WHAT THE STEAM ENGINE CAN TEACH US ABOUT AI

THE PARABLE OF PERCIVAL

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between past technological booms
and the rapid development of AI, we can

GAIN VALUABLE INSIGHTS

into the potential trajectory of this emerging field.

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WHAT THE STEAM ENGINE CAN TEACH US ABOUT AI AND THE IMPACT OF TECHNOLOGICAL ADVANCEMENT: THE PARABLE OF PERCIVAL

It was the time of the industrial revolution when innovation was sweeping across the land. A man named James Watt, had just improved upon the steam engine which increased the rate at which it was being adopted. The steam engine was rapidly ushering in a new era of mechanization, transforming industries at an astonishing rate. Word reached the bustling town of Bristonville that a large textile factory was being built on the outskirts of town, powered by a gargantuan steam engine. The townsfolk whispered in awe about the wonders it promised to bring.

In this town of Bristonville, there lived a passionate and talented leather maker named Percival. Percival was known far and wide for his exquisite craftsmanship in creating a variety of leather goods. Percival's creations were unparalleled in both style and durability. The townsfolk adored his work, and his small workshop was always filled with happy customers.

Percival took great pride in his trade, meticulously hand-stitching each piece and paying attention to even the tiniest details. He believed that his traditional methods and the quality of goods he produced would forever guarantee success. Little did he know that the winds of change were about to blow his way.

Percival turned a deaf ear to the murmurs of the textile factory. He believed that his handcrafted products would always triumph over impersonal machines. He scoffed at the notion of someone trading his beautiful creations for mass-produced items. "Who would choose a soulless product over the warmth and character of handcrafted leather?" he chuckled to himself.

But as the factory's smokestacks began to billow, the winds of change grew stronger. The townsfolk, lured by the convenience and affordability of the machine-made accessories, slowly started to drift away from Percival's workshop. One by one, they succumbed to the allure of progress and embraced the new products churned out by the steam-powered contraption.

Percival watched helplessly as his once-thriving business dwindled. His workshop, once filled with eager customers and lively chatter, now stood empty and silent. The clatter of the steam engine that drove the power looms could be heard even from his window, mocking him in its relentless efficiency.

Desperate to salvage what was left of his livelihood, Percival paid a visit to the factory that had put him out of business. With a mixture of curiosity and resentment, he stepped inside, his eyes widening at the sight before him. Row upon row of machines whirred and clanged, tirelessly producing horse accessories at a pace he could never match.

A tall, bespectacled gentleman, the factory owner, approached Percival and extended a hand in greeting. "Welcome, good sir! I've heard of your exceptional craftsmanship. Please, let me show you around."

Reluctantly, Percival followed the man, his eyes wide with amazement. He witnessed the efficiency and precision of the machines, their ability to create intricate designs and sturdy constructions at a fraction of the time it took him. The factory owner explained how the steam engine had revolutionized the industry, making it accessible to more people and satisfying the growing demand for products.

As Percival bid farewell to the factory owner, a newfound realization dawned upon him. He understood that the world had changed, and he had been left behind in his stubbornness. He returned to his now-empty workshop, contemplating the many lessons he had learned.

> **"Technological advancement and its impact on the evolution of society is nothing new."**

A CAUTIONARY TALE

Percival's story is sad but serves as a cautionary tale about innovation and our ability, as humans, to change. Technological advancement and its impact on the evolution of society is nothing new. Throughout history, we have witnessed numerous instances where groundbreaking innovations have transformed society in profound ways. From the invention of the wheel to the telegraph to the advent of the internet, technology has consistently been a driving force behind societal progress.

The current era of generative AI represents yet another significant leap forward, raising important questions about its potential impact on our collective future. By examining the parallels between past technological booms and the rapid development of AI, we can gain valuable insights into the potential trajectory of this emerging field. A careful review of some of the most prolific innovations throughout history and their impact on society has unveiled three fundamental themes that have accompanied these major technological advancements.

#1. EARLY CONVERSATIONS ARE CRITICAL WHEN FACED WITH POLARIZING TECHNOLOGICAL TRANSFORMATIONS

The steam engine was a true game-changer, possessing the extraordinary power to revolutionize work, lifestyle, social dynamics, and consumption patterns. With its introduction, the world witnessed a paradigm shift in the way people lived, worked, and interacted with one another.

It acted as a force multiplier, propelling society forward by fostering remarkable advancements in the production and distribution of goods. It paved the way for a profound shift from a society reliant on animal power and agricultural practices to one driven by machine-powered productivity and industrialism. This dramatic transition was marked by the rise of factories, mechanized production processes, and an exponential increase in the scale and speed of manufacturing. It may be somewhat hard to believe today, but the steam engine was divisive. As people started to realize how disruptive it would be, two polarized opinions of thought emerged, those in favor of its rapid adoption and those cautious and concerned about its implications.

One such group, The Luddites, emerged during the early 19th century in England, primarily between 1811 and 1816. They were named after a mythical figure called Ned Ludd, who was believed to be a young weaver who destroyed textile machinery in a fit of rage. The term "Luddite" became synonymous with those who opposed industrialization and the advancement of technology.

