


The word "nesta" is written in a bold, white, lowercase sans-serif font. The background is a vibrant teal with a subtle, grainy texture. Several large, semi-transparent circles in various colors (dark blue, orange, red, purple, black, yellow) are scattered across the frame. A faint rainbow arc is visible on the left side.

nesta

# Empowering workers to navigate their way to the jobs of the future: how can workplaces innovate?

Dr Ksenia Zheltoukhova

[nesta.org.uk](https://www.nesta.org.uk)

 [@nesta\\_uk](https://twitter.com/nesta_uk)

# We bring bold ideas to life to change the world for good.

Nesta is an innovation foundation. For us, innovation means turning bold ideas into reality. It also means changing lives for the better. This is what keeps us awake at night and gets us out of bed in the morning.







# Mismatch between supply and demand affects businesses



Current and future workers lack support and guidance on how to develop skills that meet employer demand. Many face **stagnant pay** and **low social mobility**.



Businesses are unable to find workers with the right skills. The [Open University](#) estimates that **skill shortages cost the UK £2bn a year** in higher salaries, recruitment costs and temporary staffing bills.

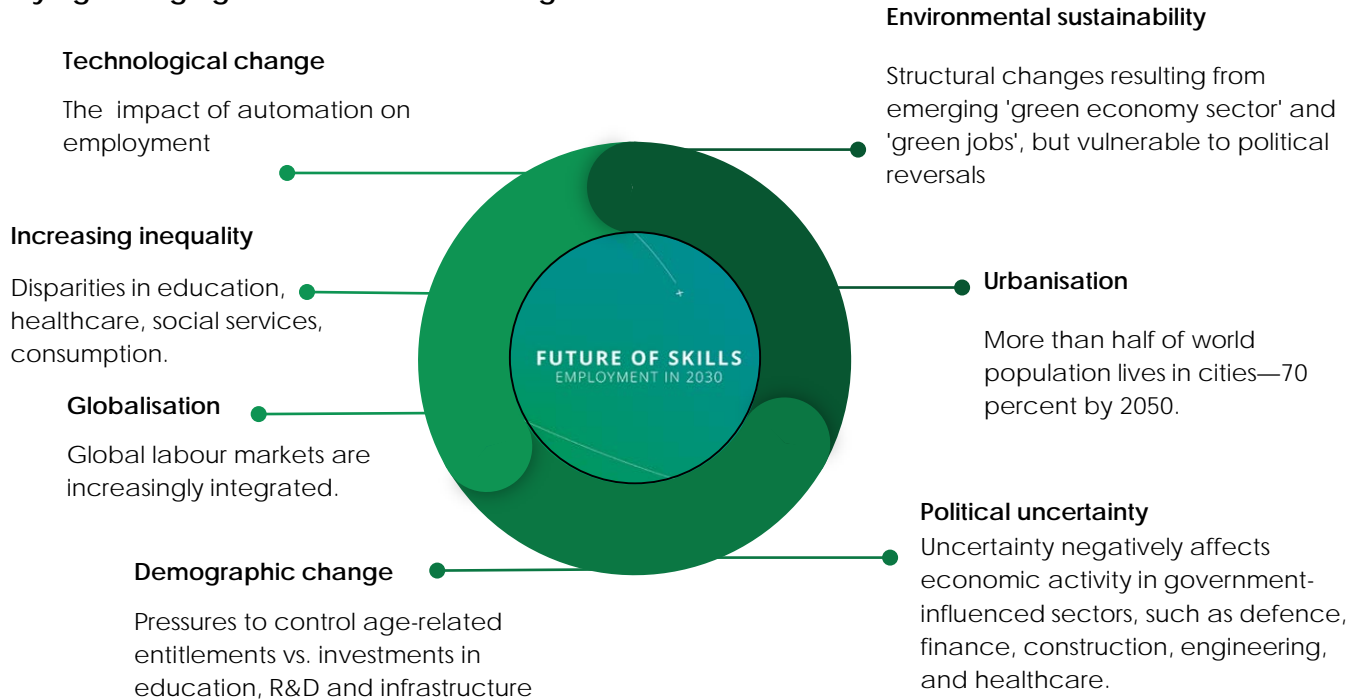


Lack of alignment between supply and demand of skills contributes to **poor productivity growth** at national and regional level. This has adverse effect on living standards and wellbeing.

