Championing the digital age

For health, safety and wellbeing to THRIVE!

Authors

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Abstract

This paper presents the collaborative efforts of Kitney[1] and Mapien[2] in their THRIVE Digital Readiness Initiative[3]. It reports the results of a global survey exploring the human factors influencing the adoption and integration of technology in work health and safety (WHS) management and introduces Kitney-Mapien's Digital Readiness Self-Assessment to assist an organisation in understanding factors that influence technology adoption to positively, or negatively, impact success of this adoption.

By coupling the expertise of Kitney and Mapien with research into the emerging digital trends, the THRIVE Digital Readiness initiative aims to provide an understanding of the factors impacting the success of digital adoption to enable organisations to target areas most likely to accelerate digital adoption and improve workplace health, safety and wellbeing.

Kitney-Mapien Collaboration

During 2023 Kitney and Mapien joined forces to champion digital transformation in health, safety and wellbeing at work.

Kitney's innovative BErTHA model[4] developed in 2019 and their experience in developing online health and safety, quality, and business management systems through Kitney Toolkit[5], combined with digital Mapien's expertise in workplace strategy form the backbone of this initiative, aiming to empower workplaces to leverage technology for enhanced health, safety, and wellness.

At the 23rd World Congress on Safety and Health at Work in Sydney, Australia, Kitney and Mapien presented their findings on accelerating digital adoption to enhance health, safety and wellbeing. They highlighted insights from field research and emphasized the importance of leveraging technology to create safer workplaces. They shared their vision for a future where practical strategies for digital readiness and technology plays a pivotal role in workplace health, safety and wellbeing.

[1] https://kitney.com
[2] https://www.mapien.com.au
[3] https://www.mapien.com.au/thrive
[4] https://kitney.com/about/bertha/
[5] https://toolkit.kitney.com

THRIVE Digital Readiness Initiative

Kitney and Mapien's THRIVE Digital Readiness initiative addresses the inevitable integration of technology in health, safety, and wellness, shifting the focus from 'if' technology is used, to 'when' and 'how' technology is used to digitally enable health, safety and wellbeing at work.

The initiative recognises the importance of using industry expertise coupled with research, to guide organisations in adopting digital tools to foster a thriving work environment in the digital age.

THRIVE, introduced by Kitney and Mapien, is a framework designed to foster growth and success in workplace healthy, safety and wellness through innovative digital solutions.

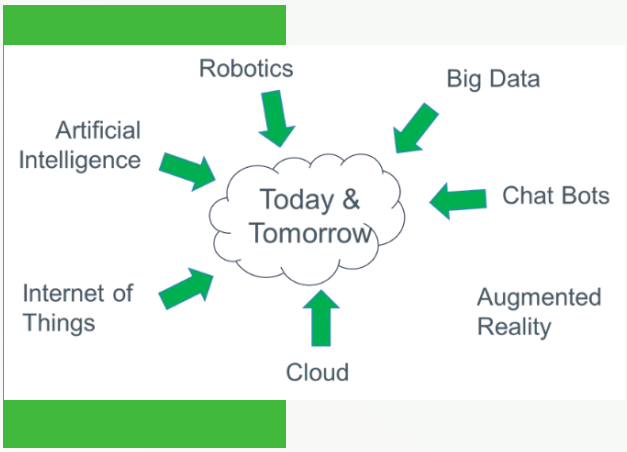
THRIVE
SAFETY & WELLBEING
Championing the digital age

Technology
Helping
Redefine
Individual's & Industry
Virtual
Experience

Emerging Technologies and Trends

"We'll experience more technological progress in the coming decade than we did in the preceding 100 years put together" [6]

The technological landscape is rapidly evolving, with significant advancements expected to surpass the progress of the last century.



The Brisbane Business Hub[7] highlight the urgency for professionals to adapt or risk becoming outdated.

Trends poised to influence the next decade include automation, artificial intelligence, and clean technologies, all of which are included in the top ten tech trends identified by Data#3's Knowledge Centre[8] and McKinsey's blog[9].

