



Content, Learning, and Knowledge Action Set

Perhaps no association functions are experiencing greater disruption than content management and education. From new forms of content sharing that eschew the old revenue-generating journal model, to changes in long-held views of educational methods, disruption is the watchword for learning and content. To add to the confusion, there is a thriving anti-expert ethos that threatens a chief pillar of many associations' mission—providing expert information and guidance about the field they represent to others. In the face of this disruption, there are opportunities for associations to take the lead and guide the development of new ideas in microlearning, mentoring, and innovation in meetings, and events.



Higher Education 3.0

SUMMARY: Traditional educational models are under tremendous pressure as changes in work, technology, and student expectations demand both new curricula and new modes of instruction. Higher education is facing new threats of disintermediation by online education and alternative credentialing systems. While the knowledge economy places a premium on analysis and thinking, it is also creating new alternatives to the university that threaten to transform how students receive postsecondary instruction.

Forecasts

- While top-tier educational programs are relatively unthreatened, online education and alternatives like massive open online courses (MOOCs) could pose a significant challenge to lower- and mid-tier colleges. Private sector acceptance of alternative credentials could amplify the challenge.
- Bifurcation among fields of study—between those degrees requiring access to campus facilities and those that are earnable from anywhere—may grow.
- The meaning of college is in flux, with traditional college models increasingly out of step with a lifelong learning orientation. Additionally, debate about the value of college as a social institution versus college as an arena for professional training will grow.

Key Uncertainties

Levels of public funding for research



The role of MOOCs and microlearning in higher education



The affordability of higher education



Who holds the power to credential



Role and influence of tech philanthropists



Financial return on college educations



Mentoring 2.0

SUMMARY: Mentoring, even as it takes new forms, remains a central way to share organizational knowledge. Millennials are especially enthusiastic about using mentoring as a path to learning. Increasingly, technical advances are affording the opportunity to make more informed mentoring assignments and to use mentoring to capture institutional wisdom.



Key Uncertainties

Willingness of experienced people to take time to train potential job competitors

How generational cultural differences make sharing information a communication challenge

The parameters for best mentors for an individual –peers, elders, formal coaches, associations

Ways to mentor gig, flexible, and remote workers

Balancing mentoring to retain and grow key individuals versus “training employees to leave”

Forecasts

- Many millennials are eager to learn from and engage with the more experienced members of an organization. Studies also show that formal mentoring programs are one way to keep millennials connected with an organization and help bridge leadership gaps.
- HR analytics can provide ideal matchmaking services for mentoring relationships. Advanced data insights can support matching the mentor and the mentee according to their knowledge, work styles, personalities, and schedules.
- Co-mentoring, group mentoring, reverse mentoring, and e-mentoring are new ways to provide guidance and skills, and will all have a role in mentoring programs.
- Building both informal and formal processes that facilitate intergenerational dialogue and create opportunities for knowledge transfer will become more important as generational ratios continue to shift toward millennials and Gen Z.



Microlearning

SUMMARY: Workers will need to continually learn, but many want small, specific bursts of information tied to immediate job demands, available at a time of their choosing. New media forms will enable modules that are small, timely, and focused. Certification will need to change to allow microlearning modules to be assembled in innovative combinations for new forms of certification.

Forecasts

- Content delivery will increasingly be interactive, online, and mobile. This will require tools that make it easy for non-traditional content providers to create engaging modules on any topic.
- Classroom time, if desired or appropriate, will be devoted not to traditional lectures but to engaging in discussions or problem-solving using knowledge from microlearning modules.
- Microlearning encourages flexible learning: different times, variable locations, and a range of platforms. It may be able to support non-traditional learners and different styles of learning.
- Systems will be needed to identify the needed micro-modules in a field of study, highlight prerequisites, track completion, and incorporate the modules into sequences of certification. Sophisticated systems for learners to find and retrieve modules will also be required.

Key Uncertainties

How to compensate providers of microlearning modules

How to assess and validate skill levels

How to avoid poor teaching and make sure that information provided is credible and accurate

Whether universities, associations, and other traditional learning institutions support and engage in microlearning or push back

Degree of reciprocity and compatibility between different systems of microlearning



New Journal Models

SUMMARY: The traditional model of academic publishing is facing disintermediation by new, technology-enabled forms of scholarly communication. Open access journals, preprint archives, and research data aggregators make it increasingly easy for researchers to bypass traditional publishing. Both traditional and non-traditional journals need to develop sustainable business models and rethink how to maintain editorial quality standards in a changing publishing environment.

Forecasts

- Journals provide multiple functions: selection, promotion, reputation, and communication. A growing number of platforms and mechanisms will be available online to replace and disaggregate these functions.
- “Digital native” millennials are likely to push journals to reduce or shift their access costs, having been raised on the internet-induced idea that information should be free.
- Scientific fields may grow more divided, with conflicting camps of scientists gravitating to different platforms, giving new form to rivalries among journals.
- Just as digital technologies shifted music sales from albums to singles, so could emerging technologies and services (e.g., blockchain, Patreon) unbundle journals and make it easy and profitable for researchers to offer articles and papers without the imprimatur of established publishers.

Key Uncertainties

- Sustainable business models for journals*
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- Impact of open access on research quality*
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- Reforms in peer review process and new replication standards*
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- Potential for university cutbacks in journal subscriptions as higher-education structures and economics evolve*
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- Influence of emerging-market science programs*
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- Public perceptions of scientists and experts*
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- Development of new web content formats*



Rejection of Expertise

SUMMARY: Public skepticism toward well-credentialed experts is growing, in part because of a perception that they have failed to recognize or address persistent sociopolitical problems. Expert pronouncements are having less impact on public perception, with the public turning instead to non-credentialed and “unofficial” sources for guidance and information. At the same time, information is increasingly able to route around gatekeepers, diminishing their influence and ability to shape discussion and debate.

Forecasts

- Rejection of expertise could exacerbate polarization and make governing large structures (such as nations) and small organizations difficult due to lack of shared consensus about reality.
- There will be new “experts” whose credentials won’t come from experience or academia but rather from new skills—media training, networking, etc.—that afford them the appearance of expertise.
- A bifurcation will emerge between people who respect traditional expertise and those who don’t.
- People’s overconfidence in their own expertise has been growing for years. A shock to society—pandemic, political crisis, etc.—could be one path to reestablish the worthiness of “traditional” experts.

Key Uncertainties

- *Evolution of the media and its role*
- *Need for information management or filtering*
- *Success of pro-expert and pro-fact countermovements*
- *Evolution of new kinds of consensus*
- *Impact of populist politics*
- *Changing role of credentials and education*
- *Impact of the evolving economy*



A Shifting Environment for Content

SUMMARY: Content producers face an increasingly challenging environment. Audiences are fragmented and distracted, and they expect to be entertained and informed for free. Delivery channels are shifting rapidly for both economic and technological reasons, a trend likely to accelerate over the medium-term future.

Forecasts

- Content personalization will steadily increase as pervasive data feeds are further filtered through automated content selection and creation.
- Innovations in micropayments and paywalls may make it easier to sell content, but charging for content will divide audiences more firmly into those ready to pay and those satisfied with free content.
- The consumption of media will increasingly be seen as a political act. Different sources will be tagged—accurately or not—as favoring one side of various political and social divides. Reading, subscribing to, or advertising in media will increasingly be perceived as political acts.
- More content creation will be automated. Automated production may take on basic information-update articles, as well as listicle-style entertainment pieces.
- Automated content-filtering systems will increasingly reveal the discrepancies between consumers’ stated, actual, aspirational, and demonstrated content preferences, which are often at odds.



Key Uncertainties

The changing role of social media

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Feasibility of widespread paywalls

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Spread and nature of content personalization

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How the media habits of millennials and post-millennials evolve

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How quickly automated content-creation capabilities grow

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The changing nature of attention

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Attitudes about privacy and data gathering and use

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Prevalence of filter bubbles and efforts to combat them



Virtualized Meetings

SUMMARY: Ubiquitous broadband, the mainstreaming of virtual reality, and robotics are accelerating the capabilities of telepresence technologies. These technologies could enable the telepresence of both speakers and participants at meetings. Or meetings could take place entirely in a shared digital reality. While these technologies can broaden participation and generate novel experiences, the social and experiential benefits of “real life” may prove challenging to replicate.

Forecasts

- A growing bifurcation between real-world and virtual meetings may occur. Information delivery may migrate to virtual reality (VR) meetings, while socializing and networking become the primary goals of real-world meetings.
- Augmented reality (AR) shows signs of developing quickly as a meeting technology.
- Meeting participants may rapidly acclimate to interacting with non-local participants. Video chat interactions have already become normalized, making it less daunting to interact with a Facetime-equipped telepresence robot.
- The post-Millennial generation will include “VR natives” who find hybrid and virtual forms of person-to-person interactions more natural.

