



Automation Roundtable – Discussion Note

Monday 26th June – Pierhead Building, Cardiff Bay

Automation shouldn't been seen as just a threat. There will be considerable advantages, too, and Wales must position itself to exploit the opportunities emerging technologies will present. But just as there will be winners, there will also be losers, and Governments need to equip both people and businesses to adjust to the impending disruption.

Key discussion points: Over 700,000 jobs are at risk from automation in Wales over the next two decades - roughly one job in every two (in specified sectors). Even more worrying is the deeply gendered impact of automation; for every three males jobs lost, one will be replaced, whilst women will lose five jobs for each new one created.

But automation isn't something to halt, it's something to harness. This rapid technological evolution will present significant opportunities; if we prepare well, automation could drive out repetitive, high-risk jobs, replacing them with creative, well-paid alternatives. But action is needed to prevent the 'uberisation' of jobs - often characterised by low pay and insecurity. And we must ensure the safety net is fit for purpose.

The development of a future-proofed skills agenda will help achieve this ambition. We need to rapidly scale-up coding and ICT provision in our schools, and we need to better prepare people for the instability and uncertainty that is coming; providing people at all stages of their career with sought-after leadership qualities - such as flexibility, creativity and innovation.

Supporting firms and organisations to focus on product diversification (over productivity) will help lessen the human impact of automation as established product (or service) knowledge will be seen as an advantage, and existing staff will be redeployed rather than made redundant. Focus must also remain on finding new ways of encouraging girls and women into STEM subjects and careers.

But to capitalise on these opportunities, and prepare for the risks, Wales needs a 2050 vision for our economy; we need to be at the forefront of the adoption for new technologies; and we need to approach automation with ambition to create uncontested market spaces - leveraging our existing expertise and combining it with new technologies to exploit emerging market opportunities.



Broader discussion: Autonomous tools are fast becoming autonomous workers. An estimated 700,000 jobs are at risk in Wales, and for the first time so-called ‘white collar’ jobs – including doctors, accountants and lawyers – will be affected, as well as the more traditional factory jobs.

“As the technology continues to advance, robots will kill many jobs. They will also create and preserve others, and they will also create immense value - although as we have seen time and again, this value won’t be shared evenly. Overall, robots can be a boom, freeing up humans to do more productive things - but only so long as humans create the systems to adapt their workforces, economies and societies to the inevitable disruption. The dangers to societies that don’t handle these transitions right are clear.”

Alec Ross (2016) The Industries of the Future

The UK economy has proved itself resilient to previous waves of disruption. Since the second World War we’ve witnessed innovations – such as automation, the desktop PC and the internet – that have transformed the way we work, yet growth has remained constant at an average of 2% every year up to 2007.

But the scale and scope of this new wave of automation seems different – with multiple sectors being hit simultaneously. Whilst some effects are already being felt, it may take generations for the potential of these emerging technologies to be fully realised.

It is crucial for Wales to focus on the opportunities presented by automation, as much as the risks.

The disruption triggered by automation will most likely be felt at the individual level, and action from employers and Welsh Government is needed to mitigate this. Alongside these actions, there is a clear role from Welsh Government to support organisations to take advantage of the opportunities automation presents. To this end, we have subdivided the challenges, opportunities and interventions discussed into these subdivisions: individuals, organisations, and economy-wide

implications. This has been done to make this summary note as accessible as possible. Our economy does not work in clear delineations, nor does it operate in a vacuum.



Individual level:

What is clear, is that the type of jobs that are created through automation will be crucial. Whilst some workers will be more easily deployed to decent alternatives (where automation has a role), others will fall victim to the so-called 'uberisation' of jobs, often characterised by low-paid, insecure work. However, handled correctly, automation isn't something to fear. Indeed it could be utopian. Boring, dangerous jobs stripped out, replaced by much more interesting alternatives. But the degree to which we can lessen automation disruption at an individual level will be decided by our ability to prepare in good time.

- The skills agenda was a consistent concern raised. Large employers in Wales currently find they have to hire contractors (not based in Wales) to fulfil jobs that full-time employees could deliver. There was a strong desire to develop a 'pipeline of talent'; specific areas that were felt to need attention include:
 - IT/programming training – particularly for children and young people - was felt to be consistently inadequate. In general, the Donaldson review was felt to be 'a good way forward', but there were concerns on the length of time it is taking for the new curriculum to be rolled out. Investment in coding clubs was welcomed, but as one participant commented – *"The £1.3 million investment into coding clubs may sound impressive, but split 400,000 ways it won't amount to much"*. We need a curriculum that is fit for purpose and ICT skills must be a priority for every school in Wales.
 - In-school workforce training and targeted careers support were also felt to need greater attention – in order to better prepare pupils in Wales for the workplace.
 - The world of work is rapidly changing. Job stability no longer means staying in one job, or even one career, for your working life. Instead, stability is the knowledge that you have the skills and capabilities to move to another job. Education policy needs to respond to this. We need to prepare people for instability and uncertainty – providing people with transferable toolkits that will enable them to move around as and when they need (or want) to, and that focus on sought-after leadership qualities such as flexibility, creativity and innovation.
 - We systematically need to attract more women to STEM subjects. Any efforts undertaken to transform our skills agenda towards these emerging industries must be sensitive to the highly gendered nature of our economy - particularly in these fields of work. The World Bank recently warned that for every three male jobs lost to automation, one will be gained. For women the situation is far worse - they will lose five jobs to automation for every one that is

gained. This approach must also focus on educating families about how to encourage girls into STEM subjects.

