The Digital Roadmap to a Frictionless Distributed Workforce

Emerging technology is elevating the employee experience

Mission : Data

Overview

Digitally-enabled workers are the driving force behind superior customer service, and frictionless workflows are key to exponential growth in productivity and profits. This calls for bold vision and a new strategic roadmap.

This paper includes the most recent research on the state of the modern workplace, an overview of emerging technologies in the workplace including specific case studies from Mission Data clients, best-practice strategies for creating a technology roadmap, tips for calculating the ROI of new technologies, and recommendations for implementation and success.

Introduction

In recent years, organizations have made a concerted effort to improve the customer experience. A data-driven approach, customer journey mapping, and omnichannel experiences are all considered crucial steps to meeting customers' needs and exceeding expectations. Meanwhile, less priority has been placed on elevating the experiences of the people behind those customer interactions—the employees. According to Gallup, only 32 percent of employees are engaged at work, yet companies with highly engaged workforces outperform their peers by 147 percent in earnings per share[1].

As workplaces become more digitized and workforces become increasingly distributed, today's business leaders must provide frictionless workflows to establish consistency, spark efficiency, and provide optimal customer service—their financial performance depends on it.

What do we mean by frictionless? Frictionless indicates an instinctual and appropriate interaction with technology. Broadly, a frictionless workflow supports micro-moments, described by Forrester Research as: "Simple triggers — messages, sounds, even tactile sensations — spur users to take action, both on devices and in the real world.[2]" For employees, this means making sure that the digital tech they use in executing their duties is natural to the tasks or decisions of their micro-moments.

In addition to mobile and SaaS solutions, leading companies are looking at newer technologies as they transform the manner in which their workforce engages. Voice-activated interfaces, the Internet of Things (IoT), augmented reality (AR), wearable devices, and artificial intelligence/machine learning all have significant potential to optimize workers and upgrade efficiency, productivity, and safety. These technologies are becoming more commonplace in the enterprise as they represent more cost-effective digital transformation solutions than other highly touted tech such as robotics.

For business executives and IT leaders, managing the selection, integration, deployment, and on-going performance and maintenance of new technology is a daunting prospect. They will have to develop a change management program to help employees

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Frictionless indicates an instinctual and appropriate interaction with technology

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grow comfortable with new hardware and software platforms. Yet, the time for companies to take the leap is imminent. Organizations that fail to forge a frictionless path for their workforce may risk loss of key growth opportunities.

Not sure where to begin? Mission Data is passionate about helping clients navigate the future of work by finding practical solutions that create real business value. Whether your organization is developing a proof of concept or considering a major system-wide implementation, Mission Data can guide you toward greater efficiencies for years to come.

The Evolution of the Way We Work

In developed nations, our collective understanding of the workplace has been redefined by waves of technological innovation. From the steam era to the industrial revolution to the computer age and most recently the Internet age, the way people work has evolved irreversibly to the benefit of both businesses and workers. As we begin 2017, we are in the midst of what Klaus Schwab, founder of the World Economic Forum, calls the "Fourth Industrial Revolution." Characterized by technology that blurs the lines between physical and digital, biological and artificial, this new era is fundamentally changing the way we live, work, and relate to each other.

We've all heard how the mobile mindset has instigated a more flexible, virtual work environment,

thanks to sophisticated communication tools, advancements in cloud computing and Internet connectivity, and the influx of tech-literate generations. Recent surveys show 24% of employed people now telecommute with some frequency[3], and a majority of them work in management or professional services.

Companies are also relying more on on-demand workers, digitally integrating talent from all over the world to increase capabilities and agility. An estimated 30 to 40 percent of U.S. workers now work on a contingent, part-time, or contract basis[4]. Work hours and location are becoming less important as companies focus on employee goals, deliverables, and information exchange.

> *Whether the workforce in consideration is salaried or hourly, centrally located or spread out, it's only a matter of time before digital communication overtakes all other forms of communication.*

At the same time, there's a broader definition of a distributed workforce that's been around for a long time. Global corporations with workers around the world or mid-sized companies with locations in several cities are relying on dispersed workforces. This includes many of the 75 million Americans working at a cash register, kitchen, factory, or job site[5]—that's 50 percent of the U.S. workforce, by the way.

Whether the workforce in consideration is salaried or hourly, centrally located or spread out, it's only a matter of time before digital communication overtakes all other forms of communication. Advances in emerging technology are making it possible to implement highly intelligent tools in work environments that boost productivity, increase accuracy, and streamline operations. Leading companies are enabling their workforces with real-time data and creating a more effective workforce that not only generates more agile employees, but more satisfied customers as well.

