The different skills described can be divided into hard skills and soft skills. The hard skills can be compared to what is expected from IT-professionals: subject matter expertise, data & technical skills, and maths & statistics knowledge. However, e-skills also require a lot of soft skills, like collaboration, problem solving, and communication which was also mentioned by the interviewees. A description of those skills is provided in Table 2.
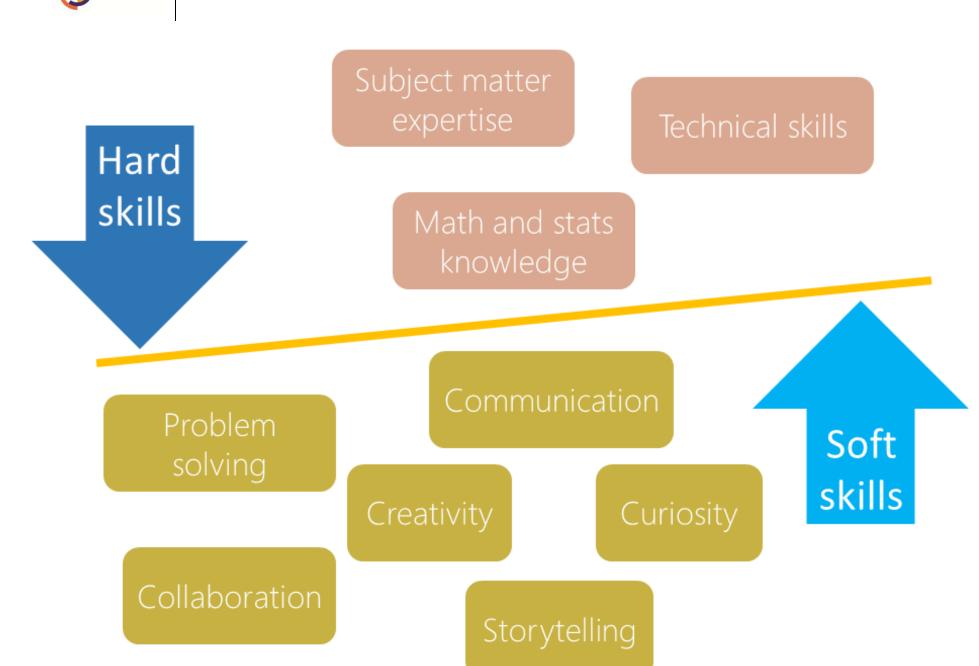
	Skill	Definition
Hard skills	Subject matter expertise	Person who is an authority in a particular area or topic. Often referred to as person with special knowledge or skills in a particular area of endeavour.
	Maths & statistics knowledge	Knowledge of the science that deals with the collection, analysis, and interpretation of numerical data, often using probability theory.
	Technical skill	The knowledge and abilities needed to accomplish mathematical, engineering, scientific or computer-related duties, as well as other specific tasks.
Soft skills	Problem solving	The process of working through details of a problem to reach a solution. Problem solving may include mathematical or systematic operations and can be a gauge of an individual's critical thinking skills.
	Storytelling	Storytelling is a method of explaining a series of events through narrative. It is used as a tool to illustrate an otherwise difficult concept or a point.
	Collaboration	To work with another person or group in order to achieve or do something. Effective method of transferring 'know how' among individuals.
	Curiosity	The urge felt to know more about something. A desire to know or learn.
	Communication	Two-way process of reaching mutual understanding, in which participants not only exchange information, ideas, feelings but also create and share meaning.
	Creativity	The ability to transcend traditional ideas, rules, patterns, relationships, or the like, and to create meaningful new ideas, forms, methods, and interpretations.

Table 2 – Definitions of different skills

Soft skills are often overlooked when thinking about Open Data and data analytics in general. Creativity and curiosity are needed to define a working hypothesis and to measure the possibilities offered by a given dataset. Indeed, to start processing the data, one has to have an idea what to do with the data. What types of insight can one gain? Which insights can possibly be created? This requires soft skills. This is also the reason president Obama insisted on hiring the top employees of Silicon Valley, as "working with data requires much more than just the skills to work with data. An important factor is to be creative and to know which organizational insight is needed." This is also visible in many start-ups. The start-ups did not start by working with data, they started with a good idea which required working with data. From there, they developed a business model.

Another reason soft skills are important, is the collaboration with the business. Managers are expecting to apply the insights gathered by data analysis into their daily operations. To be able to do so, the employees analyzing the data need to be able to communicate their findings in an understandable way. IT professionals need to invest in their communication skills if they want to make an impact in their organizations. They need to work on the storytelling and communication.

Hard skills

- Subject matter expertise
- Technical skills
- Math and stats knowledge

Soft skills

- Problem solving
- Communication
- Creativity
- Curiosity
- Collaboration
- Storytelling

Carrara, W., Fischer, S., and van Steenbergen E. (2015). E-skills and open data. *European data portal.*