

What the future holds, and what we  
can do about it?  
(I wish I knew!!)

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# There has always been change!

- Changes to what people want doing.
- Change to what we can (or know how to) do.
- Changes to what economics dictates is worth doing.
- Selling change for its own sake.
- Maybe change now is accelerating and being communicated constantly

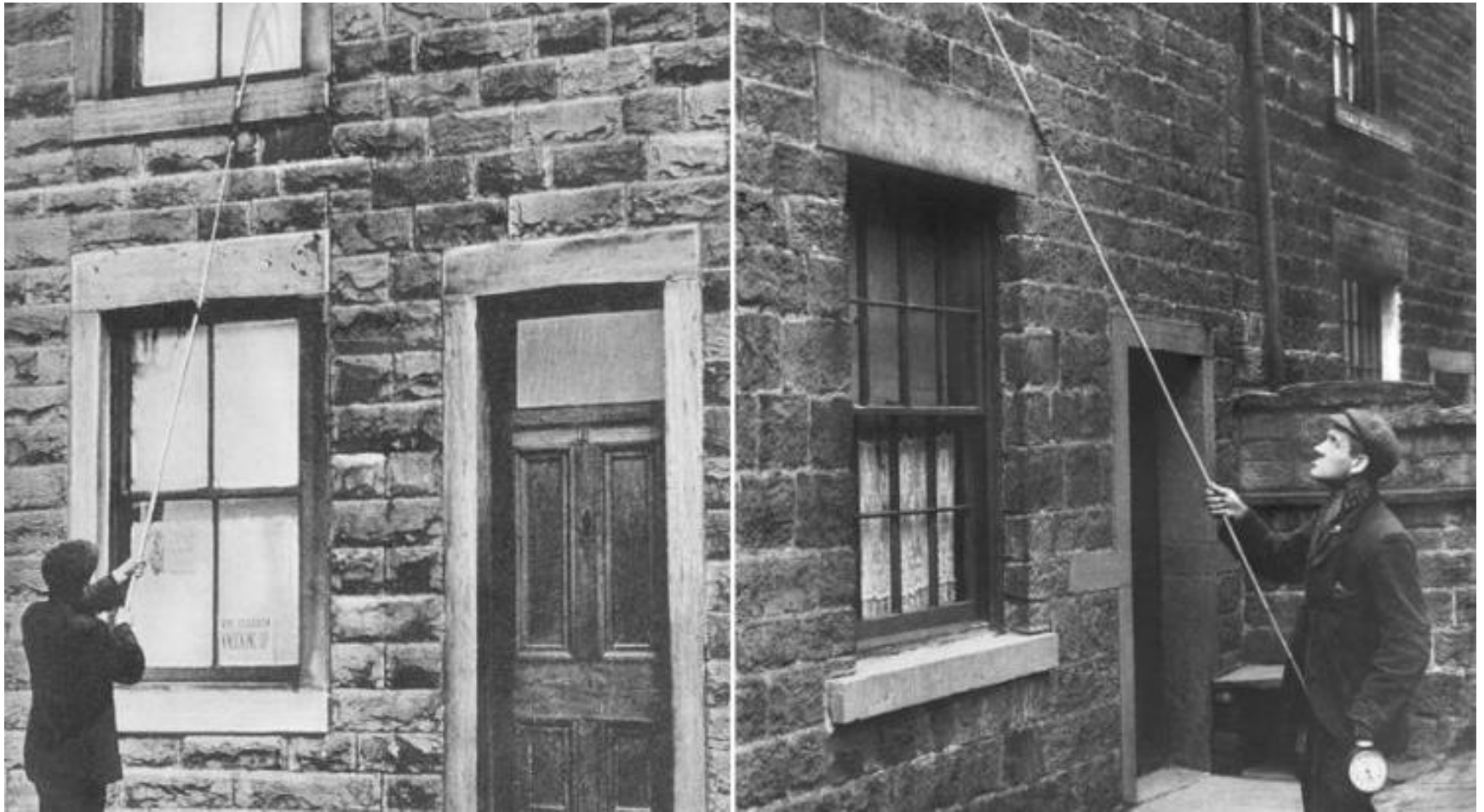
# Self Service



# Communication



# Affordable personal automation



# Technology



???



# Industrial Strategy

- This is a complex political document with multiple goals.
- It is a useful basis for discussion though.
- It raises many of the important issues for surrounding future careers.
- It is NOT a roadmap that we are following.
- We can extract some important features.



# Technical v Academic??

- The IS (and other publications) draws a distinction between technical and academic education.
- While we sort of know what is being said, as a Dean of Science and Technology it leaves me in an odd place – are technical subjects no longer academic?
- If “technical” means “skilled” – don’t we want skilled lawyers, doctors, mathematicians, ...

# We need more STEM

- This doesn't simply mean we need more chemists!
- Rather it means that STEM subjects are becoming more integrated into many fields.
- Digital areas bring STEM into all enterprises.
- Automation and AI could require STEM skills to upgrade careers.
- Sustainability is causing us to consider new approaches to many issues requiring science (e.g. micro-plastics)
- BUT girls are less likely to choose STEM subjects than their male counterparts – increasing STEM could do two things – widen gaps or reduce gaps.

# Computer Science

- Rapidly changing subject.
- Very few experienced/knowledgeable teachers – for obvious reasons.
- What is “coding”????
- CS is a vibrant, exciting, creative subject – shame the IS doesn’t get this!!
- One problem is the tension between legacy jobs and future jobs.

# Connectivity and Data

- 60 years ago telephones were still a novelty ....
- Mobiles were science fiction.
- There was no internet.
- Now, we have the internet of things – data from your TV can help companies market products.
- 50% of the data in the world was produced in the past 2 years !!!! Think this through!

# Digitisation

- This is a term thrown around, but what does it mean?
- Essentially most things are now represented in digital form. Books, music, photos, films, speech, ...
- We have digital convergence – your “phone” is also a camera, computer, watch, health monitor, ...
- 3D printing could have massive implications.

# Automation, AI and Data

- Automation is not new – sophisticated FAST technology is.
- Classical automation took simple sequences of actions and made them automatic.
- AI seeks to automate thinking-type things. Not new, but speed is now real-time in many applications.
- AI often uses data - availability, communications speeds and processing speeds makes data a valuable adjunct to AI.

# Mix them up ...

- Putting automation, AI and data availability into a pot and we get ...
- The potential for “SMART” things ...
- Cities, vehicles, health environments, ....
- This is new!!
- It doesn't simply automate what is – it creates what will be!
- Add in digitisation and connectivity ....

# What about future careers?

- Will there be sufficient stability for the term “career” to be meaningful?
- Being an “expert” in the sense of knowing stuff may not be enough – connectivity, digitisation and AI could be cheaper, faster and better.



# So what advice would I give a family member asking about careers??

- Be the sort of person who says “ I don’t know what that is, but I can learn to do it”.
- Learn to learn technology quickly!
- If you need to be shown how to do things, the odds are robots will be doing those things soon.
- Don’t get stuck in old ways of thinking.
- Embrace change! If you are afraid to try something in case you fail – you have failed.