

# DE Strategy Meeting: Well Sorted Materials

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4/6/2014

Dear participant,

Thank you for submitting your 'challenge' in answer to the question:

**“What is going to be the main societal, economic or cultural challenge associated with the digital economy space over the next five to ten years?”**

This document contains your answers, grouped by the average of your online sorts.

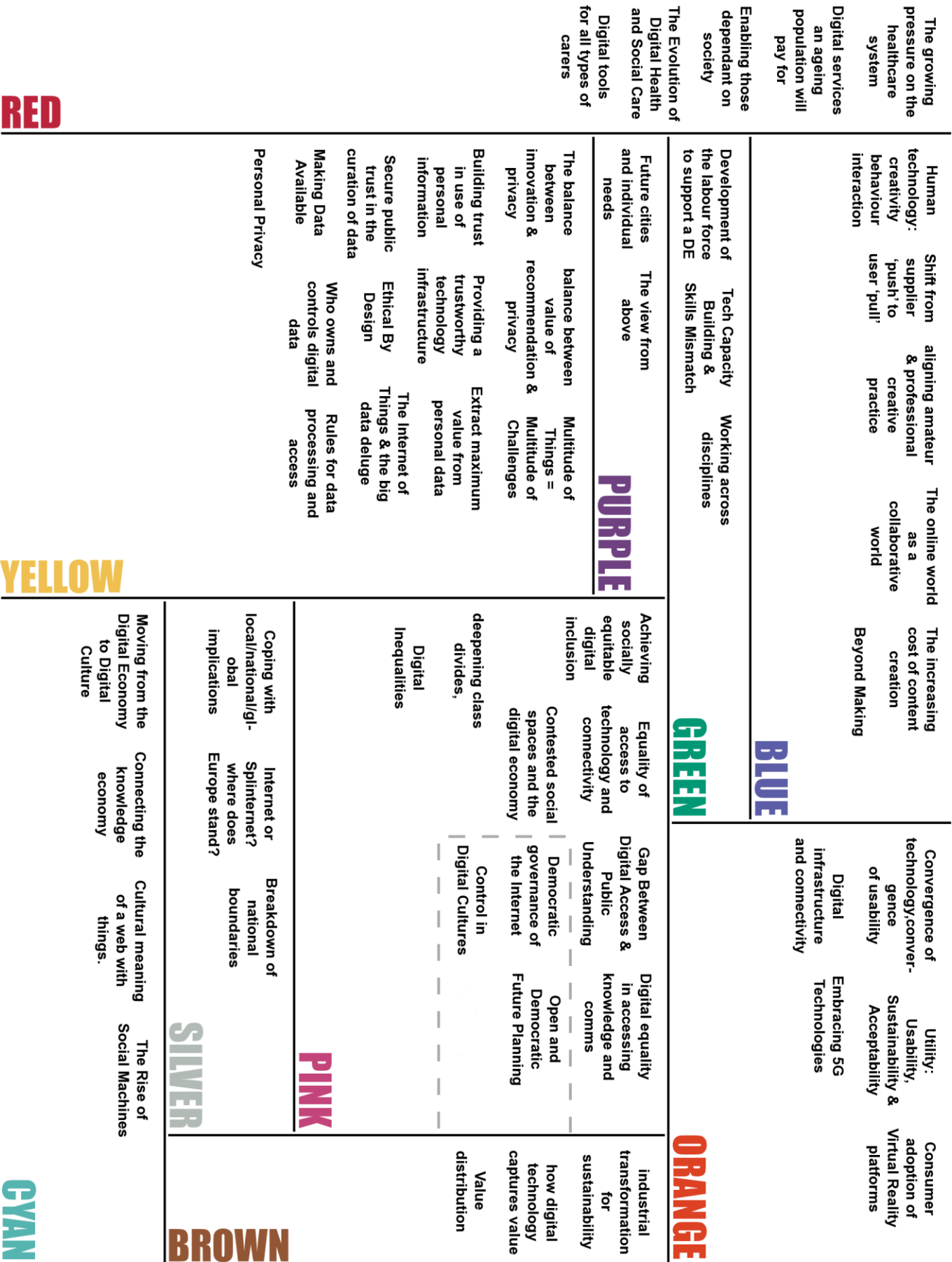
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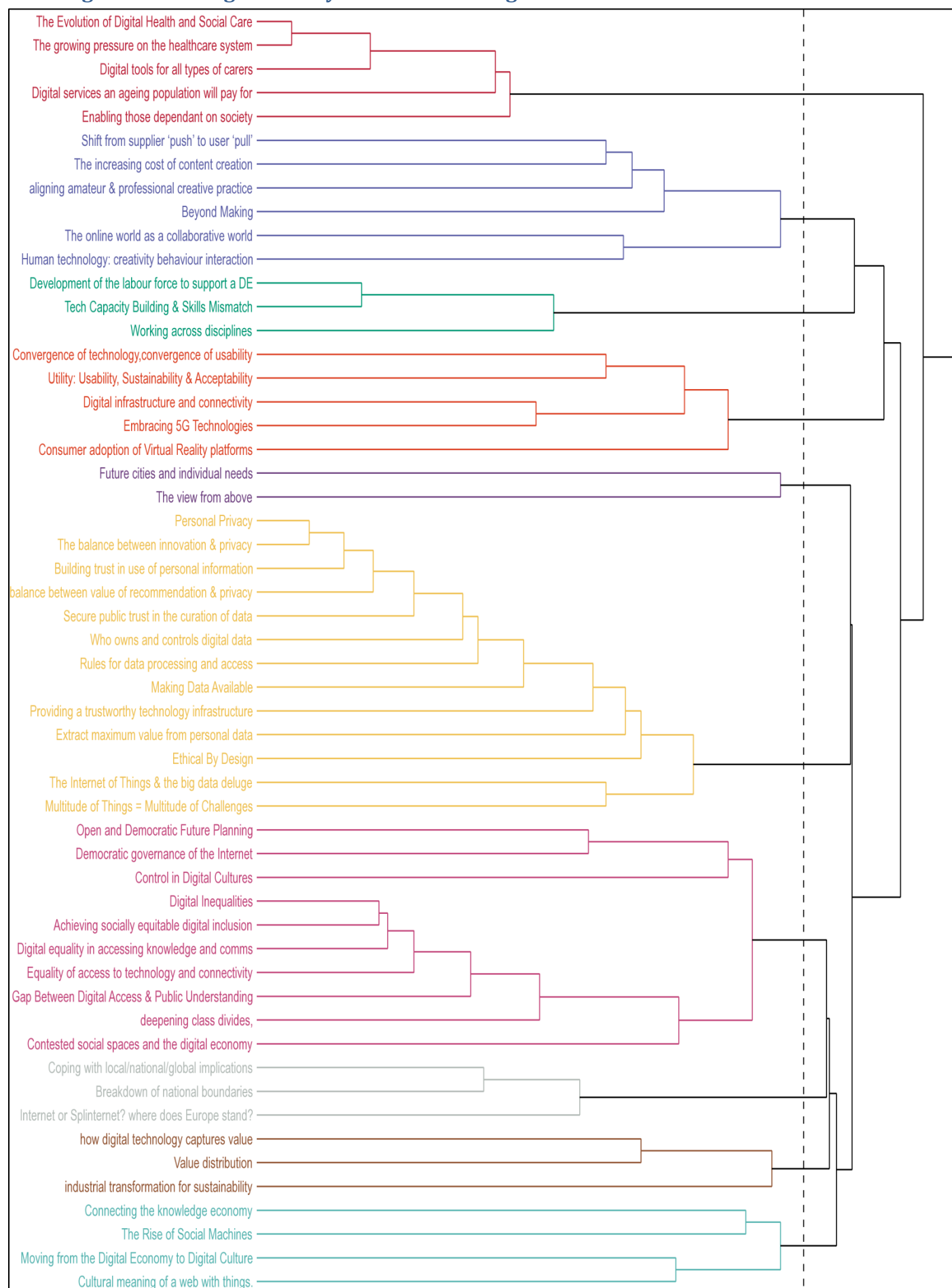
For an interactive, online version of the Tree Map and a PDF version of this document, go here:

