UNITETHEUNION

THE FUTURE OF MANUFACTURING AND SERVICES AND PROMOTING SUSTAINABLE INDUSTRIAL POLICY

IndustriALL Global Union Steering Committee Meeting on ICT, Electrical & Electronics

22-23 May 2017, Bogor, INDONESIA

BY PETE BRIGHT

Introduction

I am Pete Bright I was born in 1960 in Bristol, England, UK

My trade as such ,I was not an apprentice, was 30 years plus in IT, starting in data control, to System Engineering, via Computer Operations and service desk.

In this presentation there are many slides showing images and quotes, descriptions of new technology, there is also a lot of backup information to be viewed later if you wish.

The slides I will focus on are what Unite are doing to support members in this difficult time for workers and their families.

My experiences are mostly of living and working in a developed 1st world nation, not all plain sailing but few breaks in work and a safety net when needed. I did not go to University but still had a technical Education and lots of on the job training.

Organisations I have worked for and clients I have supported.

I primarily worked for BAESYSTEMS , AIRBUS AND

CSC (Computer Science Corporation).

The clients were many and varied in both public and private sectors both local and global.

I have signed many Non Disclosure Agreements, so it would not be right for me to go into any further details on those Organisations.

UNION ACTIVITIES

I started as an accredited Union Representative and quickly, due to what was changing in my Multi-national Multi-client Employer, had to attend many national meetings consulting on redundancies, TUPE(Transfer of Undertakings Protection of Employment), gaining or losing workers with changing client business, Office closures and business take overs etc.

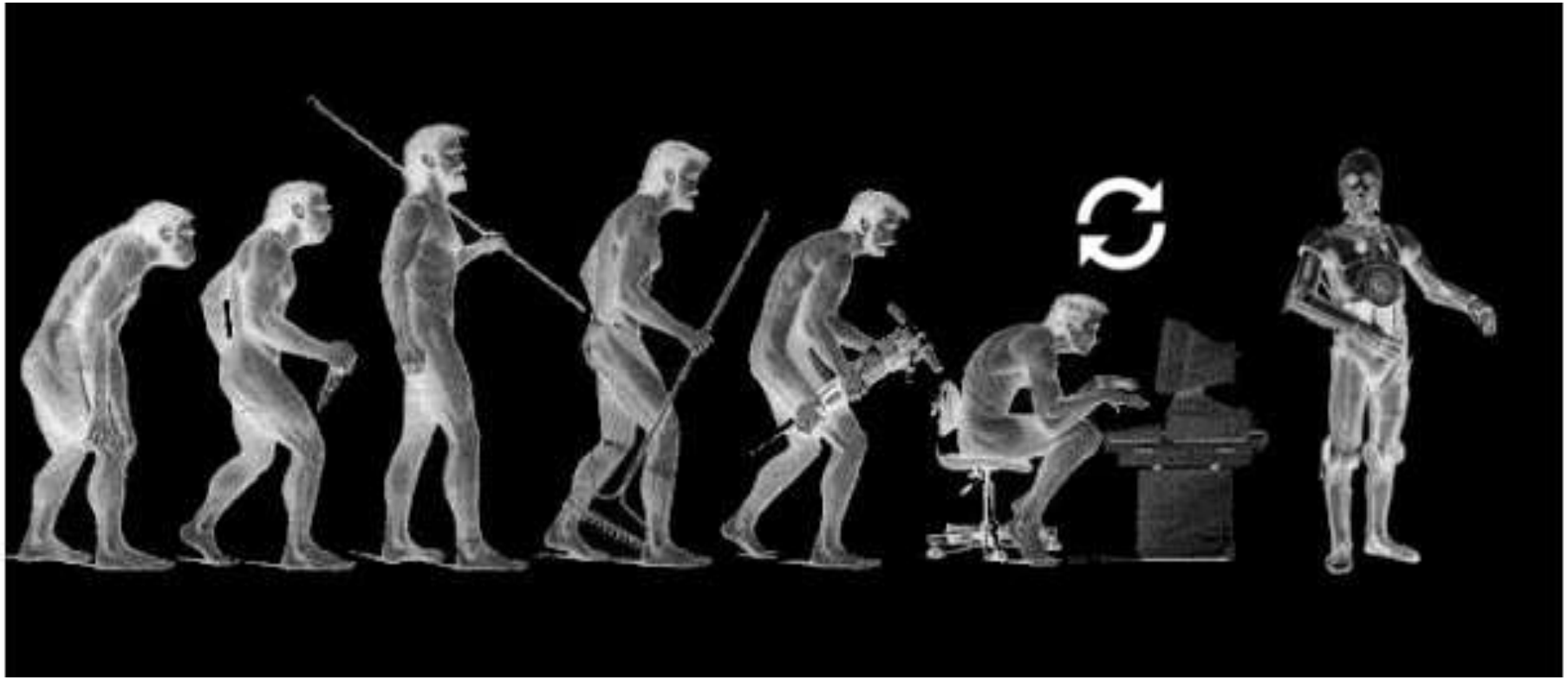
I then became more involved with UNITE being elected to various industrial committees, attending various conferences.

Then 3 years ago I took voluntary redundancy from my Employer and was nominated by my GPM & IT National Industrial Committee to help UNITE understand the new world of work.