Key Uncertainties

Ability of telepresence technology to deliver the networking and social interaction components of meetings

Ability of virtual reality to replace live product demonstrations

New capabilities of telepresence technology that traditional meetings cannot match

Generational preferences for online versus face-to-face socializing

Ability of Facebook, the owner of VR firm Oculus Rift, to mainstream virtual reality socializing



Data and Technology Action Set

The data economy and its accompanying technology are changing our world and how we live in it. A 2017 article in *The Economist* suggests, “Data are to this century what oil was to the last one: a driver of growth and change. Flows of data have created new infrastructure, new businesses, new monopolies, new politics, and—crucially—new economics.”¹ The growth rate of data is mindboggling. The research group IDC has projected that in 2025, the quantity of digital data produced in that year alone will be 163 zettabytes.² While the growth in quantity is impressive, the quality and value of data are also growing. IDC has projected that revenues from big data and data analytics will increase at a compound annual growth rate of 11.7 percent, from \$130.1 billion in 2016 to more than \$203 billion in 2020.³

¹“Data is giving rise to a new economy,” *The Economist*, May 6, 2017, <https://www.economist.com/news/briefing/21721634-how-it-shaping-up-data-giving-rise-new-economy>.

² IDC, “Data Age 2025,” <https://www.seagate.com/www-content/our-story/trends/files/Seagate-WP-DataAge2025-March-2017.pdf>.

³ Gil Press, “Six Predictions for the \$203 Billion Big Data Analytics Market,” *Forbes*, January 20, 2017, <https://www.forbes.com/sites/gilpress/2017/01/20/6-predictions-for-the-203-billion-big-data-analytics-market/#192d89af2083>.



Anticipatory Intelligence

SUMMARY: Big data, data analytics, and artificial intelligence are enabling predictive analytics used to anticipate needs, opportunities, and threats in an organization's environment. The market for predictive analytics is growing rapidly, and major computing companies are key players. Organizations view predictive analytics as one of the most important ways to leverage big data.

Forecasts

- Organizations will employ machine learning (which occurs without explicit programming) and predictive analytics to predict demand, optimize pricing, and adjust sales and marketing campaigns. They will use sensor data to anticipate maintenance requirements of physical assets and patient data streams to improve healthcare. Other applications will include banking, threat analysis and security, and agriculture.
- Prescriptive analytics, which anticipate the effects of future decisions, will be adopted by a growing number of companies and organizations.
- For individuals, an online digital assistant available on any connected device will know as much about you and your friends as you do and will make individualized anticipatory recommendations and even decisions.
- Futurist and *Wired* magazine founder Kevin Kelly forecasts that digital intelligence will be viewed as a utility—"IQ as a service."

Key Uncertainties

Development of user-friendly applications accessible to non-experts

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Rate of development of supporting technologies, such as artificial intelligence, and components such as machine learning

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Impact of regulations that enable or impede development and deployment

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Concerns about privacy, intrusiveness of the technology, and surrendering decision-making to machines

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Risk that incorrect or corrupt data lead to poor forecasts or decisions



Blockchain Platforms

SUMMARY: Blockchain technology uses a distributed digital ledger to record data, contracts, and transactions, financial and otherwise, without the need for third-party validation. While bitcoin was the first proof-of-concept for the efficacy of blockchains, blockchains have applications beyond virtual currencies. By embedding trust in the algorithms of the blockchain, blockchains can enable trustless transactions and data exchanges, eliminating the need for supervision by intermediaries or government authorities.

Forecasts

- The financial services sector is working to mainstream blockchain. Stable and secure blockchain platforms could drive decentralization of global finance by embedding trust and transparency into blockchain platforms.
- Blockchain is likely to be a disruptive technology. While incumbent firms are introducing the technology, blockchain platforms are likely to create opportunities for new entrants and entirely new types of services.
- Blockchain platforms will be developed for a wide variety of non-financial applications, such as education credentialing, worker-reputation systems, and supply chain management.

Key Uncertainties

Ability of incumbents to capture the emerging blockchain market



Scalability of blockchain to handle millions of simultaneous transactions



Security of blockchain and ability to resist hacking and subversion



Willingness of HR and credentialing institutions to adopt blockchain technologies



Fast Data

SUMMARY: The drive to leverage big data will lead to more data gathering and more effective use of existing data. An increasingly important form of data analytics is “fast data,” which emphasizes real-time decision making based on the idea that the greatest value from data comes from immediate application. Examples include fraud detection, recommendation engines, personalization, and real-time demand forecasting. In all of these cases, the value comes from quickly processing and acting on the data—and this value can diminish quickly as the data get stale.

Forecasts

- While the trend toward big data represented a change in the scale and structure of static data, fast data will impose new challenges because the analysis and recommended actions must occur nearly instantaneously.
- Artificial intelligence and expert systems may be required to monitor and respond to data at sufficient speed. The role of human analysts may shift toward training fast data systems to do analysis in real time.
- The trustworthiness of fast data analytics will be a growing concern. The speed and continuous nature of fast data mean that the underlying assumptions of the data model can change faster than conventional analytics. Analysts will need to routinely test their fast data models to verify that they are accurately reflecting current reality.
- Growth of the internet of things (IoT) will accelerate the growth of real-time data collection, creating new challenges for analytics systems. It will also boost the accumulation of dark data: data that is collected and stored, but not actively used for business purposes.

Key Uncertainties

Who has access to what information

Whether analytics insights can be verified or are “black box” systems

Whether data are public and shared or private and proprietary

Ability to extract the signal from the noise in real time

Tradeoffs of being an innovator versus a fast follower



Fraying Cybersecurity

SUMMARY: Risks to digital infrastructures are growing, even as dependence on them rises. Employees are both worried and harried—concerned about digital privacy and security in the workplace, and tired of the difficulty and complexity of maintaining system security. Associations face the same internal risks as other organizations but also have opportunities to support their members in new ways.

Forecasts

- Risks to cybersecurity will continue to mount in both numbers and potential for harm, driven by the rise in cyberwarfare activities by governments, expansion of the internet of things (IoT), and the growing sophistication of a global criminal marketplace of data theft.
- The IoT will create billions of new vectors of attack, from traffic systems to toys to medical implants to door locks. The Economist Intelligence Unit has called the IoT “a quantum leap in cyber-risk.”
- Cybersecurity will increasingly be unmanageable by humans. An emerging genre of software will apply AI to automate cyber-defense, automatically detecting and self-healing systemic risks.
- Spearheaded by the EU, more governments are likely to pay increasing attention to public cybersecurity—potentially even treating it as a “public health” issue, with new regulations for consumer-facing companies and IoT products.

Key Uncertainties

The scale and scope of future digital disasters

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Risks from the internet of things and how effectively they are addressed

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Whether courts will extend existing liability protections for non-tech products (e.g., cars, large appliances) to the IoT

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Whether autonomous cybersecurity systems will be as effective as hoped

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Shifts in balance between cyber offense and defense



Marketing and Advertising Transformation

SUMMARY: Advertisers and marketers are exploring innovative ways to connect with the public. Online advertising is growing, but concern is rising about vulnerabilities to abuse for other purposes, including fraud, as well as whether the model is even effective. Meanwhile, innovations in marketing and advertising are reshaping practices and assumptions by blurring the lines between marketing, entertainment, advertising, and content.

Forecasts

- Advertising will shift from traditional formats toward greater reliance on embedded marketing and product placement as means to influence brand perceptions. Brands looking to attract younger audiences will become more dependent on social media “influencers” to reach mass audiences.
- Artificial intelligence interfaces like Alexa and Siri will be critical gatekeepers in a growing proportion of consumer transactions. AI platforms will be locations of experiments with new advertising approaches, such as paid search placement or discount microtargeting.
- Decentralized internet technologies such as blockchain will play an important role in supporting new advertising technologies. These technologies offer new ways to prevent fraud and protect privacy, and potentially they will provide a means for consumers to monetize their attention.



Key Uncertainties

U.S. adoption of EU-style data protection practices

Shifting consumer attitudes toward privacy protection

Effectiveness of traditional online advertising

Ability and willingness to curb “fake clicks” and fraudulent web traffic

Willingness of consumers to pay for online news and entertainment

Integration of advertising into new personal-assistance platforms

Extent of regulatory controls imposed on “big tech” companies



Nichification: Big-Data Segmentation

SUMMARY: The big data revolution makes it feasible to define new niche demographic segments that share common motivations and interests and to target them with tailored and tested appeals. Associations will be able to communicate to and even predict the interests of very specific segments but will run the risk of limiting broader audience awareness of content and messaging.

