



DISRUPTIVE SOLUTIONS IN SKILL PROFILING FOR FOOD AND FOOD RELATED INDUSTRIES



PROFILING

the extrapolation of information about something, based on known qualities

In Information Science, it's the process of construction and application of user profiles generated by computerized data analysis



deal with increasing data-overload

discriminate information from noise (KDD-Knowledge Discovery in Database)

manage the profiling process



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Preliminary grounding: The profiling process starts with a specification of the applicable problem domain and the identification of the goals of analysis.



Data collection: The target dataset or database for analysis is formed by selecting the relevant data in the light of existing domain knowledge and data understanding.



Data preparation: The data are preprocessed for removing noise and reducing complexity by eliminating attributes.

Data mining: The data are analysed with the algorithm or heuristics developed to suit the data, model and goals. Interpretation: The mined patterns are evaluated on their relevance and validity by specialists and/or professionals in the application domain (e.g. excluding spurious correlations).



Application: The constructed profiles are applied, e.g. to categories of persons, to test and fine-tune the algorithms.



Institutional decision: The institution decides what actions or policies to apply to groups or individuals whose data match a relevant profile.

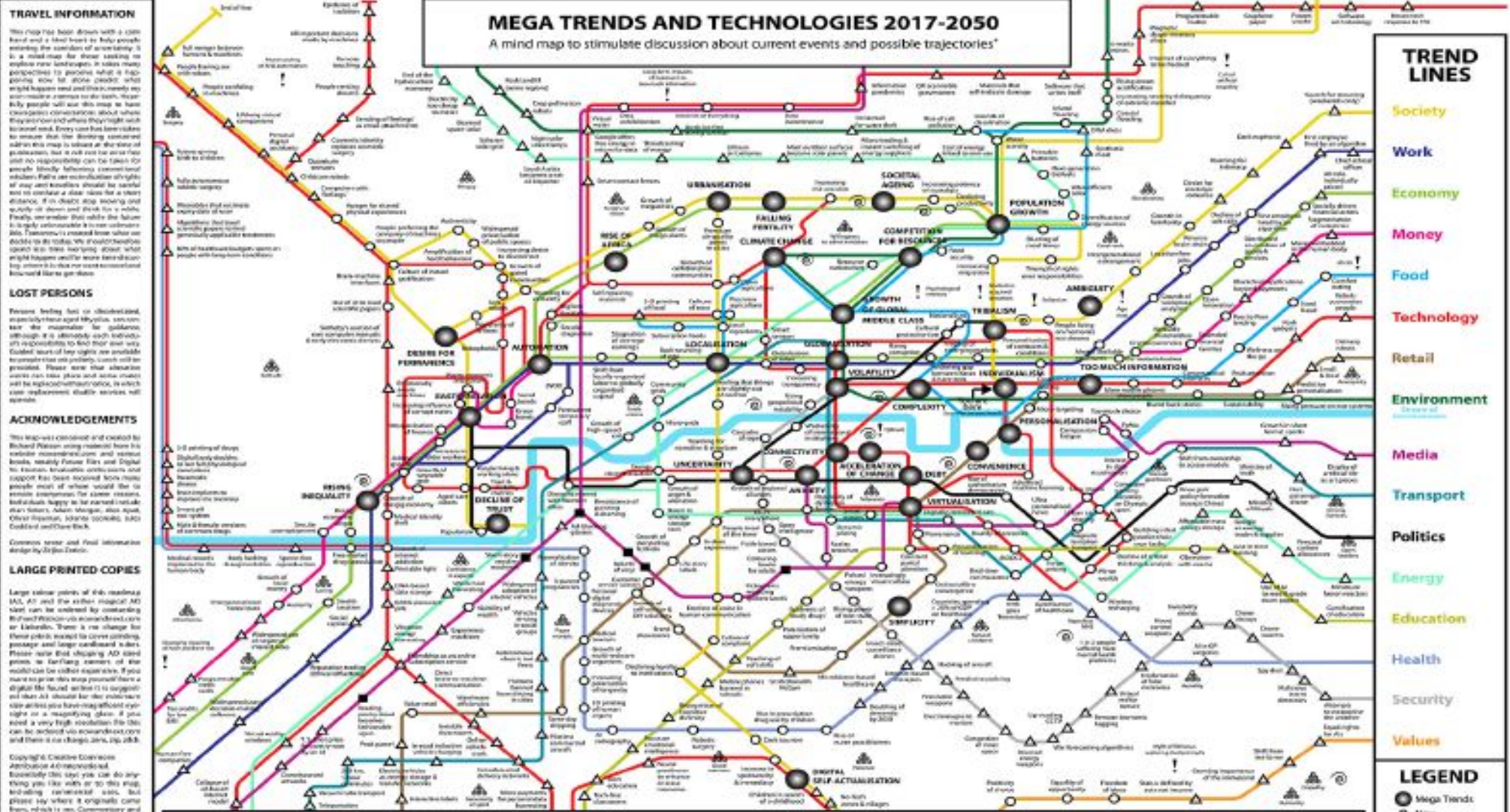


Would you ever drive by watching just at the rear mirror?



MEGA TRENDS AND TECHNOLOGIES 2017-2050

A mind map to stimulate discussion about current events and possible trajectories*



TREND LINES	
Society	
Work	
Economy	
Money	
Food	
Technology	
Retail	
Environment	
Media	
Transport	
Politics	
Energy	
Education	
Health	
Security	
Values	

LEGEND	
● Mega Trends	
○ Near	
▲ Next	
■ Counter-trend	
⊗ Partial risk	
⊕ Dangerous	
! Place of interest	
⊖ Projection Subjective	

- GLOBAL GAMECHANGERS (What could possibly go wrong?)**
- | | | | | | | |