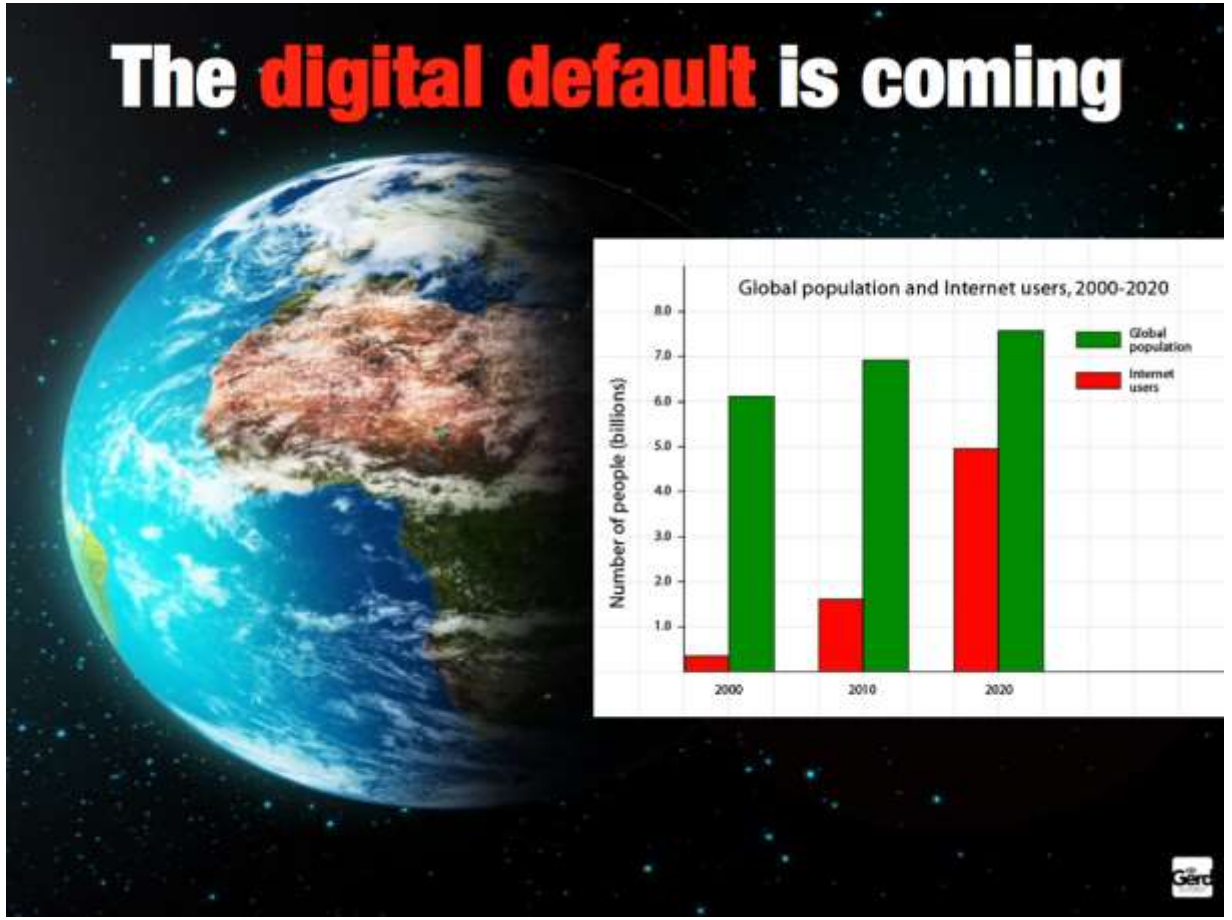
References, credits and copy rights

Trying to be careful about infringing any copy rights and giving due credit, I have only used non copyright images, plus the final slides give credit to where I have obtained information and gives links to more detailed information that is in the public domain.

New technology good or bad?



More people connected



GLOBALISATION

Due to globalisation, even if there is a political will a country and its labour organisation can not operate in isolation.

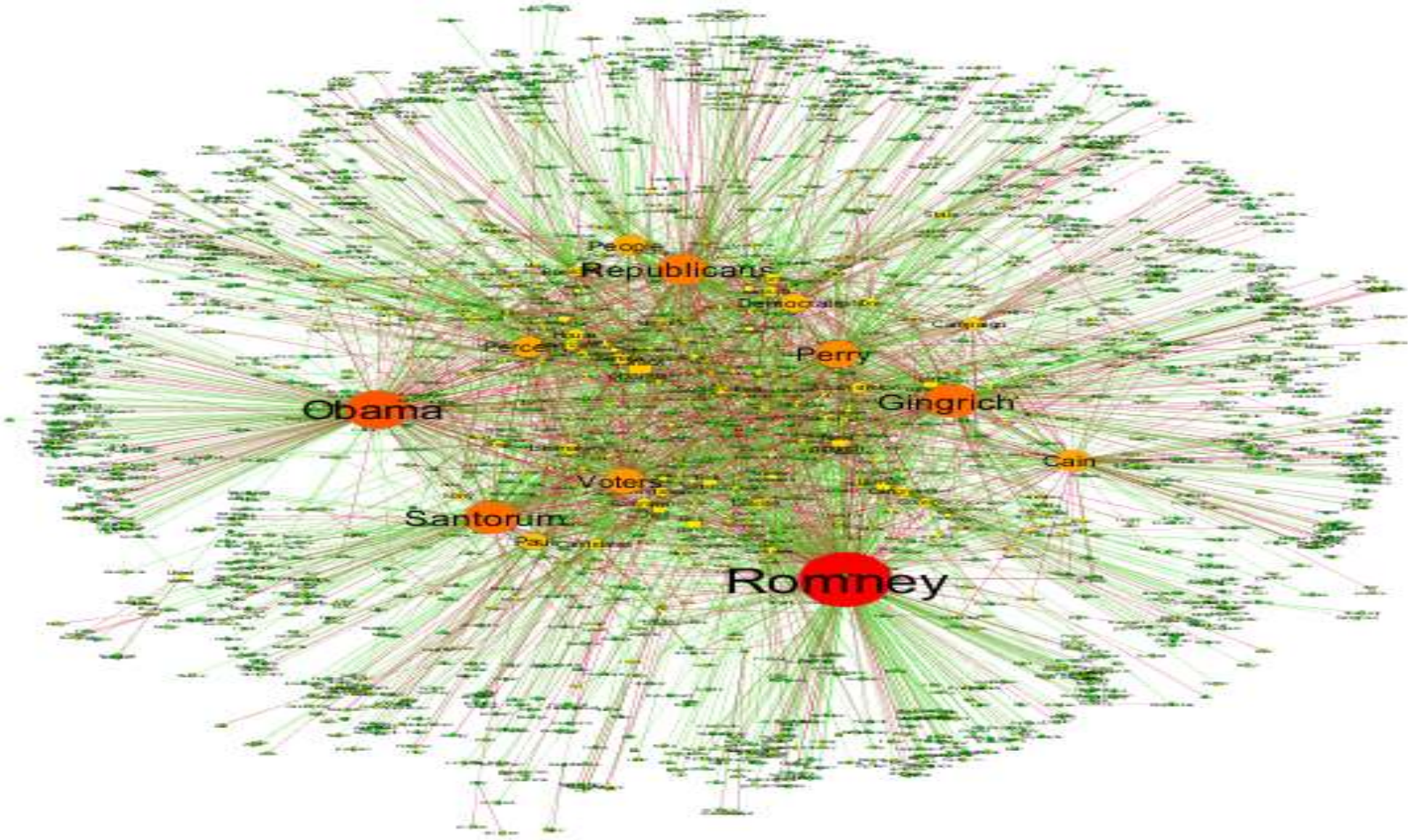
Many commentators say there is a paradigm shift occurring due to what is happening with the environment and with technology.

CLIMATE CHANGE

Due to Climate change, the same as with Globalisation, even if there is a political will a country and its labour organisation can not Operate in isolation.