Forecasts

- Nichification will enable real-time, contextualized targeting, including location-based marketing, need-based marketing, and marketing informed by past purchases.
- Nichification will be based on attitudes, values, and identity in addition to demographic and lifecycle segmentation.
- Big data will make it possible to continuously update the characteristics of a segment and forecast how its needs may evolve.
- Traditional marketing segmentation may ultimately give way to individualized customer communication based on predictive analytics. Big data nichification (“extreme segmentation”) is a step along this journey.
- Nichification could lead to algorithmic consumption and lifestyle guidance, resulting in greater separation between groups and gradual “algorithmic tribalization.”
- Nichification risks intensifying the isolation of groups of people into self-contained “bubbles” and perpetuating unintentional discrimination.

Key Uncertainties

Attitudes about privacy and control of personal data, exemplified by the recent backlash against corporate access to individual online history

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Extent of desire to escape targeting

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Resistance to being algorithmically shaped and guided

•
Ability to effectively reach identified niches and deliver on identified needs

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Potential backlash against real or perceived discrimination



Personalized Artificial Intelligence

SUMMARY: Rapidly advancing machine learning is combining with data analysis to enable software equipped with increasingly accurate pictures of consumers' lives and likes. This technology can support personalized microtargeting and allow organizations to offload customer service work to chatbots and other interfaces. Individuals may interact more and more with software that seems to know and understand them, sometimes better than their friends.

Forecasts

- Machine learning and data proliferation make the spread of personalized artificial intelligence, or AI, inevitable; only its ubiquity and capacities are in question.
- AI will offer increasingly personalized decision support in a range of activities. People will look to AI for advice on purchases, solutions, and even questions of social life. Some will grow dependent on their artificial support systems.
- Personalized AI tools will interact not only with their “owners” but also with each other and with other humans—e.g., to set up appointments.
- AI systems may be oversold or misused and become associated with ineffectiveness. This perception could persist even after the technology has further matured. The notorious inaccuracy of voice recognition systems offers a lesson.



Key Uncertainties

- *Speed of development of AI technologies and methods*
- *Speed of change in computing power, especially as advances in raw computing power slow down*
- *Acceptance of AI and how people react as they simulate intelligence more closely*
- *Effects of privacy concerns and norms*
- *Data regulation around privacy*
- *Interoperability and the compatibility of systems*
- *Data access and control and whether it is siloed or open*



Taming Big Tech Dependency

SUMMARY: A handful of global consumer-technology platforms—Facebook, Google, Apple, Amazon, and their subsidiaries—increasingly shape entertainment, news, commerce, and even personal interaction. The unprecedented (and still growing) power and influence of these companies create a variety of challenges for both governments and civil society, prompting governments to step up their oversight.

Forecasts

- All stakeholders, including the big tech companies, their advertisers, and their users, face a period of tumult as governments shift their approaches to big tech.
- New approaches to regulating big tech will arise outside the United States. The EU’s 2018 law, the General Data Protection Regulation (GDPR), could serve as a global model of stringency. Any U.S. regulation will be influenced by the GDPR but will tend toward piecemeal guidelines rather than rules.
- China’s tech champions (especially Alibaba, Tencent, and Baidu) will be a growing force in this area, creating both new competitive issues and new voices in the global regulatory debate.
- Tech platforms will self-regulate to avoid legal clampdowns. This could generate useful innovations, such as the application of AI to weed out offensive content or ensure adherence to rules.
- Beyond 2020, decentralized internet-style networks could gain usership alongside—or in place of—today’s internet.

Key Uncertainties

Whether the recurrent crises afflicting the big tech platforms (data misuse, electoral influence, fake news, etc.) will trigger significant oversight



Influence of the EU’s stringent privacy laws on other governments’ treatment of big tech



How Chinese multinationals choose to engage with regulators in the rest of the world



Effects of tech companies’ own attempts at self-regulation



Millennials’ attitudes as they move into positions of authority



The possibility of a “digital 9/11” event that changes people’s views of cybersecurity



Who Owns The Data?

SUMMARY: In the United States, there is a growing movement among technologists and consumers to give individuals more control over data about themselves (their identifying information, online communications, purchasing histories, social media habits, etc.). This idea may prove a challenge to existing industry models, as free consumer data is the lifeblood of many popular online services and programs, particularly mobile applications.

Forecasts

- The battle for control of personal data could involve consumers less and less. As government regulations on use of consumer data are relaxed, it will be corporations challenging other corporations for access to consumer databases, with users having little say.
- Current methods for enabling consumers to control their data are incomplete and cumbersome. As this idea grows, new ways of data sharing and control could arise. These may include differential controls, allowing the release of some data (consumer preferences) but restriction of other data.
- User concerns about data privacy could drive behavior changes and product innovations, including interest in products in which user data capture is ephemeral. Users may also begin to purposely create public-facing consumer personas that are similar to, but not exactly like, their actual selves.
- The issue of who owns consumer data could escalate as connected devices spread (the internet of things) and collect more consumer data, often surreptitiously.



Key Uncertainties

Convenience of data ownership systems

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The role of regulation

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Discontinuous data disasters

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Evolving privacy concerns

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Availability of non-data models of funding consumer access

•
Tech industry views of security



Demographics and Membership Action Set

Changes in social and demographic trends will be reflected in, and have an impact on, associations' members and staff. These changes will be the result of the increased presence of both immigrants and younger generations in the workforce and the aging and retirement of older workers. At the same time, women will continue to move into higher-level management, and technology will further broaden how people are able to participate in work and society. Some of these trends are already being felt: There were twice as many people older than 65 in the workforce in 2016 than in 2000.¹ And in 2015, Millennials became the largest generation in the U.S. workforce.² Societal makeup and expectations in the future will differ from today, as ideas about what it means to work, how people are included in society, and what organizations are expected to provide employees and members are being transformed as broader notions of inclusion are embraced.

¹ Drew Desilver, "More Older Americans Are Working, And Working More, Than They Used To," Pew Research, June 2016, <http://www.pewresearch.org/fact-tank/2016/06/20/more-older-americans-are-working-and-working-more-than-they-used-to/>.

² Richard Fry, "Millennials Surpass Gen Xers As The Largest Generation In U.S. Labor Force," Pew Research, May 2015, <http://www.pewresearch.org/fact-tank/2015/05/11/millennials-surpass-gen-xers-as-the-largest-generation-in-u-s-labor-force/>.



Aging World

SUMMARY: Most of the world's societies are aging, with the shares of elderly poised to rise steeply in both the advanced economies and most emerging economies. This could reshape political, financial, and social priorities as countries grapple with issues related to aging populations, such as rising dependency ratios, retirement and the workforce, and costs of caring for older citizens. These issues will play out for associations in areas such as workforce and benefits.

Forecasts

- Workforces will be older—not just because of aging populations but also because older workers will delay retirement, whether due to a preference for working, lack of retirement resources, or the need for insurance benefits.
- The aging global population could slow GDP growth in countries where aging is most advanced. In some economies this slowing might be offset by automation-fueled productivity increases.
- From geriatric communities that don't want to pay taxes to support schools they will not use, to shifting funding priorities for healthcare and medical research, demographic aging will likely spark debates over the allocation of money and other resources.
- Beyond spending concerns, aging may intensify other kinds of societal stress, arising from issues such as middle-aged people squeezed between caring for elderly parents and their own kids, or to younger workers frustrated because career advancement is being blocked by older workers not retiring.

Key Uncertainties

- *Financial health of potential retirees*
- *Levels of immigration and the fertility effects*
- *State of retirement benefits and systems*
- *What retirees do with their time and money*
- *Role of automation in replacing workers*
- *Effectiveness of medical interventions in aging*



Empowered Women

SUMMARY: In many countries, changing workplace needs, women's educational advances, and the reduction of discrimination are resulting in more women at the top of their professions. Associations have a unique and important role to play in promoting women in the workplace and making their presence visible. Gender equity discussions are important considerations in policy decisions and external communication.

Forecasts

- Women are positioned to excel in the workplace based on their academic accomplishments and their fit for a complex, knowledge-based work environment.
- As women advance into higher levels of management, they will bring different values and approaches to the workplace. As leaders, women are perceived as being both more willing to compromise and more ethical and honest.
- Younger people in wealthy countries show signs that they will downplay gender as a defining characteristic, preferring gender-neutral clothing and being open to workplace gender equality.
- Issues of reproductive rights, equal pay, and workplace harassment will continue to keep gender equity in the political and social discourse.
- Women's status in both political and boardroom hierarchies will remain unevenly distributed on the global stage, amplifying philosophical and values clashes between countries and cultures.

Key Uncertainties

The strength of pushback or backlash against women's rights, especially in the areas of reproduction, pay, and recognition

Whether advanced education will be devalued as women take a majority of degrees at all levels

Results as women compete for more political positions

The degree to which women are willing to fight within established organizational bureaucracies or choose instead to create their own structures and companies



Empowering the New Workforce

SUMMARY: New structures are emerging to support workers' rights and protections in the face of economic change. Workers are confronting challenges from two directions: deep structural changes—automation, the gig economy, and broader economic trends—that are shifting the balance of power in favor of employers, and the decline of unions and other traditional protections. Now, driven by innovative startups, a handful of political initiatives, and workers themselves, new solutions are emerging—including from associations, which can both contribute to and benefit from this movement.

