AI AND THE WORK OF THE FUTURE CONGRESS

UNCONFERENCE REPORT

2019
ON November 22, 2019, MIT hosted its first Unconference Session on AI and the Work of the Future. The Unconference was a continuation of the November 21 AI and the Work of the Future Congress, held at MIT’s Kresge auditorium. The annual Congress convenes leading thinkers to explore the impact and future trends of technological disruption and its impact on work. A full day of expert panels and fireside chats focused on the four key themes of Technology, Industry, Education, and Policy.

Nearly 100 Congress attendees participated in the Unconference, including business leaders, academics, inclusive innovation entrepreneurs from around the world, and MIT students. The Day Two event provided the Congress audience a setting in which to share their wide-ranging perspectives, experiences, and strategies on tomorrow’s workforce. Working in groups, Unconference participants defined the challenges they wished to tackle, shared and prioritized insights, selected delegates to report out their findings, and received real-time feedback on their visions from MIT faculty and alumni. The four commenters were: Katie Bach, Managing Director of the Good Jobs Institute; Erik Brynjolfsson, Director of the MIT Initiative on the Digital Economy (IDE); John J. Leonard, Professor of Mechanical and Ocean Engineering and a member of the MIT Computer Science and Artificial Intelligence Laboratory (CSAIL), and Vice President for Autonomous Driving Research at Toyota Research Institute; and Andrew McAfee, Co-Director of the IDE and a Principal Research Scientist at the MIT Sloan School of Management.

The final summaries, as consolidated in this report, will be shared broadly by MIT in an effort to help guide the priorities of researchers, policymakers, and business leaders.

The Unconference Structure

Workshops were informal, largely unstructured opportunities to suggest action items around the four critical themes that defined Day One. Participants voted on their top choice ideas via Klik and Slido technologies, which yielded a dynamic set of proposals, observations, and frameworks. While groups convened on each of the four topics, many recommendations overlapped and crossed themes.

Some ideas challenged current hierarchies and practices. For instance, some proposals centered on greater worker input in decision-making; paying employees to reskill and learn; and urging corporate leaders to plan beyond short-term targets.

At the same time, many attendees see worker displacement as inevitable as automation increases, and they expect the nature of long-term careers to change dramatically in the coming decades.
Preparing for tomorrow’s technologies.

What best practices must companies incorporate as they develop new technologies and increase human/machine collaboration?

Discussion Points and Recommendations:

- **Design improvements.** Improvements are needed in AI technology design and in the methods used to measure their success, once implemented. Specific, outcome-based frameworks and best practices should focus on “how we work today and how technologies affect and augment productivity.” There is a strong need to design more AI technologies using a human-centered approach.
- **Clarity of expectations.** Too often technologies are introduced in the workforce “without stating to employers and employees what’s going to happen next.” Clear expectations smooth adoption and ease the negative impact on an organization.
- **Readiness.** How do we know that everyone is ready to adopt the next technology? In particular, can we ensure that those at the bottom of the pyramid are on board? Incentivizing adoption can be achieved through corporate investment or directly paying employees to learn.
- **Democratizing technology.** Many skills needed by companies today are not taught in school. Beyond K through 12, digital literacy has to seep into public colleges, too. Open-source programs and similar tools can help companies advance technical learning; their use should expand so that tech skill sets exist more widely and are freely available.

Reaping the rewards of business automation and its impact on workers.

How do we continue technological progress without leaving the worker behind? Who determines what is “beneficial” for workers?

