



A Digital New World

Unite's Charter for Workers in UK Information Technology
and Communications Industries



www.unitetheunion.org

Foreword



Len McCluskey

Len McCluskey – Unite General Secretary,

Unite the Union has thousands of highly-skilled members in the Information Technology and Communications (ITC) industries in the UK - part of our Graphical, Paper, Media & Information Technology (GPM&IT) sector. We are proud of the contribution they make to the economy and the society as a whole.

Our members work in information technology and communications companies of all sizes, producing a wide range of products and skilled services on which we all rely.

This report outlines the current situation facing this vital sector of the economy, explains the challenges it faces and sets out a strategic vision for its development in the UK.

Unite believes this document makes a coherent argument for politicians developing a strategic approach to enable the information technology and communications sector to flourish.

It needs to be founded on a long-term outlook, based on skills, investment and decent, stable employment with the workforce having their voice heard at all levels.

Unite urges our ITC companies, media, politicians, training providers and importantly Unite members and activists to read and debate this document - a charter for the future of one of tomorrow's key industries.

Len McCluskey
General Secretary

Executive Summary

Any ongoing economic recovery in the UK will not succeed without a highly skilled and qualified workforce ready and able to fill skilled jobs in the sector, and without the application of a structured approach, employers will find it difficult to recruit the next generation of IT and Communications workers.

The rate of technological change is now so rapid and fundamental, a revolution in how most people work and what jobs are done is happening, such that all sectors of the economy and thus Unite membership will be seriously affected. Rapid change is now the norm and workers will have to understand this and regularly up-skill and even change careers.

As well as looking at the supply of skilled workers, it is vital the demand for those workers and their skills is considered. The accelerating rate of change from technological and process changes, which enhance organisations abilities to use, globalisation processes, automation, 5G and cloud technologies, can result in less demand for certain workers, such as with automated virtual helpdesks reducing the demand for helpdesk technicians, whilst it can also increase the demand for others with say information integration skills.

In light of the above, the Unite Graphical, Paper, Media & Information Technology (GPM&IT) National Industrial Sector Committee (NISC) considers that there has never been a more important time to encourage young people to choose to study Science, Technology, Engineering and Mathematics (STEM) and creative subjects and to choose careers in creative industries and the computer sciences.

This document has been prepared by Unites' GPM&IT sector following engagement with ITC reps and key industry players from across this important, diverse and high value sector of the economy.

With a workforce and membership employed in an array of sub-sectors including: information technology systems, electronic media and services, members are involved in activities such as: the production of a range of innovative programmes; and the running and maintenance of IT systems. They work for companies such as, IBM, AT&T, ATOS, Fujitsu, CSC, Ericsson, Hewlett-Packard, ITV and Unisys, and within many small and medium size companies.

This paper sits alongside Unites' "Made in Britain" (MIB) document¹, and whilst all arguments put forward in MIB, such as Unites position on: continuing membership of the EU; equalities; the low carbon economy, employment rights and collective bargaining, re-shoring, are pertinent to this sector and may be touched on, they aren't fully reiterated here, as the two documents complement each other. However, the key following areas are highlighted in detail:

- Profile and importance, including key worker issues;
- Skills;
- Trends and what the future holds, including 5G;
- Public procurement; and
- Investment for growth.

¹ <http://www.unitetheunion.org/uploaded/documents/MadeInBritain11-14471.pdf>

Introduction

The Information Technology and Communications (ITC) sectors are essential to our daily lives for a range of indispensables like: the internet / mobile phones; home entertainment / security; and to access a wide range of news / information services and other periodicals and publications. This is in addition to application services, managed infrastructure services and network - telecommunications technologies utilised to assist with services like post, healthcare, electricity, travel, finance and business, to keep the UK ticking.

What has not been so apparent but, will become more visible in our life is robotics, automation and the use of algorithms, allowing machine made choices that are smarter and faster than us.

The sector is a great source of employment with people working in many different settings including offices, factories, studios, at home and on the move. It employs around 2 million or around 6.6% of the UK workforce with 700,000 in ITC (around 45% working in the Greater London area) and approximately 1.3 million support staff (although these figure are difficult to pin down, with other sources quoting 645,000 in ITC in Greater London alone, or 1.4 million in the UK, as ITC workers are not always employed by ITC companies). Most of these jobs are highly skilled and evolving and over the coming decade there will need to be major upskilling programmes for the existing workforce, with the pipeline for new skilled entrants enhanced so that job openings can be filled by an appropriate pool of talent, avoiding skills shortages. Additionally, this sector is crucial to the UK economy as the turnover of UK companies is considerable, estimated to be in the many, many, billions.

Given that we are members of the European Union which is the world's largest economy, whose ongoing membership Unite sees as essential; there is now great potential for growth both here and in the so-called 'Bric' (Brazil, Russia, India and China - would-be powerhouses of the global economy) and 'Mint' (Mexico, Indonesia, Nigeria and Turkey - emerging economic giants, who are said, beyond having a lot of people, to have really good 'inner' demographics to drive their GDP, additionally they have geographical positions that should be an advantage as patterns of world trade change²) nations.

Nations which, whilst they do result in some of the UK's services being offshored there, now with the Brics, account for 5.56% of total UK exports compared with 3.34% in 2007 (the last full year before the recession) thus provide great potential for growth.

This document therefore aims to influence debate and policy to revitalise UK creative communications industries and computer sciences, and their key role in the UK economy, as sectors which sustain many highly skilled jobs and will have a massive impact on unskilled jobs that are at risk of being automated.

Whilst there is some evidence the Government is initiating a growth strategy for the sector via the Digital Economy Council (DEC), Unite notes it lacks union representation, which is essential if the Government is to adopt a truly joined up approach to support such long-term growth.

² <http://www.bbc.co.uk/news/magazine-25548060>

Additionally it notes that firms receive little Government support, being unable to acquire significant financial support or investment funding to stimulate their enterprises through research and development.

The largest area where the Government is failing to significantly invest in the growth of UK businesses is with SMEs (small and medium enterprises), critical to the country's ITC sector as a large proportion of companies employ relatively small numbers of workers. Businesses of over 250 employees only account for 41% of overall employment in the UK, yet government is only giving minimal support to SMEs that employ the other 59%.

The German economy is often seen as the 'powerhouse' of European activity and the Mittelstand is Germany's version of the UK's SMEs³. Unite believes the UK needs to echo the commitment and support of the Mittelstand shown by the German government and instil similar policies to support growth and export opportunities for ITC SMEs here.

Public procurement is another vital tool in assuring the stability / longevity of the UK economy and the retention of workers in the industry here. Unite thus supports Government procurement policies (for all levels of government) which assist UK ITC companies wherever possible.

Finally, for the sector, and for that matter the wider economy to grow, requires an integrated approach. One where all players such as unions, employers, the Government and educators work in partnership so that issues such as training are dealt with in a positive joined up way, ensuring the outlook for the next 20 years is bright and prosperous for all concerned.

