Every age thinks it’s special. But history has other ideas.

From cotton mills to cloud computing, there is always new technology: reinventing the way we work, reimagining the standard of living we expect, refashioning who we are.

From Republican Rome to the People's Republic, there are always great powers on the rise - countries and companies - bending world markets around their gravitational pull.

And there are always rewards for states that notice and react.

Sometimes they don’t.

From millennia back to around 500 years ago, China was the richest and most advanced country on earth, accounting for a third of global output.

But it didn’t last.

Complacency, insularity, a stultifying bureaucracy that had grown hostile to innovation - even banning ocean-going vessels - these doomed China to centuries of stagnation and decline.   As Napoleon put it, she became a sleeping giant.

Sometimes states do pay attention to the power of human ingenuity, and instead of suppressing it they seek to support it.

The story of Europe, and of Britain in particular, took the opposite turn. At around the same time that China turned her back on innovation, we chose to embrace it.

The Enlightenment sprang, not first here, but perhaps welcomed most warmly here, and the principles of progress built on fact, enquiry, openness to challenge and to new ideas led us in turn to become the greatest nation upon earth.

Now China awakes. She has thrown off the shackles of socialism, entered once again the global economy of trade. And she is indeed moving the world.

This rise has many lessons and consequences.

For me, the central lesson is this: that it is vital that government, rather than seeking to direct and control, should see as its goal to unleash the human ingenuity of its citizens.

This has consequences for how we run the economy: that we should favour liberal markets, properly run, open and outward looking within a strong framework and a level playing field.

It matters to our public finances, that we should live within our means, and tackle unsustainable spending.

But today I want to dwell on the lesson for how we run public services in the twenty first century too: harnessing ingenuity, dynamic and open to constant improvement.

I want every civil servant to be part of this effort.

Seeking and striving to serve our country better, as part of a team with common purpose.

As we go into this Parliament, and approach the Spending Review that underpins it, we will need to harness creativity and ingenuity in the running of public services, harnessing the very best of modern techniques and technology.

Over the last five years we’ve learnt some lessons.

We’ve learnt that how you spend is at least as important as how much you spend.

We’ve learnt that more autonomy for services and more accountability ­to citizens go hand in hand.

And we’ve learnt that you can make services better, not in spite of cutting costs but while cutting costs.  Tight budgets force innovation. They force us to free up human ingenuity.

The scale of savings we have to make in this Spending Review is on a par with what we had to find in the last Spending Review five years ago.

Back then, people said the sky would fall in and public services would collapse.

But they were wrong. Crime fell, a million more children had a chance to learn in good or outstanding schools, and people were happier with the service they received from the NHS.

We need to learn from this. We need to be reassured that by cutting in the right way, we can combine savings with public service transformation.

For instance, with some government services the average cost of a digital transaction is almost 20 times lower than the cost of doing it by phone.

By building brilliant digital services that are easy to use, we can minimise the calls people have to make.

A service that’s easier to use is also cheaper to run: it means less paperwork, fewer people being put on hold in a call centre queue, fewer forms filed in error, less risk of fraud.

At the core is the transformative potential of technology. And I make no apology for putting technology at the heart of reform.

For the infinitely replicable nature of information is central to understanding the sheer force behind the technological revolution we are living through.

Far from living in an age of secular stagnation, the fact that humanity is better connected than ever before unleashes human creativity and ingenuity like never before.

We are only in the foothills of the consequences of this global connection.

From driverless cars reshaping transport, to smart energy and education technology, digital is reshaping the world.

And closer to home, these days, public service reform ***is*** digital transformation.

We can use new technology to do the old things, sure.

But, better, we can use technology to completely redesign how we serve citizens, delivering services that are cheaper, faster, more accessible and more secure.

I have been struck in Government at the fundamental truth behind Parkinson’s law: the more people there are to do the work, the more work gets created. It’s why bureaucracies, unchecked, usually get bigger.

