

# What Will Automation Mean for Government Jobs?

BY: Mike Maciag, Governing | January 4, 2018

Automation has already altered several industries, and it's only a matter of time before it transforms more of them. Given that many governments continue to grapple with tight budgets and suppressed staffing levels, it's worth considering whether they might one day rely more on automation and technology to carry out tasks performed by humans.

Recent studies have shed some light on what this might look like, particularly in the public sector.

Automation has already made some forays into government. Kirke Everson, a KPMG intelligent automation consultant, [cited "chatbots" utilized in call centers](#) as an example. He suggested that automation could soon replace personnel who perform repetitive back-office tasks, such as eligibility checks and other procedures following a defined set of rules.

"Government is ripe for automation," Everson says. "But if it requires a large amount of judgments or human interaction, maybe you don't start there."

In the U.K., an estimated 861,000 public-sector jobs could be automated by 2030, according to an [analysis](#) by Deloitte and Oxford University. "Administrative and operative" roles, which account for 27 percent of the public workforce, were identified as having the highest probability of being automated. These types of jobs are already declining, and the report projects their numbers in the U.K. to fall further from 87,000 in 2015 to only 4,000 by 2030.

A separate [Oxford University study](#) examined U.S. job occupations, deeming about 47 percent of total employment in both government and the private sector to be "at risk" of computerization. Some public-sector roles considered most vulnerable included library workers, postal service clerks and transportation inspectors -- all positions with highly repetitive tasks. Many of the other occupations researchers identified were especially common in transportation. These included bus drivers and subway or streetcar operators, as well as highway maintenance workers.

SOC Code	Public Sector Occupation	Probability of Computerization
33-1021	First-Line Supervisors of Fire Fighting and Prevention Workers	0.0036
33-1012	First-Line Supervisors of Police and Detectives	0.0044
11-9032	Education Administrators, Elementary and Secondary School	0.0046
25-2011	Preschool Teachers, Except Special Education	0.0074
25-2054	Special Education Teachers, Secondary School	0.0077
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	0.0078
11-9033	Education Administrators, Postsecondary	0.01
25-2053	Special Education Teachers, Middle School	0.016
25-1000	Postsecondary Teachers	0.032
33-3051	Police and Sheriff's Patrol Officers	0.098
25-2012	Kindergarten Teachers, Except Special Education	0.15
29-9011	Occupational Health and Safety Specialists	0.17
33-2011	Firefighters	0.17

<b>SOC Code</b>	<b>Public Sector Occupation</b>	<b>Probability of Computerization</b>
25-2022	Middle School Teachers, Except Special and Career/Technical Educa-	0.17
25-3011	Adult Basic and Secondary Education and Literacy Teachers and Instructors	0.19
29-9012	Occupational Health and Safety Technicians	0.25
21-1092	Probation Officers and Correctional Treatment Specialists	0.25
53-3011	Ambulance Drivers and Attendants, Except Emergency Medical Technicians	0.25
23-1023	Judges, Magistrate Judges, and Magistrates	0.4
19-4093	Forest and Conservation Technicians	0.42
43-4031	Court, Municipal, and License Clerks	0.46
33-9091	Crossing Guards	0.49
43-5031	Police, Fire, and Ambulance Dispatchers	0.49
23-2091	Court Reporters	0.5
25-9041	Teacher Assistants	0.56
33-3012	Correctional Officers and Jailers	0.6
51-8031	Water and Wastewater Treatment Plant and System Operators	0.61
47-4011	Construction and Building Inspectors	0.63
23-1021	Administrative Law Judges, Adjudicators, and Hearing Officers	0.64
25-4021	Librarians	0.65
53-3021	Bus Drivers, Transit and Intercity	0.67
43-5052	Postal Service Mail Carriers	0.68
43-4061	Eligibility Interviewers, Government Programs	0.7
11-9131	Postmasters and Mail Superintendents	0.75
43-5053	Postal Service Mail Sorters, Processors, and Processing Machine Oper-	0.79
33-3041	Parking Enforcement Workers	0.84
53-4041	Subway and Streetcar Operators	0.86
47-4051	Highway Maintenance Workers	0.87
53-3022	Bus Drivers, School or Special Client	0.89
53-6041	Traffic Technicians	0.9
53-6051	Transportation Inspectors	0.9
43-4121	Library Assistants, Clerical	0.95
43-5051	Postal Service Clerks	0.95
25-4031	Library Technicians	0.99

*The probability of computerization ranges from 0 to 1 (with higher values representing more tasks potentially completed by computers.) Numbers shown for predominately public-sector occupations. Source: "The Future of Employment: How Susceptible are Jobs to Computerisation" by Carl Benedikt Frey and Michael A. Osborne*

But does this mean large numbers of public employees will one day be out of work?

