

PROJECTING THE FUTURE

A big conversation about the future of the project profession

FEEDBACK PAPER 1

**THE FOURTH INDUSTRIAL REVOLUTION:
DATA, AUTOMATION AND
ARTIFICIAL INTELLIGENCE**

SEPTEMBER 2020

#projectingthefuture

INTRODUCTION

Projecting the Future was launched by APM in June 2019 as a 'big conversation' about some of the major trends reshaping the project environment and their implications for the future of the project profession.

This paper briefly summarises some of the contributions to that conversation. Those contributions include social media comments in response to APM posts, particularly from APM's network on LinkedIn; emails received from APM members and corporate partners in response to the Projecting the Future Challenge papers; perspectives presented at APM events during 2019-20; and a variety of blogs and articles from a range of authors that were published by APM during this period.

The summary is not comprehensive but it aims to give a flavour of the views and insights shared by those participating in the big conversation and some of the conclusions that the Projecting the Future Group have drawn as a result. These inputs have all fed into our overall views about the emerging themes and the big ideas shaping the future of the profession which are presented in our report on the adaptive professional, also published along in September 2020.

www.apm.org.uk/projecting-the-future



THE SIX CHALLENGES



THE FOURTH INDUSTRIAL REVOLUTION: ROBOTICS, DATA AND ARTIFICIAL INTELLIGENCE

80% of today's project management tasks could be automated by 2030



CLIMATE CHANGE, CLEAN GROWTH AND SUSTAINABILITY

The UK aims to be a world leader in the green economy having adopted a target for net zero carbon emissions by 2050



THE FUTURE OF WORK AND SKILLS

Four out of five UK businesses need more high-level skills in the years ahead



DEMOGRAPHICS AND AGEING: THE 100-YEAR LIFE

10 million people alive in the UK today can expect to live to 100



THE FUTURE OF MOBILITY AND TRANSPORT

The UK market for autonomous and connected vehicles could be worth £52bn by 2035



URBANISATION, CONNECTIVITY AND BUILDING SMART CITIES

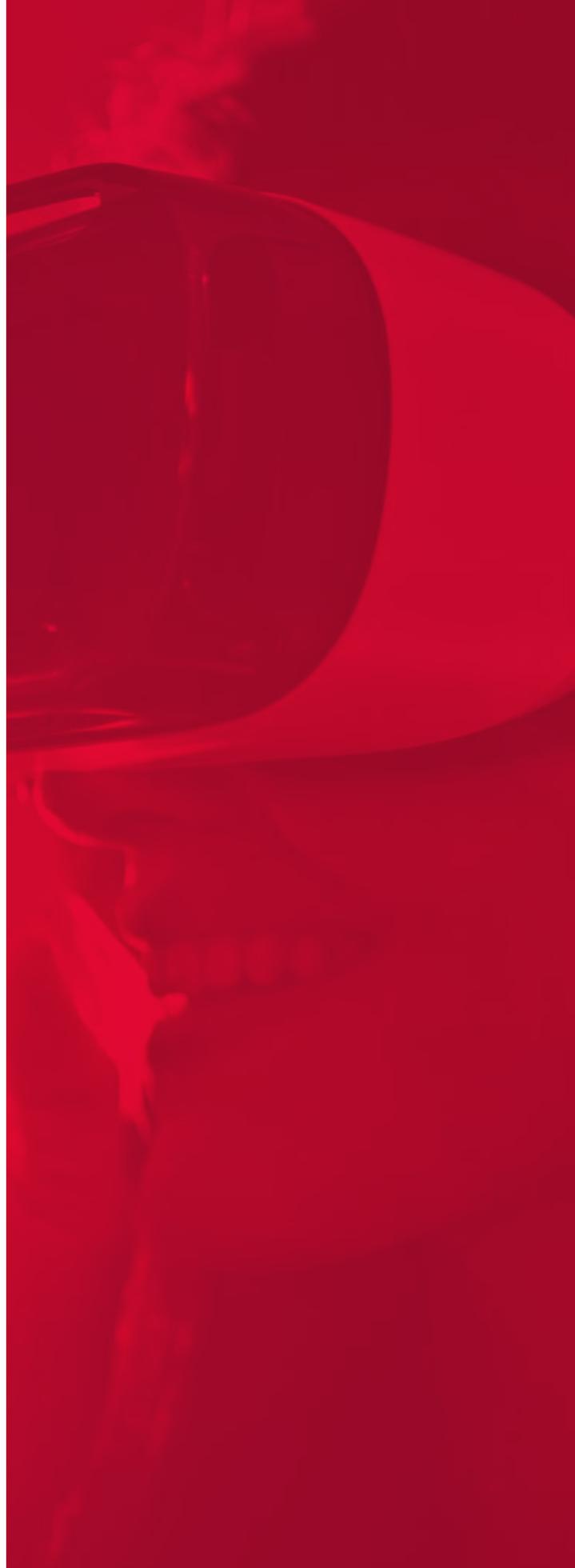
The world will have 43 megacities by 2030; global spending on smart cities could hit \$135bn by 2021

