Artificial Intelligence (AI) in Local Government

Every time you perform a Google search or use your satnav you are using simple AI. So, what is it?

It's decision making computer software that requires three components

First a set of rules that the software can use to reach a decision.

Second data from several sources. The more relevant data that is available, the more likely the machine will learn and make better, more informed decisions.

Finally, expensive computing power

It's been around for a long time.

In 1950 Alan Turing published a paper in which he speculated about the possibility of creating machines that think. He noted that "thinking" is difficult to define and devised his famous Turing Test. If a machine could carry on a conversation that was indistinguishable from a conversation with a human being, then it was reasonable to say that the machine was "thinking".

Back in the 1960s computers were playing noughts-and-crosses (tick-tack-toe) but had no real interactive human-computer interface. About that time Lyon's Bakery introduced an overnight order and delivery system using call centre operators to first speak to tea shop managers and then input their orders into the Leo computer. Systems functioned in that sort of remote way until the on-line terminal and the Personal Computer improved such interactions enormously

By the 1990s computers were seriously into speech recognition. Then, at the turn of the century, the field of AI, now more than a half a century old, finally achieved some of its oldest goals. It began to be used successfully throughout the technology industry, although somewhat behind the scenes. Much of the success was due to increasing computer power but in the business world there was little progress.

Then in the first decades of the 21st century, access to enormous amounts of data and faster more powerful computers meant that AI techniques could be successfully applied to diverse types of problems including: the development of business strategy; limited conversation; some simultaneous translation; medical diagnosis; stock trading; training pilots and air traffic controllers; teaching; and the control of robotic machinery.

By 2016, the market for AI related products, hardware and software reached more than 8 billion dollars and the New York Times reported that interest in AI had reached a "frenzy".

Today, AI stands on the verge of another industrial revolution.

AI will never replace humans to the degree that is sometimes discussed in the media. Currently, AI systems are just not very good at certain things, such as: physical movement; detecting and responding to feelings; or complex facial recognition.

In the future, many of the core roles that local government provides, such as social workers, will still be required but AI will help make them more productive and no longer reliant upon a fixed office base. They will work from home and from their personal mobile office (otherwise known as a car)

Consider the removal of graffiti from a wall. A phone call is made by a resident to the council number and is answered by a computer using AI which works out what the call is about and logs

details. The computer alerts an engineer who works from home and within his car. The computer provides a best route to the wall in question based upon latest traffic information.

The engineer attends the scene and confirms details to the computer which then obtains quotations from appropriate contractors and passes them to the engineer who selects one. The computer places the order. The contactor does the work and invoices the council. The computer alerts the engineer who inspects the work and passes it as satisfactory. The computer pays the contractor and updates the councils accounting information.

Used in this way AI is yet another step along the path that Lyons started down 60 years ago. It enables man and machine to interact and each to play to their respective strengths but without call centre operatives.

There is a close fit between the kind of AI used to augment human productivity and the kinds of work done by most local government officers. They are typically highly trained professionals who, on a day-to-day basis, deal with a perplexing variety of requests ranging from utterly mundane inquiries to highly critical ones.

This is exactly the kind of scenario where machine learning algorithms will shine, not as a replacement for human expertise but as a way of crystallising it and allowing it to focus on the right problems.

Routine tasks and interactions can be automated. Steps in complex processes that don't require deep judgement can happily be taken over by software. The treasure trove of data contained in Council systems can be automatically analysed and made available to support the officer. This will leave the people that ultimately deliver front-end services with more time to focus on the remaining tasks that really do require human sensitivity and judgement.

In a move to enhance customer service for more than 330,000 residents, in summer 2016 the north London borough of Enfield began using an AI system called Amelia. Enfield is one of London's largest boroughs and its population is growing by four to five thousand each year. Demand for service is growing all the time and each month the council receives 100,000 visits to its website and takes 55,000 telephone calls.

Sustaining consistently high-quality customer service to meet rising expectations is challenging. This is particularly difficult when set against a backdrop of central government spending cuts. By introducing Amelia, the council expects to increase the volume of queries it manages within existing resources. Amelia will be able to absorb time-intensive routine requests while freeing up council officers to focus on more complex issues.

Amelia is currently answering planning permission queries. By November 2017, she had handled over 2,300 queries and had been able to correctly recognize the intent of the person making the request 98% of the time.

Amelia's early results have impressed the council to the point that now they are seeing how far Amelia can help in managing application processes for specific areas: for example, pre-screening planning applications and providing self-certification for those building plans that fall within specific parameters.

The think-tank Reform estimates that 250,000 public sector jobs will be replaced by AI over the next 15 years. The question is no longer whether there will be an economic transition - although one can argue about the pace and scale - but about how to manage that transition within Local Government,

including streamlining structures to replace familiar hierarchical arrangements by flexible skills-based teams.

Councils in Britain are in a precarious economic situation. They have faced austerity for years and face still more in the coming years. This comes at a time when Councils face large increases in demand from an ageing population.

Unsurprisingly, the situation in some local authorities is difficult. Most Councils are currently in the process of transforming themselves - with greater or lesser success - to meet these challenges.

Historically sluggish in the adoption of technology, local government has recently picked up the pace and digital technologies have no small place in the efforts that have taken place to keep services running. Local Government in Dorset and countrywide has a real need for transformation and AI is in many ways perfectly tailored to address that need.

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The author was first involved with AI software in 1964 and maintained that involvement throughout his working lifetime, particularly in the fields of voice recognition, computer-based training, workflow management and fraud detection. Since his retirement in 2007 he has maintained a watching brief with a particular interest in white collar applications