



HOW TECHNOLOGY IS SHIFTING THE WAY WE WORK

Ways AI, Machine Learning and Big Data are
Transforming Both Work and Workplaces

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The Role of Technology in Shaping a Brighter Future

With an introduction by Legion CEO and Founder Sanish Mondkar

INTRODUCTION

As technology continues to advance, long-standing blue-chip companies who fail to innovate can expect to see their market capitalization fall steadily. One need look no further than Kodak, AOL or Blockbuster as textbook examples of behemoths that witnessed the steady erosion of their customer base as they failed to embrace technology.

Today companies need to view technology not only as an enabler to deeply understand customers and streamline processes but also as an agent that changes the nature of work itself. With the majority of the workforce now comprised of Millennials and Gen Z, providing the right day-to-day tools that not only help you run better but also engage employees is critical. We created this eBook to explain this transformation and suggest how it looks in the future.

The book opens with a seminal article from The Harvard Business Review twenty years ago defining a point where we will move from a product and services-led economy to the experience economy, and how this shift prompted a transformation in the workplace that remains in progress today.

Chapter two features an article on Millennials and Generation Z, two technically-savvy generations that have different needs than previous generations of hourly workers, particularly in this era of high employee churn and questionable engagement.

Chapter three explores artificial intelligence not as a displacer of jobs but a creator of new opportunities and looks at the ways technology can enhance our daily work lives while chapter four examines shifting trends in retail including the new era of omnichannel that blends online and offline experiences, and discusses the technology and skill sets needed.

Chapter five discusses machine learning in the workforce and how it enables a new level of accuracy. We close the book with a case study, in chapter six on how Philz Coffee and Legion have partnered to apply AI for a happier, more productive team at Philz.

We hope you enjoy reading our eBook and find valuable insights that can help you understand the practical applications of technology like AI and its ability to improve work for all.

Sanish Mondkar

Founder & CEO, Legion Technologies



CHAPTER ONE

The Brave New World of the Experience Economy

Twenty years ago, Joseph Pine and James H. Gilmore published an influential [article](#) in the Harvard Business Review titled “Welcome to the Experience Economy.” They asserted that staging compelling experiences would become the next competitive battleground for leading-edge companies and that economic value progresses from commodities to goods to services to experiences. Their paper was seminal because time has proven them right and the battle to provide the best experience has begun.

Their article on the experience economy explained how we were entering into a new era of delivering value:

“As services, like goods before them, increasingly become commoditized—think of long-distance telephone services sold solely on price—experiences have emerged as the next step in what we call the progression of economic value. From now on, leading-edge companies—whether they sell to consumers or businesses—will find that the next competitive battleground lies in staging experiences.”

WHAT WE CAN LEARN FROM APPLE

In [an interview](#) with Carmin Gallo, author of the book “The Apple Experience: Secrets To Insanely Great Customer Loyalty,” Zendesk noted that the “Apple Store is the most profitable retailer on the planet. It boasts the highest revenue per square foot of any retail store, averages more than 20,000 visitors a week and consistently earns accolades for its customer service.” Apple was nearly bankrupt in the late 1990s but

wisely realized that their customers wanted an “Apple experience” not just gadgets, and launched the Apple Store at a time when traditional electronic stores were going bankrupt, and everyone assumed people would switch to buying electronics exclusively online.

The store is an experience itself, where “sixteen thousand learning sessions are held weekly in over 500 Apple stores globally – covering diverse areas including photo and sketch walks, music labs, kids hours and coding,” according to [Forbes](#), and surveys are conducted to gauge how customers feel rather than rate their customer experience. The Apple Store experience is central to the success of the largest company on [the planet](#).

Companies born in the midst of the experience economy designed their entire customer journey around experiences and are happily reaping the benefits of the economic value of experiences.

Companies born in the midst of the experience economy designed their entire customer journey around experiences and are happily reaping the benefits of the economic value of experiences. Just look at Lululemon, designed around experiences from the ground up, thriving on the loyalty of customers who keep coming back. In July, they opened a flagship store in Chicago, according to [Footware News](#), complete with a couple of workout studios that offer classes throughout the day and a cafe that sells coffee, smoothies and other food items. Surely this experiential approach is working, as Lululemon expects sales to reach \$4 billion in 2020.