³ <http://www.unitetheunion.org/uploaded/documents/Mittelstand11-23167.pdf>

Profile and Importance

Perspective and Description

The ITC sector cuts across many sectors of the economy and is a key structural component in the development of successful businesses, a thriving economy and driving growth. The UK is said to be one of the most digitally-ready countries in the world, ranking fifth out of 17 countries in Accenture's Digital Density Index. Also, the UK has the largest ICT sector in Europe at 6.7% of GDP⁴



It is difficult to accurately define or quantify the sector given that it is linked to all other industrial sectors. However, E-skills UK, the Sector Skills Council for Business and Information Technology, have identified standard industrial codes (SIC) into which the majority of the sector falls. These are included below in tables 1.0 and 1.1.

⁴ <http://www.computerweekly.com/opinion/Driving-digital-productivity-in-the-UK>

Table 1.0 e-skills UK licensed industry footprint

SIC Code	Description
70.22/9	Management consultancy activities (relating to technology and business change)
33.20	Installation of industrial machinery and equipment (relating to communications equipment and computers)
43.21	Electrical installation (relating to telecoms and computer network wiring)
77.33	Renting and leasing of office machinery and equipment (relating to computers)
26.2	Manufacture of computers and peripheral equipment
26.3	Manufacture of communication equipment
27.31	Manufacture of fibre optic cables
46.14	Agents involved in the sale of machinery, industry equipment, ships and aircraft (relating to computers)
46.5	Wholesale of Information and Communication Equipment
47.41	Retail sale of computers, peripheral units and software in specialised stores
47.42	Retail sale of telecommunications equipment in specialised stores

Table 1.1 e-skills UK licensed industry footprint

SIC Code	Description
18.20/3	Reproduction of computer media
58.2	Software Publishing
61	Telecommunications
62	Computer programming, consultancy and related activities
63.1	Data processing, hosting and related activities; web portals
95.1	Repair of computers and communications equipment

According to UK Trade and Investment (UKTI) the ICT sector is one of the largest and most diverse and creative industries in the UK and has many sub-sectors.⁵, including:

Software and Information Technology – Is Europe’s leading market for software and IT services, including cyber security, with a market value of £58 billion pa. It’s home to over 100,000 specialist software companies including Microsoft, IBM and Hewlett Packard.⁶;

Semiconductors and Electronic design – Is home to over 40% of Europe’s electronic design industry⁷;

Data Centres – Is the largest market in Western Europe and growth in data and services such as cloud computing is creating new sources of demand⁸;

Creative IT – Is home to the highest number of game development companies in Europe employing 28,000 people. The games industry is clustered around ten regional centres including Edinburgh, Dundee, Newcastle, Liverpool, Manchester, Guildford, Cambridge, Oxford, London and Brighton.⁹ In Tech City / Nation 2015 they also indicate that clusters can be found in Hull, Bournemouth & Poole and Belfast.¹⁰;

Electronics – Contributes in excess of £16 billion to the UK GDP and employs around 300,000 people,¹¹ with Cambridge being home to such a cluster¹²;

Communications – Is valued at £45 billion and employs approximately 250,000. UK communications businesses invest almost £2 billion each year in R&D.¹³;

UK TV industry – £13.2bn in revenue in 2014. Over half (56%) of UK homes had a TV linked to the internet, via a set-top box or a smart TV, by the end of 2014¹⁴;

Telecoms and networks – By May 2015, 83% of UK properties were able to receive superfast broadband. There are 23.6m 4G subscriptions in the UK¹⁵;

Internet and web based content – More than half of UK households have a tablet. Almost eight in ten homes now have fixed broadband access - an increase of 5 percentage points since 2014. More than seven in ten online adults have a social networking profile.¹⁶

5 www.ukti.gov

6 Ibid

7 Ibid

8 Ibid

9 Ibid

10 <http://www.techcityuk.com/wp-content/uploads/2015/02/Tech%20Nation%202015.pdf>

11 www.ukti.gov

12 <http://www.techcityuk.com/wp-content/uploads/2015/02/Tech%20Nation%202015.pdf>

13 www.ukti.gov

14 Ofcom’s twelfth annual Communications Market report - http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr15/?utm_source=updates&utm_medium=email&utm_campaign=cmr15

15 Ibid

16 Ofcom’s twelfth annual Communications Market report - http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr15/?utm_source=updates&utm_medium=email&utm_campaign=cmr15



According to Government data, the sector accounts for over £105 billion (8 per cent) of the UK's total Gross Value Added (GVA)¹⁷ and measured by GVA per employee job, the sector is one of the most productive in the UK economy at £83,000 per job, almost twice the UK average for all sectors¹⁸ and likely to be higher today given this data is several years old

Annual capital expenditure is over £7 billion per year; investment in R&D is over £1 billion a year; with exports of £3.6 billion for telecommunications and £4.7 billion for the digital sectors per year.¹⁹

Geographical Spread

The ITC sector employs a disproportionate number of workers in London and the South East of England, with hubs in Cambridge and around Old Street in London, whilst companies like Google UK Ltd are based in central London

According to a Metia / IT Job Boards Survey, the regional distribution of jobs in IT is: 44.7% Greater London; 18.9% South East; 10.0% South West; 8.6% North West; 6.5% Central England; 4.6% West of England; 2.4% Scotland; 1.5% North East; and 1.2% Wales. Whilst Tech City / Nation 2015²⁰ reports the greatest volume of digital employment can be found in: Inner London 251,590; Bristol and Bath 61,653; Greater Manchester 56,145; Reading (and Berkshire) 54,527; and Leeds area 44,951.

¹⁷ HM Government Information Economy strategy, June 2013

¹⁸ UKCES ICT: Sector Skill Assessment 2012

¹⁹ Contribution of the digital communications sector to economic growth and productivity in the UK - FINAL REPORT PREPARED FOR THE DEPARTMENT FOR CULTURE, MEDIA AND SPORT (DCMS) Sept 2011

²⁰ Career Builder employment data 2013 in <http://www.techcityuk.com/wp-content/uploads/2015/02/Tech%20Nation%202015.pdf>

Trade

According to the Department for Business Innovation and Skills (BIS), across service sectors, the UK accounts for 8.3 per cent of global communication services exports (9.9 per cent of telecommunications).²¹ A quarter of computer and information services exports originate from India, 18 per cent from Ireland and 5.8 per cent from the UK. Within information services, UK exports of news agency services are nearly 100 times higher than those from France.²²

The Transatlantic Trade and Investment Partnership (TTIP) - a proposed free trade agreement between the United States and the European Union; the Trade in Services Agreement (TiSA) – the EU has been negotiating plurilaterally since 2013 with 23 other WTO affiliates with the aim of further liberalising trade in services via reaching an international agreement that goes far beyond the existing provisions of the General Agreement on Trade in Services (GATS); and the Comprehensive Economic and Trade Agreement (CETA) - a negotiated EU-Canada treaty, may all have a significant impact on trade in this sector, with suggestions that such agreements could make it more challenging for governments to regulate markets for public good.

Unite opposes TTIP and CETA, notably because of the potential for lowering labour standards across the EU and the introduction of the ISDS mechanism of secretly held tribunals where companies can sue individual countries should actions by these countries “cause detriment” to a company. Also IT data could be transferred without safeguards on security, although a recent EU ruling may have a bearing on this. Present proposals indicate that the transfer, access, holding, processing or storing of information cannot be prevented if it is conducted in connection with a business. Governments may be sued and this is particularly relevant when there is a view that TTIP / CETA will allow the sale of public services to private companies in the US or Canada, thus, being of great relevance to the procurement of public services.

