Demystifying Technology in the Workplace

August 2018

About the Report

Over the last decade, technology has evolved drastically and rapidly. Consequently, the way businesses operate is fundamentally changing. While technology was once just a division within an organization, today it is a strategic need that permeates all levels and functions. Very soon, it will become impossible to be strategic in HR without being highly competent in the fundamental mechanics and relevant laws associated with work-related technologies. The integration of and adaptation to new technologies will only become more important as they become more ubiquitous and their leverage to provide fundamental improvements increases. For this reason, the Society for Human Resource Management (SHRM) and the Chartered Professionals in Human Resources (CPHR) Canada have collaborated to bring greater understanding of this important area of work to their more than 320,000 members.

The Society for Human Resource Management (SHRM) is the world's largest HR professional society, representing 300,000 members in more than 165 countries. For nearly seven decades, the Society has been the leading provider of resources serving the needs of HR professionals and advancing the practice of human resource management. SHRM has more than 575 affiliated chapters within the United States and subsidiary offices in China, India and United Arab Emirates. Visit us at shrm.org.

CPHR Canada represents 27,000 members in the Human Resources Profession across nine provinces and three territories in Canada. Established in 1994, CPHR Canada is the national voice on the enhancement and promotion of the HR Profession. With an established and credible designation and collaboration on national issues, we are proactively positioning the national human resources agenda in Canada and representing the Canadian HR Profession with HR Associations around the world. Visit us at cphr.ca.

This report serves as a primer to understanding the role of technology in the modern workplace from an HR perspective. It will explore the needs and drivers behind technological advancements in the workplace, and through the lens of three populations impacted: the employer, the employee, and strategic HR.

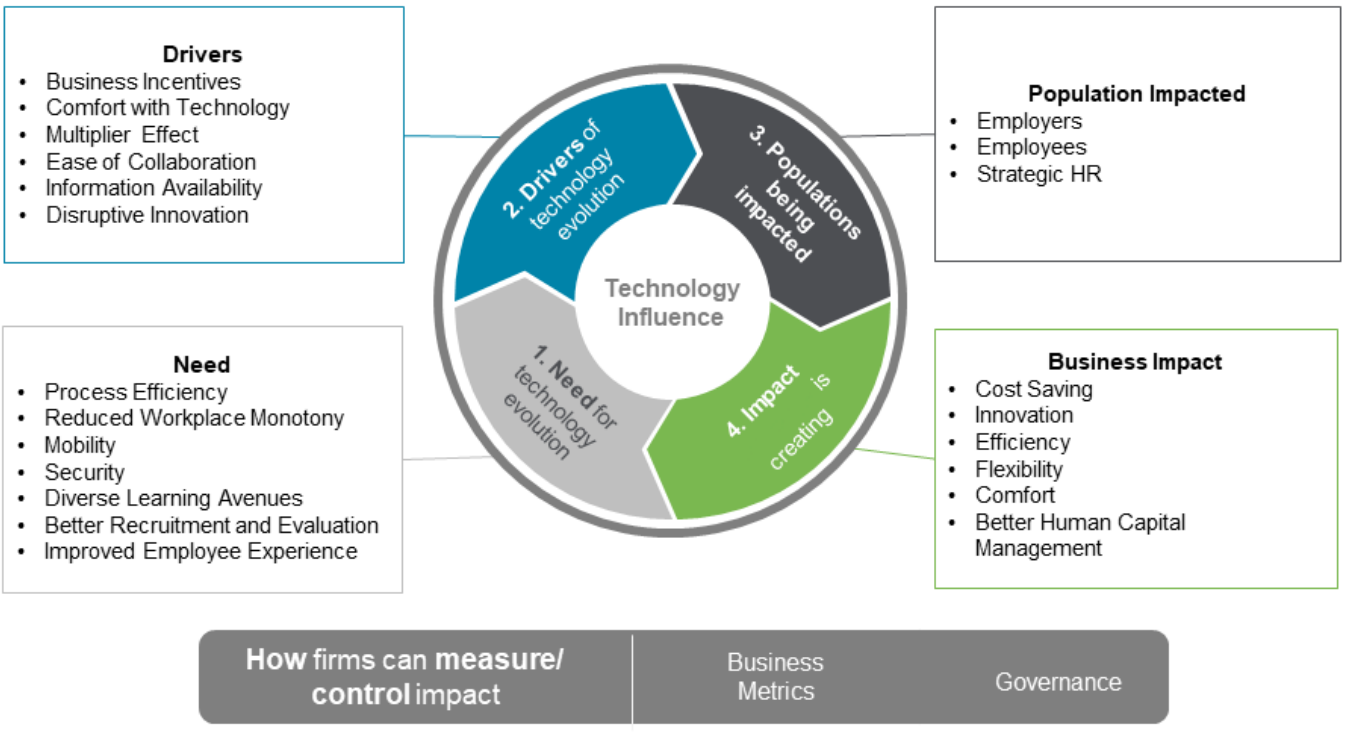
The drive to understand and utilize new technologies arise from an increasing demand for:

