

## Feature Article: Will Reskilling Work? And What Happens If It Fails?

### What's at Stake?

The answer to this question begins with the evolution of the 21<sup>st</sup> century economy, a process that COVID has sharply accelerated.

Organizations perform activities to achieve their goals. Performing those activities costs money. With the arrival of the industrial revolution, it became possible for some activities to be performed more effectively and efficiently through the application of new technologies, like electricity and railroads.

However, the productivity improvements, faster economic growth, and rising living standards this made possible weren't fully realized until human capital improved (via the expansion of public education) and organizations adopted new designs to make full use of new technological and human capabilities.

That is the very short story of the Industrial Revolution.

And now we're here again, as the Industrial Economy gives way to the Digital Economy.

Fundamentally, it's the same story – lots of promising new technology, with benefits that will only be fully realized when human capital and organization designs both improve.

Let's look at a more specific example. Like an organization, a "job" can be described as a set of activities (which can be further subdivided into tasks) that an individual must perform to attain an objective through the use of their knowledge, skills, and experience.

One of the key developments in the 21<sup>st</sup> century economy is exponential improvement in technologies that allow the automation of

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physical and cognitive activities and business processes (think robotics and artificial intelligence).

At the job level, this means that some tasks and activities previously performed by human labor can now be performed by technology. For example, artificial intelligence technologies have led to the automation of a range of information collection, analysis, prediction, and classification, and routine decision-making tasks.

For example, a 2017 McKinsey analysis concluded that, globally, 60 percent of jobs had at least 30 percent of constituent work activities that could be automated by 2030 (*Jobs Lost, Jobs Gained: Workforce Transitions In A Time Of Automation*).

In some cases automation has led to the elimination of jobs, especially those previously termed “middle management”. But in many more cases, the automation of routine activities has led to a change in the nature of the job itself, or the creation of new jobs, based on physical, social, and cognitive activities that could not be automated.

However, humans often need higher levels of knowledge and skill to perform these new sets of activities. For example, consider the work of a loan officer. Automation has eliminated the need for them to make loan decisions for routine transactions that can be handled by credit scoring and other algorithms. In so doing, it has created more time for the loan officer to spend analyzing and deciding on much more difficult credits, which require more advanced knowledge and skills.

But what happens when there is a shortage of people with the required new levels of knowledge and skill?

We can see the answer all around us today.

Because of the rapid scaling that is possible in a digital economy, companies that can attract scarce talent can adopt advanced technologies and grow much faster than their competitors, whose profit margins shrink as they fall further behind and struggle to survive.

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In the labor market, this has led to both offshoring of operations to lower costs, and outsourcing of activities to temporary “gig” workers who are poorly paid and receive minimal or no employee health and retirement benefits.

At the level of the national economy, it has led to lower labor productivity and a slower rate of growth in the size of the overall economic pie.

Meanwhile, companies that can attract the scarce talent can afford to pay them more, which worsens income inequality.

And what happens to those people who lack the advanced knowledge and skills required for well-paying jobs?

In our increasingly unequal economy, spending by people at the higher end has driven the expansion of multiple service industries. These jobs have changed too, with many requiring higher levels of knowledge and skill than in the past. But because of the high degree of competition in many service businesses, revenues are always under pressure, pay is low, and benefits are often non-existent.

In sum, as we transition from the Industrial to the Digital Economy, the mismatch between the rate at which human capital and technologies are improving has led to worsening inequality, the shrinkage of the middle class, and the creation of a rapidly growing “precarariat”.

In turn, this has led to rapidly rising government spending on various social safety net programs (which has crowded out spending in other areas), and rising social and political conflict.

And all these trends will only grow worse if the average quality of human capital doesn't grow much more quickly.

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This isn't news. In 1990, the title of the final report of the Commission on the Skills of the American Workforce put it bluntly: "*America's Choice: High Skills or Low Wages!*" It still is.

Broadly speaking there are four ways to meet rising demand for workers with greater knowledge and skill.