In relation to the Trade in Services Agreement (TiSA), it will encompass professional workers offering their skills and services, such as IT and Communications specialists, which will have the effect of making the worker a “service provider” rather than an employee.

Workplaces and Scale

Within the ITC sector a large proportion of companies employ relatively small numbers workers²³, thus the vast majority work in the small end of the defined small and medium sized enterprise (SME) bracket. Given that workers in smaller workplaces are less than half as likely to be covered by a collective agreement as those in larger workplaces, this may go some way to explain the levels of collective bargaining, trade union density and relatively level of trade union membership across the sector.

Interestingly, technology and social media may provide the tools by which to reinvigorate trade union activism and growth using more innovative methods for organising workers by providing the infrastructure to organise collectively beyond the physical barriers of the small unorganised workplace and more traditional trade union methods for recruiting new members. Building international solidarity and invigorating links with global unions, in addition to extending and widening the reach of global agreements, is seen as vital by Unite.

²¹ BIS Economics Paper No. 17, Feb 2012

²² Ibid

²³ UK Trade & Investment

There are some very large players in the ITC sector including multinationals such as Apple, Microsoft, Google (Alphabet), Vodafone, AT&T, IBM, HP, HCL, Intel, Oracle, SAP, BT, Accenture, Fujitsu, Tata Consulting Services, Cap Gemini, ATOS, CSC and NVIDIA. Additionally there are some companies such as Capita who provide IT as part of the services they offer to clients.

For certain types of work organisations need to have scale or be large enough, have enough access to capital, expertise, geographic spread, accreditations and quality marks. Data centres are a great example of how scale is important and how things have changed. Data centres now carry out services such as cloud computing, that has to be very secure and very reliable. To carry out such services, functions like: nonstop operations; cyber security; compartmentalized security zones; fast internet connectivity; lights out; environmentally friendly and mission critical systems are needed, and are unlikely to be able to be provided by SME's on their own.

Employment / Employers

The sector employs around 700,000 in ITC directly (around 45% of these working in the Greater London area), with approximately 1.3 million support staff bringing the total to around 2 million employed in the industry in the UK (although these figure are difficult to pin down, with other sources quoting 645,000 in ITC in Greater London alone, or 1.4 million in the UK, as ITC workers are not always employed by ITC companies). The majority of employment (60 per cent) is in the computer programming, consultancy and related activities sub-sector, with a further quarter (23 per cent) of employment in Telecommunications. The sector has around 120,000 enterprises employing fewer than 10 people and a small number of large global companies.²⁴

Major UK employers include:

IT: Accenture, ATOS, Capgemini, Cisco, Cognizant, CSC, IBM, Infosys, Google, Logica, Microsoft, Tata Consultancy, Tunstall, Fujitsu, Hewlett Packard and Unisys.
Communications: BBC, ITV, Sky, BT, Gorkana, Telent, Vodaphone, EE, O2 / Three UK and Ericsson.

TechUK represents more than 850 companies and their technologies that are said to be defining today, the world that we will live in tomorrow.²⁵

The Digital Economy Council (DEC) comprises representatives from government, business and academia and is currently co-chaired Minister for Culture and Digital Industries, Ed Vaizey MP, and Victor Chavez, former President of techUK. Its stated purpose is to 'provide a vehicle for Government and industry to work in partnership to develop and deliver a long-term strategy to support the growth of the Information Economy in the UK'.²⁶ However, Unite notes a lack of union representation which it sees as critical if the Government is to adopt a truly joined up approach to support the growth of the Digital / Information Economy.

²⁴ UK Trade & Investment
²⁵ <http://www.techuk.org/about>
²⁶ <http://www.techuk.org/about/digital-economy-council/leadership>

Key Employment Issues

There are a range of highly relevant and very important issues for workers in the ITC sector, with the recent preliminary findings of a Unite members' survey indicating that, whilst pay and reward is very high on their agenda, so are a range of other issues, including but, not limited to:

- Job security and redundancy;
- The offshoring of work and jobs (e.g. the public sector is a major purchaser of IT services, however, it is also now involved in offshoring work overseas to low cost economies, with the Home Office offshoring the work of the Disclosure and Barring Service to India²⁷. High profile failures in IT at NatWest Bank²⁸ along with the realisation that workers in the UK are prepared to take strike action in the face of jobs being exported overseas, as was the case in relation to Capita's plans²⁹, may impact upon future decisions to offshore);
- Workload;
- Performance management;
- TUPE transfers (e.g. where IT sections are outsourced to one company under a TUPE transfer only to find that they are then quickly outsourced again, which can affect their original terms and conditions);
- Health and safety, particularly related to stress, DSE work and conditions in offices;
- Bullying and harassment;
- Skills and training, which are further addressed later in this document;
- Casualisation;
- Pensions;
- Lack of consultation around policy changes;
- Homeworking / teleworking / flexible working, undertaken as employers seek to reduce costs, can have a negative impact on a workers general health, with feelings of isolation that can affect both morale and productivity. Additionally, work done via Crowd sourcing, where an organisation will ask many people for a task to be done, but only pay one of them, is a worrying, growing trend.;
- Sickness and absence management; and
- Career development.

²⁷ <http://www.computerweekly.com/news/2240164386/Indian-IT-giant-set-to-win-Home-Office-contract> &
<http://www.computerweekly.com/blogs/outsourcing/2012/11/has-the-touchpaper-of-offshoring-confidential-uk-citizen-data-been-ignited.html>

²⁸ <http://www.ibtimes.co.uk/britains-worst-bank-history-natwest-rbs-outages-technical-meltdowns-1506660>

²⁹ http://www.theregister.co.uk/2012/09/14/capita_unite_action_ends/

Skills

Whilst the sectors job market up until now has been strong, the situation is likely to change rapidly as the skill sets required change. What skills ITC professionals need to be successful and in great demand, or inversely, what skills will companies require to fill skills shortages over the coming years, is the crucial question to be addressed here and one which Unite is keen to foster and assist in endeavours to address it.

A recent Computer Sciences Corporation (CSC) so called 'Town Hall' explored evolving IT career paths, what employers look for in candidates and how to maintain skills. Their Chief Technology Officer Dan Hushon said that while definite skills come and go, some are always relevant. "I think 'software, software, software'". "Information integration, service integration, DevOps - all of these key trends are enabled by software to integrate information and to drive value for the enterprise. Whether we're talking Java or Python, Perl or Ruby, learn a 'foreign language.' It will teach you how to think differently and how to solve some of these next-generation problems."



CSC director of global talent management, Michael Trusty, outlined that Java and .Net skills remain among the most in demand. But the evaluation goes beyond technical skills. "We look at what they're doing with those skills, how they're building on them," he said "we look at how they show they can bring value to the organization. It's also about critical thinking, how quickly can they learn?"

"The most valuable employees are the 'double-deep' professionals," Hushon said. "They understand the business requirements and they also have the ability to manifest those in these technology engagements."