|-----------------------------------|--------------------------|-------------------------------|--------------------------------------|-----------------------------------|------------------------------------|--|
| ▲ Regulatory change | ▲ Severe food shortages | ▲ Extreme climate change | ▲ Radiation from mobile devices | ▲ Destabilisation of China | ▲ Weaponisation of near space | ▲ Decline of human intelligence |
| ▲ Systemic financial collapse | ▲ Super volcano eruption | ▲ Major Syn-bio accident | ▲ Doubt in of the Chinese birth rate | ▲ Collapse of EU | ▲ Collapse of North Korea | ▲ Message received from outer space |
| ▲ Inflation running at > 10% | ▲ Severe space weather | ▲ Loss of antibiotic efficacy | ▲ Oil price shock | ▲ Russian expansionism | ▲ US-China war | ▲ Finding out the Matrix is real (DSG) |
| ▲ Rapid rise in US interest rates | ▲ Rogue weaponised AI | ▲ Failure of pandemic virus | ▲ Extreme drought | ▲ Water trading & speculation | ▲ India-Pakistan war | ▲ Return of the Mandala Book fairy |
| ▲ Major Chinese slowdown | ▲ Gamma ray burst | ▲ Failure to treat obesity | ▲ Mass unemployment caused by AI | ▲ Collapse of EU pensions funding | ▲ Blockage of the Strait of Hormuz | ▲ People asking these things seriously |
| ▲ Global trade collapse | ▲ Giant methane burp | ▲ Mental health epidemic | ▲ Biological terrorism | ▲ Major sovereign debt default | ▲ Self-replicating killer robots | ▲ Something I haven't thought of |

Do you think a map of the future can be enough?

If the point is sharp, and the arrow is swift, it can pierce through the dust no matter how thick (Bob Dylan)



DISRUPTION

Clayton Christensen, Innovator's Dilemma author who invented the concept in 1996, disruption displaces an existing market, industry, or technology and produces something new and more efficient and worthwhile. It is **at once destructive and creative**.

What you think is attainable is just a function of what you know at that moment.

Think of it this way: **Disruptors are innovators, but not all innovators are disruptors** -- in the same way that a square is a rectangle but not all rectangles are squares. Still with me?



