Automating Work

SUMMARY: Machine learning, innovative robotics, data analytics, and affective computing mean that growing swaths of work are potentially automatable. The impacts of automation on work and workers will vary substantially by industry, occupation, and even workplace—but they could transform most kinds of work and affect workers at every level, including senior management. Associations' members and their own workforces will increasingly be affected by automation.

Forecasts

- Work automation is under way and will grow substantially, eventually displacing millions of workers, disrupting work structures, and pushing a broad societal and organizational rethink of how work is performed and managed. For the foreseeable future, automation will be an increasingly pressing issue for workers, employers, and governments.
- In the near to medium term, automation will tend to take over tasks within jobs rather than displacing entire occupations. Both automated and human work will become more taskified as a result, with humans often handling the more creative, interpersonal, or higher-value roles.
- Automation will move up the value chain. As it starts to affect knowledge workers and executives, their jobs will become more taskified, too.
- How automation affects a given industry or occupation will depend on a mix of factors including technical feasibility, business case, labor supply and demand, and regulatory and social acceptance.

Key Uncertainties

How rapidly automation technologies are adopted by industries

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Whether there will be a tipping point in many industries beyond which automation becomes a competitive necessity

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Progress of affective computing, which includes emotion detection and psychological sensitivity

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Progress in robotics

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How soon machines can understand and use natural language

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Level of pushback from regulators and the public

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The implications of automation for privacy, safety, and the quality of products and services

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Supporting Trends

- **Human-machine hybrid work.** As intelligent systems permeate the work world, semi-autonomous systems that collaborate with humans—rather than fully autonomous systems—may become more prevalent.
- **Limits to automation job loss.** Automation-caused job loss may be less than worst-case forecasts, given the difficulty of automating highly interpersonal or creative tasks.
- **World's best (AI) boss.** Early studies are revealing that workers are comfortable with—and often prefer—AI software as a manager.
- **Automated management.** Smart machines are being developed for management roles.
- **Affective computing.** The progress of affective computing—which integrates emotion detection and psychological sensitivity into computers—will be an important variable in how much and what kinds of work can be automated.
- **Rise of the chatbots.** Companies are embracing chatbots as a new tool for customer interaction.
- **Robots beyond the factory.** The array of non-factory robots for commercial use is expanding.
- **Machine learning usability.** Machine learning, which teaches computers to "think" more like people, is getting easier and cheaper, which will allow computers to take on more human roles.

Related Drivers of Change

- Human-Machine Cooperation
- Anticipatory Intelligence
- Personalized Artificial Intelligence
- Work Redefined

Notable Data Points

JOB LOSSES SO FAR

As of late 2017, about
6% of Americans reported losing pay,
hours, or their job due to automation.

Source: Pew Research Center

REPLACEABLE WORK

Existing technologies could
automate 45% of today's work activities,
and about 60% of all occupations could see 30 % or more of their activities automated.

Source: McKinsey Quarterly, Where machines could replace humans—and where they can't (yet)

AMERICANS FAVOR RESTRICTIONS

85% of Americans favor restricting automation
to jobs that are dangerous or unhealthy for humans.

Sources: Pew Research Center

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Strategic Insights

- Associations should consider the implications of automation both for their members and for their own operations and competitive positioning. Could members be supported with new content, new services, or new products that help them explore the pros and cons of automation both for their industry and for their organizations? Could the association itself benefit from automating some tasks that now consume the attention of staff or volunteers?
- The advance of automation may outpace regulatory oversight. Monitoring the regulatory response and working to shape it could become a high priority for many associations.
- Some volunteer roles might be supplemented or replaced by automation. This could alter associations' needs and strategies for volunteering, as well as the association–volunteer relationship itself.
- Different fields will be affected quite differently by automation depending on their level of automatable tasks. Associations could undertake or commission studies to understand automation's potential impacts for the fields they serve.
- Associations that serve industries in which workers are losing their livelihoods to automation could lose members.
- Automation will push more work to be taskified: divvied up into modules that are parceled out to machines or humans as appropriate. Taskification that is undertaken for other reasons—such as outsourcing—could unintentionally smooth the way for automation.

Timing

- **Stage:** Emergent, and variable across sectors and functions; early penetration likely in customer service, retail, and routine managerial functions
- **Speed:** Medium to rapid depending on function, with potential regulatory and acceptance barriers

Potential Alternative Futures

- **New jobs through automation:** As the strengths of artificial intelligence vis-à-vis human workers become clearer, automation generates new jobs, and new kinds of work, much more than anticipated.
- **Humans for a premium:** Consumers are willing to pay extra to interact with a human, rather than an automated system, in their commercial transactions, which helps sustain the market for human labor.
- **Human-centered automation:** Due to strong societal pushback, tech companies discover a more receptive market for their automation-related innovations by designing specifically to augment human capabilities.

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Take Action

- **Lead, adapt, or adopt the rise of automation in your association's field.** If automation is inevitable, will your association choose to lead in automating work, including helping develop the technologies and standards? Will you help members learn to work effectively with machines and master the automation of key functions? Which tools and capabilities now emerging in other fields could be adopted and adapted for use by your members? Which jobs can machines do more accurately and effectively than humans? Associations need to get out in front of this change and help their members automate their work.

- **Examine your association's business processes and identify functions to automate.** Many routine processes can be automated. Where can your association use automation effectively to improve the member experience? Could you use more self-help kiosks at meetings? Automate your government affairs calls to action? Streamline member renewals, registration, and other routine processes?

- **Decide where the human touch matters.** The ability to interact with caring and interested humans can be an important differentiator for associations. Human interaction can add meaning and deepen relationships. Where people would rather have machines and automated processes take care of business, do so; where people crave human connection, meet the need.

- **Train members how to stay smarter than the machines.** As more people adjust to automation in their jobs, the need for retraining will grow. Critical thinking skills to monitor and assess the outcomes from automated processes will become more important. And those still uniquely human skills of leadership, teambuilding, and emotional intelligence will be critical to continued employment.

Keyword Search

To continue researching this change driver, use combinations of these search terms: ***automation, machine learning, artificial intelligence, AI, blockchain, robotics, robots, taskification, affective computing, natural language, human-machine collaboration, chatbots, work, jobs, Frey and Osborne***

Who Will Be Affected

Associations serving companies and professionals in healthcare, accounting, law, finance, and hospitality are already dealing with the growth of automation. Many others will soon find their members affected. Trade associations are more likely to help members develop the technologies to automate; professional membership societies are more likely to help members manage the implications for their careers.

About ASAE ForesightWorks

ASAE ForesightWorks is a deliberate, evidence-based research program and emerging line of products to provide association professionals with a continual stream of intelligence about the changes facing the association industry, including:

- regularly updated action briefs;
- tools for applying insights from the research in your association;
- guidance in performing environmental scans; and
- opportunities to engage with peers around the research.

Ultimately, the program's mission is to empower association leaders to create a culture of foresight.

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