Forecasts

- The work world will evolve from a dichotomy of traditional employment with full benefits versus alternative employment models with no benefits, to a model in which gig, part-time, and contingent workers have more support structures and access to many of the same benefits as full-time employees.
- A new infrastructure will support alternative workers with operational services, collective negotiations, and safety-net benefits—and help employers manage their independent-contractor workforces.
- Forward-looking organizations, including both startups and large gig economy players like Uber and Lyft, will offer alternative workers the benefits once provided by unions and governments—such as financial products, retirement plans, subsidized training, workers' compensation, and even paid time off. These entities will also develop innovative products for such workers, such as loans designed for intermittent incomes.
- If the gig economy continues to grow, governments will be under growing pressure to revise labor laws so that gig workers may have secure livelihoods.

Key Uncertainties

How far and how fast the alternative workforce continues to grow

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Traditional unions' reactions if new entities encroach on their turf

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Whether governments step in to support alternative workers and new structures

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Younger generations interest in organizing to navigate workforce changes

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Whether new companies that offer employee-style benefits to independent workers will find sufficient clients



Immigration-Driven Demography

SUMMARY: Immigration has become the central driver of American population growth—and will reshape not only demographics but also values and attitudes in the decades ahead. For associations, this will result in a more diverse membership with new ideas, expectations, and needs.

Forecasts

- Immigration could bring cultural and political shifts as new citizens add their cultural diversity to American society. This could lead to new cultural influencers as immigrants move into U.S. media.
- The fluctuating intensity of immigration could affect all levels of the workforce, from unskilled labor (farms, factories) to highly skilled medical and technology workers.
- Polarization around immigration and resulting diversity issues will continue, though this will likely shift over time as younger generations with a more accepting view of immigration become more influential.
- The nature of the immigration debate could shift as people grasp that immigrants to the United States are increasingly from Asia.



Key Uncertainties

Immigration policy on numbers of immigrants and how they qualify for admission



Organic levels of immigration, as the demography of countries of origin changes



Immigrant fertility changes



How fast millennial influence drives changing attitudes about immigration



Immigrants' values and how they are expressed



The Next-Gen Professionals

SUMMARY: Millennials are now the largest generational cohort in the workforce, and generation Z is right behind them. These next-gen professionals are the future of associations and, contrary to some conventional wisdom, they are willing to both join and stay with organizations that meet their career development needs. Organizations will need to provide the kinds of training, mentoring, content, and other services that next-gen professionals value most, encouraging engagement that leads to loyalty.

Forecasts

- Millennials will join organizations in larger numbers as three trends unfold: their share of the U.S. workforce continues to increase, their financial status improves, and more organizations reshape their offerings around what many millennials value most. These highly-valued offerings include mentoring and training; personalization; state-of-the-art tech platforms; curated content; real job leads; plenty of networking with other millennials and with leaders in their field; and, often, a sense of meaning.
- Next-gen professionals will motivate more organizations to step up their training and education—and in formats younger generations prefer: just-in-time microlearning, multiscreen events, co-mentoring, and smaller, more focused face-to-face meetings.
- Many next-gen professionals will continue to push for merit-based leadership positions, seeking to bypass the traditional promotion ladder.
- Next-gen professionals could form their own organizations if they are unable to get what they want from baby boomer- and gen X-led organizations.

Key Uncertainties

How the youngest millennials will differ from their generation's elders

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Whether certain key characteristics (slowness in purchasing cars and homes, starting families late, etc.) are lifestyle-based or are lifelong traits of this generational cohort

•
Whether a more robust labor market and rising wages will continue—and whether this will change next-gen professionals' consumer and lifestyle behaviors



Socializing Reshaped

SUMMARY: Social media, telecommuting, digital entertainment, and shifting social norms are reshaping patterns of socializing, both online and in person. A growing percentage of social interaction is now digitally mediated. Work life and social life are increasingly occurring in the context of online social tribes and communities. The need to change one's physical location to socialize and work with others is declining.

Forecasts

- The line between work and personal life will continue to blur as technological mediation allows activities associated with either sphere to be accomplished from anywhere.
- With most work and social activities partially mediated by online tools, the providers of these tools will have tremendous amounts of user data and information, giving them influence over what users see and do and how they perceive the world.
- As digital interactions reshape social behaviors, these new patterns will be adopted by workers—increasingly changing how work is done and how offices are managed. The “I’ll text if I’m coming” ethos could play havoc with scheduling freelancers, while sick days could be supplanted by “ghosting.” Managers will need to be ready for this new flavor of blurred work and social lives.
- As new ideas about socializing and social networks take hold and work and leisure forums blur, co-workers could be seen as just another social cohort. This could lead to headaches for HR as workers begin to forget or ignore the fact that there are special behavioral rules governing office interactions.

Key Uncertainties

Effects of privacy concerns

•

Rising backlash against working from home or remotely

•

Level of integration of physical and online social lives

•

People’s need or desire for physical company

•

Role of automation in reshaping work life

•

Degree of resistance to expanding role of algorithms in all facets of life



Volunteering

SUMMARY: Cultural, demographic, and technological changes are altering volunteer expectations and experiences in an increasingly dynamic and digital organizational environment. Associations and nonprofits are experimenting with more flexible roles and structures to support collaboration and contribution.

Forecasts

- The aging and retirement of a large percentage of older workers will lead to the hollowing-out of institutional knowledge of organizations that rely on these older workers serving in volunteer capacities.
- The rise of new business models—for instance, distributed networks of ad hoc teams instead of traditional hierarchies—will pose a challenge to established volunteering models. Younger volunteers using social media and online tools will be more inclined to organize from the bottom up and avoid working through an organization’s centralized hierarchy.
- Improvements in media and communications technology, productivity programs, and association management software will enable more seamless blending of volunteer versus paid staff positions in organizations.
- Different generational experiences and expectations could lead to innovations in volunteering and reshape how volunteering is conducted; for example, microvolunteering features lower levels of commitment and smaller tasks.

Key Uncertainties

Evolution and public acceptance of new reputation systems



Impact of automation in professional fields



Generational differences in attitudes toward online work and socializing



Evolution of flexible-work practices and technologies



Impacts of baby boomer retirements



Economic Conditions Action Set

Uncertainty about the direction and health of the global economy is growing, creating a challenging environment for association strategic planning. Economic recovery since the 2008 recession has been uneven, exacerbating economic inequality. Increasingly, productivity growth in many industries is being concentrated among a handful of industry leaders, with many firms coping with slower growth rates. Emerging economies are creating a growing share of global GDP, with new players like China and India becoming more influential in global trade and finance. The financial gains from economic growth are concentrated among high earners, causing the middle class to gradually decline. Concerns about globalization have contributed to populist shocks like Brexit and the 2016 U.S. election, and, combined with concerns about climate change, put pressure on the economic status quo.



Cartel Capitalism

SUMMARY: Mergers and acquisitions have caused a growing number of industries to be dominated by a smaller number of companies, while in the tech industry, network effects have led to the dominance of firms like Apple, Amazon, and Google. While these firms benefit from economies of scale that cut costs, their dominance can reduce competitiveness and economic dynamism. Additionally, by attracting the best talent, these world-beating firms capture a disproportionate share of productivity growth, contributing to stagnation in the rest of the economy.

Forecasts

- Enthusiasm for antitrust enforcement has ebbed in the last two decades in the United States. However, accelerating industry consolidation may bring about renewed interest in this form of regulation. Action against prominent tech or health insurance firms could trigger renewed public enthusiasm for antitrust interventions.
- Industries where consolidation has occurred include beverages, household appliances, mobile phone carriers, air travel, grocery stores, health insurance, and pharmaceuticals. These are likely to be primary targets if antitrust sentiment grows.
- Even without regulatory intervention, technology innovation will eventually disrupt some heavily concentrated industries.



Key Uncertainties

Willingness of regulators to pursue antitrust investigations

•

Effects of changes in the American political landscape

•

Effects of potential EU action against U.S. tech firms

•

Inevitability of internet firm monopolies

•

Relative priority of internationally competitive firms versus nationally competitive markets



Climate Change Resiliency

SUMMARY: The climate change debate is shifting away from large-scale national and international solutions toward practical, smaller-scale actions aligned with particular geographies or industries. Businesses and organizations are exploring ways to mitigate their environmental impact and build their resilience against risks such as business disruption and loss of public support.