**1 in 5 workers in the UK are  
in occupations that will  
shrink by 2030**

**7 in 10 workers in the UK  
are in occupations with  
uncertain outlook**

## Identifying emerging labour market challenges



Read more at [Future of Skills: Employment in 2030](#)



## Trends in skills and occupations



Interpersonal skills



Higher order cognitive skills



Healthcare



Research & technology



Strength



Repair skills



Machine operatives



Elementary administration



Read more at [Future of Skills: Employment in 2030](#)

## We imagined jobs of the future



Mel: restaurant owner



Wilson: immersive experience designer



Amit: 100 years counselor



Julia: Aerospace engineer



Lisa: works in green construction



Faisal: careworker

Read more at [Six Jobs for 2030](#)

We are getting to know  
more about the future of  
work. What's next?

---

54%

of all employees will  
require extensive  
upskilling and  
reskilling by 2022

---

31%

of workers in highly  
automatable jobs  
have trained in the  
last year

---

Nedelkoska, L. & Quintini, G (2018), 'Automation, skills use and training', OECD Social, Employment and Migration Working Papers

# Big data and data science can help workers navigate changing labour markets



## Forward looking advice on jobs and skills

To help people prepare for the future we need to be able to **anticipate the impact of structural changes** in the labour market and spot changes in job requirements.



## A map to navigate the labour market

Such a map would store rich information on **relationships between jobs, skills and education** and show routes through the labour market.



## Person-centered solutions

One-size-fits-all solutions are not going to work. We need tools and services that are **user and context specific**.

# Mapping demand for skills and pathways to future jobs

---

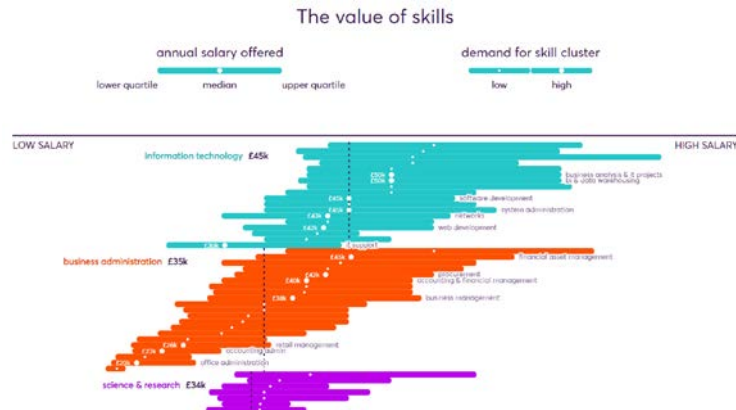
54%

of all employees will  
require extensive  
upskilling and  
reskilling by 2022

---

# 40 million job adverts

were analysed by our data scientists to deliver the first-ever estimates of skill values, and found the fastest and slowest growing skill clusters.

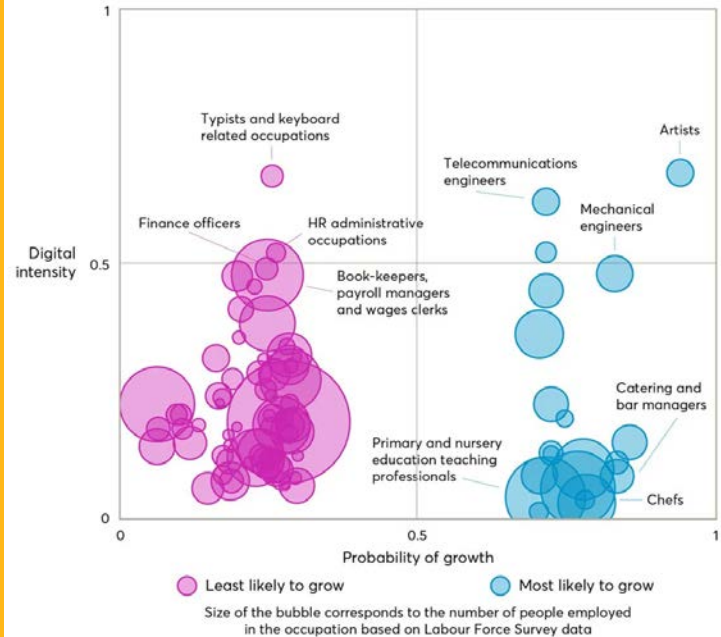


Read more about [Making sense of skills](#).

# We identified the most valuable digital skills

...by mapping those that are most likely to see growing demand.