Historically, industrialization and improvements in technology haven't caused higher long-term unemployment. It's unknown whether this time will be any different, though, with economists offering different predictions for automation's effects.

Neil Reichenberg, who heads the International Public Management Association for Human Resources, views it more as a shift. "It's not so much cutting staff as it is moving people to more strategic, higher-level work," he says.

While technology has already reshaped countless occupations across just about every segment of the

economy, it hasn't yet prompted the complete elimination of many types of jobs. Consider teachers, who employ greater use of educational software programs in classrooms. These and other types of public employee positions haven't vanished, but they do require greater tech skills than in years past.

Although some might associate automation with armies of robots, it's computers that are most responsible for redefining work these days. A recent [Brookings Institution report](#) assessed "digitization," or the degree of computer skills and related knowledge typically required of various occupations. Several public-sector jobs that required few digital skills in 2002 now mandate at least mid-level proficiency of computers or other devices.

Parking enforcement workers and compliance officers, for example, might have relied entirely on paper records not long ago. Today, the Brookings data suggests digital skills for these occupations have jumped considerably over the past decade.

Public-Sector Occupation	2002 Digital Score	2016 Digital Score	Difference
Social and Community Service Managers	14	59	45
Parking Enforcement Workers	10	55	44
Judges, Magistrate Judges, and Magistrates	14	55	41
Compliance Officers	26	66	41
Social and Human Service Assistants	16	54	37
Postmasters and Mail Superintendents	28	65	36
Career/Technical Education Teachers, Middle School	30	65	35
Police and Sheriff's Patrol Officers	27	62	35
First-Line Supervisors of Fire Fighting and Prevention Workers	21	56	35
Cargo and Freight Agents	25	59	34
Fire Inspectors and Investigators	23	57	34
Special Education Teachers, Secondary School	27	61	34
Special Education Teachers, Kindergarten and Elementary School	27	60	34
Court, Municipal, and License Clerks	26	57	31
Special Education Teachers, Middle School	27	57	30
Middle School Teachers, Except Special and Career/Technical Education	30	60	30
Secondary School Teachers, Except Special and Career/Technical Education	30	60	30
Administrative Law Judges, Adjudicators, and Hearing Officers	27	56	29
Eligibility Interviewers, Government Programs	25	54	29
Highway Maintenance Workers	4	32	28
Political Science Teachers, Postsecondary	36	63	27
Educational, Guidance, School, and Vocational Counselors	32	59	27
Education Administrators, Elementary and Secondary School	39	65	26
Library Assistants, Clerical	39	65	26
Teacher Assistants	16	42	26
Traffic Technicians	42	67	25
Postal Service Clerks	28	52	24
Firefighters	19	40	22
Bus Drivers, Transit and Intercity	2	24	21
History Teachers, Postsecondary	36	56	20
Education Administrators, Postsecondary	39	59	19
Adult Basic and Secondary Education and Literacy Teachers and Instructors	30	49	19

Public-Sector Occupation	2002 Digital Score	2016 Digital Score	Difference
Police, Fire, and Ambulance Dispatchers	51	67	16
Library Technicians	46	62	16
Crossing Guards	0	16	16
Transportation Inspectors	20	36	16
Court Reporters	56	72	16
Postal Service Mail Carriers	6	22	16
Emergency Medical Technicians and Paramedics	40	55	15
Librarians	52	66	14
Elementary School Teachers, Except Special Education	45	58	13
Bus Drivers, School or Special Client	3	14	11
Education Administrators, Preschool and Child Care Center/Program	39	47	8
Preschool Teachers, Except Special Education	22	29	7
Kindergarten Teachers, Except Special Education	24	28	3
First-Line Supervisors of Police and Detectives	59	61	3
Urban and Regional Planners	59	55	-4
Vocational Education Teachers, Postsecondary	39	30	-9

Source: Brookings analysis of O\*Net, OES, and Moody's data

In some ways, automating various aspects of jobs could prove to be more difficult in the public sector than in the private sector. Unions, Reichenberg says, will likely oppose efforts expected to result in job losses. Last year, the [union membership rate](#) for government workers was more than five times that of the private sector.

Still, if automation offers governments ways to cut costs without sacrificing quality of services, they'll likely consider it. Resources remain limited. Revenues aren't expected to grow much, and total state and local government employment is still [below](#) levels reached a decade ago. In some jurisdictions, automated processes or technologies could enable governments to provide services that otherwise wouldn't be available.

"It's inevitable," Reichenberg says. "If you look at the way we do work today, technology is going to play a major role."

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