(1) **Improve the Performance of the Education System.** Unfortunately, with some exceptions this hasn't happened in most countries because opposition from extremely strong interest groups (e.g., teachers unions) has prevented substantial change.

(2) **Outsource Activities to Other Labor Markets.** This has been happening for years. However, the pandemic has accelerated this trend, and, critically, has extended it to more cognitively demanding jobs. As the Financial Times recently noted, "if you can do your job from anywhere [because of Zoom and other technologies], then someone from anywhere can do your job. Outsourcing is a particularly acute risk for higher paid workers in English speaking countries, since English is the most common second language in the world (978 million speakers, per Ethnologue.com).

(3) **Insource Talent from Other Labor Markets via Immigration.** Some countries (e.g., Canada and Australia) use a points-based system to determine who can immigrate (almost always in parallel with separate systems for refugees and asylum seekers). These points-based systems focus on attracting people with knowledge and skills that are in short supply.

(4) **Retrain Current Workers.** Whether "reskilling" or "upskilling" is a viable solution is the subject of this analysis.

### The 50,000 Foot Policy View

*The first point to make is the widespread recognition of the critical importance of reskilling, at the "50,000 foot policy level".* From the

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OECD'S report "*Getting Skills Right: Future Ready Adult Learning Systems*" to McKinsey Global Institute's "*The Future of Work After COVID-19 Report*" to MIT's report, "*The Work of the Future: Building Better Jobs in the Age of Intelligent Machines*", there is near unanimous agreement on what must be done in order to avoid economic, social, and political disruption.

For example, the McKinsey report concludes that, "Our research suggests that the disruptions to work sparked by COVID-19 will be larger than we had estimated in our pre-pandemic research, especially for the lowest-paid, least educated, and most vulnerable workers. We estimate that more than 100 million workers in the eight countries we studied may need to switch occupations, a 12 percent increase compared to before the pandemic overall and a rise of as much as 25 percent in advanced economies.

"These workers will face even greater gaps in skill requirements. Across countries, we find that job growth may concentrate more in high-wage jobs while middle- and low-wage jobs decline."

The evidence shows that employers agree with policy analysts' conclusions. For example, a McKinsey survey found that, "44 percent of respondents say their organizations will face skill gaps within the next five years, and another 43 percent report existing skill gaps. In other words, 87 percent say they either are experiencing gaps now or expect them within a few years" ("*Beyond Hiring: How Companies Are Reskilling To Address Talent Gaps*").

Here in Colorado, a survey by the business organization Colorado Succeeds found that, "86 percent of employers said the skills gap is a threat to their business. 77 percent struggle to find workers with applied skills like critical thinking and problem solving. 62 percent have difficulty finding candidates with workplace skills like teamwork and communication." This had led to their spending more on training and recruiting, and experiencing lower work quality, productivity losses, lost revenue, and slower business growth."

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However, there is evidence that this general agreement about the need for reskilling often breaks down when different groups involved in meeting the reskilling are asked what specifically they have in mind.

For example, a 2016 report by IBM ("*Facing the Storm: Navigating the Global Skills Crisis*") found that, "industry executives ranked science, technology, engineering and mathematics (STEM) skills; basic computing skills; and fundamental core skills in reading, writing and arithmetic as the most important. However, these skills were rated lowest in priority among workforce/labor policy executives worldwide, whose top three reskilling priorities were "ability to communicate effectively in a business context; willingness to be flexible, agile, and adaptable to change, and ability to work effectively in team environments."

*The second point to make about reskilling is the scale on which it must occur.*

For example, in January 2020, the World Economic Forum launched its "*Reskilling Revolution*" an initiative to reskill one billion people by 2030. At the time of the announcement, the WEF noted that, "Technological change, industry transitions and globalization are impacting jobs and the skills required within those jobs. The OECD estimates that 1.1 billion jobs are liable to be radically transformed by technology in the next decade. The World Economic Forum predicts an overall net positive between job growth and decline but also finds that skills instability with all jobs will mean that nearly half of core skills are set to change by 2022 alone. Additionally, if current trends continue, the outdated content of education will further exacerbate the skills mismatch in the future."