Forecasts

- In the next five to 10 years, the climate change conversation will increasingly shift away from big global agreements toward practical actions at the state, provincial, and local levels. A variety of solutions will be tried, and constituencies will form around preferred, sometimes competing, approaches.
- Millennials and post-millennials will become important actors in both the political and cultural arenas surrounding climate issues, bringing new perspectives, skepticism about conventional wisdom, and a heightened sense of urgency.
- More industries and fields (e.g., tourism, construction) will be drawn deeper into climate issues, as has already been seen in the expansion from the energy industry to agriculture, transportation, e-commerce. Ultimately, few industries will be exempted from accountability for their climate impacts.
- Momentum will grow to include socioeconomic issues. Debate will shift into new arenas, including state and local budget decisions over whether and how to spend for mitigation and adaptation and protection of lower-income groups.

Key Uncertainties

Evolution of public opinion around climate change in the United States and elsewhere

What kinds of climate change solutions emerge as frontrunners

Whether and how national governments support mitigation and adaptation strategies

How the entry of new generations affects the debate

Climate-driven impacts, including unforeseen effects

Degree of mistrust in science



Global Power Shifts

SUMMARY: Existing global power structures are breaking down as new centers arise and power diffuses. Power is shifting among nation-states and flowing to several kinds of transnational and sub-national organizations and groups. This will change the operating environment for associations, especially those with cross-border reach.

Forecasts

- The United States and Europe are both on a trajectory for a relative decline in power, with Europe falling faster than the United States due to its economic stagnation and demographic aging. Present trajectories could be disrupted by positive or negative discontinuities, however.
- The institutional priorities and practices of international bodies such as the World Trade Organization and ICAAN, the internet supervisor, will shift as emerging markets come to the fore.
- The informal rules of international systems will change as different cultures assert their perspectives in the world.
- Some forecast not new leadership but less, as old powers decline before new powers step up to fill their positions.
- In a high-inequality, globalized era, more one-man powers will arise in the style of Bill Gates and Elon Musk. They will have the power to change global agendas and shift the course of technologies.



Key Uncertainties

Level of cooperation versus conflict in the international system

Trajectory of economic growth by China, India, Brazil, and other rising powers

Durability and stability of the socio-political system of China and some other rising powers

The state of global trade

Evolving power of multinational companies, which increasingly include companies from emerging markets



Philanthropy Reshaped

SUMMARY: Demographic and political changes, loss of trust in institutions, and the growth of donor-advised funds and impact investing will drive shifts in the channels, targets, and geographic focus of American philanthropy. These shifts will offer opportunities for associations to access new resources, engage new members, and create new partnerships.

Forecasts

- Charitable giving will continue to grow, although big donors will contribute an increasing percentage and will often prefer to fund their own foundations and direct philanthropy.
- A growing share of givers will be women and people of color.
- Donor-advised funds, venture philanthropy, and impact investing will grow, potentially blurring lines between sectors.
- Growing distrust of institutions will affect philanthropy; a 2015 *New York Times* op-ed described it as a sector with too much secrecy and too little oversight and outside accountability.
- Millennials—who often seek to integrate values, investment, entrepreneurialism, and careers—will want to go beyond donation to engagement and launching social enterprises.
- Social media and data analysis will continue to affect charitable giving, enabling transparency, donor engagement, and peer-to-peer fundraising.

Key Uncertainties

Performance of the economy

Political climate and potential legal and regulatory changes—e.g., to the charitable giving deduction, rules for donor-advised funds, or rules for political contributions

Evolving role of government at all levels in addressing educational, social, and environmental issues

Evolving relationship among philanthropic institutions and endeavors, corporations, and government entities



The Productivity Paradox

SUMMARY: In recent decades, growth in economic productivity has failed to match growth rates of the post-WWII era despite exponential advances in computing and the rise of the information economy. Economists are concerned that today's information technology (IT) innovations are not economically transformational and are unable to support higher rates of productivity growth. Low productivity growth has contributed to a contracting middle class and marginal wage growth for a majority of workers.

Forecasts

- Tech firms are innovating at a rapid pace in internet technology and services, but their growth likely will fuel only modest job creation. New tech-enabled, platform-based services can be a disruptive force in a given industry, but these will continue to fall short of transformational innovations that give rise to new spinoff industries.
- Many markets are dominated by a handful of leading firms, which can impede disruptive innovation. These firms may capture an inordinate share of future growth until new technologies or regulatory interventions destabilize their market dominance.
- Consumers may perceive an improving quality of life, even if economic growth is weak, as technology innovation can drop the price of goods while increasing their capabilities (e.g., HDTVs).
- Artificial intelligence (AI) could be a transformational technology but, even with rapid progress, it may take years—if not decades—to affect overall economic productivity.

Key Uncertainties

Future funding levels for scientific research

•
Whether R&D spending comes from the public sector or the private sector

•
Ability to preserve political stability given continued economic stagnation

•
Impact of artificial intelligence and automation on productivity growth



The Sharing Economy

SUMMARY: The sharing economy—the peer-to-peer exchange of goods or services—will continue to grow globally and expand into new areas of commerce, posing a greater challenge to incumbent firms in many industries. The sharing economy portends a shift in the balance between access and ownership, with owners getting new opportunities to extract rents, and users getting new opportunities to use goods and services with more flexibility. The sharing economy can blur the lines between commercial operations and person-to-person exchanges, creating a growing regulatory challenge.

Forecasts

- The sharing economy will grow. A widely cited forecast from PWC projects that annual global revenues for sharing economy companies will grow to \$335 billion by 2025.
- Consumers who choose sharing over ownership will have a lower level of control over these shared resources, and they may need to accept, as examples, uncertainty in the timing or availability of rides or lodging.
- Retirement and household downsizing in developed economies could boost demand for the sharing economy; sharing their resources could also supplement the income of retirees.
- The sharing economy will enable those with modest (or even substantial) means to sample more affluent lifestyles.
- The sharing economy will be a boon in developing countries, enabling work in the informal economy to become more formalized and secure.

Key Uncertainties

Changing regulatory climate for sharing platforms—a potential barrier to or enabler of growth

Economic conditions driving demand for and availability of shared resources

Changes in demand for sharing as generations, especially millennials, enter new life stages

Changing expectations about cost of and control over shared goods and services

Extent of mutual reinforcement between the sharing and experience economies

New economic opportunities for vulnerable populations who gain as-needed access to new resources



Trade in Transition

SUMMARY: The rules of global trade are up in the air, with growing uncertainty about whether the trend toward global trade harmonization will be maintained. The United Kingdom and the United States have begun renegotiation of once-settled trade policies that supported economic globalization, pushing the world trade system toward economic nationalism.

Forecasts

- Trade policy for the United States and the European Union will have a high degree of uncertainty through at least 2021. Trump administration tariffs on targeted industries, Brexit, and E.U. financial challenges all have the potential to destabilize established trade policies.
- Uncertainty also originates outside the trade arena as secondary effects of geopolitical conflict and domestic politics. Territorial disputes in the South China Sea, conflict in the Middle East, and Eastern Europe all add to global trade instability.
- With Brexit and the U.S. withdrawal from the Trans-Pacific Partnership, and the renegotiation of the NAFTA agreement, the world is likely entering a period that shifts trade agreements away from multilateral pacts and toward narrower bilateral trade agreements.
- China, India, and other rising economies will have greater influence and more rulemaking power in the future global trade system.

Key Uncertainties

- *Stability of the European Union*
- *Electoral outcomes in the United States and Europe*
- *Potential for bilateral trade wars*
- *Strength of populism and nationalism*
- *Impacts of tariffs*
- *Linkage of trade to strategic, environmental, or human rights issues*
- *Spillover effects from geopolitical conflict*



Society and Politics Action Set

The internet is transforming social and political life, shattering the mass media channels of the twentieth century and replacing them with a wider variety of voices and viewpoints. This process is contributing to greater social fragmentation and polarization, and diminishing the power and authority of the gatekeepers that help maintain public consensus. Increasingly, the internet allows for the filtering of information, making it easier for marketers and others to target niche demographics and include, exclude, or manipulate the information presented to a given group. In some areas, technological innovation is outpacing the legal system and regulatory structures, while politics puts more pressure on business and technical policy, including standard-setting. In a world filled with “fake news,” consumers are attracted to authenticity—found in the shared values and ethics of companies they do business with and the transparency of the organizations that they support and affiliate with.



Algorithmic Politics

SUMMARY: The power of algorithms to influence politics—shaping the way information flows, manipulating individuals, and even participating as bots—is increasing. There is growing public concern that the same internet algorithms that customize content and personalize online interactions enable tech companies to imperceptibly filter information, alter and focus attention, and provide conduits for messaging micro-demographic niches.

