

The effects of AI on the professions:

A Literature Repository

This literature repository on Artificial Intelligence (AI) for public relations and communication professionals has been compiled by the CIPR's #AlinPR Panel and other colleagues with a passion for the topic who have scoured books, academic papers, national reports, think tank studies, research group offerings, company and management consultant pieces, YouTube, and a variety of other sources to bring together what is a comprehensive overview of the impact that AI has, is and will have on the professions. The aim is to enable direct access to the database for readers to become informed about AI, explore their own interest and stimulate their curiosity in what is a crucial development, knowing that they are using definitive sources.

The literature on AI as a whole is huge and burgeoning, but a focus on the professions has enabled us to look at how it will change the nature of work overall, and specifically how it will impact on those who offer a professional service either as specialist consultants or in-house practitioners in public, private and not for profit sectors. It does not claim to be exhaustive, but every topic that is currently under consideration about and arising from AI and the professions is covered here. It does not cover popular practitioner-oriented publications either since this was outside the remit of the research which was to look at a stable and authoritative base for considering AI and the professions. Readers of this report are encouraged to read the contemporary popular journals, blogs and websites since they provide a regular update on topics that are under consideration at any one time and form a running commentary that should be engaged with.

The repository, which contains around 170 items, is summarised and accessed via a Google spreadsheet [here](#). It is organised as a matrix with sources listed in categories vertically and the content and themes horizontally.

The sources are [grouped](#) into 22 categories, starting with major reports, books, academic articles, articles from major organisations, YouTube videos, and finally popular magazines and newspapers. Each of the categories is given a specific colour to help identification and reading.

Looking at the matrix horizontally, the top row lays out a number of headings. The first column is either the title of the paper and/or the author, categorised under the various sources outlined above. This is followed by an abstract (if it is an academic article), a short description/ summary, and the URL if the material is publicly available, which it is in the vast majority of cases.

Then there follows a series of ten general themes which are of specific relevance to the professions and which came out of an analysis of all the material. Every article has been read at least twice by members of the team to identify these themes. A tick in the relevant columns indicates the themes that each paper covers. Some papers include more than one theme and in these cases all the relevant columns are ticked.

Five themes relevant to public relations were also identified and these complete the content review. It has to be said that the papers relating to public relations were limited and one which helps to designate us as a profession (ethics) was absent completely. A nil return is recorded and discussed below. The lack of discussion in the key literature should serve as a wake-up call to the profession: it is behind the curve on thinking on the impact of AI and considerable effort needs to be put into addressing this topic. Others who are ahead, such as management consultants and the HR profession, are in a good place to poach public relations' territory and the opportunity of a lifetime will be lost.

This short overview gives a summary of the key themes, draws some general conclusions, and recommends some next steps for the profession.

around
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22
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01 General themes

GROUP 1

1 Overview: the overall impact of AI, including on professional work

This theme covers some of the broad-based opportunities and issues presented by AI and includes Government and international overview reports (for example, from Australia, UK, US), think tank and influential NGO pieces and books. These are context-setting papers which take a broad view and set the stage for what is happening in the professions. Topics covered embrace AI's impact on society, politics, economy, the world of work, issues of governance by society and business, the value-chain beyond the technology industry, educational responses required, other related technologies such as drones, autonomous machines and the future for society in an AI world. There are some major reports here which provide authoritative papers on the topic of AI and include good definitions and scoping of the field as well as its implications.

2 Impact on specific sectors and professions

The second theme looks at the use, potential application and challenges of AI across and in a range of specific professions such as sales, legal, medical, healthcare, accounting, financial services, teaching, administrative, logistics, banking, and asset and wealth management. The overall view is that where the work is relatively routinised, even if these are complex routines, there is greater susceptibility to automation. Legal, accountancy, medicine, logistics, and asset management, for example, could have significant areas given over to AI driven processes and decision-making. Those professions that have less routine work and where 'human skills' such as management, social and literacy skills are important (public relations being one) are seen to be less at risk. The general opinion is that all professions will have to transform and re-shape themselves for the world of AI to a greater or lesser extent. Advantages and disadvantages are proposed and the conclusion is that some professions are profoundly threatened (actuaries for instance), while others will find that AI enhances their work considerably.

3 Most affected and most secure groups of workers

This theme focuses more deeply on the specifics of whether AI will *supplement* a profession, such as adding an intelligent robotic element to a process, or is a *decision augmenting tool* (for instance, in medicine, risk analysis), or will make a profession or parts of it *obsolete* (for example, parts of accounting and paralegal). While the power and status of some professions will be threatened, AI is also seen as an advantage in that some professions will benefit greatly from making the repetitive and routine elements faster and more accurate while releasing professionals to undertake the less predictable and human centred areas of work (for example, elements of health diagnosis will be susceptible to AI, but that will release clinicians to focus on care that requires judgements to be made on how particular cases should be handled given the human being they are dealing with). The thrust of this theme is that more highly educated and professional classes will fare better under AI than those with manual and more routine jobs. There are also indications that women (in the shorter term) and ethnic minorities will be affected more than men, although in later waves of AI advancement, women will do better (see also diversity – theme 10).