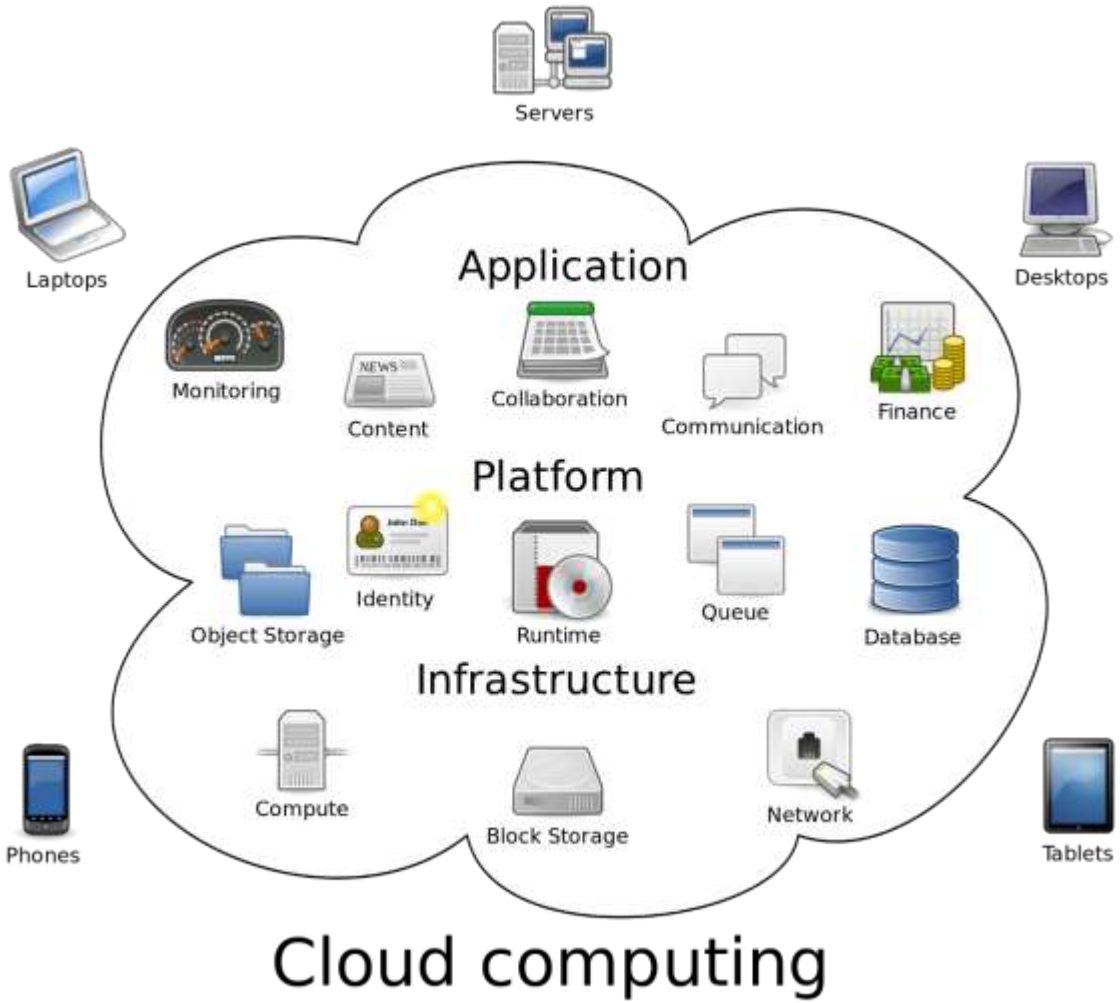
Many commentators say there is a paradigm shift occurring due to what is happening with the environment and with technology.