The convergence of technologies like social, mobile, analytics and cloud (SMAC) are swaying the skills people need to develop. "There's a reason why people talk about the SMAC stack. It's hard to do one without the other," Hushon said. "The key technique we're seeing in the industry is information-forward design. It is about bringing information from social networks, information from third-party as-a-service vendors, bringing information out of existing IT services, composing and combining it in analytically rich ways to improve the decision-making process."³⁰

In addition to these industry thoughts, attracting more women as well as young people into the industry remains a significant issue for the sector with men make up around 70% of full time computing jobs.

According to research conducted by e-skills UK, the Sector Skills Council for Business and Information Technology, only 7% of information security professionals are aged 20-29.³¹ The study highlights a real need to attract more young talent into the industry, by creating additional entry routes such as apprenticeships and signposting to relevant training more clearly.

This comes on the back of a report produced by e-skills following the release of data into GCSE take-up in August 2013 which shows that the number of students taking A Level Computing has fallen for the tenth consecutive year. The picture is similar for ICT A Level which recorded a decline in entries of 6%. This is a worrying trend as these declines took place against a background of increasing interest in STEM (Science, Technology, Engineering and Maths) subjects as a whole.

Entry routes such as apprenticeships should not be seen as low cost solutions, as many may result in high returns on investment as they provide critical and practical skills sought by employers. Apprentices must have similar standing to graduates from higher education and it is noteworthy that in the Government's 2015 budget, a training levy from large firms to fund apprenticeships was announced³².

According to the UK Commission for Employment and Skills (UKCES), skills deficits (skills shortages and gaps) are causing an increase in workload for other staff and are hampering growth in the sector, causing delays in developing new products and services and loss of business. Finding suitably skilled staff is a key challenge for employers.

There is also an issue within the sector with recruiting to specific roles, with 57% of respondents to an IDS survey providing examples of roles that were difficult to recruit.³³ These include Projects Managers, Systems Developers and Senior Business Analysts, as well as those with advanced Java and SAP programming skills. Skills shortages are also evident in Cloud, mobile applications and solutions, virtualisation and Web/API development.

In common with other sectors in Unite, for the economic recovery in the UK to succeed in a way that is beneficial to our members and where we are not competing with low wage economies, where our terms and conditions are not caught in a race to the bottom and people choose different occupations

30 http://www.csc.com/townhall/insights/133897-hottest_it_job_skills?ref=nhp_hero

31 <https://www.e-skills.com/research/research-themes/cyber-security-careers/>

32 <https://www.tes.co.uk/news/further-education/breaking-news/budget-levy-large-employers-fund-apprenticeships>

33 <http://www.incomesdata.co.uk>

because of greater rewards, we have to continually develop our skills and identify / fill skills gaps. Without these skills and qualifications, people will not be capable of filling vacancies and future job opportunities, thus the UK will not operate to its full potential.

Employee skills and capabilities should always be maintained and improved through ongoing training programmes to enable their companies to keep up with their competitors. Training must remain relevant and be properly delivered and rewarded, such that, both employees and employers benefit.

The Lords Digital Skills Committee recently said the UK is at a tipping point: The country is not addressing its significant digital skills shortage and Government urgently needs to address this. Their report also highlighted the impact of changing technology on the labour market, with a projected 35% of UK jobs at risk of being automated over the ensuing 20 years.

The report, entitled "Make or Break: The UK's Digital Future", implores the Government to seize the opportunity to secure the UK's place as a global digital leader by, among other things:

- making digital literacy a core subject at school, alongside English and Maths;
- viewing the internet as important as a utility, accessible to all; and
- putting a single 'Digital Agenda' at the heart of Government.

The report also noted that there are sectors of society and regions, falling behind at profound cost to the economy; and that industry has a pivotal role to play in developing the right skills in the workplace, in further / higher education, and in schools. Additionally it found that there is an absence of Government coordination – the current digital 'activity' within Government includes four Ministers, a Taskforce, a Committee, and a Unit. The Committee cites this as evidence for forming a single Digital Agenda driven by one Cabinet Minister.³⁴

The Tech Partnership³⁵, which is a network of employers collaborating to create the skills to accelerate growth in the digital economy, is recognised by government as the Industrial Partnership for the Information Economy.

Central to Government industrial strategy, the Tech Partnership is the skills arm of the Digital (formerly Information) Economy Council who developed the following Information Economy Digital Skills Strategy³⁶ launched in July 2014 to address, through strategic priorities, the three identified skills issues, shown:

THE INFORMATION ECONOMY DIGITAL SKILLS STRATEGY			
	NEW TALENT	NEW RECRUITS	NEW MARKETS
The current reality	The sector does not have an effective skills pipeline	Business growth is inhibited by a war for talent	New skills are needed to seize massively growing new markets
Evidence	<ul style="list-style-type: none"> - Lack of student interest in IT-related education & careers - Rapidly ageing IT workforce - Pervasive gender imbalance 	<ul style="list-style-type: none"> - Highest rate of job vacancies of all sectors - Hard to fill vacancies are significantly affecting business growth 	<ul style="list-style-type: none"> - Growth opportunities evident in transformational technologies - Wage premium for specialists due to shortage
Barriers	Efforts to address the skills pipeline issues lack cohesion and scale	Insufficient entry routes: apprenticeships are underutilised; computing has highest unemployment rate of all degrees	Lack of / availability and high cost of relevant training
STRATEGIC OBJECTIVES	Create a world class pipeline of NEW TALENT	Expand the talent pool by accelerating the intake of NEW RECRUITS	Develop the skills to succeed in NEW MARKETS
Particular focus	Diversity and gender	High quality careers for young people	Cyber security, big data, Internet of Things, mobile, e-commerce, cloud
STRATEGIC PRIORITIES	<ul style="list-style-type: none"> - Inspiring young people, particularly girls, about careers in technology - Transform school curriculum, teaching, and understanding of technology careers - Create industry backed degrees and conversion courses 	<ul style="list-style-type: none"> - Create more tech sector apprenticeships - Ensure more graduates are able to secure tech sector jobs - Promote pathways into the sector and pilot new schemes including the use of MOOCs 	<ul style="list-style-type: none"> - Increase investment in skills of strategic importance to the economy - Establish Tech Skills Hubs to help businesses collaborate for growth

34 <http://www.parliament.uk/business/committees/committees-a-z/lords-select/digital-skills-committee/news/report-published/>
 35 <https://www.thetechpartnership.com/about/>
 36 https://www.thetechpartnership.com/globalassets/pdfs/research-2014/informationeconomydigitalskillsstrategy_oct14.pdf

The current reality identified for each of the three skills issues above is worrying and Unite is keen to work with Government, employers and key industry players to ensure strategic priorities are achieved.

Further afield, The European Commission is leading a multi-stakeholder partnership, the Grand Coalition for Digital Jobs, to tackle the lack of digital skills in Europe and the thousands of unfilled ICT-related vacancies across all industry sectors.

They outline that there could be up to 825,000 unfilled vacancies for ICT (Information and Communications technology) professionals by 2020³⁷. Its recent study report (March 2015) on digital skills in the workplace outlines how 'digital technologies are having a massive impact on the economy, spreading through all sectors and changing the way economic value is created, the jobs people do, how they do them and the skills they need for those jobs'. Specifically, it is increasing the necessity for digital skills in the workplace.