⦿ The Age of the Connected Worker

Technology is once again changing what it means to be a worker. According to a survey by Pew Research, nearly two-thirds of Americans (64 percent) own a smartphone[6], and with many companies well past the fear that the BYOD (Bring Your Own Device) concept is a threat to data security, mobile technology has firmly implanted itself into the workplace.

According to Gartner, employees in today's digital workplace use an average of three different devices in their daily routine, which will increase to five or six devices as technologies such as wearables and IoT eventually become mainstream. Many of these employees are given the autonomy to choose the devices, apps, and even the processes with which to complete a task. This is placing an increasing amount of pressure on IT departments to develop a larger variety of apps in shorter time frames.

Companies that are adapting to the new consumer device-driven landscape are seeing results. Of the companies that redesigned work processes to align with the use of mobile devices, Avanade found that 73 percent were more likely to report improved sales and 54 percent were more likely to report increased profits than businesses that are not adapting in this way. They were also 58 percent more likely to report improvement in bringing products and services to market.

What's more, according to Accenture, high-performing companies that have invested in collaborative tools like interactive portals and analytical dashboards have found them to be 80 percent more effective at improving productivity[7]. Forrester reports that one-third of enterprises in North America and Europe have implemented virtual collaboration tools to unify communications and overcome business and technology complexities, with an additional one-third in the planning or pilot phase.

Emerging Technologies in the Workplace

To stay competitive in the digital economy, business leaders must set the stage for innovation by breaking down barriers and embracing the opportunities that technology can bring. Managers must consider what impacts future trends and technologies will have on their businesses.

Managers should also consider their value in supporting employees that are overwhelmed with data, organizational complexity, and a 24/7 work environment. Two-thirds of companies now believe that complexity is an obstacle to business success and productivity[8]. The more employers can automate routine tasks, the more time employees will have to focus on more strategic activities.

Increased adoption of lean start-up methodology has best practice organizations streamlining the work environment and the employee experience. GE, for example, has prioritized simplification of its work processes to foster a culture of agility, inspiration, and a focus on the customer. Their approach includes mobile apps for goal tracking and collaboration.

A variety of employee-facing technologies are capable of creating frictionless workflows that lead to substantial competitive advantages. Among the most promising digital technologies transforming the workforce are:

- **Handheld devices and enterprise apps**

- **Speech recognition and voice response**

- **Internet of things**

- **Augmented reality, wearables, and haptics**

- **Artificial intelligence and machine learning**

Mobile and emerging technologies present an opportunity for organizations to re-think their processes and workflows. Why require an employee to log in location information when a device's location services can do that automatically? Why wait for paperwork, signatures, and payments to be processed manually when a device's camera can send that data instantaneously?
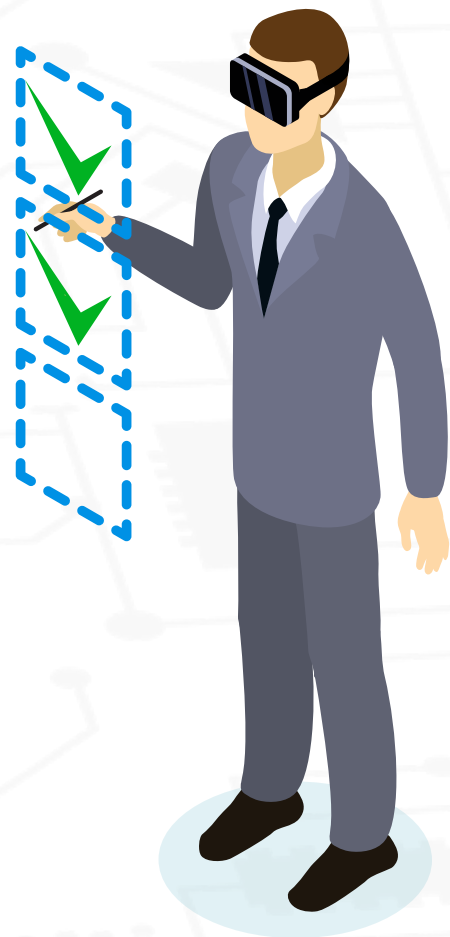
1 **Handheld Devices and Enterprise Apps**

These days, it's difficult to find a company that isn't investing in a mobile initiative. While there is still a broader functionality on the desktop, it's becoming increasingly secondary to mobile devices for work-related tasks. And yet, the nature of mobile is changing. Gartner predicts that by 2018, 25 percent of new mobile apps will talk to IoT devices. Moreover, Gartner urges organizations to prepare for the "post-app era" as they head toward 2020—expecting apps will depend less on devices and instead store more data and code on the cloud.