EXPERIENTIAL RETAIL: PEOPLE ARE KEY TO ‘STAGING EXPERIENCES’

No matter how cozy and inviting a store is, the “staging” of the experience is ultimately delivered by people. Successful retailers who have figured this out, invest smartly in ensuring their people are motivated and energized. “Happiness” has gone from a “feeling good” afterthought on the fringes of management theory to the central ingredient of the experience economy.

Influential business schools, such as the Stanford Graduate School of Business, conduct extensive research on the science of happiness and train their students on the importance of it in a successful business. One of the school’s research studies – [The Psychology of Happiness](#) – is centered around the premise that “there is a strong correlation between happiness and the experience of meaning,” asserting that happiness can be objectively measured over time in the workplace.

REALIZING ECONOMIC VALUE

Pine and Gilmore wrote that the “question, then, isn’t whether, but when—and how—to enter the emerging experience economy.” Companies like Legion, formed in the age of AI and machine learning, have been designed from the ground up to enable the transformation of the experience economy. Since much of the experience economy depends on the right staff, precise definitions of tasks and skills—from top-performing employees to those who are exceptional merchandisers—must be factored into any labor model. The good news is that automated technology like Legion matches tasks, skills and employee preferences to business needs so, ultimately, consumers who value experience as much as they value your products and services, continue to be loyal.



CHAPTER TWO

Millennials, Gen Z and Emerging Workplace Needs

MILLENNIALS ARE IN CONTROL

Millennials, born between 1981 and 1996, who were children when the Harvard article on the experience economy was written, are now the people delivering and receiving the experiences. They have a different outlook from the generations that preceded them, preferring experiences to things. Professionally they want to participate in meaningful work completed on their own schedules. And, they also make up the largest segment of today's workforce comprising 35 percent of it per [Pew](#).

Millennials demand control of their lives and value flexibility over certainty.

No wonder why companies started by millennials include services that focus on the experience and put customers and employees in control, such as AirBnB and Uber – two enterprises that completely disrupted industries within just a few years of being created and allow for “on demand” and transparent experiences.

Millennials are a generation that does not see work as separate from other activities in life that give meaning.

In an interview with [Wired](#), Alanna Cotton, head of mobile computing at Samsung, connected the future of technology to the way millennials see work. She depicted a world in which “Virtual and augmented reality, artificial intelligence, the internet of things and 5G will soon give us unimaginable freedom, even empowering doctors to help perform remote surgeries from afar,” adding that “People want flexibility in their work just like they have in their personal lives,” and referring to some of the features of their smartphones as a “truly mobile solution that allows you to work and

If Millennials came of age during the internet era, it could be said that Gen Z did the same in the social and mobile era.

be creative on the go — taking your career and life to the next level.”

Freedom is exactly what millennials demand. Freedom to work from anywhere. Freedom to work when they want. Freedom to demand corporate responsibility along with any job offer. Arguably, no other generation in recent history has forced such a radical

transformation in the workplace.

And today millennials are no longer in the entry positions; they are the managers and entrepreneurs creating the type of companies that reflect their vision of the world.

Gen Z on the horizon

With 61 million new possible employees entering the workforce, it's time for companies to start thinking about Generation Z, those born after 1996. If Millennials came of age during the internet era, it could be said that Gen Z did the same in the social and mobile era. The good news for employers of hourly employees is that Gen Z is more about the work experience and less about [benefits packages](#), per CNBC. By 2020, this generation will represent 35 percent of the overall workforce.

“The top thing Gen Z looks for is a fun place to work, with a flexible schedule and paid time off also ranking high. But while they want to have fun, that doesn't mean they're not serious,” said Denise Villa, founder of The Center for Generational Kinetics. Gen Z is not afraid of working hard, and they want to deliver value. They also are used to having their smartphones attached to them and their “always-on” lifestyle; thus tools like mobile apps for chats with bosses and peers play to this lifestyle.

For Gen Z, the social-media-savvy generation, it's about connections as work. "They want buddies and friends, which goes against everything you're taught in management class. They want to be socially connected with everyone. They want to be socially connected with their boss as well," says the CNBC article. Hint: they also like things like short, YouTube-style how-to videos.