Forecasts

- Concerns about algorithmic persuasion will combine with the growing concerns about the political impacts of information bubbles and “fake news.” Ultimately, these issues revolve around a struggle for who will control the information context for society.
- Wider access to algorithmic tools could cause them to be used beyond marketing and politics to persuade the public on a variety of non-partisan social issues.
- People disconnected from social media tracking—through either non-use or cookie blocking—will become an increasingly important variable in politics and elections.
- Widespread use of algorithmic targeting will increase public interest in online privacy and drive adoption of anti-tracking technologies.

Key Uncertainties

Consumer willingness to trade privacy for free online services and content

Balance of free speech rights versus the preservation of democratic discourse

Continuing dominance of Google and Facebook in internet media and advertising

Potential for government regulation of search and social media algorithms



American Inequality

SUMMARY: Inequality in America is growing worse, though there are scattered signs of progress. Since the 1970s, income inequality and the share of wealth in the hands of the most advantaged 1 percent of Americans have been rising, though poverty has declined. Americans face a widening opportunity gap as a function of socioeconomic status, as well as significant racial, ethnic, and socioeconomic gaps in primary, secondary, and postsecondary education—though some of these gaps are shrinking.

Forecasts

- In the absence of any discontinuous change, inequality will widen. Already, workers' share of national income has fallen and the middle class is shrinking.
- Workplace automation could exacerbate inequality issues.
- Failure to invest in the education and development of children and youth will have a negative impact on healthcare costs, criminal justice costs, and the quality of the future U.S. workforce.
- Shrinking of the middle class could leave many young Americans overeducated and underemployed as job opportunities dry up.
- Grim economic experiences, and prospects, may significantly shape the worldviews of many millennials as they move into new life stages.

Key Uncertainties

Global and national economic conditions

•
Political conditions and responses

•
Point at which growing inequality reaches a tipping point beyond which it leads to social unrest, rising crime, young people giving up on the economic system, or large-scale emigration

•
Changing conceptions of success as the economic reality becomes increasingly difficult for many



Declining Trust

SUMMARY: In the United States, trust in institutions—including government, media, science, and medicine—is falling, with important social, political, and economic implications. This decline in trust could fuel deeper political polarization and further erode social cohesion.

Forecasts

- Growing trust deficits in many areas of American life are creating a need for a rebuilding of trust systems. Fact-checkers—Snopes, PolitiFact, etc.—are early examples of this. Efforts to enhance reproducibility in science are another example.
- As the understanding of filter bubbles, targeted marketing, and “fake news” grows, more people could begin seeking out better information. This response is likely to vary by socio-political segment, however.
- Low trust in institutions of all kinds feeds political populism. If trust continues to decline, more populist political movements could find traction.
- New technologies—realistic fake video and audio and AI—will have further corrosive effects on trust.

Key Uncertainties

Evolution of trust in institutions within various political and cultural groups



Societal capacity and methods for rebuilding trust



The role of filter bubbles and misinformation



Potential rise of new trusted institutions and knowledge sources



Evolution of technical means to obscure or fake reality and manipulate people’s perceptions



Ethical Consumption

SUMMARY: Younger U.S. consumers are engaging in more “ethical” and values-driven spending on products and services, and investing in companies seen as doing good. The values and demographic weight of the millennial generation suggest that this trend will grow.



Forecasts

- As tools—apps, sensors, data analytics—to guide consumer behaviors along ethical lines proliferate, ethical consumption will be a primary screen or filter for more purchasing and spending decisions.
- From Tesla to renewable energy generation to ethical supply chains, the ethical economy will drive innovation in consumer-facing products and services as companies seek to capture ethical dollars.
- Who or what is ethical will remain highly debated in an increasingly polarized society.
- Publicly trumpeting ethical positions can make ethical issues go viral faster, and organizations and companies will run a higher risk of being publicly called out, shamed, or boycotted when consumers perceive a breach of stated ethics.

Key Uncertainties

- Evolution of consumer values over life stages*
-
- Evolution of environmental issues*
-
- Size of ethical market*
-
- Effects of political polarization on consumer values and choices*
-
- Economic conditions*
-
- Consumer choice fatigue*
-
- Related standards and certifications*



Ethical Edge of Innovation

SUMMARY: Fast-moving technological innovation is outpacing the legal and regulatory structures designed to protect public safety, promote business and trade, and foster ethical practices. While new technologies often roll out ahead of laws, in the coming decade the public pressure to curb unintended consequences will intensify.

Forecasts

- Differing views on the role of technology and regulation in society will lead to a spectrum of laws and regulations in different regions of the world, with variations governed by factors such as views of privacy, bioethics, and free speech. Some countries may surge ahead of others due to looser regulatory environments—for instance, China and CRISPR-based genetic modification.
- There could be resurgent consumer interest in government regulation in the face of transformative but alarming technologies, such as self-driving vehicles and pervasive user tracking and profiling.
- Wider adoption of artificial intelligence—and the black-box algorithms that often power it—will make questions around tech adoption and control relevant to many organizations.
- The nature of free speech online will be worked out in the 2020s: what is allowable, who controls speech, and whether social media and its platforms constitute public forums.

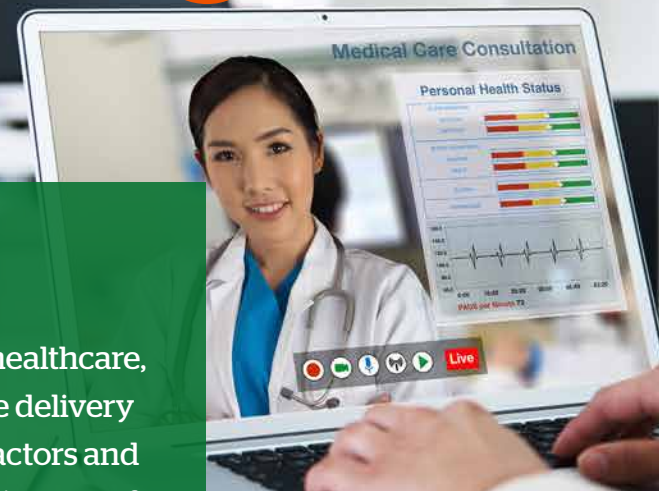
Key Uncertainties

- Speed of adoption of these technologies, including AI systems*
-
- Attitudes toward online vs. “real-life” actions and goods (e.g., cyber-bullying, theft of online goods)*
-
- Definitions of algorithmic bias*
-
- Tolerance for “black-box” algorithms*
-
- Nature of regulation of technology platforms, for instance as utilities*
-
- Harmonization of international rules governing technology*
-
- Consumer desire for technological innovation vs. demand for regulation*



Healthcare Disruption

SUMMARY: New players will inject a dose of capitalism into American healthcare, shifting healthcare to a more retail-like experience. American healthcare delivery will be further unbundled and disintermediated due to non-traditional actors and businesses moving into the healthcare delivery space, as well as to growing use of technology that liberates care from hospital and clinic settings to care anywhere.



Forecasts

- Driven by expansion of the retail sector into healthcare and the development of supporting technologies (remote data monitoring, health tracking, video messaging systems), the bulk of healthcare may be conducted outside of hospitals and doctors' offices.
- Further disintermediation of healthcare delivery could be aided by the increasingly ubiquitous monitoring of personal health via technology (body monitors, room-based sensors, and health data analytics). This monitoring could allow patients to eschew regular medical visits, shifting their care from treatment to prevention and wellness.
- The disintermediation of healthcare by technology and retail companies could bifurcate the way people receive healthcare, with low-cost treatment via automation, RNs, and physician assistants, and high-level care conducted face-to-face with doctors.
- Growing pressure for some form of single-payer healthcare could both drive and be driven by a move to retail-based healthcare, with new providers seeking to capture dollars no longer earmarked for insurance-backed HMOs or traditional medical providers.

Key Uncertainties

Pressure to move healthcare in the United States to some form of a single-payer model

Ability of non-traditional players to inject change or improvements into U.S. healthcare systems and practices

Willingness of users and employers to move to systems created by new players (inertia of the known)

Concerns about security and privacy of digital health records

Younger generations' expectations regarding healthcare delivery



Population Health

SUMMARY: The concept of population health is reshaping approaches to health in the United States. Population health looks beyond delivering health services to patients and instead pushes healthcare providers to adopt a more systemic approach to identifying and influencing the determinants of community health. Managing population health will require new techniques to identify community health risks and the most effective, efficient community-health interventions.

Forecasts

- The population health paradigm will increasingly shape the future of health, wellness, and healthcare in the United States. However, the potential for the paradigm to drive change will be tempered by inertia and incumbent interests in the healthcare system.
- The systems perspective of population health will bring new areas and disciplines into the health arena. The social determinants of health concept will place new emphasis on how social and economic practices impact public health. Awareness of the geographical determinants of health will elevate the relevance of health issues in urban planning, transportation, and real estate.
- Management of population health will require the collection and integration of health data. A key factor in public cooperation with new health-data collection practices will be shielding the data from potentially punitive or discriminatory uses.