Today, handheld devices have a wide variety of applications in the work environment. Although they can serve in almost any capacity, they are frequently used in businesses that require employees to keep track of inventory, such as warehouses, shipping, and retail. Businesses that expect staff to communicate frequently with a central location, such as restaurant servers and busy kitchens, or field workers and their managers, may also find handheld devices useful. And industries with mobile employees, such as transportation companies, frequently deploy handheld devices for workers.

Similarly, enterprise apps designed for employees are on the rise, and the productivity benefits are boundless. Employees can submit and respond to corporate communication, complete data entry and generate analytical reports, and often, handle customer service issues, all from their own personal devices while on-the-go. Tasks and deadlines are tracked, company information such as product portfolios are presented consistently, and team members can receive push notifications for important messages and events, so that instructions and requests are synced and resources are not misused.

Mobile employee apps are making an impact on retail, where, according to Gartner analyst Kelsie Marian,

the physical store still brings in the largest portion of retail revenue — around 72 percent. Widespread research shows that shoppers still expect to have an informed, knowledgeable sales associate available when they want it. According to brand and retail consultancy Experticity, knowledge-empowered employees sell 87 percent more on the sales floor[9].

Retail associates are on the front lines of customer service and interaction, which is unparalleled compared to the online shopping experience. This presents a massive opportunity for retail brands looking to improve sales and drive customer loyalty.

Retailers are looking to mobile devices to get their sales associates out from behind the cash registers and onto the sales floor, where they can interact with customers, guide the shopping experience, look up product reviews and ratings, and check inventory on out-of-stock items in order to save the sale. Early deployments are promising, but we're just at the beginning stages of mobile's retail revolution.

Case Study: Kroger

Kroger, the nation's largest grocer, employs more than 431,000 associates who serve customers in 2,781 supermarkets and multi-department stores in 35 states. Mission Data is an ongoing research and development partner of Kroger's, focused on creating the most innovative solutions to improve customer experiences and workforce efficiencies while increasing the retail giant's bottom line. Our engineers have developed several IoT, mobile, and web-based solutions to support Kroger's mission to provide frictionless experiences for customers and employees.

ATM

Associate Task Management (ATM) is a mobile technology that streamlines store operations. Managers and Associates use handheld devices to communicate tasks quickly and efficiently. Managers can use ATM to assign Associates to specific roles or tasks, schedule automated tasks, and plan staffing resources.

This solution gives employees access to information they need in real-time, allows for faster onboarding of new employees, and it seamlessly integrates with other store monitors such as IoT solutions that are described further on page 10.

Case Study: Leading Spirits Producer

A leading North American spirits supplier with a distributed workforce hired Mission Data to build a number of digital solutions.

Brand Ambassador Portal

The spirits producer's team of sales reps (aka Brand Ambassadors) had developed an ad hoc system of spreadsheets, emails, and check-ins that was inefficient and didn't adequately measure key metrics. The team needed a modern tool to empower Ambassadors to more accurately measure productivity and give management access to critical data in a timely fashion.

Mission Data developed a powerful custom web app that brings a new level of productivity measurement, goal tracking, and detailed reporting to the Brand Ambassador program. The app's mobile-friendly design allows Ambassadors to log activity and track performance from their mobile devices while visiting

bars and restaurants. That real-time logging gives management an instant snapshot of performance of individual team members and the Ambassador program at large.

For the first time since the Brand Ambassador program's inception, the spirits producer's management can clearly track performance, costs, and ROI of the program and individual employees.

2 Speech Recognition and Voice Response

Early generation speech recognition technology was frustrating to use and often not worth the trouble of getting it to work properly. Today, advancements in deep learning through digital neural networks have enhanced language technologies, resulting in more accurate predictive and conversational interfaces.

Beyond the commonly known consumer uses, voice recognition software will play a much larger role in how we do business. Considering that the average person is able to speak around 150 words per minute (wpm) compared to typing an average of 40 wpm, a long list of administrative tasks could be executed faster with voice technology. Instead of typing out company correspondence, it can be dictated to a computer that generates flawless documents. Imagine a voice assistant in a conference room that records multiple conversations, produces meeting notes, and lists of action items.