These skills are ones that are used in non-routine tasks, problem-solving and the creation of digital outputs.



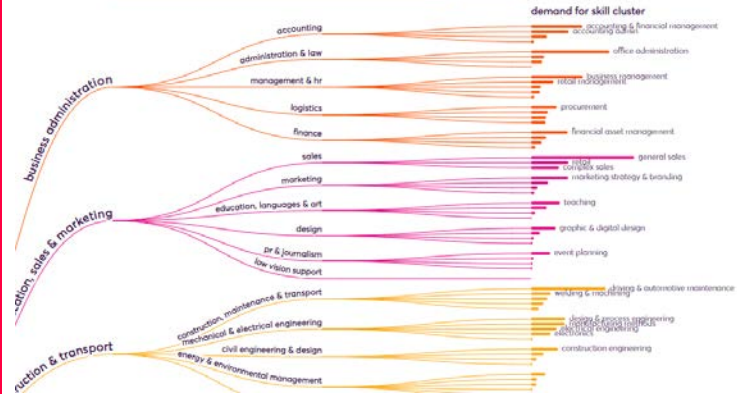
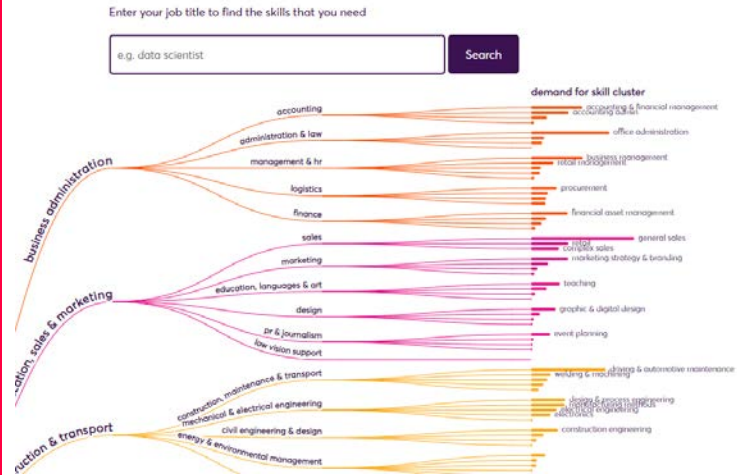
Read more about [Skills anticipation for the digital age](#).



We developed the first open data-driven taxonomy of skills that doesn't rely on expert judgement.

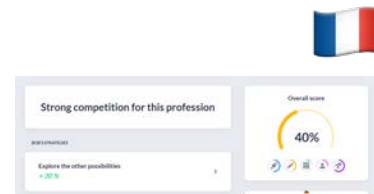
The taxonomy provides a consistent way of measuring skill demand and skill supply, enabling us to measure skill shortages.

## A UK skills taxonomy



Read more about [Making sense of skills](#).

## Novel LMI is already powering tools developed in partnership with government



### HeadAI

Funded with 500,000 Euros through a [challenge prize launched by Sitra \(The Finnish Innovation Fund\)](#), HeadAI using publicly available data to map skills supply and demand.

The goal is to make better use of skills in Finland, and attract foreign investment.

### Jobtech

A unit within Sweden's Public Employment Service, [Jobtech](#) aims to **open up labour market data** and create an infrastructure that enables the the development of **skills matching services**.

### Bob Emploi

Designed by the organisation Bayes Impact, [Bob Emploi](#) uses data from **France's Pole Emploi (Public Employment Service)** to provide individuals with **career guidance**.

Bayes Impact are working on a B2B service to **support careers advisors**.