<http://www.well-sorted.org/explore/DESM2014/>

Tree Map - titles of all 54 challenges grouped by ‘averaging’ all participants’ groupings



## Dendrogram - showing similarity between challenges



## Challenge titles and descriptions ordered by group

Group Colour	#	Group Members	Description
Red	1	The Evolution of Digital Health and Social Care	From a health and social care perspective there will be slow change in the adoption of innovative digital advances but more rapid expansion within consumer health markets. A distributed model of health and social care will be underpinned by 24/7 digital
	2	The growing pressure on the healthcare system	Healthcare costs are growing in a non-sustainable way, fuelled by an aging population, the obesity crisis, and the increasing cost of treatments. The solution to this is likely to rely strongly on new technologies.
	3	Digital tools for all types of carers	Governments have spent an inordinate amount of money on the provision of digital tools for statutory health and care and have largely neglected the informal care sector where appropriate digital tools could have a far greater impact
	4	Digital services an ageing population will pay for	Digital technologies can help look after the aging population and reduce the cost burden. The challenge is to find service ideas that 'work' economically because main stream digital is often free at the point of use and require huge economies of scale.
	5	Enabling those dependant on society	Three major categories of those dependent on society are the sick, the elderly and the unemployed. The DE should seek to fund research that addresses Health sector, accelerates a growing economy and values the pensioner (from active to dependent).
Blue	1	Shift from supplier 'push' to user 'pull'	Users have active role in production of content, no longer passive recipients, but capable of shaping products or services to their own requirements. Shift from standardisation to personalisation with significant implications for business models.
	2	The increasing cost of content creation	Creating content for all types of media is getting more expensive, driven by deeper, more engaging experiences. Areas to address this include: increasing procedurallism, improving content iteration times and enabling emergent and user generated content.
	3	aligning amateur & professional creative practice	Is the fuss about User Generated Content really that important? and if it is, should it not better be treated as complementary to content generated by professionals. Along with this come questions about provenance, IP, monetisation and more.
	4	Beyond Making	How do we enable bottom up maker communities turn prototypes into products
	5	The online world as a collaborative world	The online space is increasingly becoming a space where people collaborate to create ideas, meanings and artefacts, rather than a space to simply share information. Nurturing a global culture of collaboration is an exciting opportunity.
	6	Human technology: creativity behaviour interaction	Place human experience at centre of digital research topics, interdisciplinary science-led and arts-led practice-based collaborative digital research. Needs design thinking, high quality software, psychology, creativity & society.

Green	1	Development of the labour force to support a DE	A thriving digital economy needs a qualified labour force, but where will this come from in the UK? What can be done to encourage more people to apply for degree courses in tech subjects to develop the necessary skills to support the UK digital economy?
	2	Tech Capacity Building & Skills Mismatch	The Digital Economy offers the prospect of challenging and well paid careers but is facing major skills shortages. For example a shortage of 60,000 Data Scientists over the next 5 years. Social scientists are in great demand but don't have analytic skills
	3	Working across disciplines	The digital economy is fundamentally a cross-disciplinary topic and yet there is a real shortage of people with the skill-sets to operate in this area. This is also a challenge to universities where disciplinary structures remain dominant.
Orange	1	Convergence of technology, convergence of usability	Technology moves on so quickly that is a big enough challenge to construct a coherent device or system to sell. Harder is giving multiple systems equivalent ease of use while allowing the user to amplify the benefit of using multiple independent systems.
	2	Utility: Usability, Sustainability & Acceptability	With the increasing scope & range of computational network systems, the ability to support the diversity of interfaces, users and their expectations, sustainably cost effectively, to provide a set of acceptable, compatible interacting utilities.
	3	Digital infrastructure and connectivity	The ability to deliver digital infrastructure that will enable high levels of connectivity and be commercially accessible for all. The successful evolution of public and private services will be dependent upon the enabling power of the network(s).
	4	Embracing 5G Technologies	Embracing this grand challenge from the outset and ensuring that future applications, for whatever purpose or use case, adopt true "clean slate" approaches to architectural and communication strategies is paramount for the future UK digital economy.
	5	Consumer adoption of Virtual Reality platforms	Widespread adoption of high-end consumer-level VR technology will transform the digital entertainment industry, and with it a large part of the digital economy. Obstacles to consumer acceptance of VR, digital goods and virtual economies must be overcome.
Purple	1	Future cities and individual needs	There is a need to involve citizens in the evolution and running of the city and its services. As citizens become more connected they expect to have visibility of city services and shape the services that the city provides.
	2	The view from above	In recent years the availability of personal drones / quadcopter has risen. Along with the regulatory restrictions that will follow what are the socio/economic impacts of these devices as people begin to see their cities from above using their own tech?

