

### Roles

The platform would enable three different roles: **graduate**, **employer** and **academia** and each role would have different capabilities and different panels, as their needs and their goals are different.

The employer (industry or start-up) mainly seeks for employees and secondly for educational programs with graduates equipped with skills that fit the demands of the available vacancies.

The graduates follow a similar path, looking for jobs that fit their skills and for educational programs that cover the skills in demand from the employers, while the academia examines the needs of the market and designs accordingly educational programs capable to cover the skills gap. In the remainder of the section some more details of each role are presented.

**Individuals**, Graduates, young professionals, or any job seeker for ICT-oriented positions, who want to post their biographical information and ICT skills. The individual who enters the platform and she/he is looking for:

- searching available jobs,
- searching available education programs,
- creation of resume(s),
- apply to different job posts.

The user can alternatively register via her/his account on LinkedIn or Facebook, based on what she/he decides and browse recent posted jobs and search for jobs that meet some criteria.

**Enterprises**, Employer, representatives (e.g. HR personnel, managers) of companies (startups, SMEs, Large Companies), who want to post job announcements for positions that require ICT skills/competencies. The role of the employer is for the users who enter the platform aiming at finding new employees for their companies. The employer has four basic functionalities:

- creation of company (or companies),
- creation of the departments of the company (if applicable),
- posting job vacancies that would be filled from the job seekers of the platform,
- search for the available resumes in the platform.

**Academia**, has four main functionalities,

- the creation of HEI(s) and their departments,
- creation of education programs,
- creation of events.

For the last two functionalities, users registered as employers have the capability to approve an education program (if asked) and eventually be considered as co-creators of the program.

