

# Britain has a bright future if we seize the potential of innovation

A ploughman, a lamp-lighter and a knocker-upper walk into a bar...

It's a really old joke.

Because those jobs don't exist anymore.

They're obsolete. We don't have ploughmen, lamp-lighters, and knocker-uppers.

Thanks to tractors, electric lighting and alarm clocks, you don't have to pay someone to knock on your window to wake you up in the morning.

Can you imagine what a weird job being a knocker-upper was?

This debate has raged about automation for centuries, and it has been reignited because of artificial intelligence coming down the track, but it's actually an old argument.

Let's talk the truth about technology.

We need to be honest about what obsolete jobs were really like.

Take mining for example. There's a romance to the days of when men went down the pits. I come from Nottinghamshire mining stock, and I feel the proud legacy of our mining industry, and the contribution my forefathers made to making this country what it is – and the economic and political powerhouse the mining industry was.

But does the romance meet the reality?

I remember my grandmother told me how each of her 5 brothers, when they turned 14, were offered jobs down the pit. And I remember her telling me, very clearly, that they knew if they said yes, they'd be down there for life.

They aspired to a better life. And think of it now and this generation.

Would I want my children to do it?

No, and I imagine every parent in the country would say the same.

Because mining is difficult, dangerous, too often deadly work.

And let's not forget the environmental impact – we recently marked, celebrated, a new record in the number of hours without coal-generated energy production in Britain since the Industrial Revolution.

The future is solar: high-tech, safe and clean. If we really want to improve people's lives we need to take this lesson and apply it to our country's future.

While some only focus on the conservation of old jobs, our concern must always be the creation of better new ones.

I use this poignant example of coal mining to make a point because we need to move on to the things that are bigger than Brexit.

What's mission-critical is that we create high-skilled, well-paid, secure jobs, and we equip and empower people to get those jobs.

That's how we build a Britain match-fit for the 21st century.

Now, how do we do that?

We need to see this in the context of what many people call the Fourth Industrial Revolution, because winning the Fourth Industrial Revolution is an economic and geo-strategic imperative.

The First Industrial Revolution, the one powered by coal, saw mechanisation take over from muscle power.

Britain led the world and became the richest and most powerful nation.

In the Second Industrial Revolution, electricity and mass production transformed manufacturing.

And Henry Ford, and the Americans, took the lead.

The Third was electronics and early computers.

And the Fourth is rooted in connectivity, completing the automation of straight-line routine tasks – both physical and mental – essentially leaving to us, humans, what only we can do: the complex, the creative and the caring roles.

History shows us that, on average, new technology invariably creates more jobs than it disrupts. But the geography doesn't always match. The new jobs aren't always in the places where people live and want to be. And this is unsettling and creates profound challenges.

I know this, again, because of my own family history. Two hundred years ago, we, Hancocks, were leading Luddites. My predecessor, Richard Hancock, led a 1,000 strong gang smashing up looms in Nottinghamshire.

He was caught and banished to Australia, but if he was here today, I bet he'd tell you he did it because his family's livelihood was threatened – his family were hand-weavers and the Arkwright loom was destroying his community.

Now, I'm not defending Great Uncle Richard, and we Hancocks have learned a thing or 2 about how the world works, but you can't dismiss his reasons, and how he felt, and we can't dismiss those feelings today.

Your report is absolutely right: the disruption and the opportunities of automation aren't spread evenly across the UK.

The challenge we face as a country is to ensure that Kingston-upon-Thames and Kingston-upon-Hull both benefit from the tech transformation of the Fourth Industrial Revolution.

And there's 3 things I'd like to pick out.

Skills, innovation and making sure the whole country benefits from the coming tech revolution. I'll take each in turn.

First, skills.

In Britain, today, we have a skills shortage.

We don't have enough people with the right skills for the jobs that are being created by our most dynamic companies. Whether it's the Silicon Roundabout, the Golden Triangle, or the Northern Powerhouse, employers are having to recruit from abroad to find staff with the right skills.

Of course, Britain should always be open to the brightest and the best talent from the around the world – the NHS certainly is.

While this past decade, we've increased standards in schools, the world is changing and becoming more dynamic, and our education system needs to change too.

The World Economic Forum says the jobs of tomorrow are going to be the complex ones writing the code: AI and machine-learning specialists, big data specialists, automation experts, information security analysts, robotics engineers, machine interaction designers and blockchain specialists.

And it's not just tech.

There's the creative industries that Britain is already a world leader in, and as Culture Secretary I saw first-hand the enormous contribution they make to our economy, from our fashion designers to our game designers, from the National Theatre to, yes, Alex the Glastonbury rapper.

And then there's the caring professions: nurses, doctors, social work and so many services that are the very essence of what makes us human: face to face, empathetic, able to connect in a way that machines can't and probably never will.

So the complex, the creative and the caring.

These are the industries where the jobs of tomorrow are going to be concentrated.

To ensure we're equipping people across the country for these new jobs we need to ensure they get the best possible start at school.

We need to ensure all of our schools are properly resourced, and all of our teachers get the support they need to ensure every child can fulfil their potential.

We need to ensure our universities stay world leaders, but learning shouldn't end there.