*The third point is the recognition by some, if not all advocates that very substantial obstacles must be overcome if reskilling is to succeed at the scale required.*

The results for the United States from the OECD's Program for the International Assessment of Adult Competencies (PIAAC) are grim

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reading. On the most recent assessment (conducted in 2017), 19% of US adults scored at the lowest level in literacy; 29% scored at the lowest level in numeracy, and a shocking 62% scored at the lowest level in problem solving in an information rich environment. For many Americans, reskilling will require a substantial investment in building basic skills that should have been learned at earlier stages of their education.

Moving from the individual to the institutional level of reskilling obstacles, in *“Realism About Reskilling”* Escobari et al from Brookings observe that, “The reskilling landscape today is made up of disconnected programs that, as a whole, struggle to serve low-wage workers and individuals already marginalized by other institutional structures.

“Together, the constellation of colleges, workforce programs, and other training providers form a Rube Goldberg contraption that often overwhelms individuals seeking to reskill or transition to a new job. Each program meets only some of the needs of some workers. People fall through the cracks and will continue to do so in the absence of system redesign and better coordination across players.

“Over the past several decades, U.S. spending on reskilling has fallen dramatically. Federal funding for workforce development declined from a high of around \$24 billion (in 2017 dollars) in the late 1970s to \$5 billion by 2017.<sup>63</sup> In total, Organization for Economic Co-operation and Development (OECD) data indicate that U.S. spending on labor market programs (employment incentives, training, and employment services) has declined from almost 0.24 percent of GDP in the mid-1980s to just 0.08 percent of GDP in 2017 (figure 1.3).

“Spending on training also declined, from 0.14 percent of GDP in 1985 to just 0.03 percent in 2017. Average spending on training across the OECD is more than four times higher— around 0.13 percent.

“A March 2019 Government Accountability Office (GAO) report on U.S. federal education and training programs [*“Employment and Training*

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*Programs: Department of Labor Should Assess Efforts to Coordinate Services Across Programs”]* found that the number of people served by the programs since 2011 declined by about 56 percent. Downward trends in financial investment and reach are compounded by noncooperation among workforce development agencies and their constituents. The GAO report identified 43 federal employment and training programs administered across nine agencies, with substantial overlap in services and fragmentation across departments.”

The US is far from alone in facing reskilling challenges. As the OECD noted in its 2019 Employment Outlook, “In a rapidly changing world of work, adult learning systems are under strain. Skill demands have been gradually, but consistently, shifting towards a more intensive use of cognitive and interpersonal skills under the combined forces of technology and globalisation. In this context, there is an urgent need to scale up and strengthen training opportunities for adults to keep their skills up to date or acquire new ones over longer working lives.

“Low-skilled adults are likely to bear the brunt of changes in skill needs unless they can engage in high-quality reskilling and upskilling programmes. Similarly, as new forms of work emerge at the border between self-employment and employee status, it is important to ensure that this does not translate into growing inequality in access to training based on employment status.

“While some countries are better prepared than others to address these changes, all face challenges – be it on participation, inclusiveness, financing or relevance and quality of the training provided. On average, two in five adults (40%) participate in job-related formal and non-formal training in any given year, and this often only involves training for only few hours, according to data from the OECD Survey of Adult Skills (PIAAC). The figure ranges from 20% or less in Greece, Italy and Turkey to just short of 60% in New Zealand and Norway, pointing to a need for a significant scaling-up in several countries to catch up with the best performers.



“If participation in training varies widely across OECD countries, what is common to all countries is that it remains very unequally distributed. Participation is especially low amongst those most in need of new or additional skills and among the rising number of workers in non-standard employment arrangements. To give a few examples, participation by low-skilled adults is a staggering 40 percentage points below that of high-skilled adults, in the OECD on average. Older adults are 25 percentage points less likely to train than 25-34 year-olds. Workers whose jobs are at high risk of automation are 30 percentage points less likely to engage in adult learning than their peers in less exposed jobs. Only 35% of own-account workers participate in training yearly compared with 57% of full-time permanent employees.”