4 AI drives people, or people driving AI

This theme covers two main topics: first, AI will clearly create new types of jobs, some of which are not yet known. In this case AI will drive the kinds of knowledge, skills, and behaviours these people in those new areas of work will need. Being technically-oriented, traditionally men have dominated in these roles, so attention will have to be paid to the education system. The second topic is a warning that people should remain in charge of the technology and not yield their own decision-making powers to AI. Data driven-decisions are only as good as the data upon which they are based and the plea is to recognise the inherent biases, data gaps, data over-supply and the need to use judgement when AI driven-decisions are made. One of the questions to be asked here is 'just because we know all this, should we act and if so, how should we?'

5 Ethics

This theme explores the ethical implications of AI and looks at governance, risk, legal implications and the role for human decision-making. Areas covered include the power and knowledge imbalance that AI creates between an organisation (company, government, NGO) who have the resources (financial, technological, human) to use it and their interactions with individuals and groups who will not have these resources. This can lead to a situation where individuals and groups (even whole populations) can be manipulated, possibly without their knowledge. More positively, AI has the potential to be free of human bias and is capable of making morally independent judgements. There are also legal and moral implications for the actions of AI, for example, who is liable if an autonomous car injures someone, or if care advice based on incomplete information is provided erroneously? or if someone deliberately misuses information? Is an ethical code needed for autonomous agents? There is also a significant literature about the human rights of individuals and a rights-based approach to AI.

6 Regulating AI

This theme looks at the boundaries that should be placed around AI including which decisions should and should not be delegated to it, for example in the legal and medical professions and in social robotics. Also covered are topics such as the need for transparency and accountability in algorithms, access to and control of data and possible regulation of the big technology companies.

7 AI and related technologies

Theme seven looks at related AI technologies such as surveillance, advanced robotics, smart classrooms and the implications for a 'big brother' culture, crime-fighting and learning, as well as the implications of emerging technologies such as augmented and virtual work (HR profession). Concern is expressed about the fact that not enough thought is going into the implications of AI, linked technologies and future technological development, for the future of work.

8 Workforce, employment, skills and education

This is a large preoccupation in the literature. How AI will shape current and future work, what jobs will be lost – mainly lower skilled and requiring less education – and what new jobs will be created? While there are predictions of large-scale job losses, there is also optimism about the new jobs AI will create. These will require new skillsets which are not being geared up for rapidly enough. The key concern is about how the transition to new forms of work will be handled and the huge task of how re-training the workforce on an industrial and national scale will be tackled. There are implications for national workforce and educational strategies as well as tactical implication such as the need to learn social robotics. The professions too will need to consider how to prepare entrants to the professions and what they will do, given that entrants often undertake the routinised work that is most susceptible to AI. There are also concerns about what to do about those who will be left behind as jobs and skills change and the social and political implications of this.

9 Country based studies

This theme focuses on the impact and implications of AI for specific countries. Those in the western and already technologically advanced world, for example, UK, US, Australia, China and India will have to go through a period of transition, but are well placed to capitalise on the new opportunities presented. Other countries, such as in parts of Africa and Latin America, are not well placed. There are issues of global significance in creating a technologically divided world.

10 Diversity and other impacts

Theme 10 examines the impact of AI on different groups including the differential impacts by gender, colour, social class, age and the biases inbuilt in algorithms which replicate existing biases in society. This section also covers the spiritual aspects of AI, such as the Buddhist perspective and its implications on the nature of what it means to be human.

02 Public relations themes

GROUP 2

As mentioned earlier, the literature on the impact of AI specifically on the public relations/ communication profession is relatively thin. However, some themes can be identified and some of the topics covered more generally in the broader literature have specific application to our profession.

A AI and the human dimension

This looks at the interface between AI and humans and covers areas such as robots and humans working as teams, AI in social communication systems thus far being goal-oriented rather than focussed on building emotional relationships (even though they simulate human characteristics), the role of leaders when AI is involved in decision-making, impact on call centre staff and the unequal distribution of opportunities and risks among different workers.

B Customer/stakeholder experience

Theme B examines risk management for high-value customers and regulators, using AI for point of sale, crisis management, in the public sector to drive citizen outcomes, for fundraising and in the immediate analysis of customer experience. Also explored is the use of data, predictive analytics and AI and how it is changing the marketing landscape.

C Specific AI technologies

This theme covers replacement of public relations practitioners by AI, use of AI for media selection, use of intelligent personal assistants for assisting with office tasks, use of AI in HR with good parallels to public relations on preparing organisations for change, future leadership and over/under reliance on machines/humans, impact on workforce and transition issues. Also explored are digital asset management, use of unstructured data and data security within a regulated environment and content curation.

D Public relations ethics

Interestingly there is nothing specific under the public relations ethics theme, but all the articles under general Theme 5 can also apply. This theme is highlighted for its lack of coverage, but its importance.

E Future of the profession

Looks at the future of the profession and of professional work, not just from a task automation perspective, but at roles such as counselling and leadership in an AI world. Evidence indicates that public relations is less at risk than other professions for job losses in the longer-term, although tasks performed by public relations professionals will be affected significantly initially. There is an interesting perspective on how the economic landscape will morph over time into new large-scale, cross-sector eco-systems.