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Needs Assessment (collecting and analyzing data)



Design (program objectives, plan, measures of success)



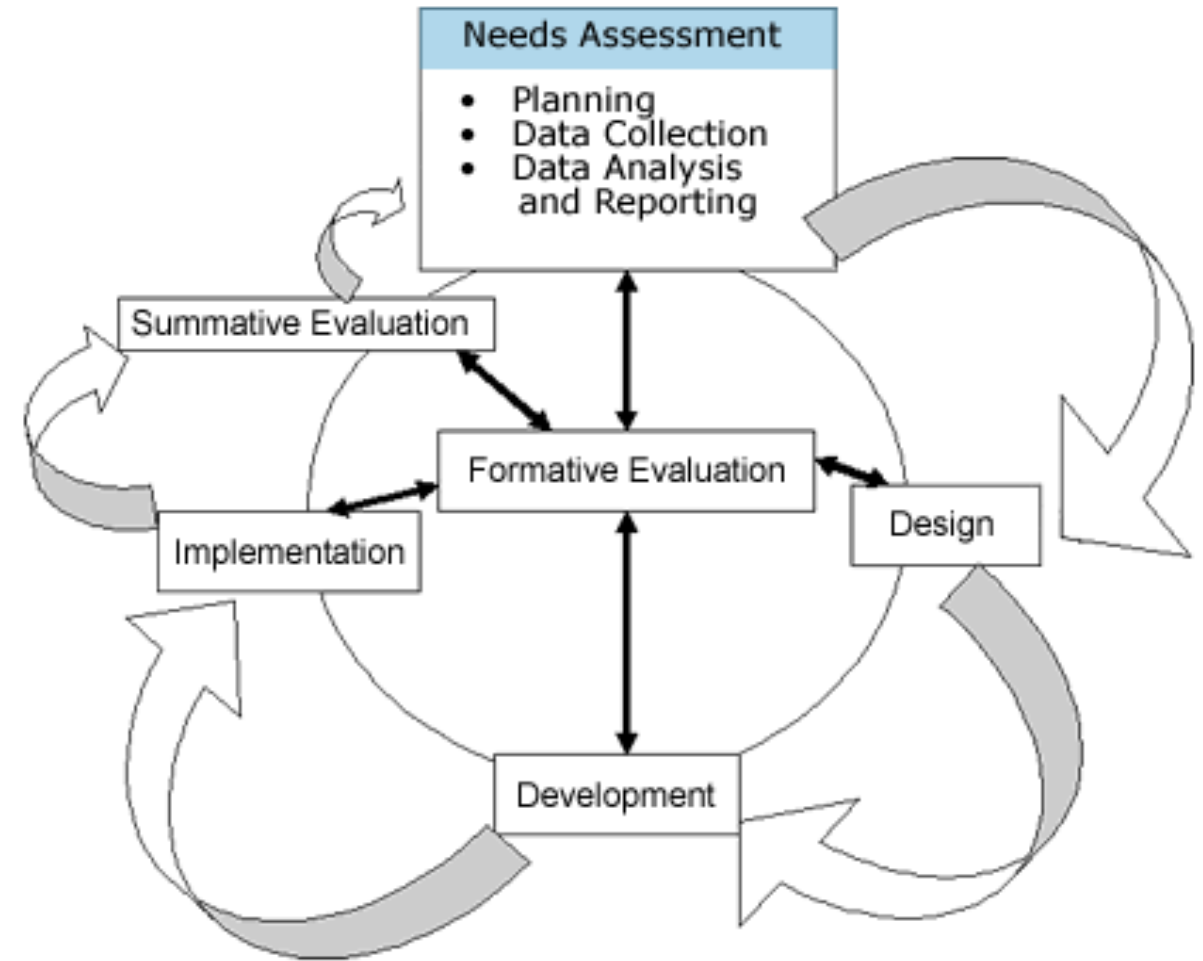
Testing (prototype the instrument and process)



Implementation (collection measures and update as needed)