- Efficiency
- Cost Savings
- Innovation
- Talent Management
- Security
- Collaboration
- Employee Experience
- Wellbeing

For a Human Resources professional, it is important to understand the value added to organizations through technology, as well as the effects that integrating technologies will have across all levels of an organization. While employers have seen improved cost savings, efficiency, and innovation, employees have seen greater workplace flexibility, changes to their physical and mental wellbeing, and their social experiences. Technological developments within core Human Resources functions such as talent acquisition, engagement and culture, employee development, and performance and workplace design, all further influence both employee experience and overall organizational dynamics.

This report will also describe several methods through which the impact of technology can be measured and controlled, and what type of sustainability initiatives are important to keep in mind when considering a technology implementation.

> ***"Information technology is at the core of how you do your business and how your business model itself evolves."***
>
> *- Satya Nadella, CEO, Microsoft*



Need for Technology

> ***If HR wants to continue to play a critical role in helping businesses anticipate and manage organizational change, it must have technology at its core.***
>
> *- Meghan M. Biro, CEO, TalentCulture*

The existing and new needs of humans will accentuate the demand for technology. Understanding the need for new technology is no longer just a business incentive; rather, it is the expectation. With data now at the forefront of so many work processes, firms need to:

Ensure Process Efficiency:
- ✓ Collect, store and organize data effectively
- ✓ Automate repetitive tasks

Security Spiral:
- ✓ Utilizing technology begets the need for more technology to control systems

Explore New Avenues:
- ✓ Use advanced tools to understand, identify, access and assess prospective employees and candidate trends

Enhance Mobility:
- ✓ Utilize technology to enable flexible, remote, and seamless work arrangements

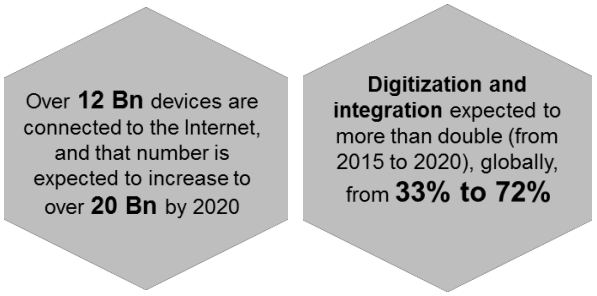
Expand Learning Possibilities:
- ✓ Adopt dynamic and robust learning management systems

Analyze Employee Experience:
- ✓ Revamp the holistic employee experience to manage changing workforce demographics

Drivers of Technology

There are several factors that determine the diffusion of technology in workplaces; firms must provide support and leadership to manage change and empower employees.