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They consisted of predominantly textile workers, including weavers, spinners, and other craftsmen, who found themselves threatened by the rapid mechanization of their industry. Already facing economic hardships due to low wages and poor working conditions, they believed that the machines would render their skills obsolete, leading to unemployment and poverty. As a result, they organized themselves into secret groups and began a campaign of sabotage and destruction against the machines that they felt were stealing their jobs.

Other prominent figures also spoke out against the proliferation of industrialization. The Victorian art critic and social thinker John Ruskin voiced concerns about the dehumanizing effects of industrialization. He criticized the steam engine and the factory system for creating soulless, mechanized environments that he believed stripped individuals of their humanity and connection to nature. Even American writer and philosopher, Henry David Thoreau, expressed reservations about the impact of machinery and the loss of a more contemplative and meaningful existence. Prominent religious leaders and artisans also spoke out against the steam engine, saying things like *"Steam power is an unnatural force that challenges the order established by God. It is a sinful and blasphemous invention."* And *"These steam engines are dehumanizing. They replace skilled workers with mindless machines, eroding craftsmanship and individuality."*

THE PARALLELS WITH AI AND IMPLICATIONS FOR TODAY

In retrospect, it might be difficult to comprehend the level of divisiveness the steam engine brought with it. However, the same holds true today when we talk about the concept of AI. Those that recognize the potential that AI can bring and are quickly embracing it in their business models' and those who are taking a more cautionary approach encouraging more governance and understanding. Just like opponents of the steam engine spoke out, prominent current day figures are doing the same. George Hinton, widely credited as the father of AI, has voiced concerns about the potential risks and challenges associated with AI, such as biases in algorithms, privacy concerns, and the impact of automation on employment. However, many companies are moving in the opposite direction, racing to deploy AI as fast as possible. Major companies like Amazon, Adobe, Salesforce, and many others have already implemented some form of AI into their products.

History tells us, however, that these conversations are extremely important to understand the good and the bad associated with technology. Looking back at the steam engine's legacy, we can draw valuable lessons about the need for open-mindedness, adaptive policymaking, and a collaborative approach to address the concerns and opportunities presented by emerging technologies. As we navigate the current era of rapid technological advancements the experiences of the past serve as a reminder that responsible and inclusive innovation is essential to build a sustainable and prosperous future for all.

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#2. MASS DISRUPTION IS COMING. IT'S GOING TO BE UNCOMFORTABLE, BUT WE CAN EMBRACE IT

Prior to the late 1700's and pre-industrial revolution, human existence revolved around a rural agricultural society. The primary source of power was limited to animals, wind, and water. People spent most of their existence within a 15-to-30-mile radius from where they lived and worked. Their knowledge of the outside world was extremely limited. Additionally, real income had remained relatively unchanged for centuries. As populations grew, people could only produce a finite amount of goods. They were heavily reliant on the communities in which they lived and worked. Personal lives were fragile, life expectancy was short, so relying on the communities around them provided stability and assurances. Technologies certainly emerged over the years, but it wasn't until the technological advances brought about by the steam engine that began to reshape society. Things began to change rapidly as the steam engine literally began to change people's very existence.

Almost overnight artisans, craftsman and seamstresses were out of work. Displaced workers often faced prolonged periods of unemployment as their traditional occupations and skills became less in demand due to mechanization and industrialization. The rise of factories and machinery contributed to economic instability, particularly in regions heavily reliant on industries undergoing significant technological changes. The loss of income for individuals and families created financial hardships, leading to poverty, debt, and increased reliance on charitable organizations or government support. In the absence of regular employment, some displaced workers resorted to subsistence farming or engaged in informal work such as street vending, odd jobs, or piecework. Think 1700's gig economy. These alternative forms of income generation often provided meager earnings and lacked stability and security. It also forced people to migrate to urban centers in search of employment. The rapid growth of cities and industrial areas led to overcrowding, poor living conditions, and increased competition for jobs. This mass migration strained existing infrastructure and exacerbated social problems.

PREPARING FOR THE AI REVOLUTION: NAVIGATING DISRUPTION AND EMBRACING CHANGE

Although we are in the very early stages of fully understanding the disruption that AI will bring, we are already starting to see signs of displacement. In a recent survey my company conducted, we asked companies across different verticals if they had plans to use A.I. in their business and if so, what were their potential starting points. 100% of the companies surveyed said they are in fact planning to use some form of A.I. in their current operations. Of those 50% said they had plans to implement A.I. in the next 12 to 18 months, the rest indicated longer timelines. Of the group that indicated more immediate plans, 100% of them said customer service and marketing were the main starting point. Their primary motivation is to increase efficiency and cut costs.