As primary senses, speech and hearing are naturally frictionless, and as a result, voice interfaces are being used to check inventories, book meetings, check account balances, and place orders, among many uses. Impressive use cases involve those where workers need to keep their hands free, such as medical workers, assembly line workers, and drivers. Mobile workers such as field sales teams can dictate information and fetch data while on the go.

Understandably, enterprises have expressed concerns around security and confidentiality when it comes to voice technology and listening devices. However, voice recognition offers an additional layer of security—voice user interfaces are increasingly being used as a form of biometric authentication, as all voices have subtle differences, similar to fingerprints.

Case Study: Well Woven

Well Woven, a leading rug manufacturer and distributor that packs and ships approximately 1,000 orders per day, asked Mission Data to evaluate the feasibility and value of leveraging a speech-based user interface in a warehouse environment. As a proof of concept, the effort is limited to the area of inventory management.

Alexa Inventory Support Skills Proof of Concept

Given our interest in business use case scenarios appropriate for Amazon Echo's Alexa, Mission Data jumped at the opportunity to rapidly develop and test this proof of concept (POC). We developed two primary Alexa interactions--the inventory status and location of a SKU in the Well Woven warehouse. Sample commands: "How many of item 8532 are there?" "What aisle is item 549103 in?"

Mission Data implemented custom, fundamental Alexa commands to explore the voice-based technology's capability to make improvements to Well Woven's operational efficiencies. The Alexa inventory support skills proof of concept was accepted, implemented and performed as expected. This leads the way to further exploration of voice-based interaction to improve Well Woven's operational processes.

"Voice-assisted warehouse management is an exciting new direction. We're currently exploring the efficiencies and problems this capability will solve for Well Woven."

- Adem Ogunc, Founder of Well Woven

3 Internet of Things

Following the trends of increasing data availability and mobility, IoT is creating an environment where almost any device or component can be connected to a network at relatively low cost. Devices can be remotely monitored or activated, and data can be instantly distributed to other people, devices, and data stores for analysis.

Gartner predicts that there will be more than 21 billion connected devices by 2020. In the meantime, businesses are installing software, sensors, and network connectivity to take advantage of IoT's value in the workplace.

Case Studies: Kroger

As mentioned earlier, Mission Data is an ongoing research and development partner of Kroger's, and our engineers have developed several IoT solutions to support the retail giant's mission to provide frictionless experiences for customers and employees.

Fast Alerts

Kroger is installing temperature monitoring systems in its 2,781 stores to consistently uphold its food safety standards. Previously, employees had to regularly visit each case, which was time-consuming and inefficient. Using the Fast Alerts IoT solution, these units are monitored 24/7 and alerts are automatically triggered when the temperature of any one unit falls outside the prescribed limits. This allows the retailer to relocate food immediately so that it is not compromised, reducing losses associated with food spoilage.

The IoT sensors also track data specific to the types of product that are in those cases. Depending on the environmental conditions, types of products, and length of time, the solution interacts with ATM (the in-house workforce management tool that Mission Data developed for Kroger) to alert or assign tasks to the Associates. These tasks include moving inventory, removing inventory, adjusting prices, or just checking up on it all. The IoT sensors initiate actions through a network of devices directly to handhelds, monitors, and alerting devices.

Once it's finished installing the system across its stores, Kroger CFO Mike Schlotman estimates the company will save $250 million in labor costs across its nearly 2,800 stores. Kroger doesn't need people walking around checking temperatures anymore, and it can do that with an investment of less than $50 million.