Big Data

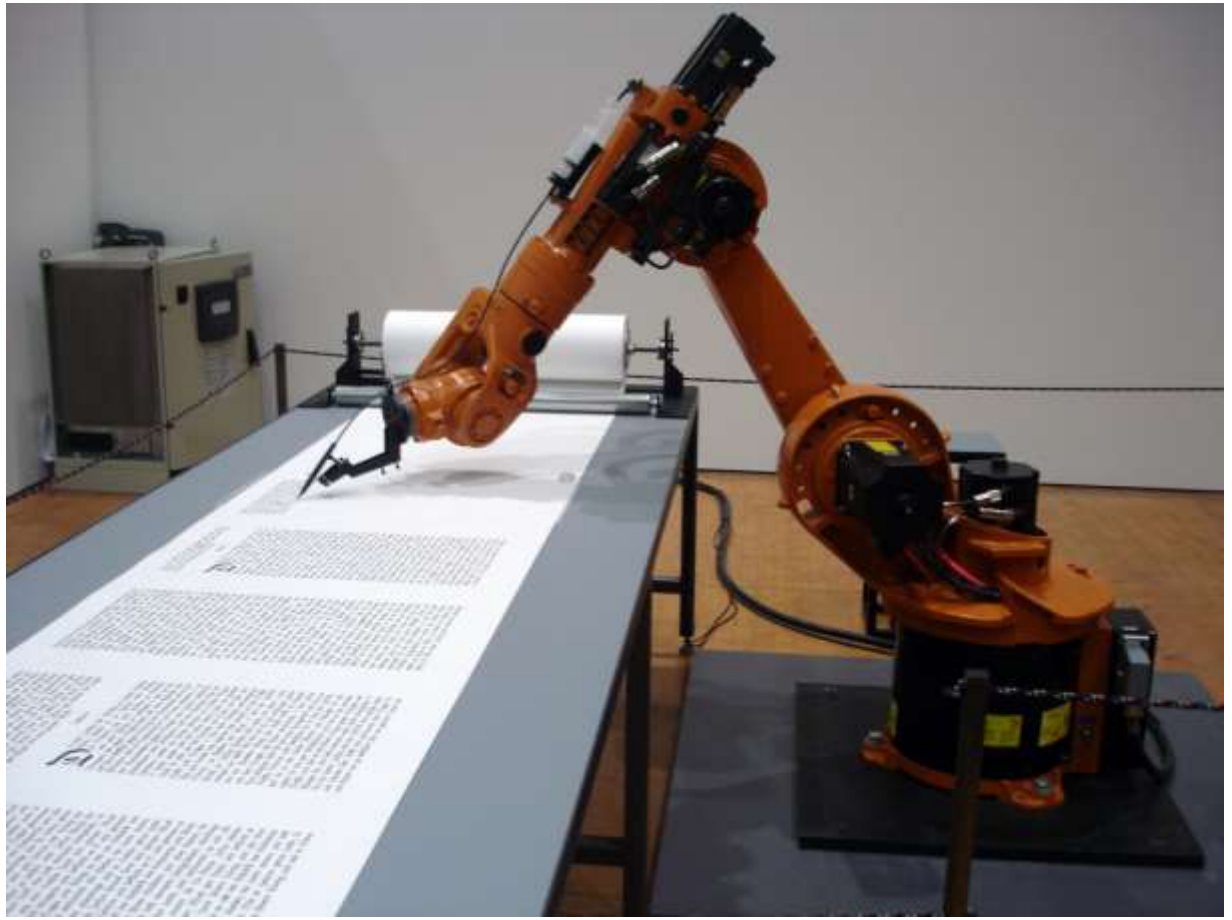

Republicans
Perry
Obama
Gingrich
Cain
Voters
Santorum
Romney

Big Data – needs to be processed and understood

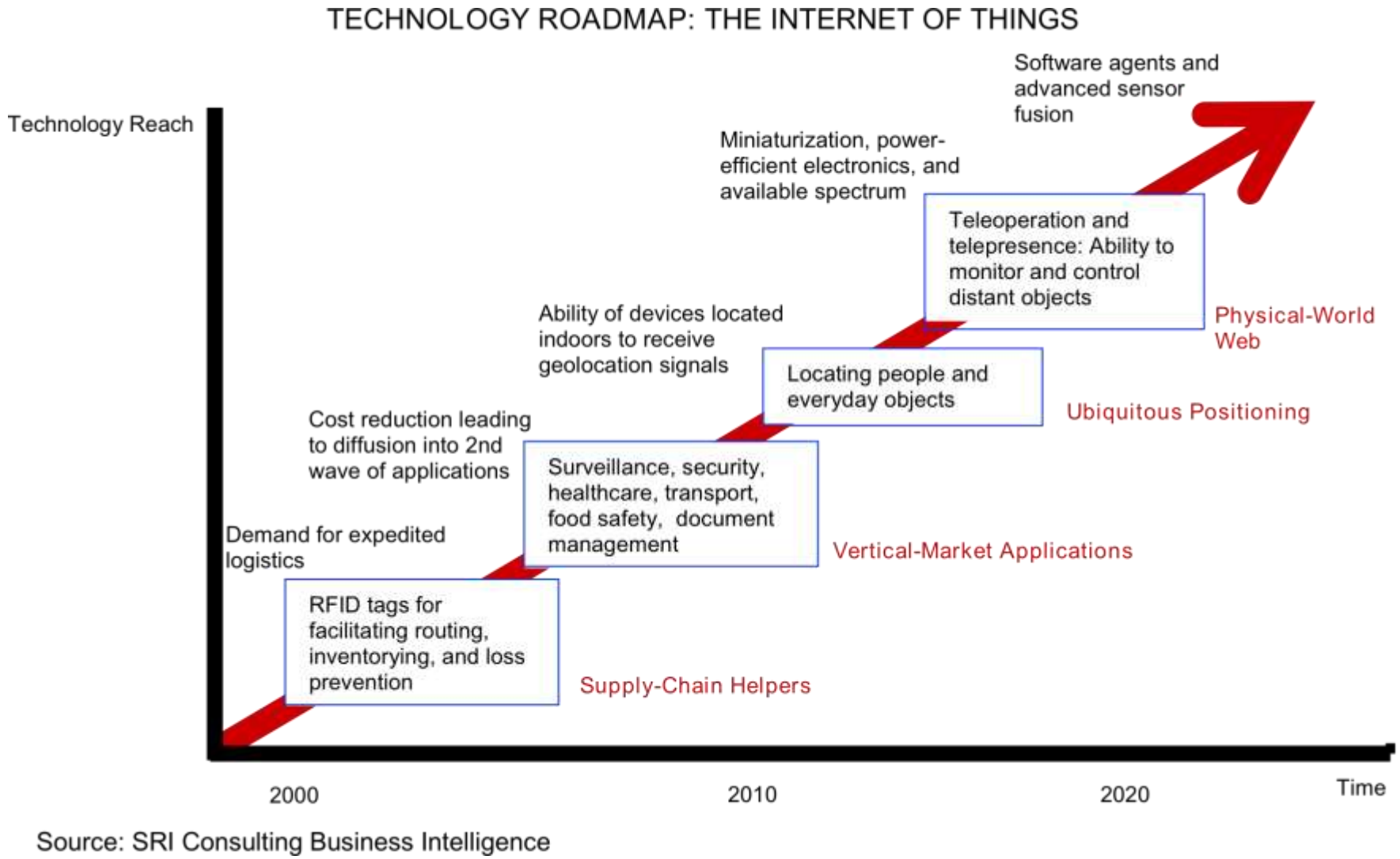
The Cloud


Servers
Laptops
Desktops
Application
Monitoring
Content
Collaboration
Communication
Finance
Platform
Identity
Object Storage
Runtime
Queue
Database
Infrastructure
Compute
Block Storage
Network
Phones
Tablets
Cloud computing

MORE PICTURES – A ROBOT SCRIBE



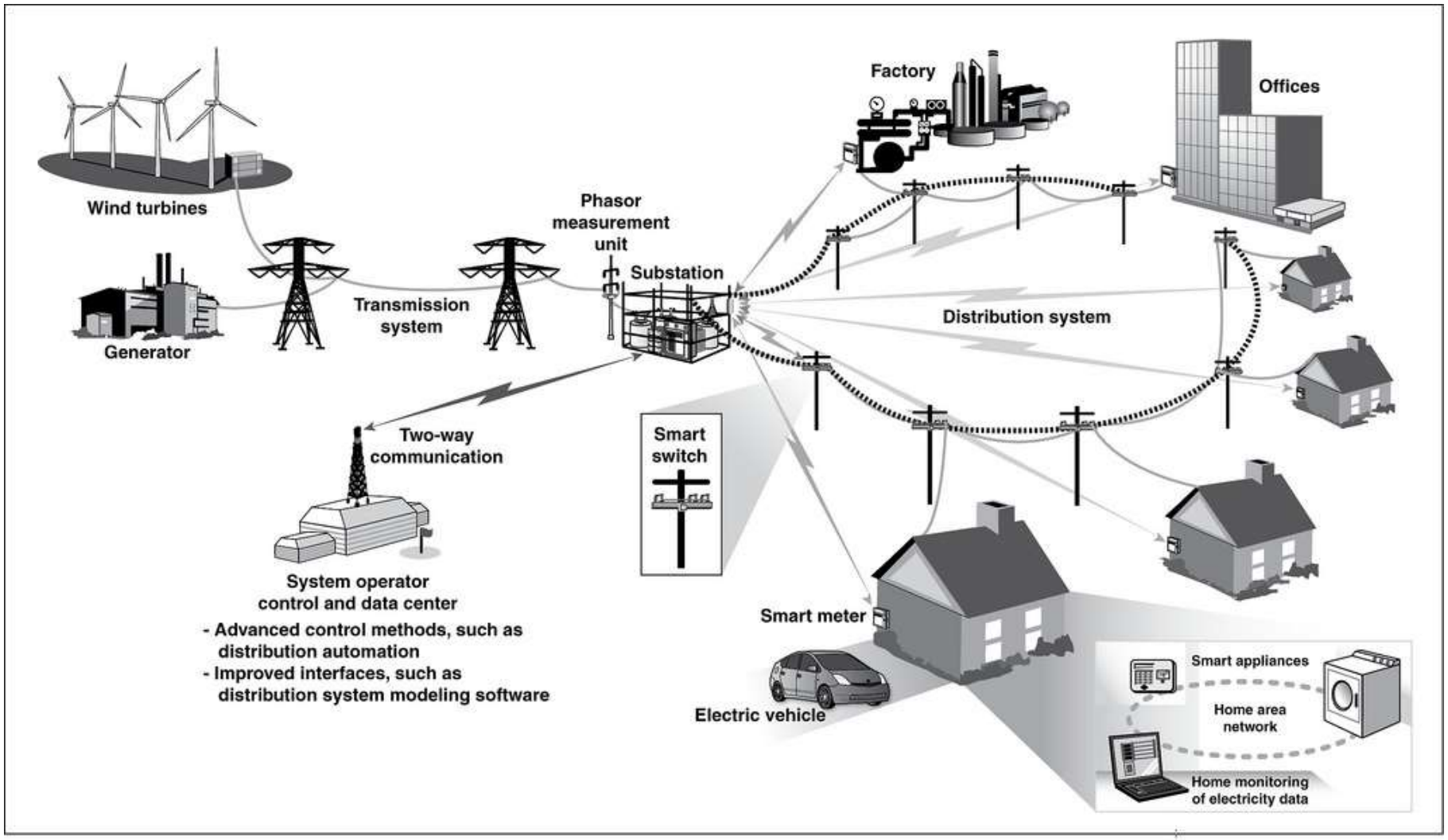
Internet of Things - Devices interconnecting with each other and the Internet



