The Impact of Digital on the workforce – how digitally worried are you?

James Freed, CIO, Health Education England, Programme Director, Building a Digital Ready Workforce

@jamesfreed5
Demand pressure and funding in £bn, real (2017/2018 prices)

Demand pressure:
- Applying demographic, non-demographic, and provider cost inflation pressures

Funding scenario 2:
- Projected funding using historic (1960 to 2017) funding growth rate of Real GDP+1.5%

Funding scenario 3:
- Projected funding using historic (2007 to 2017) funding growth rate of Real GDP+1.3%

Funding scenario 1:
- Forecasted funding until 29/30 using Real GDP growth only

Reference: The Lord Darzi Review of Health and Care: Interim report, April 2018

SOURCE: CF analysis 2018
1 Historic productivity growth is at 0.8%: Growth rate and index for public service healthcare productivity for current and previous publication, 1995 to 2015. SOURCE: ONS
2 Total Department of Health Expenditure Limit (TDEL)
Moore’s Law – The number of transistors on integrated circuit chips (1971-2016)

Moore's law describes the empirical regularity that the number of transistors on integrated circuits doubles approximately every two years. This advancement is important as other aspects of technological progress – such as processing speed or the price of electronic products – are strongly linked to Moore’s law.

The data visualization is available at OurWorldinData.org. There you find more visualizations and research on this topic. Licensed under CC-BY-SA by the author Max Roser.
Human adaptability

technology

rate of change

time
The scale of change

Automation and AI will change the skills needed in the workforce

Total is for United States and 14 Western European countries

<table>
<thead>
<tr>
<th>SKILLS</th>
<th>Physical and manual</th>
<th>Basic cognitive</th>
<th>Higher cognitive</th>
<th>Social and emotional</th>
<th>Technological</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hours spent, in 2016</td>
<td>203</td>
<td>115</td>
<td>140</td>
<td>119</td>
<td>73</td>
</tr>
<tr>
<td>Change in hours spent by 2030%</td>
<td>-14</td>
<td>-15</td>
<td>8</td>
<td>24</td>
<td>55</td>
</tr>
<tr>
<td>Skills with the biggest shift in demand</td>
<td>General equipment operation and navigation</td>
<td>Basic data input and processing</td>
<td>Creativity</td>
<td>Entrepreneurship and initiative taking</td>
<td>Advanced IT skills and programming</td>
</tr>
<tr>
<td></td>
<td>Inspecting and monitoring</td>
<td>Basic literacy, numeracy, and communication</td>
<td>Complex information processing and interpretation</td>
<td>Leadership and managing others</td>
<td>Basic digital skills</td>
</tr>
</tbody>
</table>
The type of change

myCOPD
myCOPD helps people with COPD to better manage their condition.

Cove
Create music to capture your mood and express how you feel with the Cove app.

Chill Panda
Learn to relax, manage your worries and improve your wellbeing with Chill Panda.

Blueice
Blueice is an evidenced-based app to help young people manage their emotions and reduce urges to self-harm.
Adaptability = digital readiness

- Digitally willing
  - Individual attitudes
  - Organisational “drivers”
- Digitally able
  - Skills
  - Technology

Everyone
Organisation leaders
Everyone
Informaticians
BDRW on a slide

WIDENING DIGITAL PARTICIPATION

- Patient/Citizen
- Social Worker
- Non-clinician

LEADERSHIP

- CEO
- Dr
- AHP

PROFESSIONALISM

- CIO
- Informatician

CHANGE

- Staff development
- User needs
- Service
- Sharing and listening

• Culture
• Assurance
• Future focus

CHANGE

- Empowerment
- Staff development
- Changing attitudes

CHANGE

- User needs
- Service
- Sharing and listening

CEO

Every nurse an e-nurse

Digital Academy

@NHS_HealthEdEng  @jamesfreed5  #DigitalReady
What do leaders think of ‘Digital’?

“Why can’t people working in Informatics Services just explain things more simply? …teach them to try and be ‘can do’ and to speak like a Yorkshire man to a Yorkshire man!”

“There is a sense it is one of the solutions and the NHS is not embracing the digital age but Chairs don’t understand how – it is a world of mystery.”