By contrast, when you build a digital platform, you can build it once. With minor tweaks it can be used and reused within the 17 Departments, the 494 Government Agencies, the 433 local councils, and even other governments around the world.

Why does the New Zealand Government website, or the new Israeli Government website, look so much like GOV.UK?

Because they didn’t reinvent the wheel – they borrowed the code from ours.

Maximising the work that doesn’t have to be done turns Parkinson’s law on its head.

But on its own, technology is not enough.

Because new technology merely enables us to transform how the state operates, better to serve citizens. It isn’t an end in itself. But it does unlock the door.

After all, Google didn’t invent hypertext, Apple didn’t invent the touchscreen. Uber didn’t invent GPS.

Twitter didn’t even invent the hashtag.

In fact, in each case, the underlying programming was funded by the US Government.

Except for the use of the hashtag, which was invented not by Twitter but by its users.

This is not an argument for state-directed investment. Far from it, the state does have a role, but it was the market that turned classified defence projects into consumer products enjoyed by billions.

For what these modern giants did was to invent radically new ways of understanding their customers.

Real techies know that tech is just a tool.

A tool to build a service that just keeps getting better, that constantly responds to the needs of the user.

It’s this mentality that we imported into the public sector when we set up the Government Digital Service.  And I want to see it spread.

**Empathy**

So how do we do this?

I want to set out, based on this world-view, three principles that must underpin how we need to reshape the state.

They are contestable. If you don’t agree that technology is reshaping our world, or if you think government by its nature either cannot or should not embrace it, then they don’t necessarily follow.

But if you do, then the principles of empathy with citizens’ needs, curiosity about what works, and openness, to ideas and experimentation and data and failure, these all follow.

So the first principle of public service reform is empathy.  Because understanding the citizens we serve is central to what we are trying to do.

This is not me being touchy-feely, this really matters.

Come with me to one of my surgeries, or visit a Citizen’s Advice Bureau, and you’ll see the impact of public services when they’re not designed with empathy for the people who use them.

Intelligent people who can’t make sense of the forms, patient people who’ve been passed from pillar to post, people who’ve been lost between the cracks between departmental silos.

Too often services are built after a long and legalistic procurement process.

By the time it’s launched, the needs of the user are usually lost in a distant document, which formed part of the business case right at the start.

And often these needs are purely theoretical, based on predictions about how people will respond to the service, rather than observations of how they actually do.

We’re doing things differently.

When we build a new digital service, the best reformers get real people to come and sit in their user lab and put the service through its paces.

In some cases, the lab is hooked up to a mini-cinema, allowing the programming team to see what the user is doing on screen.

If the information’s unclear, or they don’t know where to click, then the team adapt the service.

It’s what allowed us to cut 170 unnecessary questions out of the online application for Carer’s Allowance.

And to radically simplify lasting power of attorney so people can fill in the forms themselves, saving on legal fees...

Across the board, user research is yielding incredibly valuable insights, things you simply can’t guess.

Take our work on Verify, the new sign-in platform which allows you to prove who you are, so you can safely access government services online.

It’s a world first, and has been offering users a level of ID security that wasn’t previously possible online.

It manages to give these high levels of security, without the need for a national ID card or national identity database.

The service works by letting you choose from a range of certified ID assurance providers - companies like Experian or the Post Office, which then verifies your identity online, using a range of tools that meet our published government standard.

And the provider can’t see what service you’re accessing, so your data is safe.

Once the user's identity is verified the certified company then vouches for them as they sign in to government services.

When GDS trialled the service, they gave people a list, showing the logos of the providers they could use.

But this made people uncomfortable. It looked too commercial, in a space where you want reassurance that you’re dealing with the Government.

Yet when the team replaced the logos with names people responded more positively, and so of course that’s what now happens.

This is the future of service design: learning from the feedback of our users so the service meets their needs.

Earlier this year 10,000 people used it at the last minute to file a self-assessment tax return.

I signed up myself, on my phone, in a car between meetings, using just my passport and the contents of my wallet.