Source: SRI Consulting Business Intelligence

Internet of Things

ENERGY – SMART GRID



Source: GAO analysis.

Artificial Intelligence (AI)

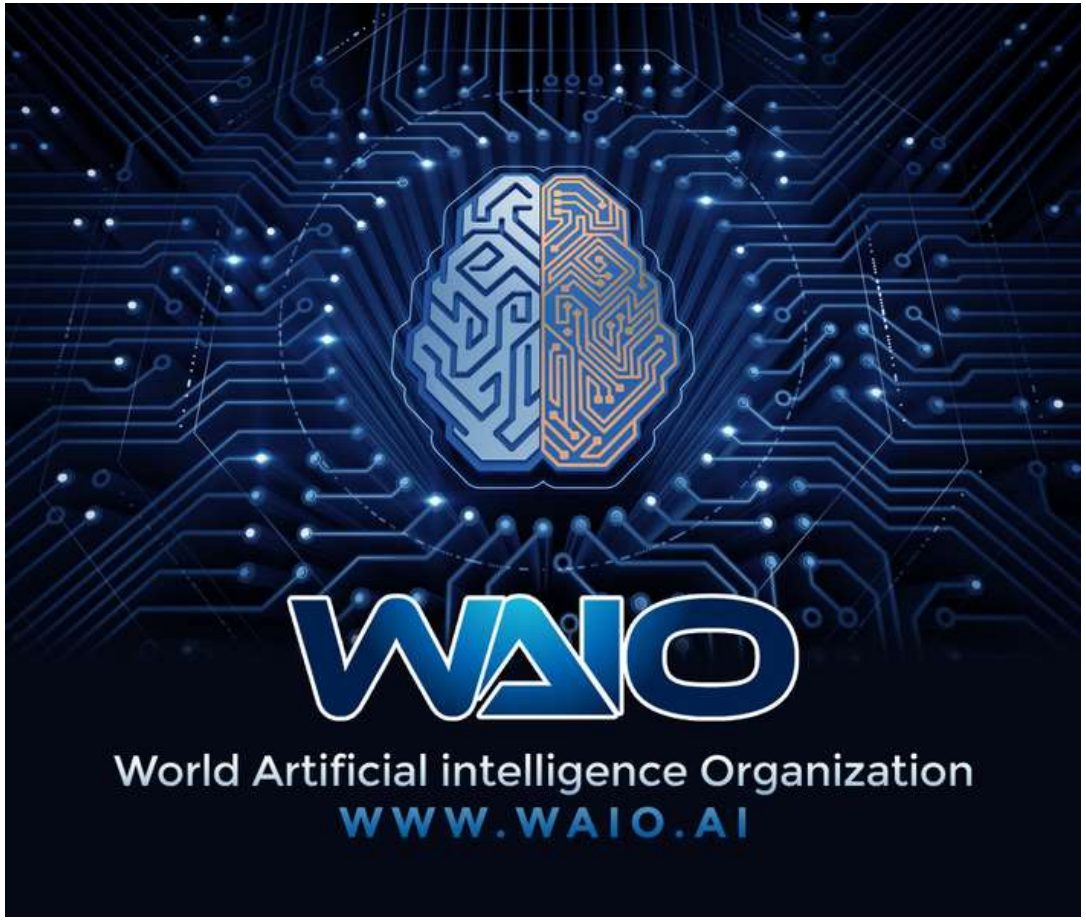
AI is using computer science to create intelligent machines. These machines learn, plan, reason, perceive and problem solve.

To perceive AI needs to communicate, to sense , to connect (needs the Internet of Things).