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There is no doubt, regardless of your AI leanings, that it will have a major impact on how we live and work. Restaurants are experimenting with robotics that could eliminate front line restaurant workers and kitchen staff. Retailers are starting to use augmented reality to help customers interact with virtual inventory, further blurring the lines between the physical and digital selling world. Virtual assistants are on the rise, helping their human counterparts become more efficient and potentially eliminating generations of human assistants. Companies like Amazon are experimenting with new ways of payment including biometrics and palm scanners. The fabric of how we live and work is on the verge of being completely uprooted.

It is imperative for individuals and companies to proactively prepare for the impending impact of AI. Companies should actively engage in discussions surrounding AI, both the positive and negative aspects, to gain a comprehensive understanding of its potential. Workers, on the other hand, need to invest time in comprehending what AI is and its implications. Fortunately, our modern society has a valuable advantage that our ancestors in the 1700s did not possess - unrestricted access to information. By leveraging this access, we can equip ourselves with knowledge and insights to navigate the forthcoming societal and economic upheaval caused by AI. Embracing information and staying ahead of the change curve will be vital in ensuring a successful transition into an AI-driven future.

#3. EXPONENTIAL AND INNOVATIVE GROWTH FOLLOWS MASS DISRUPTION

History has taught us that the transition from human and animal-powered labor to machine-powered work in factories presented significant challenges for workers. Lay-offs and upheavals were inevitable during this period. However, amidst the difficulties, an interesting phenomenon unfolded. While the steam engine greatly enhanced productivity and enabled factories to produce goods at an unprecedented pace, businesses realized that they still relied on human involvement, albeit in different roles. Humans were essential for ensuring the smooth operation of the machines powered by the steam engine. Given the novelty of this technology, businesses had no choice but to explore ways to retrain workers who were previously engaged as seamstresses and craftsmen. These workers had to learn how to manage and maintain the new machines that were performing much of the work.

In response to the need for reskilling, companies swiftly embraced apprenticeship programs to facilitate the transition. Vocational training centers also emerged, providing invaluable support to displaced workers in acquiring the essential skills required to operate and maintain the machines. Recognizing the importance of collaboration, businesses forged partnerships with educational institutions, including technical schools and colleges. Together, they developed specialized training programs that aligned with the evolving industrial requirements.

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As a result, numerous individuals who had experienced layoffs found themselves embarking on a journey of learning entirely new skills, ultimately leading to fresh employment opportunities in emerging sectors. That's not all that happened. Businesses transformed. The recently disrupted textile manufacturing industry was transformed. New textile mills and factories emerged, utilizing steam-powered machinery for spinning, weaving, and other textile production processes. Companies such as Arkwright's Cromford Mill and Richard Arkwright's Masson Mills became leading textile manufacturers during that time.

Other industries saw new growth and expansion as steam driven engines changed the nature of travel. The development of steam-powered ships revolutionized transportation and led to the establishment of steamship companies. Companies like Cunard Line and P&O (Peninsular and Oriental Steam Navigation Company) began operating steamships for passenger and cargo transportation, enabling faster and more reliable travel across seas and oceans and employing thousands of people in the process. The steam engine played a crucial role in the expansion of railways. Numerous companies emerged to manufacture locomotives and develop railway infrastructure. Firms like George Stephenson and Robert Stephenson & Company were prominent locomotive manufacturers, while companies like Great Western Railway and London and Birmingham Railway operated railway networks.

Entire new lines of business emerged as well. Companies specializing in the production of machinery, engines, and other industrial equipment emerged, providing support to various sectors. For instance, companies like Boulton and Watt and James Watt & Co. manufactured and sold steam engines. Entire industries dedicated to the production of machinery and industrial equipment also emerged to support the evolving sectors.

AI PRESENTS RICH RESKILLING OPPORTUNITIES WHEN WE EMBRACE CHANGE

As we enter the era of AI, similar transformations and opportunities can be anticipated. Just as the Industrial Revolution led to the emergence of new jobs and lines of business, AI is already beginning to shape our society.

From positions focused on communicating with AI systems to roles in AI ethics, data analysis, and human-machine integration, the early stages of AI showcase the kind of work that will be essential in an AI-based society. Embracing these new opportunities and adapting to the changing technological landscape will be crucial for individuals and businesses alike.

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EMBRACING CHANGE

Undergoing significant change, especially on a large scale, can undoubtedly evoke fear and uncertainty. This sentiment is echoed in the multitude of news articles highlighting the forthcoming impact of AI on our society. While it is natural to feel apprehensive, it is crucial to prioritize preparedness. Fortunately, our contemporary society benefits from unprecedented access to information, right at our fingertips. Both companies and workers would be wise to leverage this wealth of information to gain a deeper understanding of the imminent transitions that lie ahead.

History is clear about what we can expect with major technological advances. By proactively seeking information and fostering a comprehensive understanding, we can equip ourselves to embrace the future shaped by AI with greater confidence and adaptability.

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As the CEO of A Closer Look, I lead a company that provides clients of all industries with robust data about their first-hand customer experiences, so they can provide a brand-loyalty building experience to everyone who interacts with their brand. My experience in helping businesses iterate and improve their customer experience spans nearly three decades, including various leadership positions in retail companies known for phenomenal brand loyalty.

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