This approach means Verify is growing organically, like the best web services. No big national launch, no minister pulling a big switch, just users feeding back, service managers making incremental changes, and a service that keeps on improving.

Online security like this has never been more important. Recent events have shown that yet again.

Last week’s news reinforces the need for the very best online security.

Verify has been a powerful weapon against identity theft because it means you can safely do business with government online.

If the first duty of government is to keep the country safe, the first duty of digital government is to keep your data safe.

It has been introduced alongside strengthening Britain's cyber defences through the National Cyber Security Programme - because citizen safety is paramount, whether it’s on our streets or online.

**Universalism**

Now I know what you’re thinking.

In response to this case for digital government, some people say that we shouldn’t use a digital service until it can be used by anyone.

But that’s a rallying cry for inertia. Trying to deliver for everyone means actually delivering for no-one.

Some people will never use a computer. So I say we should deliver the best digital service we can for the majority - then focus our offline resource on those who really need them.

Others say that this is all very well in the digital space, where you can refine a service quickly and cheaply, but you can’t put a hospital in a user lab. Many Government services can’t be digitised (yet).

To which my response is: no, but you can put a design team in a hospital.

This brings me onto my second principle – curiosity.

**Curiosity**

It amazes me that in the past government has been astonishingly incurious about what actually works.

The old way of making policy goes like this.

First you decide what you want to do.

Then you find some evidence to back it up.

Then you write your Impact Assessment.

Next you implement it, after delaying the launch a couple of times, the project manager moves on, and then you have a review into what went wrong.

You hold an inquiry to find out whose fault it all was.

And finally a new group of people come along and say that something must be done.

So first, they decide on an entirely different policy.

In the past this top-down approach was may have been understandable.

In a low-data world the Minister making the decision may well have had more information than anyone else.

But we’ve now moved to a mega-data world, and Ministers cannot possibly have time to process all the information at their fingertips.

There’s just too much of it.

Instead of telling people what to do, on the basis of incomplete information, our job is to give people at all levels of government the tools and the freedom to use their ingenuity.

That applies within the Civil Service and without.

Five years ago we set up the Behavioural Insights Team, a crack squad of psychologists, wonks and behavioural economists, led by the brilliant David Halpern, with a mandate to apply their research to public policy.

The BIT find out what works by looking at the data. Testing variations of policy against a control, discarding the ones don’t work and iterating the rest.

Let’s go back to hospital.

The BIT worked with Imperial College Healthcare NHS Trust, to tackle a human error in hospital prescription charts.

They designed a new prescription chart, incorporating a number of nudges towards safer prescribing.

These included highlighting the boxes that are often incompletely filled in, and replacing unclear instructions with an example of how a prescription should be written.

They then trialled the new chart with junior doctors, in a simulated patient case study. You don’t need me to tell you what happened: it outperformed the standard chart.

For NHS patients this can mean the difference between life and death.

We want more of that kind of hard evidence, user feedback and iteration to be available to policymakers.

It’s why we’ve backed the independent What Works Network, 7 independent research bodies covering £200 billion of public spending.

Take the Education Endowment Fund, which looks at educational attainment.

They have a fantastic website which clearly shows head teachers whether it’s more effective to spend pupil premium money on smaller class sizes or more teaching assistants, according to the best evidence available.

And it’s not just that the policymaker’s role has changed, so too has the nature of our data.

Not long ago the main role of data in public life was to demonstrate to central government that you’d hit your centrally determined targets.

Now, the best organisations are adept at turning the data they generate into real-world insights, which feed back into continuous improvement of services.

Dave Brailsford led the Sky cycling team to victory in the Tour de France, not through ‘root and branch’ reform but by constantly looking for marginal gains: everything from the kind of pillow the cyclists used, to the most effective massage gel.

On its own, each gain may only have amounted to a 1 percent improvement but in aggregate they conferred a decisive edge.