“I see a few cases where Health CEOs are lauded for their success in adopting new Health Technologies, but many more who have lost their jobs when things haven’t gone to plan”

“Despite being Chair of my local STP I find it hard to champion the use of technology in how we meet and collaborate across our area. Usability and reliability is key as I always have the fear that the technology won’t work.”
<table>
<thead>
<tr>
<th>Well Led KLOEs</th>
<th>Well Led assessment questions</th>
<th>Salford PoC maturity measures</th>
<th>DMA leadership measures</th>
<th>DotEveryone</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 - Is there leadership capacity and capability to deliver high quality, sustainable care?</td>
<td>W1.1 Do leaders have the skills, knowledge, experience and integrity that they need – both when they are appointed and on an ongoing basis?</td>
<td>1.2 All members work in a digitally-enabled way, engaging with social media, and ensuring that they use understand the need to be paper-light.</td>
<td>The team leading the organisation's digital transformation includes a board-level sponsor.</td>
<td>Leadership teams focus on problems, opportunities and outcomes (rather than specific solutions and programmes)</td>
</tr>
<tr>
<td></td>
<td>1.3 All Board members have some responsibility for digital as part of their remit. How does this look?</td>
<td></td>
<td>You have clinical leadership, represented by a board-level or equivalent position, involved in the digital agenda.</td>
<td>Leaders who show the qualities of boldness, openness and curiosity in the way they work, encouraging others in their organisation to do the same</td>
</tr>
<tr>
<td></td>
<td>1.5 A senior Digital Lead is a member of the Trust Board. Normally a CIO. Best practice is that this is NOT through another director.</td>
<td></td>
<td>There is a Board-led digital programme(s), supported by effective operational IT delivery.</td>
<td>1. Understand the environment The leadership team understands the changes</td>
</tr>
</tbody>
</table>
What is a digital organisation?

**People**
- Planning for the future
- Culture (openness, experimentation, sharing and social power)
- Staff capabilities
- Focus on user’s needs

**Process**
- Processes need to be fast, integrated, light and meet users’ needs

**Technology**
- Risks are understood and assurance is received (cyber/ GDPR)
- Tech is scalable, interoperable, flexible, fixable, resilient and fit-for-purpose
Prototype resource for boards

- The Social Care community has launched the Centre for Creativity and Innovation in Care

**Element 2:** Does the organisation have a culture of open discussion, experimentation and sharing led by visible leaders?

References:

- A great example of culture is published by Netflix who recognise their values and the difficulties of meeting them
- Leeds Teaching Hospitals NHS Trust crowd-sourced their value set from staff, which made it easier to implement
- There are many blogs on what a culture of experimentation or failing the right way, there is even a Museum of Failure
- James (of vacuum cleaner fame) Dyson’s story of experimentation for success is inspirational
- Quality Improvement is another series of techniques that values staff empowerment and iteration. Imperial have a really nice video on the subject.

**Element 3:** Does everyone in the organisation understands users’ needs, as well as organisational performance, and are they empowered to act to improve them?

References:

- A good NHS specific set of users’ needs has been worked up by Arden & GEM and Oxford University
...and a prototype implementation

Session 1
- Getting used to the word ‘digital’
- Exploring personal and organisational strengths and weaknesses
- Understanding opportunity

Session 2
- Exploring specific actions around selected strengths/weaknesses
- Putting a plan in place
- Understanding what good looks like

In between…some research
- Open space workshops
- Staff engagement
- End user engagement
- Digital literacy training
The first session

“You made us have a conversation we wouldn’t have had”
Four perspectives…

Strategic (Board)  Business (Staff)

Good Decisions

Technical (Informaticians)  User

The hidden obstacles to government digital transformation
The Institute for Government
Digital Leadership = Leadership
Digital Readiness = Adaptability
Thank you

James Freed

james.freed@hee.nhs.uk

@jamesfreed5

With special thanks to:

John Deffenbaugh
Declan Hadley
Manda Thornton
Bruce Elliot
Maeve Black
Ian Macintyre
Dave Farrell

Lancashire Teaching Hospitals NHS Trust
Lancashire Care NHS Foundation Trust
York Teaching Hospital NHS Foundation Trust