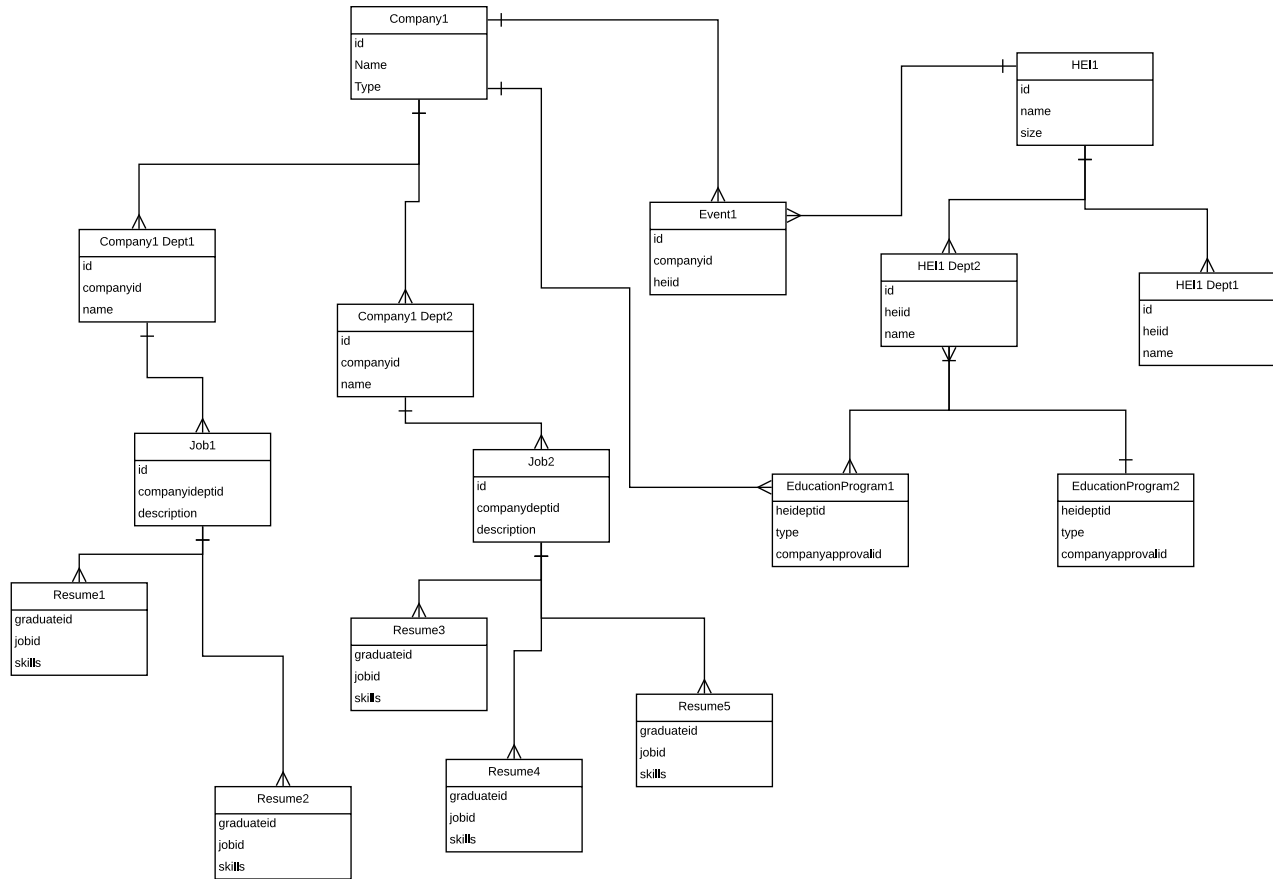
### Entities

The roles of the platform indicate the different permissions and privileges each user would have into the system in order to enter a modified platform that satisfies their needs. The entities are created and modified from the users of the platform and indicate either organizations, functions or services. The entities of the platform are:

- **companies**,
- **companies' departments**,
- **jobs**,
- **resumes**,
- **HEIs**,
- **HEIs departments**,
- **education programs**,
- **events**.

Each role interacts differently with the available entities; hence graduates look for jobs and educational programs, build resumes and apply for jobs. The employers create companies and companies' departments, post available jobs, look for

candidates and education programs that fit their needs. The basic hierarchy and interactions between the entities are depicted in the Figure.



A class diagram showing entities of the platform and basic interactions amongst them

### Mockup of the platform

The employer would have access to a control panel with the desired functionalities, such as add and modify the available jobs vacancies, create the profile and the structure of the company and search for the available resumes of the system. Accordingly, each user of the platform depending on their role (employer, graduate, academia) would have a different control panel with the functionalities that fit their needs and their goals. For example, for the users registered as academia, would be able to add and modify the available education programs, create the profile and the structure of her/his HEI, create a modify events and search for the available resumes.

### Skills gap and visualization

One of the features the platforms would have is:

- identification of skill gaps between job posts, graduates and education programs. Thus, the homepage would have a dedicated part to illustrate the skills gap both with descriptive and visual manner. ???

The page including the feature of skills gap identification would be divided into three basic parts, each one addressing specific requirements from the proposal. ☒

- The first part of the page is displaying statistics on the skills that the job posts require and the skills that are offered from the education programs. The desired outcome of the statistics is the identification of skill gaps. ☒
- The second part of the feature would be devoted to the identification of ICT trends, crawling iteratively the skill that are required from the job posts. Thus, eventually the megatrends that exist in both industry and start-ups would be revealed. ☒

- In combination with the revealing of megatrends in industry, the skills that are offered from the different education programs would also be illustrated. Ultimately, a graphic representation of skills gap through time would be depicted. ☒
- The last part of this page would be devoted into the recently introduced education programs and events that cover the demands of the market and fight the skill crisis. In this part, the synergy between HEIs and industry would be promoted, as the capability of co-creation an education program (MSc, diploma thesis, PhD, etc.) between academia and industry is provided.

IT COULD BE SAID THAT THIS PART OF THE PLATFORM REVEALS THE OUTCOME OF THE ENTIRE PROJECT, AS IT REVEALS IMPORTANT INFORMATION AND COVERS IN SOME EXTENT ALL THE REQUIREMENTS OF THE PROJECT. RECENT TECHNOLOGICAL CHALLENGES WOULD BE IDENTIFIED, AND EMERGING, CUTTING-EDGE TECHNOLOGIES WOULD BE HIGHLIGHTED AS PINPOINTED BY MARKET INNOVATORS THROUGH JOB POSTS IN THE SMART JOB HUB.