Gen Z is more concerned with financial security than past generations, with many young people starting to save early and avoid the mounds of student debt Millennials accrued.

According to [Entrepreneur](#), "These digital natives are looking to get ahead in the workplace by leveraging technology and collaboration strategies." So don't expect them to have patience for on-premise software or a slow internet connection. Instead, try to mimic those tools they use in their daily connected life.

Employee engagement the new black
With unemployment at historic lows, and a workforce that doesn't expect to be at a company for 20 or even 10 years, the question of how to attract and, importantly, retain employees, comes to the forefront. More than just a buzzword, employee engagement is defined as employees who are "involved in, enthusiastic about and committed to their work and workplace," according to [Gallup](#). But what is the secret ingredient to employee engagement?

Anything from a shared corporate vision to collaboration opportunities can contribute to employee engagement but one important consideration for Millennials and Gen Z is the use of mobile apps. "As most employees these days stay connected through their smartphones all through the day, mobile connectivity plays an important role in driving efficiency and productivity. A mobile app as a communication

channel among employees just helps everyone stay in touch and tuned." says [HR Technologist](#).

As mobile apps become commonplace, more and more functions like employee scheduling and time cards are being pulled off the manual, paper-based stockpile and moved onto apps with the added benefit of engaged employees who, in the case of scheduling, feel more empowered when their preferences and free time are honored. Apps like Legion, which allow for things like shift swapping, working at multiple locations and "pick-up" shifts that can be added at the last minute keep the emerging workforce engaged and accommodate their needs for empowerment.

NEW APPROACHES REQUIRED TO DELIVER EXPERIENCES

The authors of the Harvard Business Review article wrote "the transition from selling services to selling experiences will be no easier for established companies to undertake and weather than the last great economic shift, from the industrial to the service economy."

Mobile apps enable younger workers to have the flexibility and control they demand, propelling them to stage the compelling experiential retail experience needed for competitive advantage.

AI applied to workforce management goes beyond simply matching "demands." It enables things like predictive analytics that precisely forecast how much labor is needed in 30-minute increments, factoring in weather, local events, and even social media chatter for each store, shop or outlet. Legion uses machine learning to do this, with continuous tweaks to the model, delivering levels of forecasting precision that are not possible with traditional programming. The employees responsible for creating compelling experiences benefit from predictable schedules, flexibility and easy-to-use mobile engagement tools.

CHAPTER THREE

AI, Displaced Fears and the Eimination of Cumbersome Tasks

The future of work is a hot topic now. Experts in all fields that touch the workplace regularly give their opinions on the transformation that is being driven by automated technology such as AI that enables machines to do much of the manual work we humans do now.

“Is my job going away?”

[McKinsey](#) dives into the implications that robotics and AI will have in the future of work in “Technology, Jobs, and the Future of Work.” Specifically, the displacement notion that inevitably comes up when predicting the effect of technology on work.

Displacement fears have never been realized. A couple of years ago, [Techcrunch](#) wrote that “Robots in the workforce present an opportunity to stimulate job growth and create new types of work. Robots will not merely take jobs, they’ll also create them.” As Techcrunch asserted, machines have created more work opportunities than they have destroyed. “From the invention of the wheel to Gutenberg’s printing press,” Techcrunch noted, “humans have innovated

and adapted to new technologies throughout history. And for just as long, there have been concerns about how new technologies would affect laborers,” and these concerns have always proven to be exaggerated and inaccurate. This assertion is much more in line with historical precedent regarding technology than the current hype surrounding how AI will make us obsolete. Techcrunch provides this example:

“In each case, these technologies led to new industries and jobs. The invention of the printing press in 1440 allowed the mass production of books, leading to jobs to manufacture books, transport them, market them and sell them. Print shops sprung up. The fall in printing costs led to newspapers. Yes, the printing press put scribes out of business, but new jobs were soon developed to take their place.”

In fact, there is no precedent in history where technology has created waves of jobless people. “Disruption is an opportunity as well as a challenge—given the promise of digital talent platforms and new options for independent work,” says McKinsey.



The advent of machines during the Industrial Revolution, which automated many tasks previously done by people, did not create a massive unemployment crisis.

