

C) The progression paths of holders of a qualification/ graduates to another study programme		
Questions	Institutional level	National (regional) level
<p>1) Are there any existing or proposed systematic initiatives to track the progress of graduates to <i>another study programme</i>? (e.g. surveys or collections of administrative data on prior education, study progress, dropout etc.) Could you briefly describe them? (e.g. regularity, spread among HEIs or study programmes, other characteristics) Are there specific examples you would like to mention?</p>		
<p>2) How is the data underlying these instruments obtained? (Who commissions the collection of data? Who carries it out? What mechanisms are used (e.g. administrative procedures within the HEIs, national or regional student/graduate surveys, etc.)? Is institutional data aggregated at national or regional level?)</p>		
<p>3) What type of information is covered by these tracking initiatives? (e.g. problems during transition between educational programmes, satisfaction with the quality of study, socioeconomic background, prior education, problems during the course of study)</p>		
<p>4) For what purposes is the collected data used? (e.g. institutional or national quality assurance, marketing, administrative and statistical purposes, student counselling, student retention, policy planning, design of HE policy, allocation of resources within or across HEIs, etc.)</p>		
<p>5) How would you evaluate these tracking initiatives? What are their benefits, what are their disadvantages? Do you see barriers in the implementation or conduct of tracking initiatives for graduates who pursue further studies?</p>		
<p>6) Are there sources of further information on these tracking initiatives you would like to hint us to (e.g. reports, web sites, etc.)?</p>		

D) Contact information

a. Contact person(s) at your organisation:

Name:

Phone number:

E-Mail:

Name:

Phone number:

E-Mail:

b. Could you provide us with suggestions of persons and organisations to be contacted for further information on the issue (e.g. someone in the ministry, a researcher or a university employee)? Please indicate if the persons/organisations are associated with any of the tracking initiatives described above.

Name of the expert	Affiliation	Tracking initiative (if applicable)

**E) Do you have any comments on the questionnaire?
Have you had any difficulties in answering the questions?**

Two empty text boxes for providing comments or difficulties.

F) Is there anything else you would like us to know?

Two empty text boxes for providing additional information.

Annex 3 – Site visit teams

In the course of the research, visits were undertaken to 23 higher education institutions in 11 countries (for a list of institutions, see Chapter 1.3).

Teams usually consisted of two project partners and an international expert, who drew up the visit report.

Project partners

Willy Aastrup	Aarhus University
Elizabeth Colucci	European University Association (EUA)
Ralf Drachenberg	European University Association (EUA)
Michael Gaebel	European University Association (EUA)
Kristina Hauschildt	Higher Education Information System (HIS)
Kristina Josefson	Lund University
Ivana Juraga	European University Association (EUA)
Dionyssis Kladis	University of the Peloponnese
Kai Mühleck	Higher Education Information System (HIS)
Olof Nelsson	Lund University
Lewis Purser	Irish Universities Association (IUA)
Angel Manuel Rafael	European University Association (EUA)
Hanne Smidt	Lund University
Jonas Teglskov Nielsen	Aarhus University

International experts

Viera Farkasova	Slovak Academic Association for International Cooperation
Kate Geddie	École Polytechnique Fédérale de Lausanne
Jacqueline Smith	Former Deputy Head of OECD/IMHE Programme
Anna Spexard	Humboldt University
Charoula Tzanakou	University of Warwick

Annex 4 – Focus group meetings

A focus group of selected experts from higher education institutions and organisations, policy makers, students, researchers and quality assurance experts served as an advisory body to the project. Two focus group meetings were organised to discuss the research approach, and later the preliminary research results:

1st focus group meeting, 9 March 2011, Brussels

Jane Artess	Higher Education Careers Services Unit (HECSU), UK
Rasa Cincyte	European Students' Union (ESU)
Kris Dejonckheere	Network of Universities from the Capitals of Europe (UNICA)
Jakub Dürr	Palacký University, Czech Republic
Mee Foong Lee	European Access Network (EAN)
Kate Geddie	École Polytechnique Fédérale de Lausanne, Switzerland
Marisol Pastor	Fundación Universidad-Empresa, Spain
Cristina Pinto da Silva	Polytechnic Institute of Porto, Portugal

2nd focus group meeting, 19 September 2011, Dublin

Jane Artess	Higher Education Careers Services Unit (HECSU), UK
Aoife Flanagan	National University of Ireland Galway, Ireland
Giancarlo Gasperoni	AlmaLaurea, Italy
Patricia Georgieva	Centre for Higher Education Research, Bulgaria
Gabriela Jitaru	Executive Agency for Higher Education, Research Development, and Innovation Funding (UEFISCDI), Romania
Luis José Rodríguez Muñiz	University of Oviedo, Spain
Yasemin Yagci	International Centre for Higher Education Research (INCHER-Kassel), Germany



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