HEIs have the capability to identify the skills required in labor market and train respectively high-qualified students in ICT specific topics. The synergy between HEIs, entrepreneurs and industry would address the competences and occupational profile the labor market demands. This synergy would promote open links between Universities and industry, enhancing the relevance of higher education by supporting education programs in different forms, such as common Bachelor, Master and PhD theses supervision.

In the activity diagram, the rationale for creating an education program is depicted and reveals the connection that the industry can have with the academia. Browse the skills that are required in the market, identify the gaps between existing education programs, design the new education system with a possible synergy with the companies that exist in the platform and eventually provide the education program to graduates, that desire to keep up with the demands of the market.

#### SMART CORE ENGINE

The analysis of the data collected from the users in the platform would take place with the aid of the smart core engine, where machine learning algorithms and data analysis methods would be implemented. Apart from the basic data analysis, the smart core engine would try to better interpret the data generated in the platform and eventually predict future skill gaps.

Apart from the data generated in the platform, the smart core engine would also include data derived from other resources, such as Facebook pages from local communities

#### EXAMPLES OF AN INTELLECTUAL OUTPUT

Definition of competences/language lexicon,  
 distance learning module,  
 creation/adaptation of a platform for sharing best practices or learning new skills within a network,  
 assessment methodology and materials,  
 joint curricula,  
 digital modules/resources for learning/teaching/training,  
 library of reusable 'Open Educational Resources' (OER),  
 qualitative and quantitative analysis of network interactions,  
 methodological framework for improving career management skills,  
 methodological approach,  
 mobile applications,  
 specific software,  
 policy recommendations at different levels.

Learning outcomes, or statements of what a learner is expected to know, be able to do and understand at the end of a learning sequence, play an increasingly important role in efforts to improve the quality and relevance of education and training in Europe. Learning outcomes statements help to clarify programme and qualifications intentions and make it easier for those involved – learners, parents, teachers or assessors – to work towards these expectations.

The increased transparency offered by learning outcomes also provides an important reference point for policy-makers, making it easier to judge the match between society’s needs and the programmes and qualifications offered within education and training.

Learning outcomes, however, can be written in many different ways and it is not a given that they will add value as expected. While promoting the overall use of learning outcomes, this handbook seeks to identify not only the opportunities but also the challenges involved when writing and defining them. It provides a link to an extensive collection of international and national resources, allowing stakeholders to consult experiences gained throughout (and beyond) Europe.

Manage a skills gap analysis for Enterprises:

Step 1: Plan

Perform a skills gap analysis on two levels:

Individual: You can identify the skills a job requires and compare them to an employee’s actual skill level.

Team/company: You can determine if your employees have the skills to work on an upcoming project or if you need to [hire externally](#). This analysis can help you target your [employee training programs](#) to develop the skills you need.

Here’s an overview of skills gap analyses, including scope, examples of when to conduct a skills gap analysis and ways to close skills gaps:

Scope	Who is in charge of the process	When to conduct a skills gap analysis	How to respond to skills gaps
Individual level	Team leader	<ul style="list-style-type: none"> <li>• Changes in employee’s duties</li> <li>• Poor performance review</li> <li>• Need for new skills for a promotion or new project</li> </ul>	<ul style="list-style-type: none"> <li>✓ Training</li> <li>✓ Succession Planning</li> <li>✓ Mentoring initiatives</li> </ul>
Team/company level	Team leader HR External consultants	<ul style="list-style-type: none"> <li>• Problems meeting business goals</li> <li>• Strategy shifts that require new skills or developing old ones</li> <li>• Using new technologies</li> </ul>	<ul style="list-style-type: none"> <li>✓ Hiring</li> <li>✓ Training programs</li> <li>✓ Mentoring initiatives</li> </ul>

HR can initiate team and company-wide skills gap analyses by holding a meeting with managers to explain the process. It can also be a good idea to hire an external consultant to conduct a skills gap analysis. Hiring an outside evaluator can make the process more objective and will free up staff time to focus on other relevant work.

Step 2: Identify important skills

Some employers say they have [difficulty filling jobs](#) because of skill gaps. But others argue that skill gaps are a product of [unrealistic expectations](#). Identify the skills you need by answering two questions:

What skills do we value as a company?

