Preparing for Emerging Technologies

Authored by ALFA International Attorney:

Courtney Nichols
PLUNKETT COONEY
Detroit, Michigan
cnichols@plunkettcooney.com
I. Introduction to Emerging Technologies in the Workplace.

It is 2019 and integration of cutting-edge technology and concepts into modern offices has transformed the contemporary workplace. Ten years ago the mere introduction of mobile devices in the workplace was relatively new; they have now taken a front-row seat in various industries and offices of all different sizes. Researchers expect that the world of work and the technological skills we will need to have in 10 years will bear little resemblance to what we understand today.

This trend has resulted in a “techno-panic” – a warning that technological innovation is going to kill more jobs. Importantly, this is not a new phenomenon; in 1972, U.S. Secretary of Labor Davis wrote:

In the long run, new types of industries have always absorbed the workers displaced by machinery, but of late, we have been developing new machinery at a faster rate than we have been developing new industries....At the same time, we must ask ourselves, is automatic machinery going to leave on our hands a state of chronic and increasing unemployment? Is it giving us a permanent jobless class?

Likewise, in 1955, the concern regarding a rise of “push-button” factories rose so dramatically that the U.S. Congressional Joint Economic Committee held extended hearings on the matter. History demonstrates that while technological innovations disrupt existing production systems, from the disruption emergences adoption of new technologies that frequently result in rapid growth.

There are certain types of technologies and technology-based concepts that will likely be part of the next production revolution. These include the following:
A. Artificial Intelligence.

Automation and Artificial Intelligence ("AI") are transforming business and are expected to contribute to economic growth via contributions to productivity. Beyond traditional industrial automation and advanced robots, new generations of more capable autonomous systems are appearing in various workplace environments, such as autonomous vehicles on the roads to automated check-outs in grocery stores and restaurants. This progress has primarily been driven by improvements in systems and components, including mechanics, sensors and software. AI has made especially large strides in recent years, as machine-learning algorithms have become more sophisticated and made use of huge increases in computing power and of the exponential growth in data available to train them.

Leading companies such as Microsoft, IBM, Facebook, and other technology giants are heavily investing in this area. At the same time, analysts believe that more than $6 billion has been pumped into over 1,000 AI start-ups in the last three years, in industries ranging from transportation to health care, and across a range of specialties. Overall, AI tools are projected to create nearly $3 trillion in business value by 2021. See https://www.project-syndicate.org/commentary/artificial-intelligence-employment-displacement-by-bill-mcdermott-2018-01?barrier=accesspaylog; https://www.bloomberg.com/news/articles/2017-05-31/morgan-stanley-s-16-000-human-brokers-get-algorithmic-makeover.

As a broad matter, AI can support three important business needs: automating processes, gaining insight through data analysis, and engaging with customers and employees. To date, the most common type of AI has been process automation; to wit,
automating digital and physical tasks (typically back-office administrative and financial activities) using robotic process automation technologies. Such tasks include, but are not limited to: transferring data from email and/or call center systems into systems of record; replacing lost credit or ATM cards; reconciling failures to charge for services across billing systems by extracting relevant information from various documents; and “reading” legal documents to extract relevant provisions using natural language processing.

After process automation, AI has greatly expanded in the realm of cognitive insight. This includes using algorithms to detect patterns in vast volumes of data and ascertaining potential meaning. Harvard Business Review has referred to this process as “analytics on steroids”, and allows companies to rely on machine-learning applications to: predict what a customer is likely to buy; identify credit fraud in real time; analyze warranty data to identify safety or quality problems in manufactured products; automate personalized targeting of digital ads; and provide insurers with more-accurate and specific actuarial modeling.