Intelligent use of data allows us to find previously unfindable marginal gains.

It’s why HMRC are using data analytics to home in on tax evaders.

Or look at Cheshire, where Age UK and the Fire Service combine select NHS data with open demographic data, helping them identify older people who might need extra help.

When Cheshire fire fighters visit an older resident to fit a new smoke alarm, they can also give health advice, like how to prevent falls, or refer them towards other services, like dementia support.

And at the cutting edge, data is helping us design better policy.

Last year we changed the law to allow the linking of anonymised data about the courses people took to their future earnings data from HMRC.

It allows us find out which courses lead to higher earnings, and understand what’s the best way to use education to drive up living standards.

And this is why we have to design our services in an agile way. They are never finished, they will always change as new data comes to light, so we have to build them to adapt.

So this is how to make policy for the data-driven 21st century.

And it's only just begun.

Because as well as improving services and sharpening accountability, we’ve also found that government data is incredibly useful outside of government.

Look at the popular travel app CityMapper, which uses TfL transport data to help commuters plan the fastest route home.

Or Spend Network, a consultancy that analyses government spend and contract data, to help suppliers get better at bagging procurement opportunities.

It’s why we publish as much of our data as we can as open data.

Which brings me onto the third principle of successful public service reform: openness.

**Openness**

How do you choose where to stay when you’re travelling abroad?

How do you know which seller you go with when you’re buying a book online?

Feedback, reviews, rankings, ratings, hat-tips, up-votes, favourable mentions – these are the daily diet of the Internet.

Transparency creates trust, removing the need for heavy-handed regulation. It supports choice because you know you’re getting what you paid for.

In the digital age government too must be a source of trust and an enabler of choice.

Today we can credibly claim to be one of the most open and transparent governments in the world.

We’re opening up our data. There are now over 20,000 datasets and counting on [data.gov.uk](http://data.gov.uk/" \t "_blank), it’s a digital glasnost.

We’re open source, publishing our code and making it freely available to the rest of the public sector.

We’re open to all talents, which is why today we’ve announced name-blind applications for the Civil Service

And we’ve opened up our markets: GCloud and now the Digital Marketplace mean that over 50 percent of tech contracts go to smaller suppliers.

But more fundamentally, we’re open to feedback.

Transparency should make us uncomfortable, it’s how we make our services better.

The NHS has received 10 million pieces of patient feedback since it launched the Friends and Family Test two years ago.

When we launched crime maps they were so popular the service crashed.

There is a huge public appetite: for rating our services and for accessible data about their performance.

And we want to meet that demand.

I want every online service to be rateable, and for the feedback to be available in an accessible format.

Feedback will allow us to spot problems and intervene early.

Feedback will help us prioritise the services with the most users and those with highest levels of dissatisfaction.

And it will drive choice, accountability and improvement.

This is about recasting the relationship between the citizen and state.

A state that trusts the working people of this country.

**Conclusion**

These are not rules but guiding principles.

They guide our approach to public service reform.

They underpin our plan to move from a high tax, high welfare, low pay economy to a low tax, low welfare high pay society.

They underpin our deregulatory drive and they’ve helped inspire a new devolution settlement.

It is our duty to put them into practice.

That means transferring power away from Westminster and towards the devolved nations, and the cities and regions of England.

It means embedding an iterative culture of across Whitehall: so more of our polices are agile in design, nimble in delivery and built around the user’s needs.

It means giving Civil Servants the power and self-confidence to drive continuous improvement.

It means using technology to tackle bureaucracy.

And it means opening up more of our data, tackling the barriers that prevent the sharing, linking and enriching of one of our greatest public assets. (i.e. Data clauses)

Technology is disruptive, so we will harness its energies.

Data is power, so we will democratise our data.

The old model of government has failed, so we will build a new one.

A new state:

More empathetic about the needs of the citizen.

More curious about its own effectiveness and better-placed to act.

More open and more trusting.

Doing less but doing it better, and in so doing, offering the citizen more.