To the contrary, machines created more jobs, a trend that has continued for two centuries, and took over repetitive, dangerous and de-humanizing work previously

completed by people. In a similar way, fears about AI taking over jobs to eventually render us all obsolete are based on the faulty premise that the nature of work is static and unevolved.

Automation back then coincided with a new generation of workers who were better educated than their ancestors. An article on the lasting effects of the Industrial Revolution, [The Future of Working](#), identifies more efficient production, cheaper prices, major increases in job opportunities, spectacular motivation, and improved quality of life. All of these together resulted in unparalleled progress which the world had never seen before. Paradoxically, the steel monsters that many saw as de-humanizing work eventually made it more human.

What's happening today with AI follows this premise. It is truly transforming work but not in the apocalyptic sense that makes for catchy headlines. For perspective, machine learning, which is driven by AI, is being applied

to make work a better place, not a human-less one because it mimics the human brain to learn from data and identify patterns and anomalies with minimal human intervention, enabling humans to focus on more strategic or creative tasks. It can also enable levels of personalization that were previously not achievable.

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By replacing repetitive jobs in retail, supplementing what humans can do with augmented reality in manufacturing, and eliminating manual processes like employee scheduling via AI-powered labor management, AI creates opportunities for the work of the future.

Such is the case with the work we do at Legion where AI lets companies and their hourly employees find a match for their objectives, allowing both to have

their cake and eat it too in a fraction of the time it used to take to predict staffing needs, ensure scheduling preferences are considered, incorporate labor and compliance standards and generate schedules.



CHAPTER FOUR

The Era of Omnichannel Retail

Retail has never been as complex as it is today. For the past twenty years, technology has brought wave after wave of transformation to the industry. The first sign of this transformation was the rise of the internet and e-commerce, which many wrongly predicted would take over brick-and-mortar.

The internet also brought a wave of innovation to stores themselves. With connectivity came technologies like personalized cashier coupons, loyalty cards providing more than just discounts, sophisticated point of sale systems, and traffic counters. Connectivity allowed stores to streamline previously complex tasks like managing inventories and targeting offers to consumers.

Next came mobile shopping and stores were disrupted again by technology. The ghost of the irrelevant brick-and-mortar came back as retailers tried to figure out how consumers with 24/7 access to one-click purchasing would impact them. Again, the predictions of doom for physical shopping were proven wrong. The experience economy emerged and doom only befell those that lagged behind with un compelling experiences. According to RetailNext, 75 percent of shoppers still want an in-store experience. And, brick and mortar still make up [90 percent](#) of all retail sales. The name of the game is creating a blended but consistent experience— whether online or in-store— that showcase a brand's unique identity. From sales associates to customer support, those that represent

your brand should be trained on its core values and enabled with the latest technology.

IT'S ALL ABOUT THE EXPERIENCE

An article in [The Drum Network](#) recognizes the value of innovation in the new technology-driven experience economy. "In reality, retailers are learning to innovate – looking at new ways to engage with audiences and understand the changing consumer dynamics that are determining the way they shop." Retailers do not need to be futurists to predict the failure of retailers like Sears or similar stores that never embraced the experience economy.

Showcasing your products is no longer enough to attract the attention and the loyalty of shoppers, just like offering a job is not enough to attract and retain great talent. You must shift your mindset from 'shoppers' to 'guests' and from 'employees' to 'hosts.' You must also realize that both experiences begin far from your store and on a mobile device. When people walk into your store, either to shop or to work, they are simply continuing a journey that began online.

Today we are seeing the rise of digitally native, vertically integrated brands (DNVBs) that were born online and expanded to brick and mortar outlets. According to [Retail Dive](#), over 850 such outlets are expected to open in the next five years with online retailers take a cue from brands like Casper and Glossier.

And let us not forget about the experience of ordering online and picking up products in store. Retailers like Macys, Best Buy and Walmart offer this service. Staffing models need to factor in what's required to meet these increased demands. For the job of the

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sales associate has never been more crucial; nor is it going away in this era of automation. A [Mindtree](#) survey found that good service from a sales associate can boost transaction value by 80 percent. Consider aspects like returns from customers who may have purchased online at Nordstrom yet go to the store for an exchange. Plus, considerations like planning cut-off times for online orders should be factored. While this is more

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applicable for coffee shops and restaurants, staff and peak period considerations must be part of your calculation to avoid a poor and unerasable customer service experience.