Yellow	1	Personal Privacy	By combining together data from a variety of sources, governments, companies and employers will be able to learn so much about us, our behaviour, and our interactions with others. Do we learn to live with this, or find ways to prevent it?
	2	The balance between innovation & privacy	Finding a culturally acceptable balance between leveraging the data held by government & industry for economic & societal benefit, and the rights of the individual to maintain their privacy. Recognising the contradictory behaviour exhibited by most people.
	3	Building trust in use of personal information	Wanton disregard by some for privacy (in both commercial and state sectors) is undermining citizen and industry faith in digital economy providers. We need open and transparent privacy verification means (both technical and operationally).
	4	balance between value of recommendation & privacy	How can we find the right balance between the possible value of data based recommendations / predictive models and the need for privacy of those producing / owning the data? Will companies be asked to act paternalistically towards their customers?
	5	Secure public trust in the curation of data	New sources of data regarding behaviour, lifestyles and consumption is potentially of great interest for research on digital societies, but issues relating to e.g. patient data, surveillance and security of financial records threaten to derail this agenda
	6	Who owns and controls digital data	As the IOT arrives the digital footprint of an individual gets ever clearer and larger. Key challenge will be who owns the digital footprint, who can share, who is trusted and what business models can develop and survive.
	7	Rules for data processing and access	Who gets access to personal and other sensitive data and what are the rules around it.
	8	Making Data Available	Many opportunities in Digital Economy will depend on making diverse data from sensors, users, transactions etc. widely and simply accessible to those creating or using applications, while respecting privacy, security and ownership.
	10	Providing a trustworthy technology infrastructure	Successful digital marketplaces and communities need an appropriate level of security but onerous security reduces the benefits to all participants. We need technologies that provide reliable indicators of trustworthy technologies and agents.
	11	Extract maximum value from personal data	Empower citizens to shape their lives & deliver benefits at individual & societal levels - eg. informed, proactive health management means lower NHS costs. Leverage corporate and government interests without violating individual privacy & citizenship
	12	Ethical By Design	How can we create digital economy technologies that are transparent, trusted and open to creative use by millions of citizens?
	13	The Internet of Things & the big data deluge	As more 'things' become part of the Internet of Things, there will be a rapid increase in the amount of data being generated which will also need to be stored, used and protected. This will pose immense challenges in a world already saturated in data.
	14	Multitude of Things = Multitude of Challenges	The growth of internet connected devices associated with people's lives (in the home, transport, urban environment) will create a host of challenges around regulation, data ownership, trust, transparency and control.