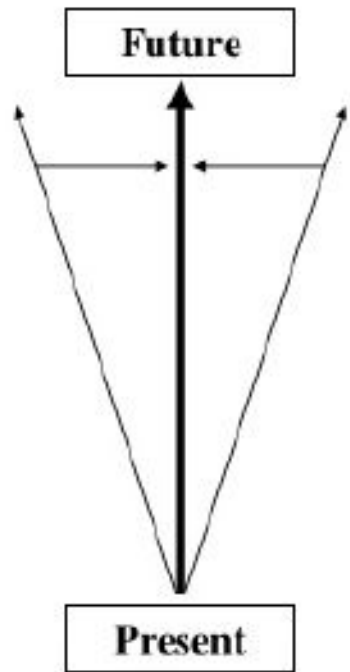


Analysis and Evaluation (review feedback and data collected)



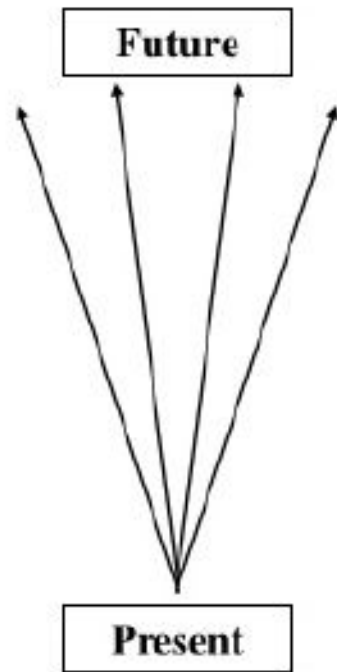
Forecasting

BAU Scenarios
Predict most likely future



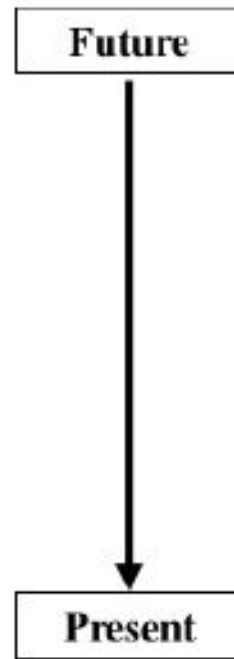
Exploratory Scenarios

Explore alternative futures

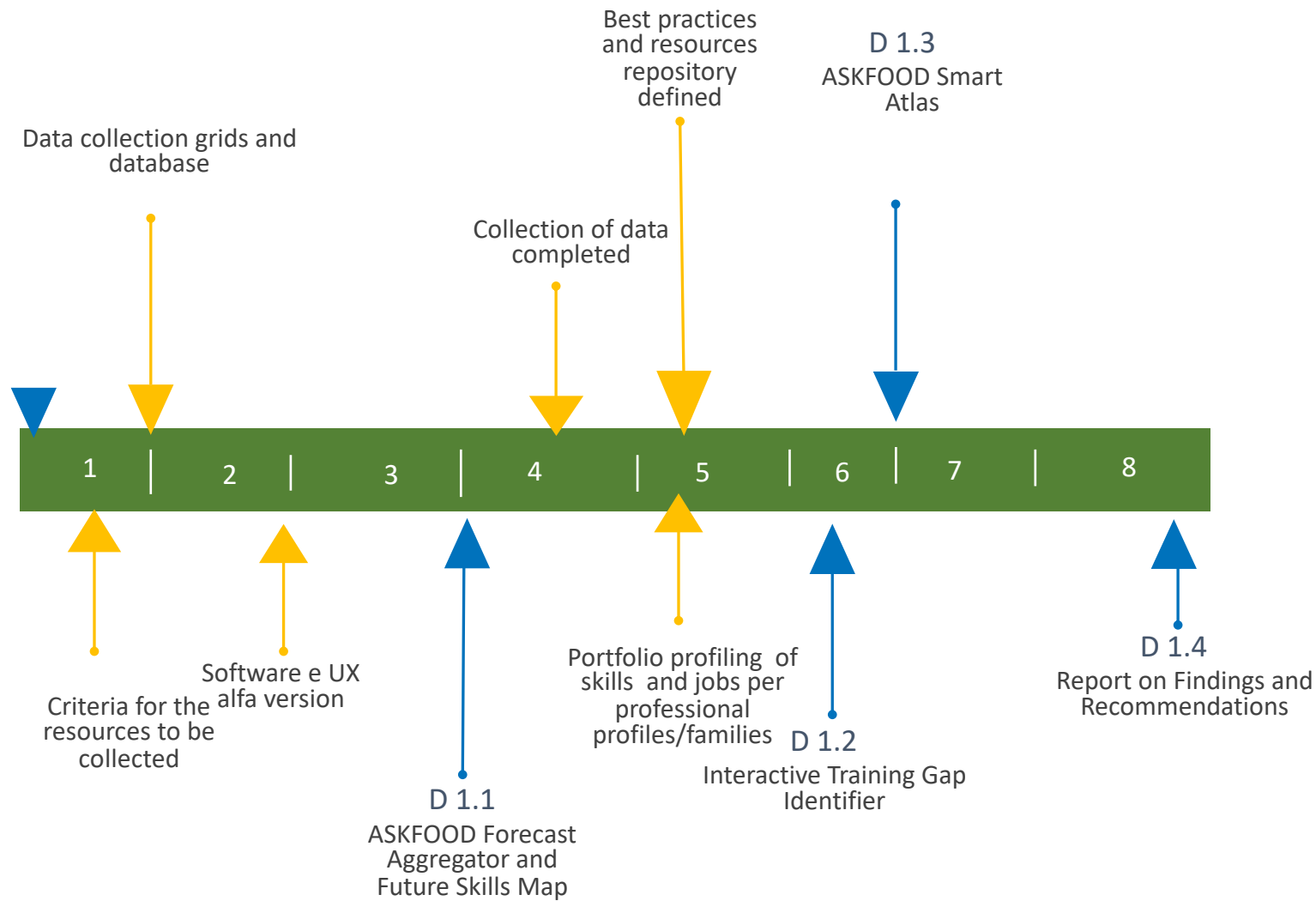


Backcasting

Assess feasibility of desirable future(s)



**NEVER PLAN A
FUTURE WITH PEOPLE
WHO DON'T HAVE
FUTURE PLANS.**
KUSHANOWIZDOM



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MOONSHOOT BACKCASTING

If we want to attain a certain goal, what actions must be taken to get there? (with the Einstein Formula in mind)

Forecasting involves the prediction of the future (unknown) values of the dependent variables based on known values of the independent variable.

Backcasting involves the prediction of the unknown values of the independent variables that might have existed, in order to explain the known values of the dependent variable



Mindset the future belongs to those who adopt a growth mindset, rather than a fixed mindset. No distinction between professional and personal growth

Mastery You acquire the knowledge; there's a framework for that. You practice it to demonstrate that you can acquire the competencies, and then through the repetitive iteration of that, you develop proficiency and then, ultimately, mastery

Cross-fertilization + Community Wisdom



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Zoom Out Your staff and colleagues may initially question the motives behind moonshot thinking. Encourage them to visualize a bigger picture. What is your brand? What does your company stand for today? For example, while we were working with a chocolate company, we started by going back to the founder and the company's philosophies. We asked: Why does this company sell chocolate?

Change the picture In a completely different world with evolved limitations, how do these qualities shine through? Do they? Choose to be bothered. In the example of the chocolate company, we said, what would happen in a world without chocolate? What would happen if the cocoa bean went extinct (this could actually happen)?

Submerge Yourself Moonshot thinking is an exercise in what-ifs. Think about the things that could happen in the next 10 years. Virtual reality? Drone delivery services? 3D printed food? In keeping with our example, these all could have an effect on a chocolate business.

Be willing to go on tangents even if they may not make sense in the current context. Imagine a new one and whiteboard your ideas. With moonshot thinking, it's good to get excited about things and build on top of other people's random thoughts. Always be asking, "And then.....?" The more that you put out there, the better; later, you can move to, "Hey, we can actually prototype this!"

TURN INTO KNOWLEDGE THE TURMOIL

How to map the future?