They outline that while digital technologies are replacing some "routine" chores they are also generating jobs; not least for skilled ICT professionals and also, that they are increasingly complementing humans in many jobs, making them more efficient and improving their outcomes and quality³⁸.

They also outline that the economy and society of Europe need to make the most of digital as 47% of the EU population is not properly digitally skilled, yet in the near future, 90% of jobs will require some level of digital skills.³⁹

³⁷ <http://ec.europa.eu/digital-agenda/en/grand-coalition-digital-jobs>

³⁸ <http://ec.europa.eu/digital-agenda/en/news/launch-study-digital-skills-workplace>

³⁹ <http://ec.europa.eu/digital-agenda/en/economy-society-digital-single-market>

Trends and What the Future May Hold for ITC Workers

Current Trends

Critically, the creation and redundancy of jobs (some estimates suggesting 54% of all jobs in Europe are at risk of automation in the next two decades⁴⁰), is and will result from, the driving forces or trends changing the way work is performed.

The emerging world of information technology is one in which data is king, social platforms evolve as a new source of business intelligence, and cloud computing finally delivers on IT's role as a driver of business growth, according to a report from Accenture.



The Accenture Technology Vision 2015⁴¹ identifies five emerging trends that challenge long-held assumptions about IT and are poised to reshape the business landscape. The report notes that technology is moving at breakneck speed. Social, mobile, analytics (big data), cloud, and increasingly the Internet of Things are said to have become driving forces behind the rapid evolution of digital businesses. This year's five emerging themes are outlined as follows:

⁴⁰ Unite rep report from the UNI World ICTS conference 15-17/06/2015
⁴¹ <https://www.accenture.com/us-en/it-technology-trends-2015.aspx>

1. The Internet of Me is changing the way people around the world interact through technology, placing the end user at the centre of every digital experience;
2. At the same time, digital devices on the edge are powering an Outcome Economy and enabling a new business model that shifts the focus from selling things to selling results;
3. The Platform (R)evolution reflects how digital platforms are becoming the tools of choice for building next-generation products and services—and entire ecosystems in the digital and physical worlds;
4. The Intelligent Enterprise is making its machines smarter—embedding software intelligence into every aspect of its business to drive new levels of operational efficiency, evolution, and innovation.
5. Advances in more natural human interfaces, wearable devices, and smart machines are extending intelligent technology to interact as a “team member,” working alongside employees in a Workforce Reimagined.

Another take on technology trends in 2015 comes from a panel of CSC experts⁴² who recently indicated that, the SMAC stack, industry ecosystems, digital leadership, skills disruption, amongst others, are taking middle stage. In light of an anticipated skills gap, Dan Hushon, chief technology officer for CSC, sees 2015 as a strategic inflection point for technical skills. "I think we're entering the overall transition to a software-based economy this year," Hushon says.

A technology with big potential is the Internet of Things (IoT); the growing universe of smart, connected cyber-physical devices, including so-called machine to machine (M2M) – e.g. smart factories, smart metering etc using mechatronics and IT. Doug Neal, a research fellow for CSC's Leading Edge Forum says that from an enterprise perspective, the IoT will aid innovation. Neal says. "Many questions remain; for example, security, communication standards, and the languages we'll use to stitch these things together."

Sue Cronizer, director of the CSC Research Network says you can't talk about the IoT without talking about social, mobile, analytics and cloud (SMAC). "IoT is about the growing interconnectedness of people and things at an unprecedented scale due to the connectedness of SMAC. One plays into the other," she says traffic apps are a perfect example of this where networked smartphones collect information in real-time and help people choose which is the best way to go.

The predictive enterprise is an evolving trend seen as the next phase for big data. Hushon says, "Now we're combining data received from a range of inputs and combining that with behavioural models to be able to predict what will happen. The predictive enterprise will allow you to reflect your business strategy in an overall set of models."

To benefit from these new developments, Neal says that companies will need to educate themselves aggressively. "This stuff is so powerful; people haven't thought through that if you just snap this, together with this, together with this, you can do really incredible things."⁴³

In addition to all the above trends, the growing use of 3D printing is ever intensifying. Medical products like hearing aids and dental devices are becoming mainstream, according to Gartner, the information technology research and advisory company. Its 2015 Hype Cycle for 3D Printing report establish that 3D printing technology has “progressed rapidly in recent years”, and is becoming the norm in certain areas of healthcare.⁴⁴

⁴² http://www.csc.com/townhall/insights/118257-top_technology_trends_of_2015

⁴³ Ibid

⁴⁴ <http://www.computerweekly.com/news/4500252259/Gartner-3D-printing-of-hearing-aids-and-dental-devices-reaches-mainstream>

The Future

The digital future is one of much greater connectivity with data and information passing between devices and individuals at increasing levels of speed, size and complexity, with analytical tools interrogating data, key. The UK needs to be at the forefront of this ongoing digital revolution. In line with this, a change in our mind set and expectations is required, as changes in technology go hand in hand with changes in the environment and society.

Wearable devices, smart machines and natural interfaces add to existing data and are likely to be areas of growth. This is in addition to asset and supply chain management (for example some medical equipment tracked by GPS) enabling more efficient use and monitoring of assets, which in turn may result in reductions of assets, saving money and helping the environment.

In the automotive sector, the continued commitment to reductions in emissions across EU member states has driven a focus on finding alternative forms of energy for all types of vehicles and with the rapid technological advances needed to produce electric vehicles, hybrid vehicles and now autonomous vehicles, there will also be a need for different types of components and connectivity that will bring new partners into the automotive arena.

For example, companies such as Apple and Google are driving research and investment into the production of connective autonomous vehicles. This change to alternatively powered and wirelessly connected vehicles needs to be assessed and addressed. Jobs will change, skills will change and new opportunities for component manufacturers will open up.⁴⁵

Additionally, consumers and employees need to be aware of the improved targeting of social engineering which may be used to manipulating what we buy and how we work.

The way data is hosted on the cloud, mobile platforms and how applications work in this dynamic environment also add to existing data. Third generation (3G), fourth generation (4G) and fifth generation (5G) mobile communications technology are and will enhance what we can access and how efficiently we access it, with its evolution shown below:

Mobile Standard Evolution - Download Speeds ~ from

- * **1G** the foundation of mobile technology ~ 1980
- * Basic GSM (**2G**) – 14.4Kbps ~ 1990
- * UMTS (**3G** / IMT-2000) - 384Kbps ~ 2000
- * LTE-Advanced (**4G** / IMT-Advanced) - 1Gbps ~ 2010
- * **5G** - 10Gbps ~ 2020

⁴⁵ Driving the Economy – A Unite strategy for the automotive industry in the UK



Currently 5G, the next generation of mobile technology, is in the planning stages, however, the impact of 5G is said to be significant, with around a billion mobile connections in the year 2000 expected to climb to 50 billion connected things by 2020. It is said 5G will result in the following changes:

- 1000 times current mobile data volumes;
- 10 to 100 times more connected devices;
- 5 times lower latency;
- 10 to 100 times end user data rates; and
- 10 times battery life for low power devices⁴⁶