The least common but perhaps most publicized type of AI is cognitive engagement. Cognitive engagement utilizes natural language processing chatbots, intelligent agents, and machine learning to directly offer customer service, internal sites to address employee questions, product and service recommendation systems, and health treatment recommendation systems. As a general matter, cognitive engagement has been used more prevalently in interaction with employees than customers. However, that may change as society becomes more comfortable interacting with machines.
B. The Internet of Things ("IoT")

The “Internet of Things” ("IoT") refers to the concept that the Internet is not merely a global network for communication between people via computers, but rather a platform for devices to communicate electronically with the world around them. This results in a world that is alive with information as data flows from one device to another and is shared and reused for a multitude of purposes, including analytics. A combination of technologies, including low-cost sensors, low-power processors, scalable cloud computing, and widespread wireless connectivity, has enabled IoT. This, in turn, has resulted in implementation at various companies to embed intelligence and sensing capabilities in their machines and products, thereby allowing everyday objects to sense, learn from, and interact with their environment.

C. Robobosses.

The “bad boss” is a problem that is all too familiar to many workers, and employment attorneys. For some, working for a robot would be a significant relief and drastically improve the workplace environment. Although this idea may sound far-fetched, Harvard Business Review has opined that it is more feasible than most people think. In a 2016 article, Harvard Business Review asked readers to consider some of the primary tasks of managers: using data to evaluate problems; improving team decision-making; monitoring team members’ performance; setting relevant goals; and providing accurate feedback. Technology is capable of not merely rivaling humans on those primary tasks, but helping humans complete them in a more effective and consistent fashion. See https://hbr.org/2016/12/the-pros-and-cons-of-robot-managers.
Frances Karamouzis, Vice President and Distinguished Analyst at Gartner® estimated that by the end of 2018 more than three million workers globally would be supervised by robobosses. She noted that “measurement of worker performance will become even more refined as smart machines become the primary means of analyzing performance”. Indeed, it is not difficult to see how measurement of worker performance can become far more refined as machines become the primary means of analyzing performance and reviewing activities and events that may be far too miniscule for human managers to track. See https://www.gartner.com/smarterwithgartner/could-your-next-boss-be-a-robot/

However, the downside of robobosses is not hard to diagnose: “smart machines simply don’t have enough nuances to manage complex human relationships which is why humans will continue to deal with issues such as creative leadership, worker relations and strategic planning”, said Ms. Karamouzis. “Human managers may be partnered with smart machine managers in a way that allows them to influence the skills and strengths of the machines, but for the next five years at least, expect smart machines to take on the tactical and quantifiable elements of management rather than the more people-centered aspects.” Id.

D. Smart Workplaces.

Say goodbye to the traditional whiteboard and conference room. In the wake of emerging technology, new work styles, locations and patterns are giving rise to a connected, competitive, and increasingly complex work environment. Notable IT advances that continue to develop include: growth in computer capacity and speed (and shrinkage in size); the development of fiber optics (reducing the costs of
telecommunications, making wireless communication considerable cheaper); ubiquitous smartness in buildings and workplaces; and, increasing efficiency of software applications such as web-meetings, videoconferencing, teleconferencing, instant messaging, application sharing and email, resulting in improving productivity and creativity. These “smart workplace” improvements are resulting in more-and-more geographically separated teams and client bases, especially within global companies.

What does the future hold for smart workplaces? Commentators expect the following: rooms booked purposely for specific types of meetings, such as all-purpose whiteboard rooms, creative rooms, relaxation rooms and concentration rooms. These rooms will likely include high-end health and wellness features like lighting, air filtering and temperature control. Also expected is an enthusiastic adoption of video teleconferencing and shared whiteboard (Microsoft already has a widely-used program called “Surface Hub”, an approximately 80-inch TV that acts like a giant Surface tablet).

Inextricably intertwined with the smart workplace is client concern regarding workplace security. To address that concern, companies are moving toward the expanded use of credential technology. For example, Microsoft Windows Hello works with a biometric sign-in, also providing a facial recognition option for authentication. In sum, the computer will not “unlock” until the approved user sits down in front of the screen.

E. The Gig Economy.

In July, 2018, the Bureau of Labor Statistics provided the first official reading of how many workers in the US rely on temporary, freelancing and contract work. The report found that 16.5 million people were working in such arrangements; nearly six
million people held contingent jobs, another 10.6 million were working as independent contractors, on-call workers, temporary help agency workers and for contract firms. Early 2019 estimates show that nearly 60 million people in the US alone make up the gig economy. This boom is certainly attributable to modern technology and communication strategies, as the ability to work from anywhere and stay connected through mobile devices has enabled employees to have increased freedom of choice for who they work for, with many companies far more willing to hire remote workers (and often on a contract basis).