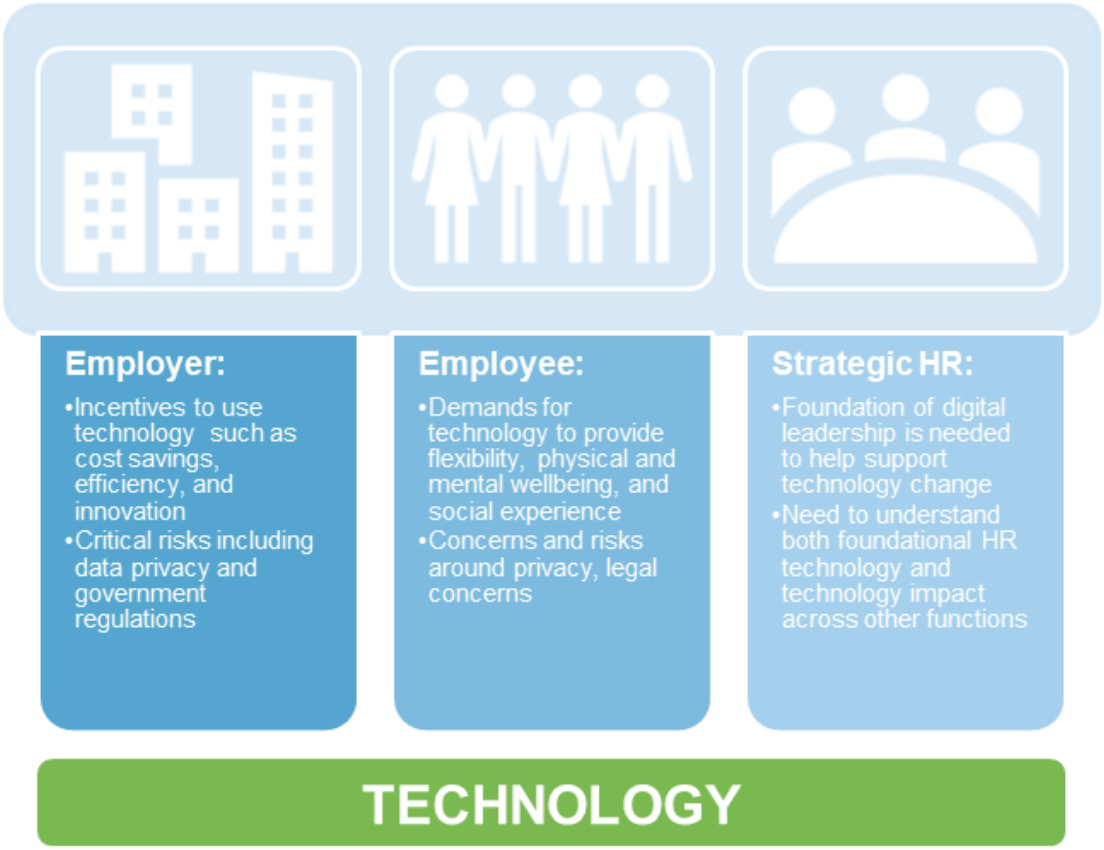
- ✓ Improved business outcomes (reduce costs, increase efficiency, enhance products and services, re-think business models and strategy)
- ✓ Increased comfort with technology (as people become more comfortable with technology, firms' propensity to implement new technology improves)
- ✓ Extensive collaboration, communication, and new partnerships



- ✓ Availability of new data for analysis (reach, depth, and widespread impact of technology gives access to massive amounts of diverse information, as well as new opportunities for utilization and analysis)
- ✓ Disruptive innovation (improved products and services to disrupt industries and uncover untapped avenues of augmented profitability)

Technology in the Workplace

For each of the three pillars of technology impact (employers, employees, and strategic HR) the report will address some of the technologies that are creating the biggest impact, the real-world examples of the business impact they can have, and the associated risks.



Technology in the Workplace – Employers

Employers see real incentives to use technology and have tangible results from keeping up to date with it. The main impacts of technology that are relevant to this stakeholder group are cost savings, efficiency, and innovation (including innovation of business models, products and services, and customer strategy).

Cost Savings:
Automation and Robotics: machines with enhanced sensing, control, and intelligence used to automate, augment, or assist human activities. Automation and robotics have the largest impact in manufacturing, customer service, and retail, where they provide speed, strength, resilience, accuracy, and process efficiency.

Cloud Computing: delivery of on-demand resources including applications, data centers, and more, over the internet on a pay-for-use basis. By providing increased agility, decreased time to market, accelerated innovation, and better and richer user experiences, cloud computing can benefit all industries.

Blockchain: an encrypted digital ledger of public records distributed over networks. In other words, a decentralized digital database that allows everyone in a "chain" to see and verify the details of every record in the network. Blockchain allows faster, cheaper, and more reliable and transparent processes. Though it is mainly used in financial transactions, notably Bitcoin, blockchain has a much wider spread of potential applications in managing supply chains and end-to-end quality assurance.

Efficiency:
Artificial Intelligence/Machine Learning: AI provides systems the ability to automatically learn and improve from experience without being explicitly programmed; machine learning is focused on the development of programs that can access data and learn to use it for themselves. AI and Machine Learning provide the capability to process very large databases in intelligent ways, deriving insight and the ability to make predictions. The main risks associated with AI are related to its programming complexity; it requires high-level skill from a small talent pool, and can be subject to unintentional coding biases skewing results.