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Key mega-trends that will serve as main power-breakers

- Changing patterns of employment;
- Changing millennial aspirations;
- Increasing tech-talent shortages;
- Increasingly aged population;
- Increasingly financially constrained institutions;
- Growth in trading nations & anti-competitive practices;



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The rise of the robots

- Up to 800 million global workers will lose their jobs by 2030 and be replaced by robotic automation, a new report from a consultancy has found.
- The study of 46 countries and 800 occupations by the McKinsey Global Institute found that up to one-fifth of the global work force will be affected.

[Jobs lost, jobs gained: Workforce transitions in a time of automation](#),
McKinsey Global Institute, Dec 2017



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The rise of the i-pro

- 91% of millennials are **willing to relocate**
- Automattic, the company behind WordPress.com, are a distributed company with over 700 employees in 63 countries worldwide, all of whom speak 80 different languages.
- Rather than give their employees an office, they give them a \$250-dollar stipend a month to spend on a workspace of their choice. Some use it to pay for a desk in a coffee bar, others use it for co-working spaces.

[The creator of WordPress shares his secret to running the ultimate remote workplace](#), Quartz at Work, May 29, 2018



Post - Millennial (GEN Z) lifestyles

Main trends in post- millennial lifestyles shaping their relationship with cities are;

- Flexibility;
- Connectivity;
- Flat hierarchies;
- Mobility;
- Access over ownership; and
- Empowerment;

Millennials Lifestyle Observatory, MIT Mobile Experience Lab, 2015. See this [video](#) and [report](#)



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Post- millennial lifestyles

- Post- millennials are changing the concept of work, shifting prioritization from career advancement to making a difference in their society.
- However, only 17% of Post- Millennials feel that their city governments or other Institutions are listening to them.
- 55% of youth want to participate in meetings about the future. -**Post- millennials want to be engaged, they recognise the economic importance of living in a youthful place and they want to help create it.**
- Millennials confirm that a youthful city is one that is **connected, dynamic, open, curious, inventive and playful**. Millennials believe youthful places deliver **more jobs, a better economy and a happier population**.

[Things Post-millennials want from work](#), World Economic Forum, 2015
[Global Urban Millennial Survey](#), Youthful Cities, 2016

Opportunity to make
a difference In
society/
my city/country

65%

Opportunities to

Learn 51%

Career Advancement

40%



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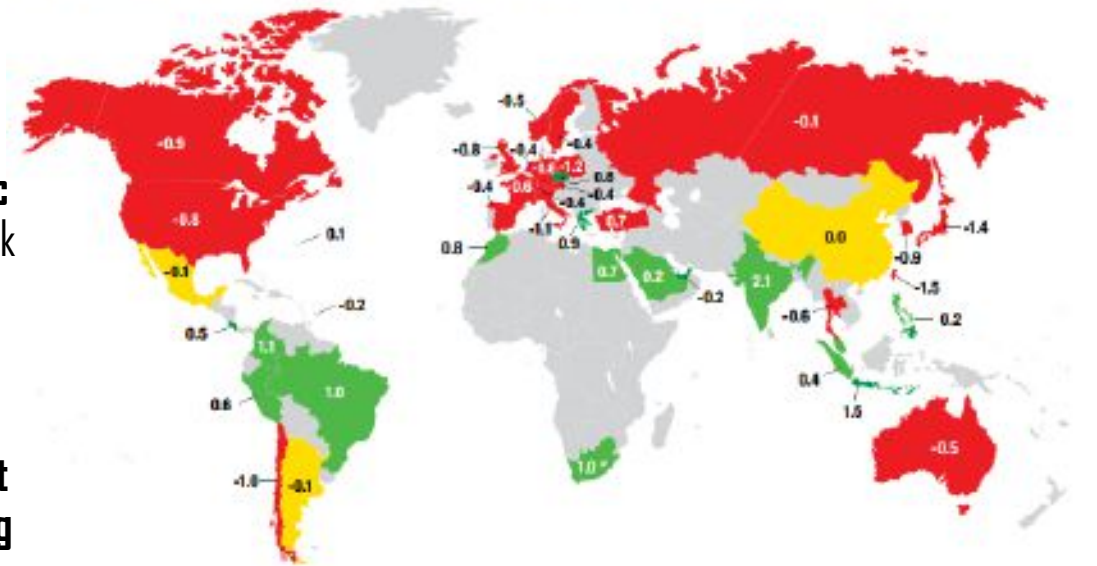
The war for talent