We need to change the mindset that skills are something you acquire at the start of your career and then carry with you unchanged until retirement.

That's like buying a smartphone, never updating the software and expecting it to still be working in 50 years' time.

It's not how the modern world works. As jobs require ever greater, and ever changing, skills we must place a greater emphasis on learning how to learn.

I find the Onward proposal for a Retraining Tax Credit, aimed at low-skilled workers, incredibly powerful.

We have tax credits for R&D so why not for retraining?

We need to encourage companies to upgrade the skill-set of their staff.

So investing in people should be seen at least as attractive as investing in research and development.

As someone who oversees the nation's largest employer, I know that it's people who make the NHS what it is. So we must always invest in our people.

As skills minister, I brought in degree-level apprenticeships so we could give people an alternative route into professions like insurance, accounting and the law, if they didn't go to university.

We introduced all-age apprenticeships so you can retrain at any point in your career to get into a well-paid job, because you're never too old to learn new skills.

Retraining is vital. It's a concept we need to embrace across society to ensure everyone has the chance for a well-paid job in the future.

Second, innovation.

How do we create the right conditions for innovation?

Here the government's role is, partly, to incentivise innovation in the private sector, and directly to support innovation across the board.

Let's just pick one example: the NHS.

Since I became Health Secretary, I've "axed the fax", "purged the pager" and made the tech inside the NHS look more like the tech everyone in the outside world uses in 2019.

But the tech of tomorrow isn't something that can be driven from the top – centralised, hierarchical systems are incompatible with rapid innovation, because they assume that the boss has all the answers, when the truth is, we don't even know what all the questions will be in the future.

NHSX, our new specialist tech outfit, officially launches today, and it will take the same approach to innovation that Apple and Google do.

NHSX is going to make the NHS a platform for innovation.

It will radically simplify the system for developers and NHS decision-makers.

NHSX will set national policy, national standards, and ensure systems can talk to each other.

But it will open the door to new ideas and new people, help create a diversity of thought, by constantly welcoming innovators with an outward-looking approach.

The NHS, historically, has been too closed to innovation from outside – partly that is because new tech has driven up costs, but digital tech can save costs, and make money go further.

What it requires is a completely different approach to innovation. Not the 10-year cycle of creating and testing a drug, which rightly adheres to the precautionary principle, but trying things out, learning as we go along, iterative development.

That's how you innovate. That's how you achieve excellence.

So the role of government is to set the mission and ensure we have the right architecture in place: the right conditions to attract the best global firms, and support British innovators – a way in for the best international talent, and a way up for British people to get the skills and training they need.

But we must go further. The real challenge of our times, as your report nails it, "is how we fix the gap between the headline statistics and the lived reality for people."

How we humanise the statistics.

How we ensure work always pays.

And how we stand up for capitalism and liberal democracy as 2 of the greatest innovations in the history of humanity.

So the third, and final, thing I'd like to talk about is making sure the whole country benefits from our growing economy.

One of the causes of Brexit was the dislocation in this country between those areas, predominantly cities, that are flying high, where a generation of growth, of attracting younger people and of increased diversity and dynamism has separated our cities from their hinterland.

British cities today are more open, liberal and outward-looking than ever before. It's true of London, but it's true of our other big cities too.

For half a century, during deindustrialisation, major British cities, outside

of London, became relatively poorer than most of Britain. This isn't the case in other countries.

But that trend is reversing in Britain, as our cities are becoming richer and younger, and creating the high-paid tech-enabled jobs of the future.

A generation ago, the average age of people living in urban areas matched those of rural areas.

Now the average age of Britain's biggest cities is almost a decade younger than in rural areas.

It's driven by many factors.

One is 50% of young people go to university.

And aspirational young people often leave rural areas for the cities.

And here is a conundrum for conservatives: we support aspiration. I support aspiration. The aspiration for all people to reach their potential.

But what happens if all the aspirational people were to leave a community?

What if that is especially true of aspirational young people?

We need to be aspirational not just for individuals but for entire communities.

The purpose of a town is to be somewhere it's easy to live and have a good life: easy childcare and good schools, local businesses providing great services, good connectivity both physical and digital, thriving high streets, high-quality owner-occupied family homes and the support of great NHS and social care.

We have brilliant towns in Britain, and we have some of the most beautiful villages in the world – but not all of them are brilliant. Many haven't seen the benefits of the strong economy we now have.

We haven't done enough to make whole communities aspirational rather than just helping aspirational people move.

So skills, innovation and aspiration for every community.

Now more than ever, this matters. We will deliver on Brexit. And we will move forward.

But to do this – and for Britain to succeed after Brexit – we need to harness it and drive it right across the country. We need to harness the great potential of this technological innovation for every single person.

We must be bold and brave after Brexit.

We can be ambitious and aspirational.

But we must be for the whole country and leave no one behind.

Britain is a union, of nations, of cities, towns, and villages, and each part, each one of us, has a contribution to make to the future of this country.

Each person has value to give.

So we must invest in skills and training.

We must spur innovation and embrace new technologies – as we're doing in the NHS.

And above all, we must ensure everyone shares in the success of this great country.

That's how we make a success of Brexit Britain.