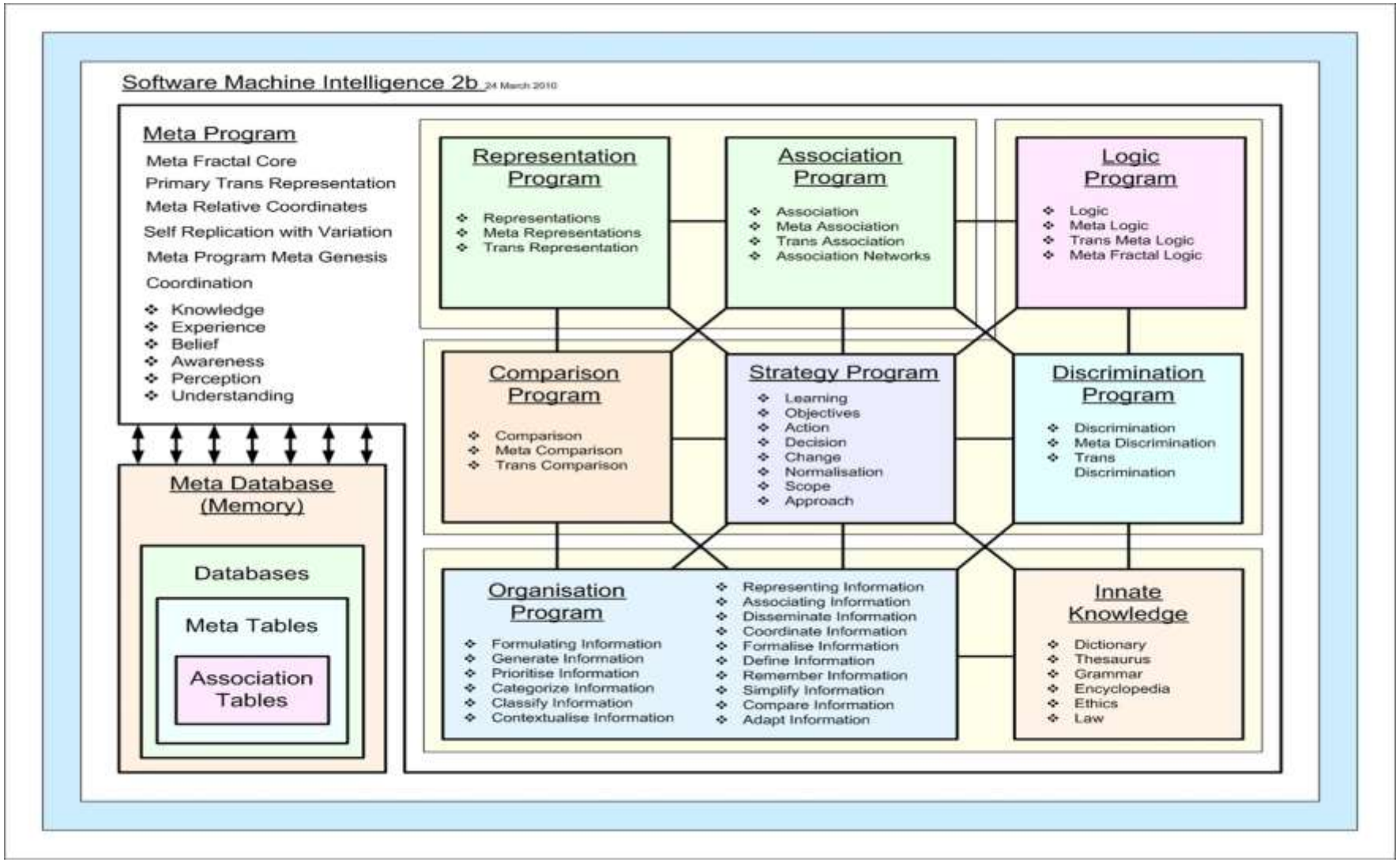
To problem solve AI has to use what it senses, use knowledge, planning and reasoning.

“A true artificially-intelligent system is one that can learn on its own. We're talking about neural networks from the likes of Google's DeepMind, which can make connections and reach meanings without relying on pre-defined behavioural algorithms.”

IT IS ALMOST HERE, ALLEGEDLY



AI – Artificial Intelligence



5G , Autonomous vehicles and Smart cities

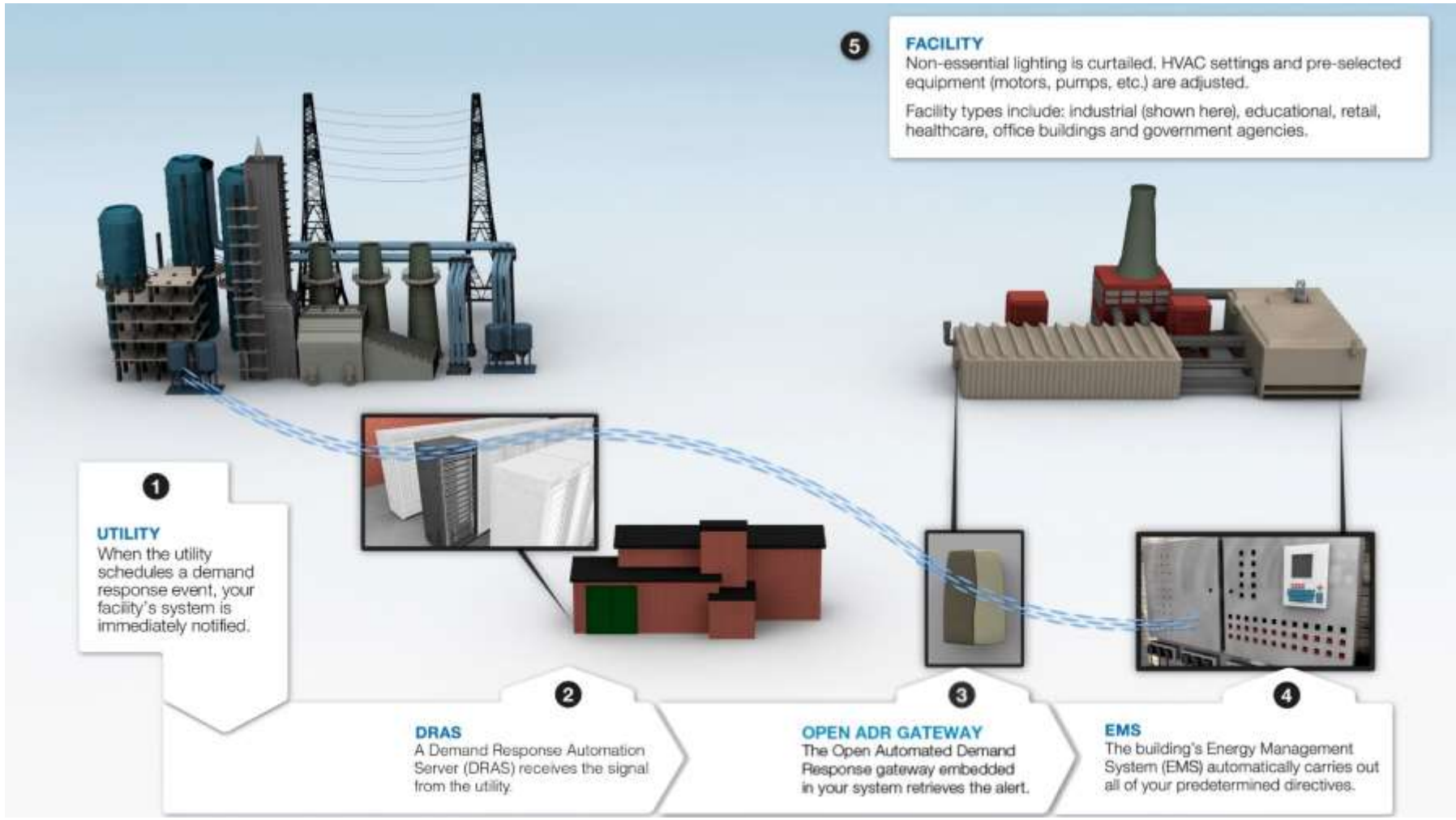
5G in the next generation of mobile and wireless communications, standards not yet set, but could start to be implemented from 2020, autonomous vehicles and smart cities need more secure, faster, faster response times (reduced network latency).