### **Reskilling in the Larger Context: The Slow Emergence of a New Human Capital Ecosystem**

I’ve been involved in Career and Technical Education for almost two decades, as an employer, parent, and in various volunteer roles in K-12 (secondary) education. At our affiliate, the Strategic Risk Institute, I’ve also experienced creating a course for the reskilling/upskilling market, and struggling with various government organizations. So what follows is based on personal experience, and might not be applicable in other places. But it gives

you a good idea of what the obstacles mean in practice, and why it has proven so hard to overcome them.

*Reskilling is Just One Part of the Struggle to Create a New Lifetime Learning/Human Capital Ecosystem.*

In the late 1970s, I graduated from university and joined Chase Manhattan Bank. I spent the next year in their credit training program. While that represented a very substantial investment by Chase in the development of its human capital, I received neither an academic degree nor any certification of the additional competencies I had acquired. At best, I received the “reflected glow” of the credit training

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program's reputation, and hoped that in the future recruiters would recognize its value when they saw it on my (paper) CV.

I often think about how much some things have changed since then – and how many others have not.

I think of the reskilling and lifetime learning ecosystem challenge in terms of seven questions:

- Who defines mastery?
- Who enables the development of mastery?
- Who assesses mastery?
- Who certifies mastery?
- How does a person decide which areas of mastery to pursue?
- How is a person's mastery communicated to potential employers in the labor market?

To varying degrees, all of these are broken, and powerful vested interests want to keep it that way.

### *Who Defines Mastery?*

The traditional answer was accredited diploma or degree granting academic institutions. In recent years, however, traditional academic institutions' lock on defining mastery has been supplanted by the emergence of a Wild West of certifications. For example, a 2019 survey by the US non-profit Credential Engine identified over 730,000 unique credentials ("*Counting US Post Secondary Credentials*") in the United States, of widely varying specificity and marketplace value.

In the UK and Europe this is less of a problem, as both (along with Switzerland) have implemented national qualifications frameworks with consistent definitions that include both academic diplomas and degrees and industry certifications. For example, the Strategic Risk Governance and Management Course offered by our affiliate the Strategic Risk Institute, was designed to meet the UK government's National Qualifications Framework's standards for a Level 7 (post graduate)

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“Award” course (the lowest level, based on the time required to complete it, with “Certificate” and “Diploma” courses requiring more).

In the United States, Credential Engine is an effort to entice course providers to use their standardized method for defining the significance of their respective certificates of mastery. However, whereas the UK’s National Qualification Framework is relatively straightforward and easy to use, Credential Engine’s is extremely complicated for any organization trying to get their credential listed on it. And unlike the UK, Credential Engine’s customer service (at least in our experience) is terrible. Out of frustration, we gave up on it. And I’m sure we weren’t alone.

### *Who Enables the Development of Mastery?*

Once again, in the US this has traditionally been bifurcated. Academic institutions enabled the development of mastery by paying students who took classes that led to the award of diplomas and degrees. Traditionally, this type of mastery was associated with the acquisition of a body of knowledge (and, in the case of PhD’s, its expansion).

In contrast, mastery associated with industry certifications has traditionally been more skill focused, and has been developed in multiple ways, including online courses, classroom courses at an academic institution, and in-person courses delivered on an employer’s site. These have been delivered by a range of providers, including community colleges’ “non-degree certificate programs” (which have been a growing source of revenues for them), consulting firms, specialized training firms, training affiliates of larger firms (e.g., Moody’s Credit Training courses), industry organizations (e.g., the Post-Tensioned Concrete Institute), and companies themselves.

### *Who Assesses a Candidate’s Attainment of Mastery?*

For diploma and degree granting institutions, the answer has traditionally been relative simple: “We do.” However even they have increasingly found themselves competing with independent assessment

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providers, like the College Board (AP and SAT), NWEA (MAP), ACT, the Council for Aid to Education (the Collegiate Learning Assessment), and the OECD (PISA).