Discussion Points and Recommendations:

- **Unions and management.** We have systematically lost the opportunity for workers and management to discuss worker rights, leaving confrontation as the only answer.
- **Single-minded profit focus** inevitably leads to efficiencies, sometimes at the expense of workers. There is a need to re-educate MBAs in this regard and to revise the shareholder-to-stakeholder relationship to include workers as stakeholders.
- **Incorporate the employee journey.** Just as businesses have recognized the power of customers, employee-centered design of business processes can yield multiple benefits. Companies reap more efficiency and productivity by integrating employee experiences while also making life better for workers. Indirectly, organizations optimize customer experience at the same time. Recasting the role of workers gives everyone a chance to improve processes and employee satisfaction.
- **Alternative institutional pressures.** Concepts like JUSTCapital, which ranks how companies are treating their stakeholders, and SEC regulatory changes calling for human capital measures are shifting the financial landscape. Combined with the elevated role of customers and employees, there are increased pressures on corporations to seek input outside of stockholders. Good companies, not just good products, are gaining stature.
- **Ongoing research is needed** to improve worker experience, as well as corporate performance. This would expand on MIT Professor Zeynep Ton’s work on The Good Jobs Strategy.

Expert Feedback, Comments, and Suggestions:

Katie Bach: Human-centered design and best practices for value creation are inextricably linked. A company’s ability to retain talent and upskill for productivity are financial levers; as they’re rolling out new technologies in a human-centered way, they’re also looking at work processes. Synergistically, there is an incredible opportunity here to broadly review and to increase productivity across the board.

Erik Brynjolfsson: When you consider technology complements and corporate incentives for technology investment, remember that technologies are introduced for profit motives; concurrently, however, they create external value for society. Externalities are also at play when employees use generic tools, and training is required. Businesses don’t have great incentives to invest in that type of training because once employees learn say, Python, they might leave for a higher wage somewhere else.

Andy McAfee: We are not going to see business assuming the role of employment maintenance organizations in our society. If businesses can automate some jobs and improve their bottom line, they will and should do that. We should not look to the private sector to maintain our employment levels, firm by firm. We need a very dynamic private sector. We can take this stakeholder argument to an extreme that is unhelpful, which is demonizing companies for getting rid of employees that they don’t need. We should work on the bigger problem: creating good jobs.

John Leonard: The value of the workforce must be viewed as one of the most important assets of the company. Getting workers involved and excited about technological change is key. We need to place the well-being of workers at the heart of the company’s identity.

Katie Bach: We absolutely can and should hold companies accountable for the quality of the jobs they create, as they can best define what’s beneficial. We sometimes forget that companies don’t behave rationally. Often, they’re trying to maximize store sales, or they’re panicking every day if they’re down 0.5% on half-day sales, and they’re frantically implementing quick fixes. These are knee-jerk reactions by very smart people who are facing a crazy set of incentives. There are institutional levers that can make corrections. It is critical to do this as we think about the intersection between technology and job quality. Simply redirecting the questions asked on earnings calls can have a huge impact on what companies do day-to-day.

John Leonard: The whole impact of the gig economy and contractors versus permanent workers is an issue. I worry that technology will leave workers behind. We really need careers, not just jobs, not just a paycheck. Too many people don’t have a career anymore; they just have a gig job or they work to survive. How do we share the prosperity more broadly and have more great careers?
The Next Wave of Education

How can we better engage public-private partnerships to experiment with new models for education?

Discussion Points and Recommendations:

- ** Widening the job pool. ** The group identified a tremendous gap between job candidates and those who provide the funding for education. Firms must cast a wider net, particularly when creating a pool of candidates. Otherwise, we will continue to leave people behind, causing a throttle on corporate growth and innovation.

- ** Credentialing. ** One of the barriers to solving hiring challenges is the issue of credentialing. In the case of MOOCs, there are a lot of concerns about completion rates and what student criteria we actually measure. How do students establish credibility and expertise, if they've only studied on MOOCs? For some workers, reskilling can mean going back to a university for three years and that would derail their lives. How can we level the playing field in ways acceptable to both workers and employers?

- ** Demonstrating mastery. ** Educational access and awareness are the first steps, but we need viable ways of reaching potential learners and measuring what they've learned. Some propose that workers demonstrate mastery, as opposed to degrees, to fill new roles. Compiling specific outcomes and examples of people who have succeeded would help define the scope of the training and how it should be funded.

- **Educational platforms.** A new concept may be privately funded, open platforms where credential standards are defined by the public sector. Corporations would invest because they could use the platform as a valued recruitment pipeline.