⁴⁶ Unite rep report from the UNI World ICTS conference 15-17/06/2015



Proposed schema of the 5G network workings

Unite notes that the 5G Innovation Centre (5GIC) at the University of Surrey is the largest UK academic research centre devoted to the development of the next generation of mobile and wireless communications. It is keen to draw on and work with Surrey's internationally leading work and understanding of mobile communications, IoT, satellite communications and broadcasting, connected cars and future internet, to more clearly ascertain how such changes will impact on both society and the jobs people do.⁴⁷

Frost & Sullivan, a growth partnership company which is said to help companies achieve transformational growth as they negotiate their way through an economy dominated by accelerating change, growing risk and the disruptive impact of the conversion of new business models and disruptive technologies, outline the future in some of the following ways⁴⁸:

Connectivity and Convergence: There will be greater than 5 billion web users by 2020, with many accessing it over tablet devices, with 80 billion connected devices globally. This connectivity is said to spread to our daily lives bringing the three silos of work, home and our surrounding environment into one seamless experience termed "connected living", with all our relevant data sitting in a cloud so it can be accessed anywhere anytime. A new range of technology enabled services such as smart lighting, mobile working solutions, and smart governance will define and shape our everyday experiences;

Bricks and Clicks: The retailing norm of the future, with every retailer having an online identity as well as a bricks and mortar presence by 2020. They claim nearly 19 percent of global B2C retail will happen online, with such retail sales expected to be \$4.3 trillion by 2025;

Future of Mobility: People and organizations in the future are predicted to want personal mobility to travel from place to place. Journeys will become integrated with intelligent and smart technologies, such as Apps, providing a single ticket or membership which will provide seamless travel on multi-modal transport systems - the car becoming an integral part of a wider transport network. Car sharing is said to become commonplace and they will become autonomous, ultimately driving you home on their own;

47 From presentation by Dr S. Mazur – Vice President & Head of Ericsson Research to the UNI World ICTS conference 15-17/06/2015
 48 <http://prod.surrey.ac.uk/5gic/about>
 49 <http://www.frost.com/sublib/display-report.do?id=M82C-01-00-00-00>



Innovating to Zero: Which is the vision of a “Zero Concept” world focused on developing products and technologies that “Innovate to Zero”. Evolving technologies will see cars with zero: emissions; accidents; and fatalities. Technologies will see cities and buildings becoming carbon neutral, where products like carbon neutral beer or services such as carbon neutral hotels, evolve. Atos developing a “zero email” or “zero inbox” strategy is an example of this;

Smart Products: Which are intelligent, connected and have the ability to sense, process, report, and take corrective action will be everywhere around us from smart clothing, watches, phones, to smart buildings and smart cities. The smart city market is predicted to take off, where participants will assume one or more of the following roles: integrators or the end-to-end service providers; network operators, the M2M and connectivity providers; product vendors, hardware providers; and managed service providers, overseeing management and operations;

Value for Many: An emerging global middle class of 4 billion and a connected internet community of 5 billion is suggested will enable businesses to “make one, sell many,” a concept that will be ever more important and usher in a new business model of “value for many.” This implies that businesses can produce and sell the same product or service to the masses in both the developing and developed worlds using either the internet or by developing an inexpensive products strategy. The “value for many” model is proposed to drive innovation across a whole range of industries, from low-cost flights and affordable healthcare products for the masses, to selling and scaling your business to the worldwide market from setup; and

Future Energy: The energy sector will merge with several related ones to develop efficient and environmentally friendly solutions, vital in combatting global warming.

Key developments are likely to be the Smart Grid, where all houses and businesses energy metres are connected to their suppliers via mobile telephony and the internet, allowing usage to be accurately monitored / predicted to optimise production. We are said to likely see more micro grids and energy storage technologies leveraging electric car batteries second life, and possibly, space-based solar power satellites that beam electricity to ground.⁵⁰

Whilst all this is very futuristic, much of it is in the pipeline and will affect the lives of many workers the world over, thus such new developments must be embraced and understood so as to minimise their impacts on the many whose jobs may change massively, for the better or worse, or perhaps become redundant.

Public Procurement

With developments in the European Parliament, where legislation was introduced in January 2014 to combat perceptions around the application of EU procurement rules, Unite believes, the UK Government must apply the new rules and move away from value-for-money only selection criteria so that local purchases, by all levels of government, become the norm as public procurement spending is a vital tool in maintaining a strong UK economy.

Here, Article 26 has recognised directives and guidelines that permit European Union governments the capacity to award procurement contracts based on 'Buying Social'⁵¹, which allows governments to consider the social impact of their contract. For example, a new principle has been introduced, that of the 'most economically advantageous tender' (MEAT), in the award procedure which will enable authorities to put more emphasis on quality, environmental considerations, social aspects (including skills) or innovation, while still taking into account the price and life-cycle costs of that being procured, a principle which Unite supports.

In 2013/14, the UK public sector spent a total of £242 billion on procurement of goods and services; accounting for 33% of total public sector spending⁵². Of this, central government claims, in its Information Economy Strategy, to aim to procure at least 25% of procurement spend from small and medium-sized enterprises (SME's). It also claims that the G-Cloud programme is simplifying processes and creating a competitive and transparent marketplace here⁵³.

Unite believes the government should recognise the economic opportunities which are available to the UK economy in using the procurement procedure to purchase goods and services from ITC companies based here. It would also like to see for example, training requirements written into procurement contracts.

In line with the above, a key factor in achieving a positive procurement policy is for government to make sure that UK ITC companies receive a steady flow of procurement contracts as this will: be an inward investment of UK taxes into UK businesses; generate more tax revenue for the treasury and thus more revenue for the public sector; result in firms retaining more employees and investing in skills, training and apprentices; and provide firms with an enhanced opportunity to invest in innovation.

50 <http://www.frost.com/sublib/display-report.do?id=M82C-01-00-00-00>

51 <http://www.tuc.org.uk/>

52 <http://researchbriefings.files.parliament.uk/documents/SN06029/SN06029.pdf>

53 https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/206944/13-901-information-economy-strategy.pdf

Not procuring from ITC companies based in the UK, as previously outlined has been the case with, for example with the Home Office, can have a range of detrimental effects. These may include: indigenous workers being made redundant and ending up on benefits, not then being able to reinvesting their income for the greater economic good; suppliers business drying up; and local companies experiencing reduced turnover, not being able to invest in, and maintain / upgrade their infrastructure and training regimes such that efficiency and productivity levels decline leaving them vulnerable.

Unite considers that a progressive procurement policy, based around new EU legislation / procurement rules, offers the UK government the opportunity for long term investment in innovation, research and development, and skills in the ITC sector. Such a commitment is key to ensuring public procurement works in a beneficial way for UK companies, especially small and medium sized enterprises.

Public procurement is an essential instrument in guaranteeing the stability and endurance of, not only the UK economy but, also that of its workers. Unite believes support for UK industry and the growth of the UK economy should be the top priority for government.

