HR WITHOUT PEOPLE?

The Future of Work

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Industrial Evolution in the Age of Automation, AI, and Machine Learning

BY

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INVESTOR IN PEOPLE

To my co-author, who has made a greater impact on my life than any other mentor

- Anthony R. Wheeler

To Marsha, Kathleen, and Christopher

- M. Ronald Buckley

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PREFACE

Depending on the movie or book, the natural end point of artificial intelligence and machine learning is either the destruction of humankind at the hands of the machines or the general atrophy of the human body, mind, and spirit such that our bleary-eyed existence will be reduced to machine-assisted movement and a technology-enabled continuous stream of audio-visual entertainment to keep our brains occupied during waking hours. With the Internet of Things (IoT) linking every device, appliance, and machine, perhaps one day a self-aware network of appliances will conspire to rid their world of human threats while we do our laundry or reach for a cold beverage in our refrigerator – a scene ripped from *The Terminator* itself. Perhaps one day, humans will lounge all day in motorized personal chairs that carry us from our beds to breakfast to morning movie time to lunch and so forth such that we evolve into pure *id* biological masses that no longer resemble our now-distant *Homo sapiens* relatives – something the Disney-Pixar film *WALL-E* portrays. Or perhaps humans adapt and evolve to use technological advances to spur a new age of Renaissance where our creativity leads to breathtaking advancements in art, music, and literature that makes us more human than we have ever been.

Getting from where automation, artificial intelligence, and machine learning currently exists to whatever future might

exist for humans and machines will not be a simple straight-line narrative. How humans and machines evolve will change nearly every facet of human existence, including how we work – and the meaning of that work – and how work influences almost every organizing structure in the world today – companies, industries, government, societies. That span of organizing structures through the lens of human resources management is the purpose of this book. That is, automation, artificial intelligence, and machine learning will change how humans think about the role of work in their lives and how organizations – the force driving automation, artificial intelligence, and machine learning – will use their human resources management systems to influence the meaning of work, the role of jobs, and the sense of belonging that all humans derive from their work. This is the seminal reciprocal relationship between humans and work.

Yet these trends are not new. Societies became aware of automation during and in the aftermath of War Wars 1 and 2. During the 1980s, car manufacturers began to embrace the use of machines to automate portions of vehicle production. An IBM machine – dubbed Deep Blue – famously defeated world chess champion Gary Kasparov in 1997, signaling an advancement in artificial intelligence. At the turn of the twenty-first century, many economically advanced nations had entered into the *Knowledge Economy* where generating ideas and services created significantly more economic value than did making things. Terms like "human capital" emerged amid the *Knowledge Economy*, meaning that companies could leverage the cumulative knowledge, skills, and abilities of their employees to create, nurture, and sustain competitive advantages in their markets. In the *Knowledge Economy*, people mattered. Companies quickly realized that the old stereotype of human resources management as a back office, pushing papers, and only adding to a company's overhead

costs did not mesh with a globally competitive business environment. As outsourcing to lower labor cost countries became more expensive and was paired with advances in robotics, artificial intelligence, and machine learning, human capital disruption in labor markets – people – became inescapable. This is the inevitable result of the *Knowledge Economy* ceding to the reality of what some have called the "Fourth Industrial Revolution" – one that is based on automation, artificial intelligence, and machine learning.

Meanwhile, secondary, vocational or technical, and higher education have tried to keep pace with preparing students to enter a workforce that looks remarkably different from the workforce that their parents entered. Science, technology, engineering, and math – STEM – programs at the secondary/high school level have sprouted up all over the world, teaching children at younger ages new technological advances and applications. Vocational or technical training programs have heavily focused on computer and technology-based courses. Automotive mechanics work as much now with computer terminals as they do with wrenches. In higher education, "analytics" now pervades general education requirements at colleges and universities. Formerly art-based majors like graphic design now minor or double-major in marketing. Accounting programs regularly include analytics courses instead of additional tax or auditing courses.

In the United States alone, college and universities enroll over 250,000 accounting majors per year and graduate just under 80,000 students per year with bachelor and master degrees. This supply of students feeds 42,000 accounting firms, who combined employ 1.3 million accountants. An additional 300,00 certified public accountants (CPAs) work inside of corporations as opposed to public accounting firms. These figures do not include people in the workforce who do not hold CPAs or even accounting degrees but work in accounting-related jobs like bookkeepers, payroll clerks,

corporate financial analysts, staff accountants, or accountants working with non-profits or all levels of government. The broadest estimate in the United States of the number of people working within the field of accounting nears 11 million people.[1] Globally, that number soars by multiple factors.

Over the past decade, accounting firms across the globe have invested billions of dollars into automation, artificial intelligence, and machine learning technologies. While firms might have in the past outsourced entry-level tasks to low-cost overseas partners, the economics of outsourcing increasingly yield smaller cost savings when compared to what an algorithm or bot can accomplish with greater volume. Outsourcing labor still provides cost-competitive advantages in some industries, but in the accounting industry, it appears that outsourcing does not provide the same advantages. Advances in data analytics, computing power and data storage, and analytic technical skills of talented data scientists have created disruption in the field of accounting.

Over the next 20 years, 40% of basic accounting jobs will be automated. Technologies like blockchain, which automatically leaves an audit trail, change how auditing functions within firms and companies will operate. On the audit side, estimates suggest that fewer than 100 firms in the United States will be needed to handle all of the auditing work that is now done by thousands of firms.[2] Add in that many companies – some estimates suggest over 30%[3] – plan to outsource their financial functions, which includes mostly entry-level accounting job duties, within their units, and the field of accounting looks likely to significantly contract over the coming decades. At the macro level, this means that millions of accounting jobs within the US workforce will be displaced over a relatively short period of time. A classic supply and demand mismatch warily looms on the horizon. Institutions of higher education produce thousands of

graduates that head out into an industry known for high paying jobs and long careers as that industry morphs into a smaller, more analytic, more technologically driven industry. The accounting industry will be alive and financially well in the *Fourth Industrial Revolution*, but it will likely not employ nearly as many people as it now does.

These effects, of course, are not limited to the accounting industry. Artificial automation, intelligence, and machine learning will impact numerous industries. Across the entire US workforce, for instance, up to 73 million jobs – a full third of the US workforce – could be displaced by automation, artificial intelligence, and machine learning in the next 10 years.[4] Unlike previous industrial revolutions, the *Fourth Industrial Revolution* might not create new industries and jobs to replace those who are displaced. The question that this book tries to answer, in everyday business and not academic terms, is, how will the business field of human resources management – the people function – respond to these paradigm shifting changes and potential realities? We start by examining the importance of work for humans and societies that artificial intelligence, machine learning, and automation actively gainsay. We then explore how human resources management functions within businesses will adapt in the near-, mid-, and long term. Finally, we peer into a future of smaller full-time workforces where human resources management can be leveraged to potentially usher in a new Renaissance and what that might mean for people and societies. Obviously, no one can predict the future with exact certitude, but patterns and trends can be extrapolated. So, what happens to human resources management when there are no or fewer jobs? Let us start with the beginning and hopefully begin a discussion.