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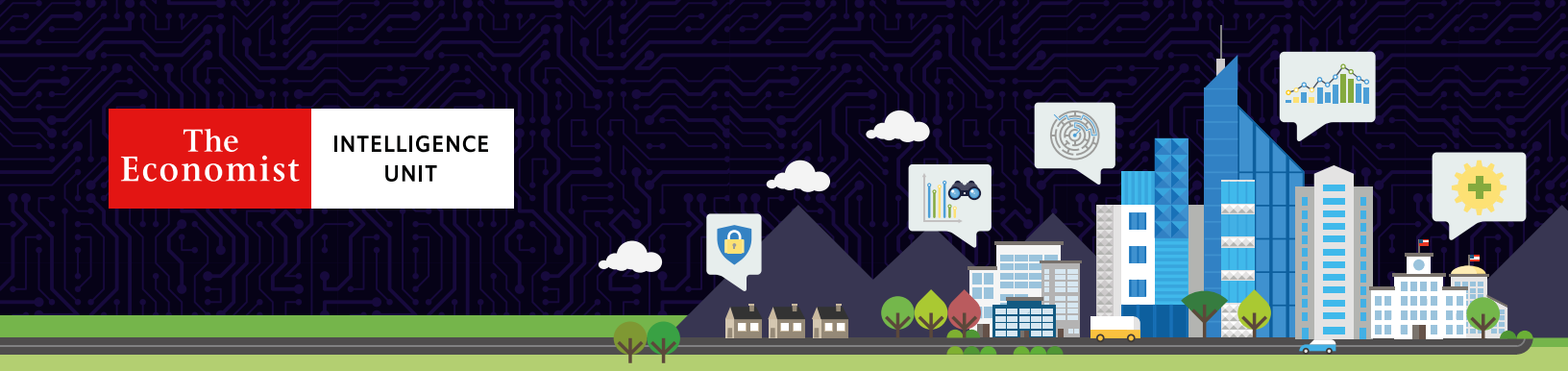

Public AI

Intelligent algorithms, responsibly deployed, could help governments improve service delivery and strengthen citizen engagement

In recent years, local, city, regional and national governments across the world have quietly launched pilot schemes to test emerging applications of artificial intelligence (AI), to an extent that demonstrates no less enthusiasm for the technology than that apparent in the private sector.

A new survey conducted by The Economist Intelligence Unit and sponsored by Microsoft reveals that just as many respondents in the public sector as in the private sector reported that they had at least piloted AI: three-quarters of respondents in all.

Looking ahead, there is striking confidence among public-sector officials that AI will assist in solving key strategic challenges. Just under a third (31%) of those officials surveyed said that AI was "very important" for solving such challenges and a further 64% said it was "somewhat important". But the applications apparent in the public sector, as well as the perceived barriers and risks, are quite different.

Citizens gain

The public sector is less likely to prize simple efficiency and productivity gains, or see particular value in AI's ability to improve process innovation, than industry is. AI can certainly help automate repetitive processes and streamline back office functions, but these applications are among the most prosaic when it comes to the possibilities afforded by AI for government.

Instead, the survey unearths significant positivity towards AI's ability to help governments engage with their citizens, with almost three-quarters (73%) saying they expect the adoption of AI tools to improve citizen engagement over the next five years.

Emerging examples in this area include the use of bots, from those that answer questions and help citizens make sense of laws, rights and regulations, to those that counsel or advise. Finland, for example, has trialed a bot called

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Aurora to help citizens find work and school leavers choose careers, given their interests and skills. Its algorithm claims to predict when skills might be likely to become obsolete, and then suggest a more sustainable employment route or advise on available training.

In Switzerland, the Swiss State Secretariat for Migration has recently turned to AI to help the government allocate refugees to fruitful employment. The algorithm developed combines employment data from previous resettlement with data on the refugees' characteristics to assign individuals to a canton—a Swiss state—where they have the best chance of finding work. The data are then factored into the human staff's resettlement decisions.

Recent figures suggest that only 15% of asylum seekers in Switzerland manage to find a job after three years, but early outcome modeling suggests that the algorithm might boost refugee employment by as much as 30%, with each refugee being in employment saving the Swiss state an average of US$35,000 each year.

Public eye

The most popular current application of AI in the public sector, according to the survey, is image analysis, chosen by 41% of respondents. Use cases range from the practical but ordinary, such as reading number plates to monitor traffic or issue parking tickets, to the controversial, such as facial recognition of citizens. Computer vision can also help with the monitoring and management of public infrastructure.

More promising still is predictive analytics. Predictive algorithms have been used across the public sector in a variety of cases for some time, put to use predicting outcomes in everything from the job market to policing, as well as regulatory or tax fraud.

In newer, more innovative cases, disparate sources of data are being brought together to yield new insights. For example, machine learning has been used to help fire services predict where fires are most likely to break out, and so where resources are best deployed.

The Pittsburgh Bureau of Fire has piloted the use of machine learning to crunch property information and fire records to estimate future fire risk. The pilot was able to accurately guess over 57% of the real fires in a six-month period, an improvement on previous methods. When these predictions determine how resources such as engines and personnel are deployed, they could save lives by reducing response times.

Challenges ahead

In some areas, the public sector is already ahead of the private sector in its adoption of AI tools. Greater numbers report adoption of AI for image analysis and machine learning, for instance. However, the survey data also suggest that governments are notably less prepared for widespread adoption. The officials we surveyed report that they have done less to develop policies, procedures and oversight processes within their organizations: 39% say that they have done so "not very much" or "not at all", compared with 26% of their private-sector counterparts.

Robyn Scott, founder of Apolitical, a global innovation network for public servants, reckons that this is likely to be for three main reasons. First, governments often have very heterogeneous, poorly structured data, which can slow things down, she says. However, a growing number are taking innovative steps. "New Zealand is already experimenting with making all its legislation machine readable," she notes. The idea applies to laws involving eligibility or calculation, such as those determining the allocation of welfare benefits. Rewriting them

as code means laying out the underlying logic, requirements, and exemptions of a law. The experiment holds out the promise of making it easier to deploy AI, and to assess where a physical interaction with the government is necessary (such as signature or proof).

The second issue is a lack of skills. "The public sector has in some cases been slow to internally develop and hire for the skills required to understand, harness and regulate AI," she explains.

Lastly, governments are directly accountable to the public in a way that most private-sector organizations simply are not, she notes. Greater democratic scrutiny and media interest requires more safeguards, for example against biased data producing biased outcomes.

Yet as pilot projects in Finland, Switzerland, the US and beyond demonstrate, there is no shortage of innovative ideas being explored, piloted or already in use by governments and the public sector. Successful and long-term adoption that can positively transform public services will depend on governments focusing on developing in-house capabilities and skills, as well as navigating the complex but critical matters of assuring public trust and legitimacy.