For other certifications, assessment of a candidate's mastery is usually undertaken by the organization that defines it and provides the instruction and training a candidate needs to attain it. For example, the Chartered Financial Analysts (CFA) exam is offered by the CFA Institute, which also defines the mastery. More recently, however, larger organizations like Pearson VUE have begun to offer testing services in those cases where a certification has become popular, and multiple organizations are providing training.

### *Who Certifies Mastery?*

Traditionally, the answer from accredited academic institutions is "Us". You receive your diploma or degree from them, not a third party organization.

In the case of industry certificates of mastery, this varies widely. In some cases, it is the organization that defines the mastery, provides training to develop it, and conducts assessments. In the case of more popular certifications (e.g., in software engineering), the certification comes from the company that defined the mastery (e.g., Oracle or Adobe), even though many providers compete to help candidates develop it, and assessment may be provided by yet another organization (e.g., Pearson).

### *How does a person decide which areas of mastery to pursue?*

Based on the most recent data (from 2018), today in the United States 64% of high school graduates immediately enroll in tertiary learning (college). However, the United States also has a relatively high dropout rate, especially in the early years. An issue for those who remain in college is the course of study to pursue. While a growing number of initiatives are trying to provide students with better information about the economic value of different majors (e.g., *"What's It Worth? The*

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*Economic Value of Different Majors*” by the Georgetown University Center for Education and the Workforce), it is open to question how many students access this data and the extent to which it affects their decisions.

For students who drop out of college or never go at all, the situation is much worse. According to the National Skills Coalition, 52% of jobs in the United States require skills training beyond high school, but not a college degree. The challenge facing people pursuing these jobs is how to determine the economic value of and decide between the bewildering array of various type of certificates of mastery that are offered by an equally bewildering number of organizations and programs.

While this is widely recognized problem (e.g., see *“Credential Currency: How States Can Identify and Promote Credentials of Value”* by the Council of Chief State School Officers), thus far the pursuit of solutions is fragmented across states and initiatives like Skillful’s Career Coaching Corps. Our current labor market information systems are still a long way from meeting this challenge.

Another critical and hotly contested issue is the relationship between credentials and academic degree programs. In the UK, if a certificate program meets the requirements established by the National Qualifications Framework, successful participants can receive portable academic credits (under an established formula) that can be applied to degree programs at academic degree granting institutions.

This is far from the case in the United States, where academic degree granting institutions have (with a few competence-focused exceptions like Western Governors University and Southern New Hampshire University) aggressively resisted this approach. To the extent they have compromised, it is in cases where the certificate in question is earned in their classrooms (in which case, the primary result is academic credits, and the certificate is an add on).

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### *How Is a Person's Mastery Efficiently Communicated to Potential Employers in the Labor Market?*

In the case of accredited academic institutions, the traditional answer is that you may put your degree (i.e., your Bachelors in Economics) on your CV or LinkedIn profile, perhaps with your grade point average, and we will verify this credential if anyone asks.

The body of knowledge that is signified by a BA in Economics, much less the set of skills that have been mastered, is ambiguous at best. So too is the overlap between the knowledge and skill mastery signified by different degrees (e.g., the practical English major who has taken accounting classes for her electives).

Industry certifications can be equally problematic for an employer, unless the knowledge and skill mastery they actually represent is very clear (e.g., as in the case of a CPA or CFA certificate). Unfortunately, this is not the case for most certificates, whose value is likely to be overlooked by the automated applicant management systems used by many companies today.

To be sure, there are initiatives underway to improve this situation and reduce the very substantial information frictions that exist in the labor market today.

For example, the Skillful initiative of the Markle Foundation is promoting the use of skills-focused training, job-description, and recruiting practices. The US Chamber of Commerce Foundation's Job Data Exchange (JDX) project is on the same path. Those are encouraging. But both still have a long way to go. Today, our labor market information systems remain grossly inadequate even as the full force of the reskilling challenge draws closer at an accelerating pace.