Fast Alerts
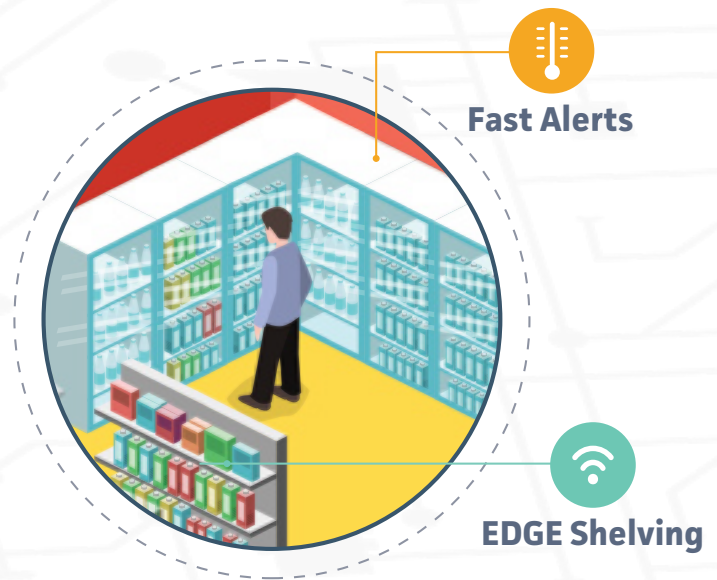
EDGE Shelving

EDGE Shelving

At a typical grocery store, paper price tags line the shelves, and perhaps some coupons stick out. At Kroger's test stores where new technologies are implemented, some 2,000 paper tags that needed periodic changing by Associates have been replaced with Enhanced Display for Grocery Environments (EDGE), a fully-integrated IoT solution. The digital displays can present pricing information, videos about the products, and other information. They also can present Associates with an indication of what SKUs should be on the shelves and where they should be presented.

## 4 Augmented Reality, Wearables and Haptics

While wearable devices also fall under the category of IoT, and most of the buzz around them has focused on consumer uses such as fitness tracking, wearables—along with haptics and augmented reality (AR)—have made their way to the enterprise. Rapid advancements in head-mounted devices (HMDs) and smart glasses utilizing biometric sensors trick the human brain into visualizing virtual images as real.

While virtual reality (VR) provides interesting use cases around worker training, overall it currently does not fit our definition of frictionless—VR is simply too disorienting and disruptive to most workflows. However, AR merges a person's surroundings with 3-D images to create a continuous view of both virtual and real worlds, and is expected to make a bigger impact on the enterprise market than VR.

AR, wearable devices, and haptic feedback all pose to make significant improvements to complex work processes such as medical procedures and equipment maintenance. Workers wearing headsets can see information overlaid directly on physical surfaces, or feel haptic feedback as they make movements, reducing errors and saving time. The start-up company AccuVein is using AR to help healthcare professionals find patients' veins faster, reducing chance of infection. These hands-free technologies also are expected to make drastic improvements to high-risk industries such as field services, utilities, and construction.

For example, workers could have their vitals tracked when performing hot work to reduce likelihood of heat exhaustion. Honeywell Industrial Safety and semiconductor producer Intel have worked together to make an IoT proof of concept geared toward firefighters and industrial workers featuring a wearable mobile hub that monitors breathing, heart rate, activity, and location, to create remote situational awareness.

GE is testing its Smart Helmets designed to connect field engineers with more experienced colleagues at its headquarters to streamline complex tasks with audio and video assistance. Developed by Italian company VRMedia, an AR pioneer spun off from the University of Pisa, the Smart Helmet began with an industry-certified safety hard hat. Equipped with a video camera, a near eye display, and a Bluetooth-enabled headset with enough bandwidth to support uninterrupted connectivity and two-way communication, the helmet allows technicians to receive voice commands and exchange information with a centralized team while working.
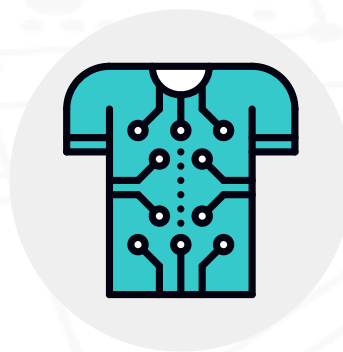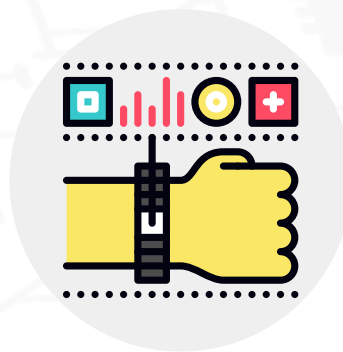
Case Study: Asphalt Institute R-18LabQMS

Asphalt Institute is an international trade association of petroleum asphalt producers, manufacturers, and affiliated businesses. Mission Data has partnered with the association to develop tools that have helped reshaped their industry.

R-18LabQMS dramatically reduces time spent with assessors

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The Asphalt Institute wanted to provide a simpler and more efficient method for its members to manage their laboratory equipment, document their processes and train their staff so that they can achieve and maintain stringent government accreditations. Their strategy was to employ digital technology to transform rigorous and somewhat arcane methods to one that was nearly fully automated. To accomplish this, they asked Mission Data to create a SaaS platform to address the needs of their members and to also provide a new revenue stream for Asphalt Institute.