WHAT OUR CHALLENGE PAPER SAID

- *"We are in the early stages of a fourth industrial revolution. New technologies are set to affect nearly every aspect of how we live and work, disrupting major organisations, whole sectors of the economy, and entire professions... It's no exaggeration to say that the 4th industrial revolution could change nearly every aspect of our lives."*
- We dubbed the next phase of the project profession's evolution "PM 4.0", echoing the widely used terms for the fourth industrial revolution, "4IR" and "Industry 4.0". The key question we asked: "Is the project profession ready for PM 4.0?"
- Many policy analysts focus on the significant potential for job losses that arise from automation – and, on the other hand, the productivity benefits it promises. Project professionals should consider which specific parts of their jobs they could automate, and how they could use the resources saved to have a greater impact.
- Project professionals will be key to implementing technology programmes and delivering the benefits of new technology. They will need the skills to understand, and if necessary, implement and use new technology effectively.

80%

of project management tasks could be automated by 2030 according to a 2019 report from Gartner. AI is set to take on traditional functions such as data collection, tracking and reporting.



KEY QUESTIONS WE ASKED

How do you expect 4IR to affect the project profession over the next 5-10 years?

How could the project profession adopt new technology in its work?

Does 4IR mean we need to rethink the core skill set for project professionals? If so, how?

POINTS FROM THE BIG CONVERSATION

- The impact of 4IR is generally a 'known unknown' and seen as a typical example of today's VUCA environment – that is, volatile, uncertain, complex and ambiguous. The trajectory for the adoption of new technology remains hugely uncertain: many professionals feel in the dark about the technology available today, when AI and machine learning will have an impact, and what the paths are for adopting new tech.
- Technological change is a major driver of the profession's future skills needs: related skills, like data analytics, are among the critical priorities for the profession, alongside human-centred skills like leadership, team building and stakeholder engagement. See also Challenge 6 on skills.
- The upsides of new technology include the removal of low-value, dull work. Tech should help "remove drudgery from the job" as one Chartered Project Professional and APM Fellow put it, while Tom Ollerton, founder of Automated Creative, promised that "A lot of the humdrum, low cognitive, boring tasks will be automated".
- Project professionals view report generation, reporting and document management as areas ripe for automation. Project managers should consider how technology could help them, and how the automation of repetitive tasks could free up time for value-adding (and more rewarding) work.
- Employers should act now to adapt to 4IR. One employer doing just that is PwC: its \$3bn global 'New World, New Skills' programme, showcased at APM's March 2020 Corporate Partner Forum, is helping improve employees' understanding of technology in anticipation of both the opportunities and disruption that lie ahead. The business's leaders admit they cannot predict the extent of change, but PwC's chairman Bob Moritz has made a commitment to employees who opt into the programme: "we will not leave you behind. I can't guarantee you the specific job that you have or want to have. But I can guarantee you you're going to have employment here." In the wake of the disruption caused by coronavirus, this form of experimentation might become more necessary and more common.
- Another effect of technology is that it makes multi-disciplinary working vital: both for individuals, drawing on wide knowledge and experience, and across teams. One example could be a need for business ethicists. Technology might make something possible, but is it right to do it?
- Organisations at the 'edges' or outside the project profession, such as tech start-ups, may be early adopters of new ways working, which will shape more mainstream project thinking in the years ahead. Some contributors felt the mainstream profession should do more to learn from those start-ups.