The good news is that AI-based solutions like Legion can factor in 100s of data points to generate predictive scheduling—factoring in anything from exchanges to in-store pickup peak periods—so brick and mortars can account for activity and transactions that originate online and end up in-person.

Getting transformed alongside the industry No matter how you see it, consumer retail has been permanently transformed. A new generation of tech-savvy employees and shoppers has taken over. They want great, technology-enabled experiences both at work and when shopping. Riding on the transformation will be easier and faster for you if you keep in mind that the right technology, applied to your shop, store or gym, makes it easy to embrace and delight employees and consumers alike.



CHAPTER FIVE

AI Applied to the Workforce

Despite the dire warnings from some of humanity's brightest minds, every startup worth its VC funding seems to have a checkmark for Artificial Intelligence (AI). Yet software that helps your car navigate does not necessarily run on AI, and automation has been central to software code for decades.

Machine learning (ML) is a more precise description of what we do at Legion, specifically applied to scheduling and labor forecast models, which means that machines can analyze vast amounts of data, group patterns and anomalies, and learn from them so results continually improve.

MACHINE LEARNING, APPLIED

ML is behind some applications people use every day, including speech recognition. Before the advent of this technology, recognizing and reacting to speech was a difficult task for computers. From different accents to words that mean different things within different contexts, computers could simply not be programmed to deal with the real-world nuances of language. ML changed all that: rather than programming computers with all possible variations in speech, they were programmed to learn and reprogram themselves based on their findings. Soon enough, applications like Apple's Siri and Amazon's Alexa became useful, and continue to get better as they interact and millions of users talk to them every day.

Practical applications of ML at work mean you have 'evergreen' systems that help you make sound decisions in a dynamic business environment. ML-enabled technology can help you find patterns and connections in data that were not necessarily there—or were difficult to see with the naked eye.

Traditional labor models were created by looking at a single dimension: historic sales. But when we add external data—store promotions, the weather, nearby events like street fairs, and so on—we're talking about a different problem that makes machine learning techniques more useful and underscores just how difficult it would be for a human to factor in these myriad data sets for each location.

LOCATION-SPECIFIC FORECASTS ENABLED THROUGH MACHINE LEARNING

"If I'm the manager of one store, I might be able to, as a human, do as well as or even better than some of these algorithms, because I know deeply how these things work since I've studied it over many, many years," says Thomas Joseph, head of data science at Legion.

"But if you want to scale out to multiple locations, it in a repeatable, consistent way across your whole organization—if you've got a hundred stores or even a thousand stores or ten thousand stores—you can't trust every single store manager to do a good job. We're trying to say, 'How do you take your best managers and replicate them?'" says Joseph in speaking of ML's ability to draw complex correlations.

At Legion, we more than 50 machine learning models with our clients' data—from the familiar Linear Regression (based on prior observations of a data set) to the more intricate, like Random Forest (which helps build predictive models) and Neural Networks (modeled after the human brain and built to recognize patterns)—for the simple fact that all data are not created equal.

"Each location has its own pattern of traffic, things happening nearby, whatever—everything is different. I need to take into account all the nuances of each

location. So you've got to be able to do this not just in a scalable, replicable way, but also in a very localized way," says Joseph.

Each Legion model learns from local data to avoid a one-size-fits-all approach. A store in Portland is not going to learn from data in San Francisco.

Each Legion model learns from local data to avoid a one-size-fits-all approach. A store in Portland is not going to learn from data in San Francisco. It's much more relevant and accurate to learn from the Portland area. This location-specific granularity gets difficult if you are doing it manually.

The other factor in the labor demand equation that benefits from machine learning is productivity measurement. What is driving the need for labor? Is it cups of coffee, units of clothing sold, total sales by hour? We first start with an assumption for the forecast, then gauge how accurate that assumption is.

"If I predicted 500 cups of coffee to be sold, and 520 cups were sold, I can see how accurate I was on the demand side. I can do the same for labor: I predicted 500 cups of coffee, which translated to so many hours of labor, and actually, 520 were sold — how many hours should that have been?" says Joseph.