Innovation:
Internet of Things (IoT): The network of physical devices embedded with electronics that allow those devices to connect and exchange data, including vehicles, home appliances, wearables, and countless others. Due to the unlimited variety of connected devices, specific impact will vary across for every organization. Broadly, IoT can be leveraged for improvements in energy conservation, security, supply chain, and inventory management. Because IoT is comprised of many systems and devices from many different providers, there are significant concerns with data vulnerability, system complexity, and regulation issues.

Technology in the Workplace – Employees

Employees can see major improvements in their quality of life, wellbeing, and performance through technology, and when employers invest in systems that their employees value, it improves engagement and retention. It is important to note that while impact of technology for employers is best described by large scale processes such as cloud computing, employee impacts from technology are better split according to how they benefit that segment, and which technologies are relevant to providing that benefit.

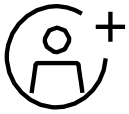
Flexibility:
Employees require flexible work environments to meet the needs of collaborating with people they have never met, in places they have never visited, and staying connected with the office at all times. Among the technologies relevant to this benefit are those focused on Microwork, which is a process that breaks down complex tasks into small tasks (eg Amazon's Mechanical Turk). There are also those technologies related to remote teams, which in addition to adding flexibility, also lower overhead (eg Google Drive, Slack). While flexibility is one of the most important benefits for employee retention, firms must strike the balance between allowing freedom and ensuring there are not productivity losses.

Physical and Mental Wellbeing:
Work-related stress, sleep deprivation, and lack of physical activity all negatively impact employees and represent significant costs to employers. New technologies such as smart office layouts, improved acoustic design, and smart lighting can all help combat work-related stress. Wearable devices, such as FitBits and Apple Watches, can track anomalies in body systems and suggest quick solutions, including physical activity reminders and interventions for high stress. Continuous data collection, including health information and geolocation information, are among the security and privacy concerns with these technologies.

Social Experience:
An increase in socializing between team members can increase performance by 50%, and relationships with coworkers is a top engagement driver for 79% of employees. Connected environments, collective intelligence, and social media all allow individual employees to act as contributors to a collective experience and collaborate on decision making (eg Google Nest, AI-enabled-workflow-management interfaces, Yammer and Jive). Organizations that have installed internal social media tools found increases in employee satisfaction, and usage of those tools can help overcome some of the problems of malignant exposure and objectionable information that can arise from public social media.

Technology in the Workplace – Strategic HR

Advances in HR technology provide the opportunity to change the mechanisms for HR systems, the availability and sharing processes for data, and the convenience of using familiar technology to interact with core HR processes. Technology presents a unique opportunity for HR to guide overall company strategy and direction, through establishing systems that advance CSR goals organization-wide.



Talent Acquisition:
Technology is enabling managers to move beyond 'gut feel' in hiring. Talent acquisition has improved through the use of Artificial Intelligence and natural language processing as candidate evaluation tools. Augmented reality can also be used to simulate job environments, enabling recruiters to learn how candidates react in proxy environments. These technologies help reduce cost, improve process time and efficiency, and address unconscious bias in the acquisition function.

Engagement and Culture:
To better understand employee sentiment, engagement monitoring is transitioning from a point-in-time activity to a continuously interactive system. Quick feedback tools with familiar, social-media type interfaces and gamification programming allow HR to make culture more identifiable, customized, and relevant for employees. Engagement and culture tools can provide significant improvements in employee experience, but the kinds of data they collect and the security of that data raise ethical questions.

Employee Development:
Firms are not only focusing on innovative ways of conducting training and development but also more effective dissemination systems. Artificial intelligence and machine-learning-enabled-systems expand the horizons for training potential, allowing for improvements in succession planning and cross functional talent development. Online learning systems also help bridge the gaps in training by allowing on-the-go information with highly effective dissemination across the organization.

Performance:
Organizations are moving from performance management to performance tracking and increasing the flexibility of performance measuring tools to gain new insights. Wearables offer the ability to track and understand work through the eyes of the employees, allowing firms to identify gaps in competencies like quality assurance and safety. By using people analytics data to customize performance tracking systems, managers will be able to make more informed and relevant judgements about performance.