- As technology accelerates the pace of change, speed will become critical to projects. One contributor to the LinkedIn conversation wrote that "project lifecycles will be drastically shorter because of increased automation/AI capabilities which will mean PMs will not have weeks to plan, assess etc. So, they will need to be very proactive and quick to react to ensure they do not become the blocker!"
- Which technologies will have most impact in the near term? One contributor told us: "the first thing we'll see (and are already seeing) is the PMO function utilising voice to handle governance/meetings/controls". A white paper from PwC suggests that automation will begin with the integration and automation of key systems, progressing to the use of chatbot assistants, and then to the use of machine learning-based project management. This could see predictive analytics being used, with software offering advice to project managers on how to set up and steer a project, or how to solve a particular problem, based on analysis of previous cases. The authors forecast that machine learning will be the "most disruptive innovation in project management in the next ten years". (PwC (2018). *AI will transform project management. Are you ready?*)
- In an APM blog in September 2019, Lloyd Skinner wrote that "AI will add the most value if it can support prediction to provide insight and foresight. For example, using historical data to inform early rapid progress insights could help companies develop strategies to minimise the likelihood of project failure. Some AI start ups are already experimenting in this area, such as Aptage, which uses AI to recalculate if a project will be delivered on time and on budget." This is where, Skinner argued, the greatest potential benefit lies: "in prediction and provision of insight and foresight that helps improve decision making." This would enable consultants and project professionals to focus on "higher value tasks like undertaking comprehensive planning, providing greater insights, or working or coaching key stakeholders."
- Many authors and analysts are writing on the future of technology. Carl Benedikt Frey has written about the "technology trap", the way in which the economic progress achieved in previous industrial revolutions has been accompanied by pain for particular groups. Daniel Susskind has written about the social implications of a "world without work". He concludes that "We will be forced to consider what it really means to live a meaningful life," and argues that governments will be required to provide something like a universal basic income – a policy that perhaps seems less far-fetched in the wake of the Covid-19 furlough scheme than it did a year ago.

IMPLICATIONS FOR THE FUTURE OF THE PROFESSION: EMERGING THEMES

- Individuals need to develop a pro-technology growth mindset. Technological disruption, potentially including job losses and significant periods of retraining, are likely throughout the careers of today's professionals. It will be imperative to take responsibility for keeping up with technology and to develop both the skills needed to use new tech effectively, and those higher-level skills that will come to the fore as many of today's project management tasks are automated. (See also Challenge Six.)
- Employers should invest in new technology via small-scale experimental projects, accepting that not every approach will work. Innovation will be vital for organisations of all sorts. Without it many organisations will find themselves facing competitive disruption from unexpected sources, as digital businesses use their technology to expand into new fields with business models that compete with more traditional market incumbents.
- Employers should be responsible in how technology is adopted and used, with regards to their clients/end users, and their employees and suppliers. To build engagement and engender trust, employers should make clear commitments to support and invest in their people's development.
- 4IR represents a huge challenge for policy makers. A cross-government long-term strategy is required to prepare the UK for the potential of a 'world without work', and to avoid the social dislocation and pain of the 'technology trap'.
- APM will support the sharing of knowledge and insight relating to emerging areas such as data analytics for project professionals, through events, webinars, and guest speakers. APM has already kicked off a research project looking at the use of project data and is funding research looking at various aspects of digitalisation, AI and big data in projects.
- APM and the project profession as a whole will need to assess how technology capabilities should be incorporated in qualifications, standards and CPD for the future. This will feed into APM's 2020 review of its professional competence framework and inform the next Body of Knowledge (BOK) review.