With machine learning, you can put in these actuals versus the forecasts to retrain the forecast model and improve it over time. Legion developed an algorithm that automatically selects the best-fit machine learning model for ongoing forecast accuracy. During the model training and evaluation period, we separate the last few weeks of data into a validation dataset and train each of the candidate models against the remaining data. Each trained model is then used to make a forecast for the weeks in the validation dataset. The predictions of each model are then compared against the actual values in the validation dataset. We then select the model that performs best on a criterion that balances both actual and absolute error.

The cost of under and over forecasting is not always straightforward but we know this: it only takes one poor impression to make a customer not return.

When it comes to overstaffing, you simply take the scheduled person's wage and multiply it by the hours s/he was going to work. "It's much harder to quantify the cost of under-forecasting, which may come with the loss of sales or customer satisfaction," says Joseph, who says that most people reverse the overstaffing for under forecasting. Though not exact, it's a place to start.

With Legion machine learning, 98 percent accurate forecast models for labor can be generated. The other offshoot of this is one-click scheduling where employees input their preferred shifts into an app and Legion matches the demand forecast with these needs via a single click. Employer policies, labor regulations and other constraints are also factored. This type of complex computation, with high degrees of accuracy, would not be possible through manual means or spreadsheet-driven formulas. Machine learning is enabling an entirely new level of accuracy and prediction.

BEATING HUMANS IN TEXAS HOLD-EM

Consider poker, categorized as a game of [skill](#) rather than luck, with imperfect and always-changing information, can be "beat" through machine learning. Consider [DeepStack](#), which beat human players in a no limit game of Texas Hold'em. The very best poker players can remember a select number of games to learn patterns but machine learning can apply things like recursive reasoning to inconsistent information and even mimic "intuition" for each hand played by relying on deep learning to "get smarter" from continued play. It's clear from such cases that we are only scratching the surface of what's possible with machine learning.

Machine learning surfaces complex relationships between various datasets so companies can accurately forecast their demand. With an accurate forecast, employers can then solicit and incorporate employee preferences and determine the optimal schedule across hundreds of thousands of potential outcomes. While optimization at this scale is impossible for humans, machine learning can complete this task in seconds.

CHAPTER SIX

Philz: An AI-driven Workplace

If you want to hear the sound of happy employees, just walk into any Philz Coffee in the country. Their busy baristas cheer on each other, ask you to make sure the coffee they just made for you is perfect, and every half-hour or so clamor in unison throughout the store. Philz mission of “bettering people’s days” starts with bettering their employees’ days. This is where Legion investor Maynard Webb found the perfect intersection between Legion and Philz.

PERSONALIZATION BROUGHT US TOGETHER

In a [Medium article](#), Maynard wrote how he saw in Philz CEO Jacob Jaber a “total mind meld,” over our view of the world: “personalization,” was exactly what we had that could help each other. The story of this rapidly expanding coffee chain began, in their own words, “with a dream to create a really great cup of coffee personalized for you,” while Legion is all about creating highly effective and happy workforces by easily

personalizing their hourly schedules. It was with Philz, and the goal of bettering hourly workers’ days, that Legion took shape.

Maynard says Jacob’s team and Legion used seven of their stores as a pilot and spent countless hours together so we “could learn about patterns that would enable them to forecast future work schedules and automate the process,” to code it into Legion’s machine learning algorithms. As with most coffee chains, restaurants, retail shops and businesses that hire people by the hour, this was a big, hairy problem for Philz. It was also the perfect problem for which to apply AI and machine learning since frustrated baristas can’t easily advance Philz mission of bettering people’s days.

LEGION AND PHILZ LET HOURLY EMPLOYEES OWN THEIR SCHEDULES

It didn’t take long to create a system that empowered Philz hourly employees to feel they truly owned their schedules, and for their managers to remove the



tedious task of coordinating everyone's schedules and focus on the same goal of bettering people's lives. In Maynard's words "while it's not unusual for startups to do a beta with another company, it is unusual for the CEO of that company to be the one to invest immense personal time to develop an idea and even help launch a new product that is not their own. It's even more unusual to have the CEO champion the product and quickly deploy it enterprise-wide."

