Robert Bolton, Partner, KPMG

My role at KPMG is to explore the impact of AI and Digital Disruption on the Workforce and to build solutions that KPMG can take to its clients. My background is over 20 years in organisation consulting for KPMG, focusing on the people agenda and a further 15 years leading the HR function of organisations such as Nationwide Building Society. Most recently I have been helping organisations in Insurance, Banking, Telco and Energy and Natural resources respond to the challenges of digital disruption; often wrapped-up in the question “Help us understand what our workforce of the future needs to be?” My evidence today is drawn from this bottom-up experience of client engagements involving the impact of AI and so called digital disruption, as opposed to a more top down, macro-economic perspective. This is a view from the AI ‘coal face’ so to speak.

Summary of evidence
Industry’s Role in Upskilling the Workforce: Challenges and Opportunities

Main Evidence

Three things affecting Workforce of the Future:

Atomisation of traditional jobs

- We are in a world where we are moving from mapping people to jobs to a world where we are mapping skills to work
- The effect of AI is at the task level not the whole job. The well-known and quoted Frey and Osborne study overestimates the whole job level impacts. E.g. “Will a robot do my job?” + BBC and type ‘Accountant’ = 95% but “Will a robot do my job?” + ABC = 29%. Clearly Australia is the place to be an accountant!
- The future is therefore all about humans and machines working together but in organisations that have been reinvented to make the most of redesigned end-to-end processes. Some commentators refer now to three intelligences: IQ, EQ and RQ or Robotic Quotient. RQ being the skills and attitudes to work with machines in a more symbiotic way. Indeed, the imperative is to redesign processes and reinvent work if we are serious about AI investment in business. Growth in worker productivity has slowed considerably since 2004. But global technology spend is predicted to exceed $3 trillion this year. It is our analysis that suggests that one of the reasons we have the productivity issue is that in spite of significant technology investment we tend to avoid the reinvention of organisations, work and processes, instead preferring to “plug-in” the technology on a path of least resistance and hope for the best.

Emerging skills agenda, in addition to STEM which goes without saying

So, what are the skills needed in organisations that will help us boost productivity and make the most of AI?

- **Design Thinking**: To address the customer / end user experience and redesign processes from this perspective. Just plugging-in the technology without process redesign is a bad idea
- **Systems Thinking**: To see the wood from the trees and understand symptoms from root causes. To also know how to fit it all together into a coherent whole
• **Innovation and Creativity**: To invent new organisation forms, products and services. This is the big limiter (or driver) to growth and value creation.

• **Evidence Based Practice**: In a world where the algorithm rules we need to understand the strengths and limitations of data as well as take evidence-based decisions to avoid responding to symptoms rather than root causes which has been of the big failings of modern management practice in recent times.

• **Interpersonal Skills**: It was always thus; reading people, empathy, storytelling, caring, stakeholder management, influencing, selling, consulting, challenging, chairing, it’s what makes the world go around.

• “It’s your fiction that interests me. Your studies of the interplay of human motives and emotion,” Asimov wrote in *I, Robot*. Given the close link of AI with the world of fiction, it’s probably just sweet irony that storytelling skills are as important as machine learning skills to get the world AI-ready.

### Top 10 skills

<table>
<thead>
<tr>
<th>in 2020</th>
<th>in 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Complex Problem Solving</td>
<td>1. Complex Problem Solving</td>
</tr>
<tr>
<td>2. Critical Thinking</td>
<td>2. Coordinating with Others</td>
</tr>
<tr>
<td>3. Creativity</td>
<td>3. People Management</td>
</tr>
<tr>
<td>4. People Management</td>
<td>4. Critical Thinking</td>
</tr>
<tr>
<td>5. Coordinating with Others</td>
<td>5. Negotiation</td>
</tr>
<tr>
<td>6. Emotional Intelligence</td>
<td>6. Quality Control</td>
</tr>
<tr>
<td>7. Judgment and Decision Making</td>
<td>7. Service Orientation</td>
</tr>
</tbody>
</table>

Creativity, emotional intelligence and cognitive flexibility were either not on the 2015 list, or were much lower on the 2015 list. This reiterates the fact that as IA and other disruptive technologies continue to automate portions of work – the inherently human centric capabilities and characteristics that cannot be substituted through technology will rise in importance.

Note: cognitive flexibility – is the mental ability to switch between thinking about two different concepts, and to think about multiple concepts simultaneously


“The answer is clear: instead of hiring people with backgrounds just in data science or application development, companies and training institutes will need to invest in skill sets such as storytelling that will help AI specialists to write code to better understand and react to human behavior.

*The end of “one size fits all”*
The world of work is affected by more than digital: Quantified workforce technologies; where we know what employees are thinking and feeling even before they do, the rise of gig working and the 100 year life all mean that we are moving from a totalitarian one size fits all model of employment to an employee / people centred mass customisation world where, to use the jargon, employers will need to adopt multiple employee value propositions for different generations and types of workers

Implications for Government and Policy Makers

- **Learning to learn** is as important as what you learn. How can we formalise this in early and higher education. We need a foundation of knowledge, skills and attitudes for the discipline of lifelong learning
- **Encourage lifelong learning**: both from direct government provision but also encouragement of employers to adopt platforms for career long learning, personalised learning and in the moment learning. All of which enabled by AI of course! Perhaps we should all have a blockchain that tracks skill and experience acquisition throughout our lives and become less fixated on getting a degree by 21
- **Nudge the right organisation leadership practices**: Time to take seriously Human Capital Management reporting and nudge, perhaps in annual report and accounts, steps that employers are taking to shape the future of their workforce and prepare for digital disruption. A simple 5Cs framework is a good place to start: What is the employer doing to address Cost, Capacity, Capability, Compliance and Connections of the workforce in a From : To sense over the short, medium and long term

Robert Bolton
February 2018