Workforce and Org Design:
With an increasing need for flexibility in all aspects of the workplace, firms are using technology such as cloud-based collaboration tools and predictive analytics to adapt. As the gig economy continues to expand, organizational design must change to accommodate contingent, short time, and remote employees. Predictive analytics are essential for workforce planning, and augmented reality can bring to life workspaces they have never visited.

Measuring the Impact of Technology

Measuring and controlling the impact of technology in the workplace is no different than measuring and controlling the impact of any other business activities; the same pragmatism and controls are used even for implementing innovative technologies.

There are two main components to measuring impact of technology:

1. **Control Metrics:** are comprised of state and federal regulations, and corporate policies that restrict things like dissemination and usage of data. Organizations must ensure compliance with regulation and use those principles to guide their own internal policy-making.
    - One example of a technology-focused control metric is GDPR, which protects EU citizens from privacy and data breaches, and provides expanded individual control over data collection.
    - By contrast, the US does not have a single, comprehensive federal law to provide this type of metric. Instead, US control metrics largely exist on an industry-by-industry basis (e.g. Health and financial information), which create overlapping and contradictory protections.
2. **Business Metrics:** are comprised of the strategies and systems used to make any other type of business decision, including financial models such as return on investment (ROI).
    - One approach is the Return on Investment (ROI) Model, which measures net gain versus costs. Values derived can be modeled into comparative statistics models or direct targets for RoI can be set to determine feasibility. Because precise costs and gains can be difficult to measure for technology projects, proxy variables often need to be used.
    - Many technology projects fail because they are not accepted by the user community. The Uptake Analysis approach uses both qualitative and quantitative methods to identify who is using a technology solution and how they are using it. Data measured in this manner can be utilized to predict business outcomes from technology projects, such as productivity gains or resources consumed.

Approaching Technology Sustainably

To ensure that the continued integration of technology into the workplace does not cause unintended side effects, some caution must be taken to be pragmatic and sustainable. Sustainability in this context must include both environmental concerns, as well as stakeholder driven concerns.

Energy Consumption:
With continuous advancements in technology spurning greater than ever electricity consumption, firms need to keep an eye to minimizing long term impacts. Specifically, they should consider investing in more energy efficient plant and property investments, and utilizing alternative energy sources wherever possible.

Automation Insecurity:
People's careers are a significant source of identity and self-worth, and the fear of being made redundant by automation is on the rise. A cohesive environment where employees and machines can coexist needs to be envisioned by firms. The need for talent is likely to increase as jobs transform, and HR must help those displaced by technology transition into other roles.

E-Waste Management:
E-waste is the fastest growing municipal waste stream in America and increases in remote working and the Internet of Things are resulting in growing numbers of connected devices. At present, only a small fraction of E-waste is actually recycled, and as the number of devices mounts, firms must take a greater consideration to the business *and* social cost of technology decisions.

The Trust Issue:
Many of the contemporary applications of technology that offer the greatest growth potential to organizations rely heavily on collecting information that humans dislike sharing, including health data and private correspondence. Employee automation insecurity is amplified by growing concerns about data security and privacy, and lack of understanding of systems further contributes to distrust. To encourage a positive relationship between employees and technology, it must be clear that firms see technology as a partner to, not a replacement for, essential human abilities and activities.

Conclusion

Technology is a vital part of modern business and understanding how to leverage it for growth is imperative; with successful adaptation and integration come benefits that permeate all levels of an organization. Advancements such as robotics, cloud computing, blockchain, AI, machine learning and the Internet of Things provide firms with greater cost savings, efficiency, and innovation. These technologies then impact firms at the employee level, where individuals gain greater work flexibility, utilize tools to monitor their well-being, and engage in more social work experiences. HR plays a pivotal role to understand and manage the many newfound benefits and concerns that arise with technology as it relates to talent acquisition, engagement, culture, employee development, performance, and workforce/organizational design.

Businesses should consider several parameters when evaluating a technology to implement:

- Their business strategies and current state of technology
- Benefits and costs associated with adoption of new technology
- Confidence level in adopting new technology

Although adapting to technology is not always easy, and comes with some inherent risk, it is a requirement for firms that want to stay competitive and see continued growth. Understanding the opportunities available is the first step towards achieving that goal.

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