Motivating  
adults to  
take up and  
sustain  
learning

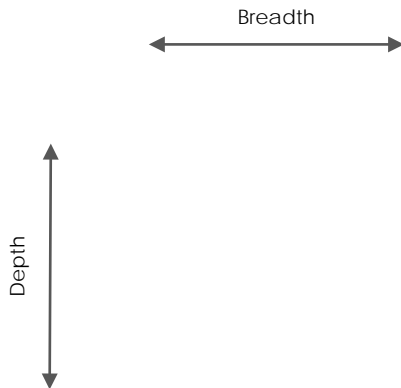
---

31%

of workers in highly  
automatable jobs  
have trained in the  
last year

---

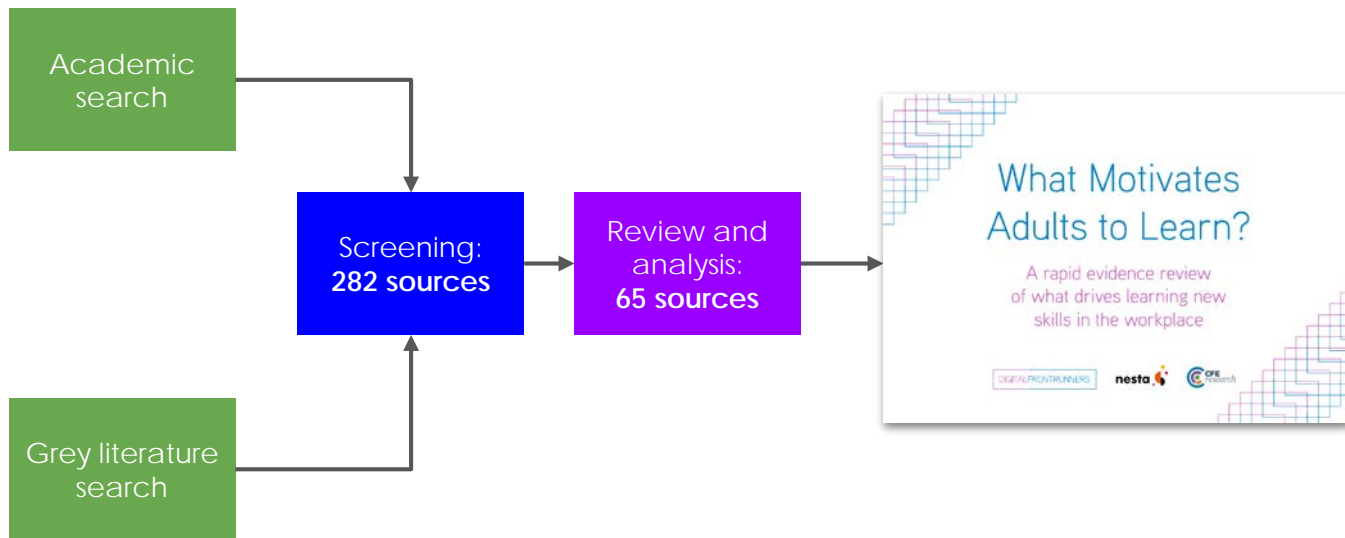
## The shape of skills to come



, Fadel, Holmes &  
Bialik (2019)

The shape of skills to come

We reviewed over 280 sources to identify what motivates working adults to learn



Read more about [What Motivates Adults to Learn?](#)

# Both **extrinsic** and **intrinsic** motivation are important for learning

Extrinsic motivation is **results driven**

A desire to gain a **reward**  
(External regulation)

Desires for **approval**  
(Introjection)

Achieving a **personal goal**  
(Identification)

Increased reflection of **an aspect of the self** (Integration)



Intrinsic motivation to learn is **learning for its own sake, for the pleasure of learning something new**

Mielniczuk, E., & Laguna, M. (2017). Motivation and training initiation: evidence from Poland. *J*, 29(1): 24–36.

# Future Fit

Developing and testing training solutions which empower workers with new skills that allow them to adapt to changes in their workplaces in Sweden, Finland, Denmark, the Netherlands and Belgium.



A Challenge Prize for digital solutions that improve access to accurate, data-driven career information, advice and guidance.

A Grant fund for innovative tech solutions which motivate people and support them to learn new skills and retrain.



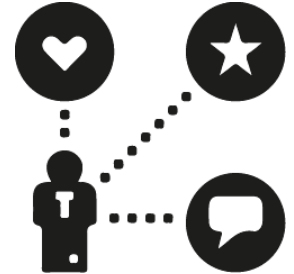
What's for innovation in the  
workplace?



Skills



Learning



Ways to support  
employee  
development

# Skills

Use latest insights on skills relevance to inform human and AI-enabled selection processes; talent strategies

Cognitive and socioemotional skills; creativity

Broad vs specialised knowledge

Explore opportunities to connect datasets

Experiment with collective intelligence tools to combine human and AI input

# Learning and development

(Smart) learning as a core part of employment offer

Relevant across all types of workers (possibly even more relevant for less secure forms of employment)

Career adaptability

New learning methods to motivate uptake and ongoing learning

Right to know: raising awareness of skills declining or increasing in demand