## **The Current Ecosystem Has Turned Off a Surprising Number of Workers**

Research by the Strada Center for Education Consumer Insights has found that 62% of American workers prefer non-degree programs and skills training to academic degree focused courses.

But 56% of American workers say they don't have access to the education and training they want.

And 61% doubt that getting more education and training would be worth the cost.

Finally, for time squeezed workers, the current ways additional education and training is delivered don't line up with their preferred mode of receiving it: 46% prefer online, 30% in person outside of work, and 23% during work hours.

## **The Bottom Line: Will Anyone Spend Scarce Financial and Political Capital to Change the Current Ecosystem to Enable Reskilling at Scale?**

In her article, "*Davos 2020: Unpacking the Upskilling Agenda*", London Business School Professor Lynda Gratton confronted the elephants in the room:

"Behind the public pledges to help retrain workers in this new economy, there are nagging "Why bother?" questions from all the stakeholders that threaten to derail the efforts:

"Why would a company pay for someone to be upskilled when that person could walk out of the door with the newly acquired skills — and, more important, take these skills to a competitor?"

"Why should a government pay for someone to be upskilled when it is not clear that those new skills will make a positive impact on his productivity and therefore the health of the economy — particularly at a

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time when there are other competing asks, such as health care, on the public purse?”

“Why would a worker be motivated to be reskilled when she doesn’t have the time or the money and when she cannot anticipate whether the skill she’s acquiring will make her more marketable?”

### Conclusion and Forecast

Good forecasters start with base rate/reference case data, and then consider the extent to which they should adjust it given specific details about the focus forecast question.

In the United States, the history of government sponsored retraining programs over the past sixty years, from the Manpower Development and Training Act in the 1960s, to Comprehensive Employment and Training Act (CETA) in the 1970s to the Job Training and Partnership Act in the 1980s to the Workplace Investment Act in the 1990s to the Workforce Innovation and Opportunity Act in the 2010s is a generally a story of lofty ambitions, poor implementation, and disappointing results.

In contrast, corporate training programs have a much better track record over the years of reskilling employees. Unfortunately, most of them have been sharply cut back as intensifying global competition put downward pressure on revenues, the rise of “financialized capitalism” increased investors’ demands for high returns, and previous norms related to employee loyalty were eroded by multiple pressures (e.g., outsourcing, automation, more frequent M&A activity, etc.).

While a promising new education ecosystem is slowly emerging, it is unlikely (30% probability, +/- 10%) to achieve the maturity required to adequately respond to the sharp increase in demand for reskilling that will soon be upon us.

A critical uncertainty to monitor is the development much better labor market information systems that are a fundamental constraint on the speed at which the new ecosystem will mature.



Last but not least, what are the likely consequences of failing to meet the reskilling challenge? Economically, lower productivity and GDP growth. Socially, worsening inequality and anger at elites. Politically, more conflict and accelerating drift towards populist extremes on the left and right.

### **Pre-Mortem: Assume this forecast turns out to be wrong. Why could that happen?**

- Intensifying conflict with China leads to increased reshoring of production to the United States, sharp increase in demand for employees with advanced skills, and stronger government and industry support for reskilling, including regulatory or legislative action to overcome obstacles to standardization of skill-based credentials and development of national labor market information system.
- Legislation or regulation that mandates the creation of tax-exempt employee training accounts, the balance in which must be used each year for reskilling (e.g., similar to continuing professional education requirements for CPAs). These could be funded by a combination of employers and the government. However the success of this initiative would almost certainly also require standardization of skill-based credentials and development of national labor market information system.
- New entrants into the reskilling sector, like Guild Education (which plays a market-maker role between employers who want to reskill staff, providers of reskilling services, and also directly supports students in this process) develop effective approaches and overcome previous barriers to growing them to the scale required to meet the national reskilling challenge within the timeframe required to avoid substantial worsening of social and political conflict.