Investment and growth

Whilst it is great news that the total value of venture capital investment in UK and Irish tech companies is said to have reached a record level of £669m in Q2 2015, up 8% over the previous⁵⁴, continuing expansion in other diverse forms of investment in this sector is vital to ensuring continued growth. Additionally, in considering this good news, it is also vital to consider other types of investment, such as that in telecoms (and thus 5G), which is low in the UK at £200 per capita, a figure dwarfed by the £340 per capita spent in the Netherlands, which tops the Digital Density Index⁵⁵.

Digital density is said not just to be an indicator of how productive the UK can be in the digital economy, but is an indication to overseas investors that are seeking the most favorable locations for various parts of their digital operations, whether it be consumer experience design or precision manufacturing. Digital density, it is said, ought to rank alongside access to natural resources, a good transportation network and skilled people, in the list of criteria that business leaders should contemplate when making investment decisions.⁵⁶

The UK's consumer markets are said to be amongst the best digitised in the world, however, companies' ability to digitally source and manage labour, capital and other business inputs lags behind Europe. While the environment is highly welcoming to digital enterprise, UK firms can be slow to adopt new digital processes such as cloud and radio-frequency identification (RFID), and whilst the UK may have the largest financial centre in Europe, it could do better to encourage other forms of funding to improve access to finance.⁵⁷

Whilst taking into account the above, the bedrock of the UK economy and for that matter a vast component of the ITC sector, is its SMEs. A vibrant ever growing SME sector is one of the prerequisites for future growth in the UK economy. The majority of new jobs created in the UK are created by small businesses – existing small businesses contribute 34% of new jobs created, whilst new business start-ups contribute 33%.⁵⁸

54 <http://www.techmarketview.com/research/archive/2015/09/27/industryviews-venture-capital-q2-2015>

55 <http://www.computerweekly.com/opinion/Driving-digital-productivity-in-the-UK>

56 Ibid

57 Ibid

58 Job Creation and Destruction in the UK: 1998-2010 (Anaydike-Danes, Bonner and Hart – Aston Business School, October (2011)).

However, there are a number of market failures⁵⁹ affecting the supply of finance to SMEs. These market failures relate to the provision of both debt and equity. There is also a demand-side issue relating to the awareness of, some but by no means all businesses in this sector, as to the potential benefits of raising finance or the chance of doing so successfully. That lack, in some instances, of sophistication may result in businesses failing to exploit their growth potential.

In general terms, the non-availability of finance to smaller businesses is long-standing. It was identified in 1931 by the Macmillan Report⁶⁰ (such lack of finance being known as the 'Macmillan Gap'). There is also a relative lack of competition in mainstream credit providers, noting that the Independent Commission on Banking identified that the largest four banks account for 85% of SME current accounts.⁶¹

There are many international examples of government-backed intervention in this area. In fact, the UK is currently unique among the members of the G7 in not having a dedicated institution dealing with SME financing issues and initiatives. The bodies responsible in the other G7 countries are:

Canada - Business Development Bank of Canada

France - Caisse des Dépôts et Consignations (CDC)

Germany - Kreditanstalt für Wiederaufbau (KfW)

Italy - Cassa di Risparmio di Padova e Rovigo (CR)

Japan - Japan Finance Corporation Small and Medium Enterprise Unit

USA - Small Business Administration (SBA)

Therefore, whilst Unite notes the government's creation of the British Business Bank working through the market⁶², it believes a UK strategic industrial investment bank with no shareholders needs to be created in order for SMEs and the wider ITC sector to truly prosper.

Unite considers that government needs to take a similar approach to the financial needs of SMEs as that which happens in Germany where government supports and invests in the Mittelstand so that investment intentions, can be converted into actual investment. The German economy is often seen as the 'powerhouse' of European activity and the Mittelstand is Germany's version of the UK's SMEs. Unite believes that the UK needs to echo the commitment and support of the Mittelstand shown by the German government and instil similar policies to support the economic growth and export opportunities for ITC SMEs here.

Government Investment and Support

For any economy to remain globally competitive there are certain enabling conditions which governments must ensure function properly and help to promote business growth. There are two perspectives from which to view the achievement of growth. The first is best driven by local leaders – public and private – working in partnership together to effect the long term changes their communities need. The second starts with the vital responsibility of central government in creating the conditions for economic success.

Any UK Government must have a clear long term interventionist plan that sets out how our future large scale infrastructure investments will meet the needs of business to deliver growth.

⁵⁹ Defined as "an imperfection in the market mechanism that prevents the achievement of economic efficiency" HM Treasury Green Book: Appraisal and Evaluation in Central Government (2003) p103; BIS Economics Paper No 16: SME Access to External Finance (January 2012) Section 2.

⁶⁰ Report of the Committee on Finance and Industry, Cmd 3897, July 1931.

⁶¹ Independent Commission on Banking, Final Report Recommendations (September 2011) p 168.

⁶² Industrial strategy, Government and industry in partnership – Progress Report, April 2014

The Treasury's Infrastructure Plans⁶³ identify many nationally significant projects that require central coordination. These projects are vital. We have seen this in successes of the past – the Channel Tunnel and High Speed 1 (HS1), the Dartford crossings and the London Docklands Development Corporation – that have unlocked growth. Indeed, we need look no further than London 2012 for evidence of the power of large scale investments.

Investments, such as improving superfast broadband coverage, which remains low, especially in some rural areas including the Highlands of Scotland, are vital in promoting this sectors growth, for creating new business and inward investment opportunities in rural communities, and for the creation of technology hubs in such locations.

There are a number of tough decisions facing government on such projects that could unlock multi billions of pounds worth of investment. These projects are crucial to our future competitiveness.

Foreign direct investment (FDI)

UK Trade and Investment (UKTI) outline the types of opportunities that are available for overseas companies and investors looking to enter the UK's ICT market, as follows:

- software development;
- mobile device market;
- cloud computing;
- data centres;
- cyber security;
- research networks and support; and
- locations⁶⁴

In order to keep the UK attractive to such FDI projects, there are said to be three attributes that make it attractive to overseas investors, including: quality of life / culture and language; the stable political environment; and technology and infrastructure⁶⁵. Priorities for attracting future FDI include the provision of high quality e-infrastructure and physical infrastructure (roads⁶⁶, in particular).

Additionally, it is important to note that in relation to the ITC type of investments flagged above by UKTI, the European Union referendum is crucial, as current debate creates uncertainty which hampers investment decisions. Unites stated policy of remaining in the EU, is partially based around the knowledge that industry could be severely harmed by opt out as many of the companies operating in the sector are global, with Europe a key market, thus trade there is critical for maintaining investment in the sector.

⁶³ HM Treasury, National Infrastructure plan, 2011, http://www.hm-treasury.gov.uk/national_infrastructure_plan2011.htm

⁶⁴ <https://www.gov.uk/government/publications/information-communications-technology-ict-in-the-uk-investment-opportunities>

⁶⁵ Ernst and Young (2012) 2012 UK Attractiveness Survey.

⁶⁶ EEF (2012) Transport for Growth

Conclusion

In the UK, all sectors of Unite, the economy and society in general, across all skill and education levels, will be massively affected by rapid technical development, as evidenced by the experience of our sector reps, academic studies and corporate websites.