Network Type	Download Speeds
3G Network	384Kbps
4G Network	100Mbps
5G Network	1-10Gbps (theoretical)

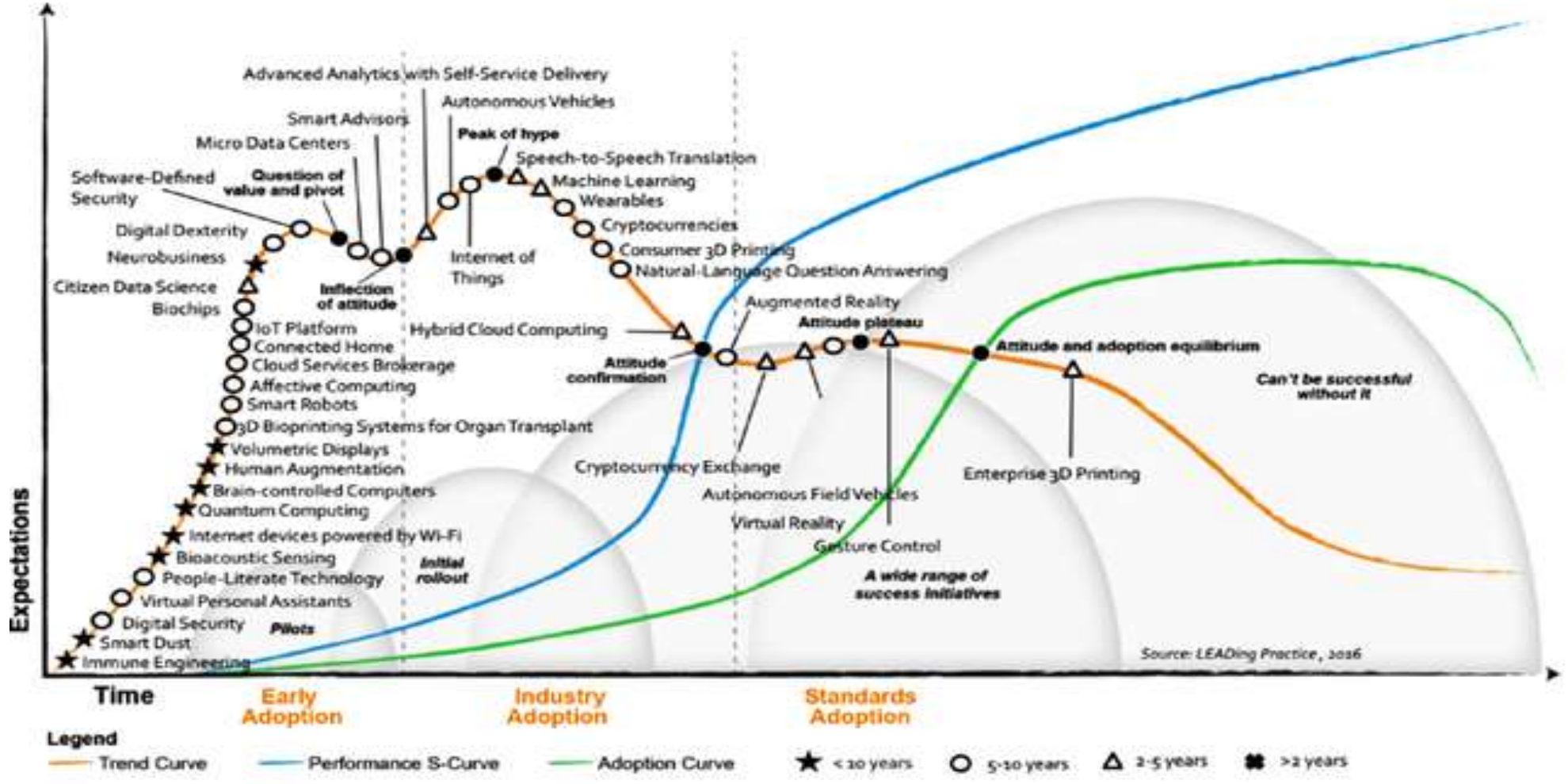
The circular economy

3D Printing and other advanced manufacturing

Industrie 4.0 and Smart factory



Complexity of technology changes



CHANGE - KEY ENABLERS/ DISTRUPTORS

This depends upon your point of view.

Change is only good for those who gain from that change.

So, who are the winners and losers?

Is there more or less equality?

Traditional area of union power is changing, how workers are employed is changing, what rights workers have is changing and mostly not for the better, there is a growth in precarious work, crowd working / crowd sourcing more task orientated work. Examples such as UBER and AMAZON.

In the UK Union trade Union rights and particularly representatives facilities time is being squeezed and people are less inclined to step forward as reps, as their increased job insecurity both actual and perceived, there is an unfortunate scenario where things will become so bad that people will have had enough and will step forward, but I have not seen that is the case yet.

Examples of change

Relatively new successful companies, such as Alphabet, Apple, Tesla and Facebook have less employees that Ford Motors or GE, but in the media or/and in company reports the earnings per employee in the newer organisations are generally a lot higher, as is the share price per employee. These newer companies are not always in profit, but the bet is on potential.

Co-bots

Machine learning – Automate tasks without a human programmer

Examples of change

Layers of management reduced, as altered flatter organisation structure models are followed: - Traditionally organisational structures were by function or division and the more complex Matrix, now there is a newer Flat ‘Flatarchy’ structure that gives employees more autonomy and is used in start-ups’ and can allow faster implementation of tasks.

Computer system administrator ratio depends on age of system, Operating System, Number of users, System reliability, Support hours, Number of hosted applications, Off the shelf applications, Amount of Automation, types of clients and company sizes.

The support ratio ranges from 1 to 2, through to 1 to 2500. But the support ratio is increasing.

Issues and challenges on the future manufacturing

The changes shown in the previous slides illustrate some of the issues and challenges of future manufacturing.

Promoting effective strategies for sustainable employment

Some ideas of what has and can be done are shown in the following slides.

Knowledge, enabling motions, developed policies and processes, networking and solidarity are needed.

What has and can be done?

The presentation is my viewpoint and is not necessarily that of UNITETHEUNION.

Working in IT you work across both the manufacturing and services sector.

But having said that, with my help, the IT subsector in the GPM and IT industrial sector in the manufacturing part of UNITETHEUNION in 2015 produced the following charter with the input and support of Tony Burke UNITE Assistant General Secretary.