What skills do our employees need to do their jobs well now and in the future?

Consider your company's [job descriptions](#), business objectives and company [values](#). Think of the new skills your company might need in coming years. You could also survey team members on what skills they think are missing. Their insights could prove invaluable and involving your employees can help them feel that they're contributing to your company's growth.

Here's an example of how to list and prioritize skills employees, teams and companies need:

	Importance	Skill level required
Leadership	High	Excellent
SAP knowledge	Moderate	Good
Initiative	High	Excellent

Numerical rating scales can be a more practical way to assess skills gaps when you want to aggregate individual scores. You could use a five-point or three-point system. Ensure you have explicitly defined scales. For example, a scale of 1 to 5 could range from poor to excellent, or inexperienced to expert.

Emp ID	Last	First	Notes	Skills				Data Warehousing	Database Programming	Information Services (IIS)	Internet Security	Java
				.NET	ActionScript	AD	AJAX					
1	Reeves	Alvin		4	2	5	4	5	3	5	5	5
2	Roberts	Lela		3	4	4	2	3	5	5	2	1
3	Irvine	Justin		3	3	4	1	1	4	5	2	2
4	Meyer	Lue		3	5	5	5	2	3	2	4	2
5	Adan	Ninfa		2	4	2	2	5	5	3	1	5
6	Black	Tereasa		3	1	3	4	4	3	2	5	1
7	Luong	Holly		2	3	4	5	4	3	5	1	4
8	Washington	Lisa		5	4	4	2	5	1	4	2	1
9	Apple	Leslie		4	4	3	4	5	1	4	2	1
10	Bell	Amy		2	1	2	4	5	3	3	1	5

**Step 3: Measure current skills**

To measure skill levels, you could use:

- Surveys and [assessments](#).
- Interviews with employees.
- Feedback from performance reviews.

Skills management software, like [Skills DB Pro](#) and [TrackStar](#) that can make a skills gap analysis much less time-consuming.☒

Alternatively, you can measure skills by creating a skills spreadsheet specific to each individual position. For example:☒

Position: [Telesales Representative](#)

	Importance	Required level	Actual level
Negotiation skills	High	5	4
CRM software	High	3	3
Excel	Moderate	4	2

Sometimes, a skills gap can result from limited experience, especially in the case of new hires. Consider on-the-job coaching as a way to close a skills gap, instead of formal training. An employee with the scores listed above probably doesn't need training in Customer Relationship Management (CRM) software. But, they do have negotiation and Excel skills gaps. Negotiation skills are marked as more important than Excel, so employee training and development should begin there.

Step 4: Act on the data

There are two ways to fill skills gaps: training and hiring. Decide which approach (or combination) works best for each skill gap.

Train for skill gaps

[More than half of companies](#) train and develop their staff to fill open positions. Offer training for employees in skills you'd like to strengthen, for example [using SAP](#) or [Excel](#). The right training can help you close gaps between current and desired skill levels.

You can use [professional training firms](#) to arrange workshops, training sessions and seminars for your staff. Along with formal training, you can also offer:

Subscriptions, [online courses](#) and educational material.

Voluntary [employee mentorship programs](#).

Opportunities to attend [events](#) and conferences.

Opportunities to obtain certifications like [Project Management Professionals](#) (PMP) or [Professional Certified Marketer](#) (PCM).

Hire for skill gaps

If your skills gaps are too wide to minimize with training, consider hiring to bring new knowledge and skills into your company. You could:

Modify your hiring process to screen for skills your company needs. For example, you can add skills assessments (like writing samples) and numerical reasoning tests.

Use [structured interviews](#) to reduce biases and ensure your criteria for choosing a new hire are strictly job-related.

Source passive candidates. Often, candidates who have the skills you need aren't looking for a job. Use effective [sourcing techniques](#) (like [recruiting on Twitter](#) and [sourcing using boolean logic](#)) to find and contact promising candidates.

Conducting a skills gap analysis can be time-consuming. But the results are worth it. Knowing which skills you need to grow as a business will help you hire – and retain – the right people.

Information Technology (IT) Resume. Resume Builder.