Pink	1	Open and Democratic Future Planning	Fully engaged participation of large numbers of experts, for open and transparent development of structured foresight, horizon scanning, and strategy development activities (covering governmental, business, NGO, and academic sectors)
	2	Democratic governance of the Internet	Large corporations and states have initiated regimes of pervasive surveillance and personal data collection which are shaping the Internet today. How will we deal with the consequences for democracy?
	3	Control in Digital Cultures	As digital technology becomes integrated with every aspect of the human experience who will be in control, i.e. as we become cyborgs who will control are digital limbs. How do we ensure that which is to be enabling does not become disabling/degenerative.
	4	Digital Inequalities	Citizenship and cultural engagement will increasingly require digital literacy, but there is no current strategy that effectively challenges the ways that the digital economy tends to reinforce existing inequalities and exclude the already disadvantaged.
	5	Achieving socially equitable digital inclusion	An individual's ability to expand and diversify their social networks is an essential skill for social and economic mobility. Understanding this skill in the era of digital services and communication is key for an effective digital economy.
	6	Digital equality in accessing knowledge and comms	How can we ensure the benefits of the technological age are equally beneficial to society as a whole, can we remove the market economy from a provision that should be a fundamental point of access to knowledge for all, exclusion should not be an option.
	7	Equality of access to technology and connectivity	The problem encompasses access to technology both in terms of owning technology and being able to use technology. At the other end of the scale it encompasses the social context in which technology is used and whether this supports or inhibits access.
	8	Gap Between Digital Access & Public Understanding	Access to information online supports wider contributions to the digital economy, but there is a gap between access & understanding. True digital inclusion equates to a quality & clarity of online information to inform better public use of digital assets.
	9	deepening class divides,	the introduction of the universal credit system, coupled with enforced mobility of certain populations are two outcomes of a number of digital and economic policies and practices that will have a lasting impact on British culture.
	10	Contested social spaces and the digital economy	Digital media promote social cohesion and the exchange of ideas. But businesses steal the attention of customers; radical groups insinuate ideologies; individuals suffer cyberbullying. These increasingly prevalent negative phenomena are little understood.

Silver	1	Coping with local/national/global implications	How will we manage challenges posed by the disproportionate distribution/use of digital economy structures in local, national and international contexts (including how new technologies are introduced and then interact/interoperable with legacy systems?)
	2	Breakdown of national boundaries	Increasing power of multinational internet giants plus diversity of approaches to privacy, censorship and regulation across rapidly growing economies such as China, India and Brazil rapidly erodes influence of smaller democratic states and their citizens
	3	Internet or Splinternet? where does Europe stand?	The Open Internet has many enemies: some are deeply rooted and explicit (eg China) some more subtly confused (Europe). How do we resolve trade-offs between the perspectives of social liberalism (privacy etc) and economic liberalism (innovation/growth)?
Brown	1	how digital technology captures value	understanding which business models capture value effectively will influence wealth and health and what gets consumed - money drives most things - technology is both mobilized by better business models but also influences the business model system
	2	Value distribution	who will get the value that created in the digital economy - in short will the 'rich get richer' and the 'poor get poorer' following on from Piketty's research on returns to capital and labour
	3	industrial transformation for sustainability	digital technologies are transforming basic industrial structures that have defined our global economy for at least 50 years. How do we effectively apply digital in the dramatic reduction of CO2, and in creation of equity - rather than fuel consumerism?
Cyan	1	Connecting the knowledge economy	The digital economy is really morphing into the knowledge economy in the sense that the technology - digital or analogue - is only part of the equation. This emergent interconnecte economic model is a social machine where people and communities matter too
	2	The Rise of Social Machines	Increasingly citizens will participate in the digital world, by Web but predominantly by app and the Internet of Things supplementing physical with digital. With this democratisation and empowerment comes the easy creation of new social process at scale.
	3	Moving from the Digital Economy to Digital Culture	Economists are increasingly recognising the significance of culture (e.g. identities, norms and values). It is necessary to consider how real cultural change can be effected in an unequal and unhealthy digital society using new theories of economics.
	4	Cultural meaning of a web with things.	When all our things are connected to the web, how will we know what data is being collected and how it is being used? This requires understanding of how to design for the cultural meaning of things that read, write and execute data on our daily lives.



# Well Sorted

Organising the World

The materials in this document were generated using Well Sorted ([www.well-sorted.org](http://www.well-sorted.org)), an online Card Sorting tool which is free to use for academics.

## Notes

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