Key Uncertainties

Future modifications to the Affordable Care Act



Deployment of policies designed to address socioeconomic inequality



Ability to motivate individuals to change unhealthy behaviors and habits



Speed of healthcare innovation and the rate of dissemination of successful new practices



Boundaries of health populations, with individuals potentially being categorized in multiple or overlapping health populations



Shifting Terrain for Advocacy

SUMMARY: In the United States, bitterly divided House and Senate, shifting power between Congress and regulators, and conflicts among federal, state, and local governments will change the nature of policymaking. National-level gridlock will drive more efforts at policy change toward state and city governments. All of this will change the arena in which advocacy occurs.

Forecasts

- Sharp political disagreements over the locus and nature of regulation mean that American regulatory policy could whipsaw in the 2019-2022 and beyond, as party control of Congress, the executive branch, and state legislatures changes.
- To the extent that national government is gridlocked, more efforts at policy change will devolve to states and cities.
- Devolution will also create new power centers, accentuating the role of certain states or even cities, or groupings of such. These centers will lead or shape certain issues, as California, Texas, or New York City have in the past.
- Cities will attempt to enact policies, sometimes in concert with each other, but will often be thwarted by preemption from their more conservative state legislatures.

Key Uncertainties

Political direction of the United States from 2020 onward

•
Strength of current political system and rule of law

•
Changes to rules for lobbying, advocacy, and political contributions

•
Nature and course of the political struggles between different levels of American government

•
Ability of states to make policy at odds with federal policy, and of cities to defy their home states

•
Success of efforts to combat political gerrymandering



The Splintered Society

SUMMARY: Americans are self-segregating along multiple divides, both online and offline: politics, economic status, educational attainment, social life, consumer spending, media choices, and geography. This is being fueled as much by political polarization as by economic and social inequality.

Forecasts

- Political polarization could be exacerbated as more issues are labeled partisan or assigned to a particular divide. This could strengthen segregation and filter bubbles and increase their effects—shaping even more whom people socialize with and where they live, among other factors.
- A splintered society will drive social instability and insecurity, as it is the result of corrosive processes that undermine existing institutions and social structures.
- As people self-segregate into like-minded communities, or around shared ideas, it could spark the rise of new social, commercial, and civic institutions that partially duplicate existing institutions but better mirror the ideas and values of their supporters and users.
- As splintering spreads, the danger of people further disengaging from political and social institutions is rising due to lack of trust or a failure to believe in efficacy.

Key Uncertainties

Whether some kind of breaking point will occur

The potential for restoration of trust in media

Varying levels of trust decline across different institutions and social groups

Potential for re-engagement in shared civic discourse

The speed at which polarization grows

Effects of a potential external unifying event, such as war or terror attack



Standards Under Pressure

SUMMARY: Standard setting will be marked by more conflict. Internationally, more countries are using standards to advance competitiveness or dominance via standards. Within countries, social issues are playing out in standards, making them more political in a polarized era. Associations will be participants in these conflicts—and also potential mediators.

Forecasts

- More standards will become arenas for controversy as sociopolitical issues are pursued through standards. Labor and environmental standards are current examples. This will spread in technology, for instance in ethical standards for algorithms. Polarization will help drive this and make some of the conflicts more intractable.
- Standards will be the scene of more international rivalry. More countries will insist that they have a role in standard setting. Some standard-setting will be used as weapons in trade conflicts, and as barriers to trade.
- As smart and connected technologies become more pervasive, consumers will encounter standards-related incompatibility issues more often. This could create public frustration with letting markets generate divergent standards whose chief purpose is to serve companies' proprietary "walled gardens."
- Global and multilateral standards may face skepticism from populist and protectionist movements and governments. The role of EU standards in the UK's Brexit debates and the Trump administration's doubts about the Universal Postal Union's rate-setting are examples.

Key Uncertainties

Degree of fragmentation of the global standards system

Potential changes in how standards are used to promote political and ethical goals

Regulatory shifts' effects on standards

Changing balance of standards emanating from private entities, standard-setting organizations, and governments



Transparent Organizational Ethics

SUMMARY: Organizations will face new kinds of scrutiny as drivers of transparency proliferate. Ubiquitous connectivity and information-capture, new sensing capabilities, and pervasive social media all enable hyper-transparency of organizations' actions, necessitating actively managing reputation in a world increasingly concerned about ethical behavior.

Forecasts

- Growing amounts of deliberately released and emergent data will create an environment where organizations have declining control over their transparency.
- Ethical decisions in a very dynamic and polarized environment will require difficult balancing of considerations and an understanding of longer-term implications.
- Automated ethics-ratings apps, tailored to users' personal ethical beliefs and interests, will inform where individuals buy, invest, or do business.
- Consumers will show a wide range of interest in punishing and rewarding organizations for their behavior; new tools may help boost the percentage of people who engage in this behavior.



Key Uncertainties

Overall societal status of trust

Effects of competing and contradictory views of "ethical" in a polarized political climate

The nature of future activism

Evolution of regulation

Level of active consumer interest in corporate and organizational ethics

Role of fake and misleading news and information



Workforce and Workplace Action Set

There is no more pressing topic these days than the future of work and the workforce. Work is changing, driven by technologies that are helpful but also threatening, often at the same time. The rise of automation could create work that is modularized and taskified, then farmed out piecemeal to workers, where once that work might have been covered by a single employee. That modularization could lead to a divided workforce of strategically focused, highly valued employees at the top and replaceable, task-based workers at the bottom.

At same time, there are clear roles and opportunities for human workers and the non-replaceable human decision-making and emotional skills humans possess. As automation moves forward, workplaces will mix humans and automation. The challenges will be helping humans acquire and develop in-demand skills in a fast-changing environment and advancing the diversity and inclusivity that are necessary for workforce and workplace success.



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



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



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



Progress in robotics



How soon machines can understand and use natural language



Level of pushback from regulators and the public



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



Bifurcated Workforce

SUMMARY: Trends may create two classes of American workers: mission-critical players who move the organization forward, and foot-soldiers who do the basic work. The latter are regarded by employers as relatively disposable, with lower prestige and pay. Such a two-tiered workforce is not assured, but it is being driven by deep structural forces including the expansion of gig and freelance work and the rising inequality of opportunity for workers.

Forecasts

- The rise of a global gig, freelance, and contract work economy will produce a vast pool of workers for whom work is a piecemeal—and, in many cases, insecure—affair. Besides lacking salaries and benefits, contingent workers risk finding themselves treated by employers as second-class or disposable, with lower pay and professional standing.
- Lower-tier workers could represent all skill levels, and indeed may be as educated and skilled as their full-time counterparts. For instance, adjunct professors may be as capable as their tenured peers but typically work for little, with weak upward prospects.
- Automation will not be a determinant of whether a worker is considered crucial or disposable. Either tier of workers could serve as skilled counterparts to machine intelligence. But because automation will drive taskification, more work will be modularized and farmed out to contingent workers, potentially pushing a bifurcated workforce.

Key Uncertainties

Labor supply and demand in any given industry (which shapes treatment of all workers in that industry)



Regulatory and policy protections for gig and contract workers



Overall economic conditions (which shape business decisions about investment and hiring)



Social insurance policies



Risk of lower-quality products and services from less-invested contract and gig workers



Diversity and Inclusion

SUMMARY: American society and workplaces will continue to grow more diverse and inclusive as values evolve and younger generations increase their share in the demographic mix. This will occur against a backdrop of social, political, and racial polarization—and the workplace will be a primary arena in which contending views collide and issues are worked out. To meet these challenges, inclusion efforts can be treated as a systemic priority, supported by a new generation of tools and processes.

Forecasts

- Given ongoing trends—immigration, rising racial and ethnic diversity, contention around LGBTQ rights, and changing values—diversity and inclusion will be a primary social and human resources issue for decades.
- New diversity and inclusion issues (such as cognitive diversity, genetic discrimination, etc.) will arise continuously. Some will be novel; some may pit the rights of different groups against each other.
- The workplace is one of the few places where people from diverse backgrounds are thrown together by circumstance, rather than choice. Increasingly, businesses and organizations may be the primary location in which issues of diversity and inclusion are worked out.
- Millennial demography and values will push organizations to make diversity and inclusion a strategic priority.