03 Conclusions from the review of the literature

A number of conclusions can be drawn from this repository on the effects of AI on professions and on public relations specifically.

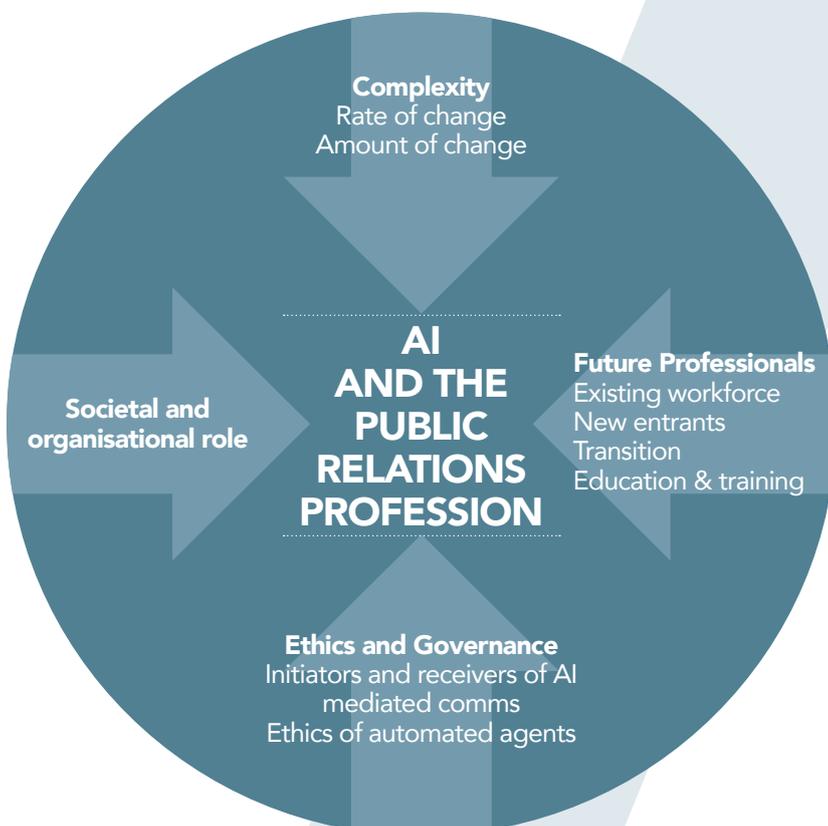
- There will be significant and lasting threat on professional skills because they are often based on closed systems of knowledge and routine and comprise many repetitive tasks which, until now, have been successfully claimed as exclusively the domain of a particular profession. For example, case law and public relations crisis management handling are key areas of work for the legal and public relations professions. AI can analyse cases more quickly and accurately than human beings and the routinised approach to handling both can be quickly mastered by AI. There has been no systematic study of the potential for AI taking over public relations work, apart from the one undertaken by the #AlinPR panel study of 2018 – ‘Humans Still Needed’ – accessible via [this link](#).
- There will be major impacts on the professional workforce, and these are the subject of advanced consideration by a number of professions. Again, there is only one systematic study in this repository examining the effect on the public relations workforce undertaken by the [Institute for Public Relations](#).
- There are issues about the impact of AI on specific work groups: women, ethnic minorities, those who have lesser qualifications and undertake routine work, and entrants to the professions, including public relations.
- There are key ethical issues around the nature of the power and knowledge balance for those using AI, issues concerning the algorithms used and the lack of transparency within ‘the black box’ and their inherent biases. Rules surrounding governance and use of AI need to be established so that we do not enter a world of algorithmic determinism, or a world where the big technology companies are able to wield disproportionate power. Public relations has a key role to play in shaping governance both in society and within organisations given its multi-stakeholder perspective and commitment to ethical behaviour.
- The public relations profession is behind in thinking about all the issues outlined above.

04 Recommendations for the public relations profession

It is clear from the foregoing that the public relations profession needs to undertake a systematic review of the current and future use of AI and its impact on the profession. Specifically, the following is required:

- an overview impact study of AI and the public relations profession.
- a thorough examination of workforce issues including existing and new careers in public relations, transition issues for the existing workforce, consideration of entry level professionals and their potential career paths. The examination will also include consideration of issues such as gender, age, social, ethnic and cultural bias.
- a review of education and training courses that will equip current and future professionals for the work landscape of the 2020s and beyond.
- a study of the ethical implications of AI in the profession, both for those using AI, the subjects of that use, and the ethical safeguards that should be put in place for non-human agents.
- a consideration of the organisational and societal role that public relations professionals will have in the future.

The graphic below indicates the key demands on the profession.



This literature repository is more than a source of information. In it is contained the basis for a detailed and urgent conversation and action about what public relations needs to do as a profession to prepare itself for a world that is going through the 4th industrial revolution. The profession has some catching up to do and needs to do this quickly. Indeed, public relations is a profession uniquely placed to play a leadership role in both the societal and organisational debate about AI. This paper is a plea for us to do just that.

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