- Crucially, because of the speed of change underway, focus needs to be as much on people mid- and end-career, as on children and those at the start. Upskilling and in-work development will be just as important as school and degree programmes.
- There is widespread recognition that some people at risk of losing their jobs will be in a more precarious position than others. We must ensure the safety net is fit for purpose and that we don't look at the pressures on individuals in isolation. To this end, we need a national debate about proposals such as universal basic income in Wales and changes to our tax system (i.e. shifting to a model that taxes assets, land and capital instead of income).

Firm/organisation level:

- We need to support firms to use automation as a tool for product diversification, rather than simply to raise productivity. Doing so, will naturally provoke a retention of staff (who have existing, likely transferable product knowledge) over the replacement of employees by machines. For example, a quarter of all jobs in the NHS are in admin/clerical – roles that are at risk of automation. However, rather than implementing mass redundancies, the NHS could repurpose these positions towards early intervention. In so doing, automation ultimately becomes a tool of refocusing the NHS towards preventative healthcare.



- Accountants have a birds-eye view of the trends underway and those fast approaching - where firms are succeeding, and which areas are being squeezed. We need to mobilise this knowledge more effectively. Supporting firms, public services, technical colleges and universities to access accountants could help to ensure opportunities are seized.

- With official levels of unemployment at record low levels in Wales, the criteria used for the provision of financial support to firms should be re-examined. Rather than focussing solely on jobs creation, alternative measures of success could be trialled – including productivity or product diversification.
- Organisations must be encouraged to have ‘grown-up’ discussions with their staff about future workplace changes. Sony, for example, has a five year plan for every job grade. The DVLA, faced with a 34% cut in budget has sought to bring IT back in house, and is making efforts to replace lower-skilled outgoing jobs, with higher-skilled alternatives.
- Local authorities, in particular, need access to expertise that will enable them to take advantage of emerging technologies. Not one of the 19 wellbeing reports submitted by local authorities under the Future Generations Act identified automation as either a risk or a future tool for success. Wales is heavily reliant on public sector employment – decent jobs that are distributed nation-wide. But without expert support, local authorities will struggle to transition. We need to tackle the traditional public sector mindset and facilitate access to expertise.

Economy-wide level:



- We need a 2050 vision for our economy and an Industry 4.0 strategy – focussing on offering direct investment to areas with multiple wins. And we need to be working with industry to ensure we are well-positioned to apply to the Industrial Strategy Challenge Fund.
- Rather than following others, Wales needs to create our own strength. We need to approach automation with ambition to create uncontested market spaces. We have existing expertise in insurance, data mining, electric mobility, fintech, compound semiconductors, and bonded composites - amongst other sectors - we need to leverage this knowledge and experience and combine it with emerging technologies to explore new market opportunities.
- We also need to ensure we are at the forefront of adoption for new technologies – including in more rural areas. Wales can both facilitate and capitalise on this if we’re smart – transforming communities in Wales into rural test beds for emerging technologies, such as autonomous vehicles.

List of participants:

Philip Catherwood | Senior Strategy Manager, Advanced Materials and Manufacturing, Welsh Government

Dickie Davis OBE | Deputy Director for the Advanced Materials and Manufacturing Sector, Welsh Government

Paul Davies | CEO, Industry Wales

Simon Greenwood | Expert – Robotic Process Automation, CGI

Sophie Howe | Future Generations Commissioner

Daniel Hurford | Head of Policy (Improvement and Governance), WLGA

Leigh Hughes | Chair - Learning, Skills and Innovation Partnership (South East Wales)

David Hulston | David Hulston Associates

Sue Lane | Group HR Director, Principality Building Society

Barry Liles | Former Chair - Regional Learning and Skills Partnership (South West and Mid Wales)

Peter Perry | Chief Operating Officer, Dwr Cymru

Tracy Porch-Bradley | Engagement Lead (Wales), CGI

Professor Nicholas Rich | Swansea University

Tegid Roberts | Cadarn

Professor Rossi Setchi | Cardiff University

Professor Johann Sienz | Swansea University

Ken Skates AM | Cabinet Secretary for Economy and Infrastructure

Lee Waters AM | Assembly Member for Llanelli

Louise White | HR & Estates Director, DVLA

Professor Alan Winfield | Bristol UWE

NB: This note is intended as a summary of the key themes emanating from the conversation, rather than a transcript featuring directly attributable quotes.