Mission Data designed, developed and maintains a platform that supports subscription management, role-based access, workflows, document creation, and complex management of equipment inventory, testing procedures, and employee performance tracking. The result is a mission critical, quality management system for laboratories that greatly simplifies the accreditation process, keeps quality manuals up-to-date and shortens the amount of time spent with the assessors when coming on-site.

5 Artificial Intelligence and Machine Learning

Among the myriad use cases for machine learning and artificial intelligence (AI), advances in natural language processing are giving rise to conversational interfaces — one of the most important paradigm shifts in technology.

Companies are catching on to using big data technology to complete internal functions in conversational, efficient ways. A recent survey by SoftServe found that 62 percent of medium to large organizations in the US and UK plan to implement machine learning for business strategies by 2018.

The co-existence between human workers and cognitive technology is creating a new class of digitally-enabled labor. With automation taking over routine tasks, employees are able to spend more time performing higher-level tasks and innovating.

Advances in conversational AI technology are transforming chat apps into a new way to navigate the Internet and interact with brands. Use of chatbots has skyrocketed in recent years, with the rise of chat platforms such as Slack, HipChat, Facebook Messenger, and Microsoft Teams. At Mission Data, we've used Slackbots to provide a natural language interface for several solutions, including beacon tracking to discover where employees are located in our offices in real time.

Start-ups such as Chyme and Kore are developing bots specifically for the workplace. For example, Chyme's bots help workers in call centers quickly determine the customer's problem by identifying previous customer behavior. Kore's Smart Bots are designed for retail, helping shoppers speed through the checkout process and receive customer service support at any digital touchpoint.
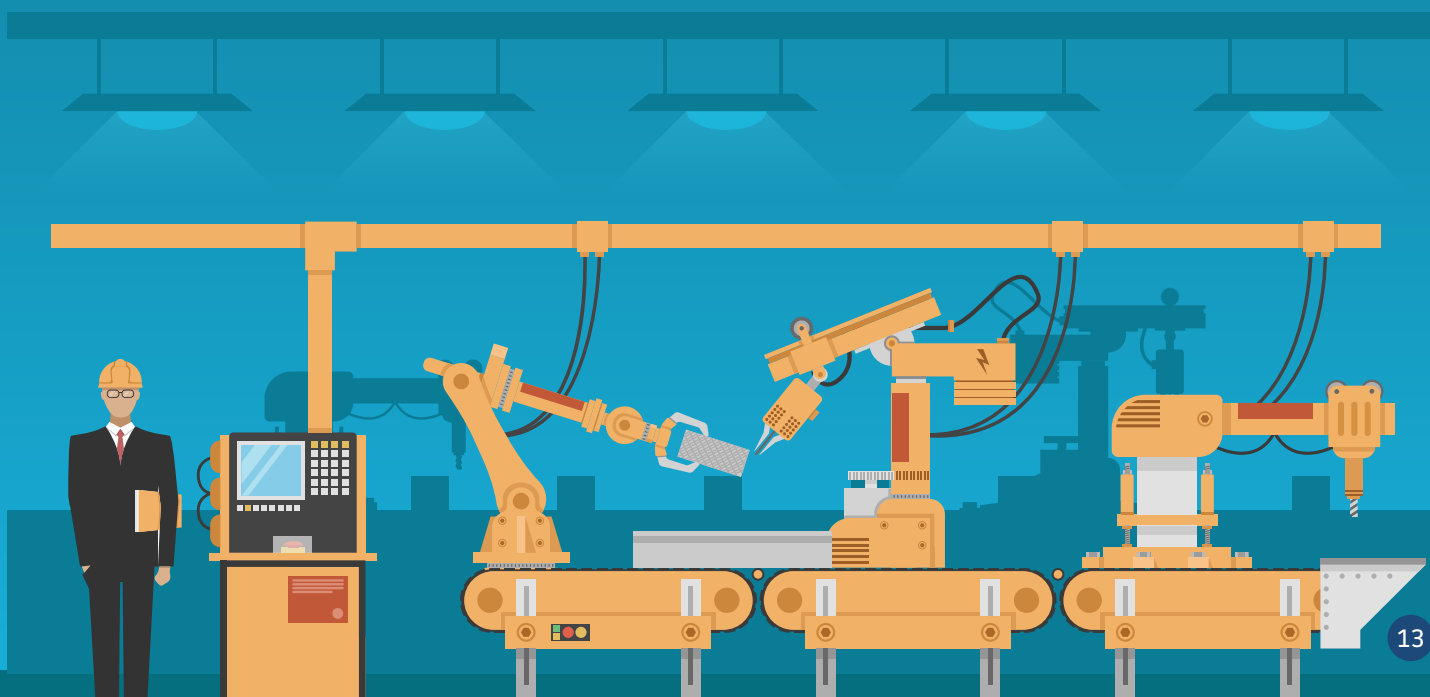
Case Study: Gusto Farm to Street