Expert Feedback, Comments, and Suggestions:

Andrew McAfee: Don't underestimate the value of experience. Get yourself into the world of work as quickly as possible so you can learn how to be a good colleague, how to work as part of a team. Even the best universities can't replace real-world experience. Teach yourself something new and difficult every year. Become a learner.

Katie Bach: Corporations can build very flexible, three-month, boot-camp-style training programs to prepare people for new roles—but they need to see a return on investment. Training backfires when ROI doesn't materialize. Often, that occurs because organizations don't structure jobs correctly, and they're looking at the wrong metrics. As a result, they keep trying to hire talent instead of training; they don't reexamine their systems.

Erik Brynjolfsson: Credentialing works best on very specific, concrete skills and capabilities, and we may be in the early days of an explosion of that kind of credentialing. We're seeing it with the unbundling of teaching and certification, and there are organizations like Udacity that offer self-paced, nanodegrees. Platform training and how it should be funded.

Katie Bach: What do technology, automation, and AI, mean for the jobs in a particular company? I have yet to meet an executive who can clearly define that—and that's not a criticism; it's a hard question that involves a lot of moving parts. But that says to me that we talk as though companies have this very clear roadmap of exactly how they're going to deploy AI and what that's going to mean; but they don't. In fact, there is a tremendous opportunity to help educate executives about what's possible. A lot of people go to the default assumption, which is, the point is to replace workers. But that isn't always the point, sometimes the point is to make them more productive.

Erik Brynjolfsson: Worker insurance is an intriguing way to think about the problem. We insure against fire or hurricanes, but for most of us, the biggest risk is our human capital, our skills; what's going to happen if the economy changes? And that's really hard to insure against because of the problem of moral hazard. But there may be a multi-trillion dollar insurance gap here that we're ignoring. I hope people will grapple with this, and think about ways that we can at least mitigate it as we have many other kinds of insurance needs.

John Leonard: At Toyota, we have a wonderful example of how folks that haven't won the educational lottery in life in terms of getting a PhD at a top school, were able to take part in the digital transformation of the business. We have a group of about 25 professional safety vehicle operator/technicians that drive the driverless cars who have tremendous talent and insights, as well as a capacity to learn and to contribute. I wonder if more generally, technology might provide new paths like this so that a broader subset of society gets access to new careers and jobs.

Macroeconomic Changes and Policies that Work for All

Will AI narrow or widen today's inequalities, and what policies need to emerge as a result?

Discussion Points and Recommendations:

- **Accountability and Ethical AI.** How can policy and policymakers be responsible for ethical AI, and how we can think about accountability and auditability? Specifically, how can workers be brought to the table to address inequality? Some suggestions were: Co-determination, unions, diversifying corporate boards, and changing how foundations fund projects.

- **Support for workers.** Benefit portability would ensure that safety nets don't go away when jobs do. Similarly, enhanced transition support and wage insurance would add protection. Individual workers need to see learning as not necessarily tied to a job, but as a lifelong process: Always thinking about yourself as adaptive and able to move on.

- **New mindsets:** It can be daunting for someone who is 55 and lost their job to spend three years learning new skills, and they will resist. Policymakers and corporate leaders, therefore, have to change their mindset in terms of what they're asking workers to do.

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John Leonard: Explainable AI is a huge technical challenge. I don't see something great on the horizon, I just see more people using black box algorithms; it's a huge challenge. We need to hire faculty to study this over the next several decades. It's not something we're going to solve quickly in my opinion.
More concentrated efforts must be placed on the human impact of implementing AI and machine learning in businesses. Human-centered design approaches are a step in the right direction.

Workplace and workforce dynamics are changing dramatically as a result of automation. There’s a tremendous opportunity to educate business students and executives on ways to ease the pain for employees while increasing productivity. However, don’t expect that the private sector will forgo profits to become employment maintenance organizations.

If workers become active stakeholders in the organization, they can ensure their own benefit protections and mitigate inequalities that are baked in to the gig economy.

Education and reskilling platforms need clearer, expanded credentialing standards and private-public funding.