**ASAE ForesightWorks**

**Drivers of Change Summary**

**Content, Learning, & Knowledge**

**Higher Education 3.0:** 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.

**Mentoring 2.0:** 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.

**Microlearning**: 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.

**New Journal Models:** 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.

**Rejection of Expertise:** 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.

**A Shifting Environment for Content:** 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.

**Virtualized Meetings:** 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.

**Data & Technology**

**Anticipatory Intelligence:** 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.

**Blockchain Platforms**: 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.

**Fast Data:** 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.

**Fraying Cybersecurity**: 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.

**Marketing and Advertising Transformation:** 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.

**Nichification: Big-Data Segmentation:** 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.

**Personalized Artificial Intelligence:** 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.

**Taming Big Tech Dependency:** 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.

**Who Owns The Data?:** 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.

**Demographics & Membership**

**Aging World**: 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.

**Empowered Women:** 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.

**Empowering the New Workforce:** 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.

**Immigration-Driven Demography:** 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.

**The Next-Gen Professionals**: 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.

**Socializing Reshaped:** 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.

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

**Economic Conditions**

**Cartel Capitalism:** 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.

**Climate Change Resiliency:** 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.

**Global Power Shifts:** 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.

**Philanthropy Reshaped:** 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.

**The Productivity Paradox:** 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.

**The Sharing Economy:** The sharing economy — a peer-to-peer exchange of goods or services — will continue to grow globally and expand into new areas of commerce, although regulatory issues constitute a key uncertainty. The sharing economy portends a shift in the balance between access and ownership, from ownership of resources to access to goods and services. Organizations that broker exchanges between owners and users play a pivotal role in this economy.

**Trade in Transition:** 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.

**Society & Politics**

**Algorithmic Politics:** 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.

**American Inequality:** 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.

**Declining Trust:** 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.

**Ethical Consumption:** 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.

**Ethical Edge of Innovation:** 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.

**Healthcare Disruption:** 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.

**Population Health:** 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.

**Shifting Terrain for Advocacy:** In the United States, single-party control of the executive and legislative branches, 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.

**The Splintered Society:** 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.

**Standards Under Pressure:** 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.

**Transparent Organizational Ethics:** 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.

**Workforce & Workplace**

**Automating Work:** 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.

**Bifurcated Workforce:** 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.

**Diversity and Inclusion:** 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.

**Human–Machine Cooperation:** 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.

**More Human Humans:** 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.

**New Forms of Work:** 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.

**Reputation by the Numbers:** 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.

**Re-Working Career Pathways:** 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.

**Toward a Spectrum of Abilities:** 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.