As Legion worked to automate Philz labor forecasting process, Legion's machine learning learned from Philz internal data on sales, transactions, SKUs sold, and even store traffic. In addition, Legion learned that data from other sources influenced Philz forecasts—anything that influenced people's desire for a cup of coffee, from local events, the weather, and holidays—was an input for Legion. Quickly, the system identified and applied patterns that store managers were not even aware of, resulting in easy and accurate scheduling and forecasting that 'magically' took care of everyone's interests, constraints and goals. Philz employees engaged through the Legion app so they felt empowered by being in control of their time while their managers left it to Legion, and only fine-tuned schedules based on their personal know-how (these tunes are then factored into the machine learning model).

Today, Philz uses Legion's machine learning platform in all their stores to predict demand, compute optimal labor needs and perfectly match employee wants with business needs. It's used by thousands of hourly workers

and their managers, in hundreds of locations, to make hourly work easy so companies can focus on delivering their products and services and remove the common burdens of labor management.

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"Over the past year, we compiled data from employee exit interviews and found that 30–40% people quit because their schedule no longer worked for them," said Philz CEO Jacob Jaber in [Medium](#). "Now, with Legion's technology, we have a real-time awareness of staffing needs and employee availability, allowing us to optimize for the business and our Philz community."

IT'S NOT THAT COMPLICATED: TRUE ENGAGEMENT MAKES EVERYONE HAPPIER

The result of Legion's collaboration with Philz is what you see and feel when you walk into any Philz location: happy employees and store managers, focused on bettering customers' days, knowing each hour of work is maximized to benefit customers and producing a really great cup of coffee exactly the way they want it.

CONCLUSION

An Evolved Workplace

“Technology goes beyond mere tool making; it is a process of creating ever more powerful technology using the tools from the previous round of innovation.”

–Ray Kurzweil

You're not alone if you feel the pace of technological change has increased in the past couple of years. With the rapid rise of intelligent machines, inexpensive and almost infinite storage, supercomputers, readily shared open source code and a host of other factors contributing to the next wave of innovation, the pace can be dizzying.

We started this eBook with examples of laggard companies like Blockbuster and AOL that failed to keep up with the pace of technological change ..executives who worked at these enterprises undoubtedly think “woulda, coulda, shoulda.”

There's no crystal ball that will predict the future but it is time for organizations to rethink age-old processes and envision ways to automate cumbersome tasks while at the same time keeping employee engagement top of mind. We shared the example of AI beating poker players in a game of Texas Hold'Em, a game with seemingly endless possible outcomes. If

AI can recognize complex patterns are invisible and undetectable to the naked eye, it's clear that mundane tasks like employee scheduling and labor demand forecasts should be automated. Organizations should rethink every facet of their organization and ask “what can we automate?” to open the doors for new innovation while redefining what a well-run organization looks like.

Today's younger generations expect a similar experience with technology in the workplace that they have in their daily lives; intuitive and easy to use applications that don't require extensive training to use. Legion delivers that experience in the form of mobile apps that allow Millennials and Gen Z to indicate their scheduling preferences and tools that are capable of complex computations but offer insight and simplicity at the same time. Don't rule out older generations that see the future as a bright one where automation can enhance and not detract from daily work life to enable more strategic thinking and less repetition. No matter where one falls on the generational spectrum, one thing is clear: new technology will bring unprecedented levels of efficiency for the workforce. The time is now to embrace it.

LABOR FORECAST MODEL



MACHINE LEARNING IN ACTION

Many organizations manually generate labor forecasts using time-intensive methods like spreadsheets or use solutions that require manual configuration. Legion automatically generates labor forecasts based on demand driver data obtained through integrations with our customers, down to 30-minute increments, by customer and by location.

Legion takes into consideration both the positive and negative effects of local events, holidays, and extreme weather changes when generating forecasts, identifying all venues within a one-mile radius of the customer's store. All events occurring at these venues are automatically taken into consideration when calculating the past and future impact of similar events. Impact on demand before, during, and after the event can be identified as seen in the example above.

MODEL TRAINING

Each time a new location is onboarded, Legion performs an automated model selection step for that location. This step evaluates several potential machine learning models against the initial dataset and picks the one that yields the best results.

The set of potential models includes over 50 models that use different machine learning algorithms as well as different feature sets.

We evaluate the best performing model and then continually monitor real results versus forecast projections to retrain the ML model and continually improve forecasts.

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