Key Uncertainties

Directions in American politics and their effects on society



The pace, nature, and demography of immigration



Evolution and effects of social and political polarization



The speed at which millennial attitudes shift American culture, and how those attitudes evolve

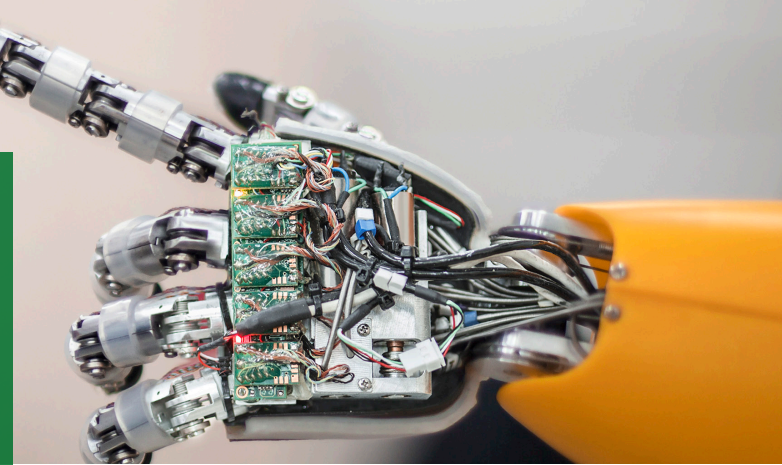


The changing nature of identity and its effects on social fragmentation



Human-Machine Cooperation

SUMMARY: Though many forecasts include substantial job losses due to automation—and such losses are indeed already occurring—many jobs will rely on cooperation between humans and machines. While less disruptive than total automation, human-machine cooperation will be a massive shift, with entire work processes becoming machine-oriented and humans learning to complement automation's role.



Forecasts

- Work automation will proceed for the foreseeable future, mostly by taking over tasks within a job rather than by taking over entire jobs. Humans will handle the remaining tasks in ways that complement what automation can do.
- The ratio of automated work to human work will vary substantially by industry, job, and workplace. Employers will embrace automation to the extent that they can, attracted not only by lower labor costs but also by higher quality and greater output.
- The human side will often be about planning and decision making, managing and developing people, or creative work—tasks that are all hard to automate with current technologies.
- An emerging breed of artificial intelligence-driven employers will add a new dimension to job displacement: startup companies whose business models rely on AI, rather than humans, from the very beginning.

Key Uncertainties

The speed of development and adoption of automation technologies

The speed at which organizational leaders learn to redefine roles and processes

The ratio of automatable tasks versus human tasks in a given work process

Regulatory and societal reaction to automation

People's tolerance for working with machines, including as managers

Rates of progress in machine learning, affective computing, and natural-language capabilities—each of which will significantly extend the kinds of work machines can do



More Human Humans

SUMMARY: Automation will steadily increase the relative value of certain human qualities in work, including social skills and creativity. In the age of artificial intelligence, humans will remain relevant not by knowing but by thinking, listening, relating, and collaborating at the highest level.

Forecasts

- Economist Tyler Cowen forecasts that the human abilities that will remain important are “empathy, interpersonal skills, and who we are rather than what we do.” According to author Edward Hess, a human will remain relevant by defining herself “as the quality of [her] thinking, listening, relating, and collaborating.”
- Digital technology, by enabling collaboration, transparency, and flexibility, has the potential to democratize and humanize work, match it to individual strengths, and make it more meaningful.
- As valued characteristics in the workplace shift, women may have comparative advantages. Women tend to be comparatively stronger in emotional intelligence, empathy, storytelling, collaboration, and teamwork; some of these are “mission-critical skills for innovation and critical thinking.”
- As automation takes over the production of a service, the human interaction offered by the service provider and the quality of the experience created will become more differentiating.

Key Uncertainties

Progress in “humanizing” technology through affective computing and machine learning



Positive or negative impact of social media on interpersonal skills and the quality of social interactions



Extent to which organizations adopt structures and leadership models designed to leverage uniquely human strengths



Relative priority placed on human development versus economic growth, in society in general and political systems in particular



New Forms of Work

SUMMARY: Freelance, gig, contract, and temporary work and the infrastructure to support them (e.g., online platforms and reputation systems) are growing. The number of independent professionals is expanding, and networked organizations rely on them. Associations will have new opportunities to serve these workers and advocate for their interests.



Forecasts

- Online talent platforms, including gig-economy digital marketplaces, could improve productivity, grow some kinds of employment, and boost labor force participation globally.
- As more jobs are atomized into tasks and shorter-term engagements, a vast amount of work—blue-collar or white-collar—could be outsourced to freelancers or gig workers.
- Future social safety net policies, and especially about access to health insurance and retirement benefits, will significantly affect the viability of new work forms.
- More work will shift from jobs with titles to shorter-stint project work. Fewer careers will move upward on straight paths, with more taking fluid courses.
- The shift to freelance and gig work could be a temporary stage. More policy and economic factors will have to align to make the change viable as a primary structure for work.

Key Uncertainties

Changing regulatory climate for new work patterns

Economic conditions affecting hiring and employer confidence

Societal tolerance for potential adverse impacts of new work forms—e.g., less certain employment and reduced access to the social safety net

Evolution of attitudes toward the freelance and gig work lifestyle held by rising generations

Societal recognition of traditionally unpaid work, e.g., childcare and elder care



Reputation by the Numbers

SUMMARY: Vast amounts of data will support reputation systems, and reputation will increasingly eclipse credentials for landing a job. As worker reputation systems and human resources analytics grow, assessment of an individual's suitability for a job will be driven by a person's algorithmic match to needs.

Forecasts

- The evaluation of reputation data by new analytics could change what personal attributes or abilities are valued. For instance, a system may reward popularity, or it may effectively ignore it.
- New reputation analytics may erode current credentials, both educational and professional. For example, degrees from Ivy League schools may carry no more weight than degrees earned via massive open online courses (MOOCs) or other alternatives.
- A move to a more objective measurement of talent could vastly expand the talent pool of workers, facilitating a more global workforce. Workers previously overlooked due to subjective human hiring biases could also find more opportunities.
- For those without an established reputation, there will be challenges to entering the workforce. Reputation systems will have to include effective "on-ramps."

Key Uncertainties

Efficacy and reliability of reputation systems, especially black-box, algorithmic systems

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Privacy concerns

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Role of algorithmic and human discrimination

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The effects of rating fatigue on users

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Effects of gaming the system and reputation-polishing



Re-Working Career Pathways

SUMMARY: The idea that the course of people’s professional lives is settled in their twenties is long-outmoded, but employers and life structures have been slow to adapt to this fact. However, organizations are increasingly assisting workers with midlife transitions, such as going back to school, enhancing skills for new career directions, or allowing for reduced hours so that employees can pursue other interests. Such steps create a need to rethink work, education, and social safety nets to accommodate new approaches.

Forecasts

- “Careers for life” may begin to give way to “careers for life stage” as workers and employers realize that time in a job or industry is a finite thing due to changing skills, interests, technologies, and market needs.
- New resources and structures will be needed to support a workforce that retrain or shifts careers regularly. These could range from mid-career use of social safety net funds to rethinking the roles of universities, community colleges, and technical schools.
- Mid-career shifts could help combat workplace ageism as workers retrain and move to jobs where they have interests, rather than lingering in jobs where their skills become obsolete.
- While this change is emerging slowly, it could become supercharged in the medium term by a workforce with generally looser ties or allegiances to organizations than in the past.

Key Uncertainties

Whether evolving views are tied to generation, life stage, or some combination thereof

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Evolution of institutions to support midlife shifts

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Older millennials and their approach to midlife

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In the United States, whether health insurance continues to be tightly coupled to work

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Shifting gender roles vis-à-vis work and family

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Whether midlife career transitions are primarily for elite workers



Toward a Spectrum of Abilities

SUMMARY: Changing attitudes and technological interventions are shifting the nature of disability and blurring its boundaries. Gaining ground is the concept that disability and ability are not a binary but instead a spectrum, with every individual's physical, behavioral, and cognitive traits falling on multiple points along that spectrum. These changes will increase the number of workers who would once have been characterized as “disabled,” while also broadening that category. Organizations will need to navigate a complex and evolving terrain of expectations and rules.



Key Uncertainties

Shifts in the definitional boundaries of what is considered a disability

Degree of organizational support for disability-friendly working environments

Employer willingness to hire workers with neurodevelopmental and emotional disabilities

Extent of public acceptance of “ableism”—discrimination or prejudice against people with disabilities—as a form of social discrimination

Regulatory commitment to enforcing anti-discrimination laws

Forecasts

- Medical and technological interventions to ameliorate disabilities will proliferate, providing new ways to repair or work around physical and mental conditions. These will include robotic prostheses, sensory enhancements, and artificial intelligence (AI) coaches, among other innovations.
- Interventions will spark debates over what should be “fixed” and how, with issues growing more intense as pharmacological, neurological, and genetic approaches advance.
- Legal challenges will contest the formal boundaries that define disability. For instance, a U.S. district court has found that Americans with Disabilities Act (ADA) protections can be extended to gender dysphoria—a conflict between a person’s biological sex and gender identification—creating a legal precedent for litigating gender discrimination under disability discrimination laws.
- U.S. cities and states will enact new disability discrimination protections that extend protections to new groups. These new legal protections will be broader than existing federal standards.