TechRepublic® expects the gig economy to continue to grow through 2019, with more than one-third of US workers taking part. See https://www.techrepublic.com/article/how-the-gig-economy-will-change-in-2019/

Stunningly, nearly half (46%) of Generation Z (born in 1996 or later) workers are freelancers, a number that is expected to grow as approximately 61 million Generation Z individuals enter the workforce within the next few years.

Additionally, more companies are becoming fully remote. The Autumn Group noted that approximately 170 virtual companies currently operate in the US (a dramatic increase from 26 in 2014). The ability to have a fully remote workplace stems in part from the growing ability of companies to offer technology tools such as Zoom, Slack and Dropbox, among others. Employers can effectively communicate with and accurately track the performance of distant remote workers. However, fully remote companies lack the ability to transmit company culture and directly supervise individuals as other companies, which may be a drawback for certain organizations.
F. Digital Dexterity.

Gartner® defines digital dexterity as the “ability and desire to exploit existing and emerging technologies for better business outcomes.” See https://www.gartner.com/binaries/content/assets/events/keywords/digital-workplace/pcce13/4_steps-infographics-3.pdf. ETCIO.com (an initiative of The Economic Times) explained that “[a]n organization with high digital dexterity has employees who have the cognitive ability and social practice to leverage and manipulate media, information and technology in unique and highly innovative ways.” See https://cio.economictimes.indiatimes.com/news/strategy-and-management/too-few-organizations-have-the-digital-dexterity-to-adopt-new-ways-of-work-solutions-gartner/64695657. Importantly, digital dexterity comes not just from technology, but from people using digital technologies to think, act, and organize themselves in new and productive ways.

Because digital dexterity is a business strategy, input is needed from the leaders within a company (accounting, HR, legal, marketing, operations), not just IT, to ensure that the voices of employees are truly head. In addition, flexibility is required and rigid goals will impede true progress. The best strategy is to identify important milestones and reassess next steps when those are reached. Experts further recommend that technologies should track business initiatives and key metrics. If technology improvements and changes are not improving those metrics, the plan should be adjusted accordingly. See https://www.inc.com/elizabeth-dukes/the-facts-you-need-to-improve-digital-dexterity.html.
II. Utilizing and Leveraging Emerging Technology.

The emerging technologies discussed above have provided businesses with opportunities to become more productive, efficient, and introspective. The following are some of the most common ways for companies to utilize and leverage technological advances:

- Data mining to find trends and make predictions
- Easy access to actionable data transparency and accountability
- Increased visibility within the workplace with utilization of smart workplace mapping tools
- Increased employee engagement through collaborative working
- Gamification techniques drive employee investment and offer real-time feedback
- Cloud technologies enable greater interoperability
- Creation/utilization of worker/worksite safety or environmental safety app to improve workplace safety and reduce workplace accidents
- Utilization of chatbots to understand human language, answer questions, and provide information
- Automation of mundane tasks to focus energy on creativity and personal relationships
- Utilization of AI technology and AI-based products to improve hiring
- AI-powered service desks to provide employee support (in particular by automating repetitive responses to questions regarding benefits and personnel policies)
- Allow employees who come from different backgrounds and speak different languages to collaborate easily and work together in real time
- Streamline training and onboarding
While utilizing and leveraging emerging technologies, companies should be aware of the downsides and potential pitfalls, such as:

- Done incorrectly, people analytics can bake bias into the core of human resources activity
- Replacing human-performed job with smart robots may result in employee/public dissatisfaction and resentment
- Ensuring decisions made by robots or machines are ethical
- Eroding privacy and increasing likelihood of discrimination claims through the use of employee biometrics (unique, biologically-based data like fingerprints, voice prints, or scans of a person's retina, face, iris, or hand)
- Providing cyber-criminals a window into company and employee worlds