The founder of Gusto Farm to Street grew up on a farm in Pennsylvania and was obsessed with the idea that he could provide a fast, fresh, healthy meal at a reasonable price. The fast casual restaurant has chef-driven kitchens that serve up locally sourced ingredients.

To preserve the freshness of their vibrant farm-to-table ingredients, Gusto needed a way to consistently monitor the conditions in their cold storage and salad wall around the clock. Gusto wanted confidence that the temperature in food storage areas were accurate and auditable. Furthermore, as freshness is central to their mission, all members of the team have the obligation to be aware of the food quality and conditions. This requires remote monitoring as well as the ability to direct in-store team members from anywhere. It wasn't long after installing wireless sensors and implementing the OpSense monitoring

platform built by Mission Data that a freezer at Gusto began to fail. The alert notified the appropriate people at the restaurant saving thousands of dollars of product and proving the ROI quickly.

"OpSense provides real peace of mind that the ingredients we're serving are in an optimal environment."

- Stephen Smittle, Gusto Farm to Street COO

Best Practices for Charting a Strategic Roadmap

Adopting a frictionless employee experience strategy is essential to remaining competitive in an increasingly distributed global marketplace.

Organizations looking toward a sublime futuristic vision of a digitally transformed workplace still have some mundane tasks to carry out. Assembling the right mix of tools and solutions that will achieve maximum results will not only require IT leadership, but business leadership as well. Input from teams in operations, human resources, communications, and marketing may also be essential for successful implementation.

While a frictionless workforce solution cannot be implemented with a one-size-fits-all strategy—that will vary by industry and by organizational resources—there are a number of key steps organizations can take to get started:

Philosophy - It's not IT.

The common adage still applies: start with the business' needs; don't start with the technology. This overarching guideline must be in place as you consider drawing the roadmap. Without this perspective, the digital transformation will result in yet another technology-first and workforce-second initiative.

Scan the environment.

Rather than narrowing in on a specific problem or department, take a spectrum view to consider the full variety of options and permutations that are possible. It's from here that you find what fits for your business.

- Look at competitors and adjacent markets.

- Get out of the echo chamber of your office, organization, or unit and get into the field to see what's really going on.

- Assess the digital maturity of the business today.

Define the landscape.

It's not necessary to map out the details of every process of the business. Start with a simple top-down perspective and consider where friction lies and can be reduced.

- Be intuitive—run with what feels right, time is ticking.

- The closer the employees' activities are to the delivery of revenue or the acquisition of revenue, the better the opportunity for obtaining value in implementing a digital transformation.

- Within the landscape, identify the key areas of opportunity. List them out.

- Do small scale journey and process mapping. A large-scale survey isn't necessary, but getting direct input from the workforce to identify key touch points and pain points can have huge returns in assessing priorities as well as viability. It might also allow you to find some surprise opportunities while gaining a collaborative development of the frictionless solution.

Evaluate the opportunities.

Use the results of the scan activity, including the trusted advisers and partners identified during the scanning efforts, to evaluate the myths versus the realities of opportunities. Ask whether the opportunity is based on known implementations and appropriately
available tech.

- The myth versus reality evaluation should include input and/or participation from the key constituents—IT, operations, HR, etc.—to ensure that the opportunity is viable. Look for speed bumps and reality checks. If implementing new tech might require retraining under a union contract or might disrupt a long-term contract with a supplier, then you can better assess the realities.

- The costs of investing in and implementing each opportunity should be modeled. In some cases, the ROI is obvious, such as technology that opens new revenue streams. In others, the benefits are more intangible, such as increased opportunities for worker collaboration.

- Beyond the investment costs and benefits, a consideration of the opportunity costs is also essential—the potentially missed chance for workers to do something else that would save the organization time and money. Consider all usage outcomes as potential sources of value. How will the technology increase efficiency by improving ease of use? How will fewer errors and consistent task execution lead to more profits? Is the solution expected to reduce attrition?

Start with disciplined experimentation and incremental evaluation.