Technological change has altered how many tasks and roles are undertaken, utilising automation or undertaken remotely, in turn resulting in redundancy. Therefore, this poses the question of what these and future workers do.

There are a number of tough decisions facing Government on such projects that could unlock multi billions of pounds worth of investment. Business has to understand that the demand for the goods and services they provide will be seriously impacted, as will society as a whole, if workers are not fairly rewarded and feel insecure and thus unable to make long term decisions.

The state has to understand that social cohesion is at risk if workers are not treated fairly, are poorly paid and high unemployment or underemployment becomes the norm, resulting in workers being disenfranchised.

In order to address this and for the UK ITC sector, and for that matter the wider UK economy, to grow, requires an integrated approach. One where all the players such as; unions, employers, industry groups, the government and educators work in partnership so that industry challenges like: addressing the long-term supply of skilled workers; how training is funded; and how this can be swiftly addressed, are dealt with in a positive joined up way.

The links between industry and education need to be strengthened to ensure that students see the sector as an attractive and worthwhile career path at an age when key decisions about subjects and courses are being considered. This is especially so in the knowledge that recent data shows that the number of students taking A Level Computing has fallen for the tenth consecutive year, with ICT A Level uptake also recording recent declines in entries of around 6%. This is a worrying trend as these declines took place against a background of increasing interest in STEM subjects as a whole, thus early help and assistance is crucial in ensuring tomorrows future is secured.

Challenges, such as encouraging educational and employer flexibility around the recognition of non-specific subjects for young women so-as they're not excluded from later education and digital employment opportunities, cannot be progressed by individuals, companies, institutions or the Government working alone.

Working in partnership, embracing the elements of this charter which provide a strategic focus for the UK's ITC Sector will help in ensuring the outlook for the next 20 years is bright and prosperous. Thinking, that should ensure the workforce is listen to, its experience is built upon to guarantee skills are maintained and expanded in line with new technologies, and most of all a demonstration of commitment from all participants in an integrated approach to ensure ongoing growth.

Growth, which avoids the creation of a totally horrible or degraded society with very high unemployment, great inequality and high levels of stresses, in favour of a utopian one where the majority work a shorter working week (being more quality than quantity), having more family and leisure time and a more equal society, is the goal. Such positive growth would require a massive shift in our thinking and maybe, through the use of evolving digital technology, we shouldn't have to work so much, and from an anthropological view point, it's a bit of back to the future.

Recommendations

With a workforce and membership working in the array of subsectors outlined, we recommend:

1. The **issues identified in this document need to be highlighted to all sectors** of the union, via the National Executive Council and National Sector committees, as they are seen by reps as absolutely vital, and are believed will affect them all.
2. Draw on the experience of Baroness Morgan of Huyton – former Digital Skills Committee Chair, House of Lords, and lobby relevant Government Departments, including Education, around issues with the ITC sector **skills gap** and the accelerating rate of change in new skills requirements and how important these skills are to the UK.
3. ITC Industries campaign and lobby for increasing targeted, strategic and regionalised **Government and additional foreign investment (with enforceable impact assessments)** in UK to seed growth so as to protect and expand the UK's ITC jobs base.
4. To campaign for improved **supply chain ethics** and to encourage the **reshoring** of work and jobs back to the UK.
5. For the government to support UK ITC companies via the optimal use of public funds through their **procurement** processes aspiring to buy goods and services from UK based companies. Additionally to lobby the government over the negative impacts of the: proposed Transatlantic Trade and Investment Partnership (**TTIP**), the Trade in Services Agreement (**TiSA**) and the Comprehensive Economic and Trade Agreement (**CETA**).
6. Industries campaign for our continued membership of the **European Union** to ensure the ongoing sustainability of investment in the sector.
7. To fight for wide-ranging, well-coordinated, comprehensive **skills and training** programmes for the sector and all sectors, in order to address current and future skills shortages, possibly using Unionlearn and learning reps. Educate members around the fact that their career paths will involve lifelong learning, learning many new skills along the way, and that the life cycle of a particular skill may be 5 years and not 20 years, as in the past.
8. Support programmes which encourage skilled labour to remain in the sector, through **clear career paths, optimal employment rights / job security** and the provision of **optimum collective bargaining structures**, to prevent skilled paid labour being undermined by activities such as crowd sourcing, unpaid / underpaid internships and volunteers.
9. **Campaign against a race to the bottom on pay and conditions, and for decent employment**, emphasizing that demand for a business's products / services will decline if people have less disposable income, which will in turn have an overriding detrimental impact on society.
10. The industry must do much more on the **equality agenda**, to go further in attacking the vocational stereotyping that occur in the education system and the workplace and support initiatives to bring more women into skilled sector jobs.

11. To lobby government to ensure **infrastructure**, such as, superfast broadband coverage, is maintained and upgraded, especially in the regions, such that, for example, logistical operations run at optimal efficiencies
12. Even in the knowledge that, for example venture capital investment in UK and Irish tech companies recently reached a record level, the establishment of a **Strategic Investment Bank** or a Bank for Industry, that works, where companies of all sizes have access to investment funding at affordable rates, is essential if we are to maintain and further accelerate growth, particularly through the growth of SME's.
13. To vigorously encourage the government and sector to work in **partnership** to develop a truly **National Industry Body, with union representation**, for the interest of the industry. Such an integrated approach should not only help see this sector grow in the UK but, through the combined efforts of unions, employers, the government and educators working in partnership, issues such as training can be dealt with in a positive joined up way, ensuring the outlook for the next 20 years is bright and prosperous for all concerned.

Unite would like to thank our Graphical, Paper, Media and Information Technology Sector - National Industrial Sector Committee, our union Reps and members, National Officer, Regional Officer, and the Unite Equalities and Research Departments.



10 good reasons to join Unite, the UK and Ireland's biggest trade union with over 1.42 million members in the private, public and voluntary sectors including the Graphical, Paper, Media & Information Technology Sector:

- 1) You can earn more** - Trade union members earn, on average 10 percent more than non-members.
- 2) You could get more holiday** - Unions are the people that brought you the weekend. Unite campaigns to protect your holiday entitlements.
- 3) You can get a better deal** - Unite negotiates terms of maternity or paternity leave, pensions, and redundancy winning you more than the legal minimum.
- 4) You are less likely to be injured** - There are 50 percent fewer accidents in unionised workplaces. Unite works to ensure employers protect employees from risks to their health and safety.
- 5) Support whenever you need it** - Without the backing of a union you could face £1,200 in fees should you need to take your employer to a tribunal. Unite gives free advice, support and legal representation to all its members so they never have to face problems alone.
- 6) In or out of work, there is a place for you** - Unite Community offers a place for all those out of work, studying or retired - meaning that you are always part of something bigger.
- 7) You get more - and better - training** - Union members are more likely to get on with better training and development. Unite has fully trained learning reps to help you update your skills.
- 8) You can get better compensation** - In 2013, a record £330 million was won for union members and their families through legal help, and £1 million in equal pay claims - an average of £15,000 per member.
- 9) Better job security** - Trade union members are more likely to stay in their jobs longer - on average, five years more than non-members.
- 10) Being part of the fight for fairness** - From defending our NHS to fighting for decent homes to campaigning against discrimination.

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