- **“There could be up to 825,000 unfilled vacancies for ICT professionals by 2020”** - Andrus Ansip, EC Digital Single Market chief.
- **“The lack of STEM skilled labour will be one of the main obstacles to economic growth in the coming years ”** - Business Europe, Plugging the Skills Gap: The clock is ticking.
- **“Demand for people with STEM skills is increasing across the Globe. Many STEM workers are approaching retirement age. Some forecasts suggest around 7m technical job openings will emerge between 2016 and 2025 .Whilst demand for tech people continues to increase, the number of people choosing to pursue tech careers continues to fall.”** - Encouraging STEM: Comparison of Practices Targeted at Young People in Different Member States, DG for Internal Policies, March 2015

Global Heat Map

The gap between the growth in demand and the growth in supply of talent, 2011 to 2021

(Red indicates a trend deficit, green a trend surplus, yellow a broad balance. Numbers show trend growth as annual percentages.)



OXFORD ECONOMICS



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An increasingly ageing population

- Eurostat predicts the share of the 'very old' in EU-28 will increase from 5.4 % in 2016 to 12.7 % by 2080 (27.3m in 2016 to 66.1m by 2080). **By 2080 there will be less than two persons of working-age for each elderly person;**
- WHO predicts that the number of economically active people needed to be health workers to maintain current levels of care will rise from 7.17% in 2005 to 11.79% by 2050;
- The IMF estimates that a 1% increase in the 55–64 age cohort of the workforce is associated with a reduction in total factor productivity (TFP) of about 0.2% per annum. They project that aging could reduce TFP growth by 4% over the next twenty years.