We see many organizations co-innovating with vendors and business partners in lean labs. To truly learn about new technology and its viability, organizations should establish internal incubation programs. This is where teams will learn if solutions will require unnatural or extraordinary effort. We've found experiments that last a week or two are most valuable with respect to maintaining velocity while allowing for hands-on learning.

Take stock of infrastructure and security.

Important factors to consider in your costs and logistics assessment are computing power, bandwidth, and data storage capacity. The influx of data delivered from new connected devices and platforms will require flexible networking solutions that can scale along with technology expansion.

- IT departments and product engineers will need to decide where the optimal points are on the data processing journey for data to be compressed, stored, or transmitted.

- To guard against increased threats introduced to emerging technology deployments, organizations need multi-layered, scalable security strategies that include elements such as legacy systems, IoT sensors, and cloud-based solutions. Solutions may include a combination of firewalls, encryption, authorization tools, and network segmentation.

- Organizations will also need to address user privacy concerns. While tracking employee behavior is useful from a productivity and user experience standpoint, organizations should take appropriate steps to inform users about what information is tracked and how it is stored and kept secure.

- Consider whether your organization has the skills required to implement new technologies. Key positions for your organization moving forward may include data scientists, R&D engineers, and managers trained in advanced analytics.

Establish a Proof of Concept (POC).

Whereas a lab study provides insight on the viability of the tech and provides first principle experiential learning, building a concept requires more of a product perspective. It is at this point that metrics are identified, verified, and established. The POC is a business moment in which the solution is evaluated to determine how it reduces friction for the intended workforce members, and whether that leads to increased friction for IT or operations. Such friction may come from reliability and availability.

- Don't stick to one POC. A roadmap depends on considering all of the potential opportunities from the landscape and then determining which ones have the greatest near term value, which ones may be best as markets and workforces mature, and which ones are actually dependent on one another. The POCs reveal the viability of all of the opportunities charted on the roadmap.

- Look to consumer-based tech to start before diving into custom-engineered solutions for your organization. Experimentation with implementations that use commercial off-the-shelf tech are invaluable in clarifying if there's really any opportunity to reduce friction and achieve ROI.

- Increment swiftly. Learn, record, adjust measures or KPIs, and then iterate. Once an MVP can be defined, move out of experimentation toward implementation.

Create a clear and formal technology roadmap.

There's value in producing a living document that can be used for communication purposes and obtaining feedback. The roadmap should record the process, technology, and organizational architectures that are needed to support the change. Using a table of contents view of what's in the roadmap, consider the following:

- Overarching guidelines
- Business and architectural principles
- Domain model—define the entities and users that have control of the distinct technology and data
- Map of the target landscape and architecture
- Map of the current landscape and architecture
- Implementation and change management roadmap
- Break down the stages of product management, including milestones, KPIs, and investments

Take the leap!

With your roadmap in place, you now have a plan of action. Be sure to set achievable business goals and set measurable metrics to continuously track your company's progress.

Implementation & Performance Management

A successful implementation of frictionless workflows will require an organization-wide communications strategy. IT should partner with other relevant departments and take an empathetic approach to deploying the changes. New technologies such as non-screen interfaces and wearable devices will take some getting used to.

In addition to messaging, make changes visible. Consider visual aids and reference guides to help employees map the changes. Remember to focus on the user and ensure that all demographic segments of your workforce are accommodated with training and change management that meets their needs.

The replacement cycle for emerging technology solutions may be longer than the advancement cycle in sensors and software embedded in those tools. Companies should adapt to continuous delivery models to update software and products on a rolling basis. Additionally, new security measures may be needed. Consider ongoing support services to manage, maintain, and monitor the program.

Conclusion

Emerging technology will take over workforce processes and culture in many sectors and verticals. The question organizations are facing is not when, but rather how to prepare for the era of the tech-enabled workplace. Emerging technology holds great promise in allowing organizations to quickly solve problems, identify capabilities, transfer complex data, and coordinate actions.

The potential gains in actionable data, communication and decision making, productivity, safety, reliability and consistency present a tremendous opportunity for organizations to generate financial value and sustainable operations.

Footnotes

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About Mission Data

Founded in 1996, Mission Data builds smart digital products that transform the way companies do business. From Fortune 500 companies to start-ups, Mission Data applies current and emerging technologies in innovative and practical ways to grow revenue, improve productivity, and make meaningful impacts on organizations, their employees, and their customers.

What We Do

Digital Strategy

UX/UI Design

Digital Product Engineering

Product Managed Services

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