A Digital New World

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

In the UNITETHEUNION GPM and IT sector conference in 2015 a motion was carried call "The march of the robots"

Also in the UNITETHEUNION Policy conference in 2016 a motion was carried

POLICIES AND NEW TECHNOLOGY

Even if we have some good ideas about what is happening , what can we do to support our existing and potential members and their families?

Motions passed at Unite policy conference

Motion passed at the UNITETHEUNION Policy conference July 2016

“Challenge of the Digital Economy

The accelerated capacity of automation and artificial intelligence now represents a threat to the security and availability of work in a way never previously experienced.

Unite will lead the way on this by creating policies that result in technology helping to create a better society and environment and is not just to be used as the ultimate cheap labour resource to only create redundancies.

Unite is committed to:

Establish a working party across industrial sectors to monitor this threat to our members’ (and future members’) employment prospects.

Implement an industrial strategy that includes a Manufacturing Combine to prepare the manufacturing sector for the serious impact that ‘Industry 4.0’ will have on employment and our members working conditions on the manufacturing sector.”

Acting on policy conference motion

NETWORK

USE SOCIAL MEDIA

Improving Union information and processes

- **Work, Voice, Pay** program a toolset has been developed and deployed.
- Securing good jobs and decent ***work***
- Making sure workers have a strong and effective ***voice***
- Getting decent ***pay*** and conditions
- As part of this programme Unite is providing this industrial toolkit to support Unite shop stewards. Here you will find:
- Work, Voice, Pay guides
- Pay and Anniversary date data
- And at a future date, Unite Agreements
- These resources are designed to assist you, our shop stewards and representatives. I hope that they will help you to campaign for better pay and conditions for Unite members.
- - See more at http://www.unitetheunion.org/work-voice-pay/

COMMUNITY MEMBERSHIP

GROWING THE MEMBERSHIP

“It is only as standing together that we can defend and improve our lives.

Through Unite’s community membership we will work with you to make life better; we will give you the platform you need to create a fairer society. Our trade unions are the biggest voluntary group in the UK and Ireland.

At 6.5 million strong, we are the Big Society. At Unite we have 1.4 million members – just imagine what you can achieve with them standing by your side? “

- See more at:

http://www.unitetheunion.org/growing-our-union/communitymembership/”

EDUCATION AND LIFE LONG LEARNING

As jobs become more precarious and job automation increases, then the need for continuous vocational learning and more and upskilled apprenticeships grows.

I am interested in how apprenticeships work in Germany with the Mittelstand model, especially the grouping of small and medium sized companies linking with local technical colleges.

Also need to have learning pathways for all ages, genders and abilities.

I have been involved with an organisation called the Tech Partnership for UNITE giving feedback into consultations on apprenticeships for ITC jobs in the UK.

https://www.thetechpartnership.com/

UNITE learning links http://learnwithunite.org/

THE FUTURE OF EMPLOYMENT: HOW SUSCEPTIBLE ARE JOBS TO COMPUTERISATION?

THE FUTURE OF EMPLOYMENT: HOW SUSCEPTIBLE ARE JOBS TO COMPUTERISATION?∗

Carl Benedikt Frey† and Michael A. Osborne‡ September 17, 2013

Quantifying effects of technological change on people's jobs.

From the above report an analysis of job titles of members in UNITE against perceived jobs replaced, partly automated and new jobs would produce figures that are quite sobering for the UK.

Other reports can also show that the job remains, but many of the tasks within that job could be automated meaning less people required doing that job.

THE FUTURE

This is not all doom and gloom, less workers can mean less customers, so governments need to be concerned that the ability to consume needs to be supported, ideas are needed, such as universal income, a safety net to allow multiple innovation attempts.

The circular economy and the sharing economy could allow more equitable and sustainable use of resources.

If the economy and society is equitable and innovative, then work and home life could be in balance, many people over work and many people are under employed.

Links, references and credits

https://en.wikipedia.org/wiki/Internet_of_things

- http://www.investopedia.com/terms/o/organizational-structure.asp
- **The Rise of the Robots: Technology and the Threat of Mass Unemployment Paperback – 2 Jun 2016 by Martin Ford**
- **The Wealth of Humans: Work and Its Absence in the Twenty-first Century Hardcover – 22 Sep 2016 by Ryan Avent**
- The Second Machine Age: Work, Progress, and Prosperity in a Time of Brilliant Technologies is a 2014 book by Erik Brynjolfsson and Andrew McAfee http://secondmachineage.com/
- The Zero Marginal Cost Society: The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism – Jeremy Rifkin
- www.thezeromarginalcostsociety.com/

Sample of conferences I have attended and the associated materials

- http://www.ceemet.org/news/digitalisation-world-work-report
- https://www.pwc.com/gx/en/issues/talent/future-of-work.html
- https://www.strategyand.pwc.com/global/home/what-we-think/digitization/megatrend
- ETUI/ETUC Shaping the new world of work. The impacts of digitalisation and robotisation conference Brussels 27-29th June 2016
- http://www.etui.org/Events/Shaping-the-new-world-of-work.-The-impacts-of-digitalisation-and-robotisation
- Various OECD and ILO Reports
- Oxford Internet Institute - Digital Transformations of Work Conference
- https://www.oii.ox.ac.uk/
- https://www.oii.ox.ac.uk/events/digital-transformations-of-work-conference/
- Speakers: Professor Mark Graham, Professor Vili Lehdonvirta, Professor Guy Standing, Professor Kevin Doogan, Professor Jill Rubery, Professor Saskia Sassen, Karen Gregory
- Transformation of Work Conference As part of the Green Templeton College Future of Work Programme we are bringing together leading researchers to consider the ways in which digitalisation and the internet are globally transforming work, employment and labour markets.
- http://www.oxfordmartin.ox.ac.uk/event/2437

Sample of conferences I have attended and the associated materials(continued)

- 'The second wave of the second machine age' with Prof Erik Brynjolfsson
- Various Reports from National Physical Laboratory (NPL) events on 5G
- Bristol University faculty of Engineering
- SYNDEX Reports
- wmp consult – Wilke Maack GmbH) reports
- Uni-Europa ICTS conference Rome 2013
- Uni World Engineering conference Tokyo 2016

Various UK Government reports such as on

- AI and robotics
- The digital economy
- BBC articles
- http://www.bbc.co.uk/news/business-32743770

Other references and links

http://www.mckinsey.com/mgi/our-research/technology-and-innovation

http://www.mckinsey.com/global-themes/employment-and-growth/how-work-will-change-in-the-next-economy

http://www.mckinsey.com/global-themes/employment-and-growth/technology-jobs-and-the-future-of-work

https://www.weforum.org/agenda/2016/02/the-future-of-work/

http://www.alanturing.net/turing_archive/pages/reference%20articles/what%20is%20ai.html

THE END