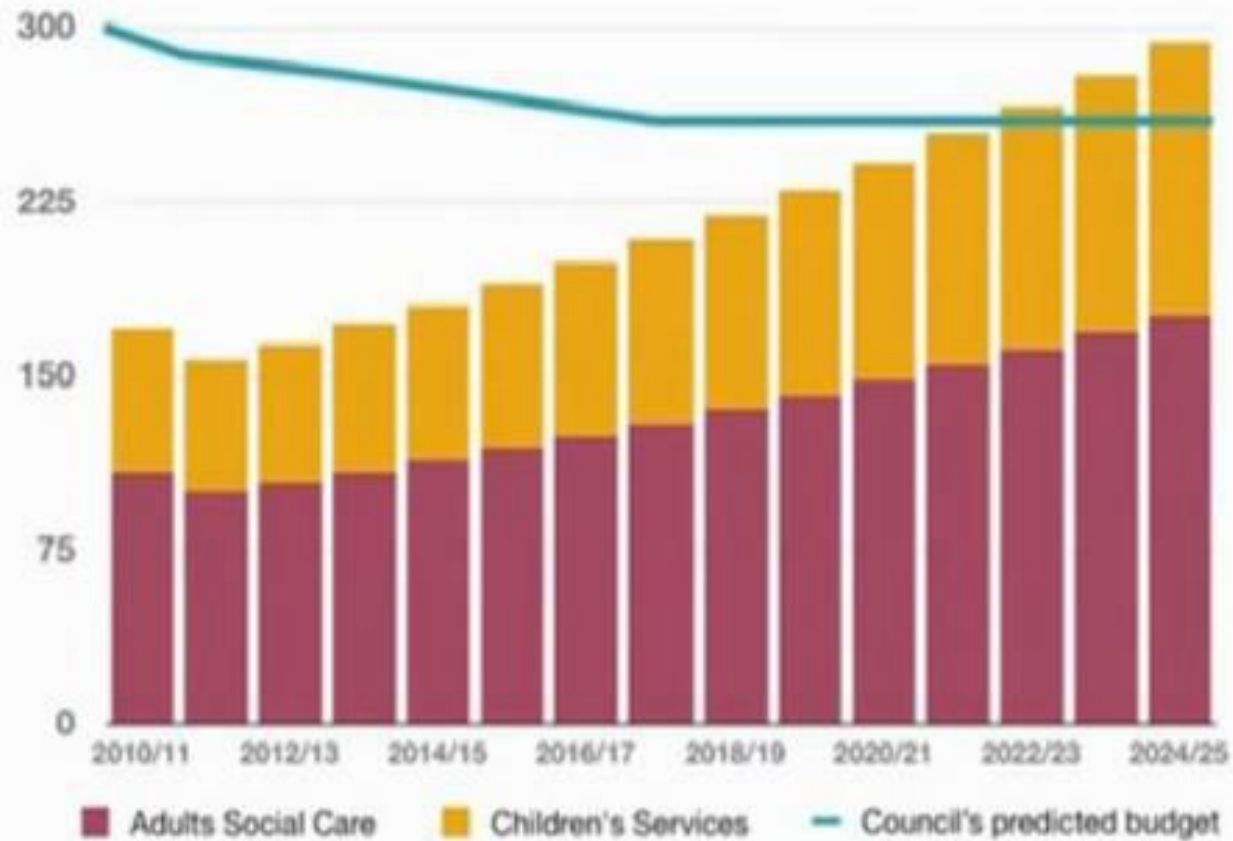


A tight fiscal environment

- Growth in the volume of global trade putting pressure on tax take;
- Demographic time-bomb - less people are paying-in than taking out;
- Increasingly debt ridden governments and financial institutions;
- Some evidence to suggest businesses and consumers are saving for a rainy day ...



The 'Graph of Doom'



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TEMPESTS

Most of us have the sense that our education systems haven't kept pace with innovation

The modern education system was developed in the Age of Enlightenment to support the Industrial Revolution of the 19th century, as a way to take people off of farms and educate them to work in factories. That's why there are school bells. They're meant to mimic factory whistles. That's why we have the people lined up in desks, in rows, because that's how an assembly line is constructed



In the 1900s, 40 percent of the jobs in this country were farming jobs. Today, only 2 percent are farming jobs. Very soon, 40 to 50 percent of the jobs are going to be replaced by robots and automation..



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Technology

Self-aware data (AI); Invisible Technology (IDT); Debunking the Fabricated; Robot renaissance; F&D App-ification

Economics

Trade Threats; Cryptocurrencies, Crowdfunding and Innovative Finance

Social Issues

Side quirks and tribes; Mainstream Mindfulness; Touchworthy food; Food Equality and Food Equity; Social Innovation

Market

Food co-curation; Essential Integration; Desperate Detox; Outrageous outsiders; Instant Entrepreneurs; Enlightened Consumption



Transformative Industry

Disruptive logistics, Retail theaters, Peer-to-peer networks via blockchain. Remixing standardization to personalized offers

Environment

Climate change and biological networks; Food as a landscape/endangered species; Biosensors; Proteins for food, Eco-processing, LCA and re-use/re-cycle/re-manufacturing; From Intensive to Low Impact and Precision Farming

Policy and regulation

Ethics for food; Predictive protection for Golden Silvers; Brand Youth as politics; Malnutrition and Nourished Planet

Science

Foodomics; Nanotech accidents; Nutrigenetics and Nutrigenomic; Lab/Home Grown Food; Frozen Food Frontiers

Potential policy responses

- Improved integrated local delivery of opportunities;
- More participatory programmes;
- More innovation, entrepreneurship and disruptive business models;
- Digital services, technology adaptation and upskilling;
- Investment in placemaking and creative/cultural capital;
- Promotion of social entrepreneurship as a tool for innovation even in skills profiling and delivering;
- Stimulation of alternative sources of finance to support and reward disruption attempts



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THANK YOU!

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ASKFOOD PROJECT



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