[6] https://www.weforum.org/agenda/2021/10/technology-trends-top-10-mckinsey/
[7] Brisbane Business Hub: The AI Catalyst: Empowering Professionals for Success in the Digital Era
[8] https://www.data3.com/knowledge-centre/
[9] https://www.weforum.org/agenda/2021/10/technology-trends-top-10-mckinsey/

Top Ten Trends for Technology

	**Next-level process automation and process virtualization**	Enabling the streamlining of processes through Ai, robotic process automation (RBA), and virtualization to automate repetitive tasks.
	**Future of connectivity**	The evolution of 5G, satellite internet, and the Internet of Things (IoT) is revolutionizing how devices communicate and interact with each other, enabling new services and applications.
	**Distributed infrastructure**	Resources such as storage, processing power, and networking will become more distributed to improve capacity to scale technology and improve privacy.
	**Next-generation computing**	Unprecedented power and capabilities of computers will be enabled through rapid technology improvements in areas such as quantum computing and neuromorphic computing.
	**Applied AI**	Real world problems can be targeted like never before by enabling computers to have “vision” and to “hear” with the capacity to couple such rich data with predictive analytics and machine learning to create specific recommended answers.
	**Future of programming**	By enabling Ai to interact with “no code” programming, the lifecycle to develop new programs or software will be significantly faster.
	**Trust architecture**	The emphasis of building secure, transparent, and resilient systems to protect against cyber threat and to safeguard personal information will be prioritized.
	**Bio-revolution**	This involves manipulating biological systems to create innovative products and solutions, such as biofuels, bioplastics, pharmaceuticals, and sustainable agriculture practices. Key areas of focus include genetic engineering and gene editing technologies
	**Next-generation materials**	Innovative materials will bring enhanced qualities and innovations which may include nanomaterials, biodegradable polymers, and smart materials that offer improved performance, sustainability, and versatility.
	**Future of clean technologies**	This relates to developing sustainable solutions to address environmental challenges, such as resource depletion, by innovating renewable energy solutions, carbon capturing, and information / utilities storage.

Challenges of Digital Adoption

The introduction of new technologies presents challenges, such as those identified by Forbes for 2023[10], [11], which include:

1. **Embracing Uncertainty:** Balancing cost-cutting with innovation priorities in a turbulent market, where customers may stall investing in tech.
2. **Managing Cyber Supply Chain Risk:** Addressing the growing risk around third parties and cyber supply chain attacks, which are expected to increase.
3. **Adapting To Major AI Innovations:** Understanding and adapting to the capabilities of AI, managing potential challenges such as new regulations and the risk of coding bias into AI programming.
4. **Integrating AI Into Products and Processes:** Pressure to integrate AI into products and internal processes, while avoiding investing in solutions looking for a problem.
5. **Taking A Hands-On Role in Production:** Tech leaders facing the need to be more efficient and agile to survive changes caused by generative AI, data breaches, and more sophisticated cyberattacks.

To be successful, organizations must stay informed on industry trends, innovate to maintain a competitive edge, and proactively address challenges.

It is crucial that opportunities for embracing and adopting technology are seized and not outweighed by challenges, and businesses can make smart decisions about how technology will be introduced and used.

The Kitney-Mapien THRIVE Digital Readiness collaboration underscores the necessity of overcoming technological challenges. By making informed decisions, businesses can navigate the complexities of digital adoption and ensure health, safety and wellbeing of their workforce.

Challenges for Health, Safety and Wellness

People responsible for health, safety, and wellness in organizations face multiple and daily challenges. When supporting organizations to maintain safe and healthy workplaces, health, safety, and wellness professionals:

- Write policies and procedures to clarify what needs to be done, however, how this is done and whether it is done varies greatly.
- Are reliant on managers, workers, and contractors knowing what is needed, and prioritizing health, safety, and wellbeing amongst competing priorities.
- Understand that health, safety, and wellbeing management systems hinge on compliance and diligence, with risks of non-compliance and mistakes.

[10] The Top 5 Technology Challenges of 2023 www.forbes.com/sites/forbesbooksauthors/2024/01/09/the-top-5-technology-challenges-of-2023/
[11] 15 Tech Leaders Share the Challenges they're Bracing for in 2023 15 Tech Leaders Share The Challenges They're Bracing For In 2023 (forbes.com)

200
Workers died

1.4
Fatalities per 100,000 workers

139,000
Serious injury claims

14,600
Serious claims for mental health conditions

In Australia, statistics show that too many workers are still dying and being seriously injured at work[12].

Technology offers opportunities to proactively provide information, gather data, and develop targeted strategies to meet obligations and manage risks.

Opportunities and Challenges for the Future

The future presents opportunities and challenges for health, safety, and wellness in the workplace. Embracing technology and digital transformation can lead to significant improvements in health, safety and wellbeing outcomes, but requires a strategic approach and willingness to adopt new ways of working.

50%
of employees will require reskilling by 2025 to keep up with technology shifts

30%
of skills deemed "essential" in 2025 are not yet regarded as crucial

6/10
jobs have approximately 60% of tasks being automatable

The THRIVE initiative aims to guide and support organizations through this transition, ensuring the benefits of technology are realized while mitigating the risks associated with change.

Technology to THRIVE

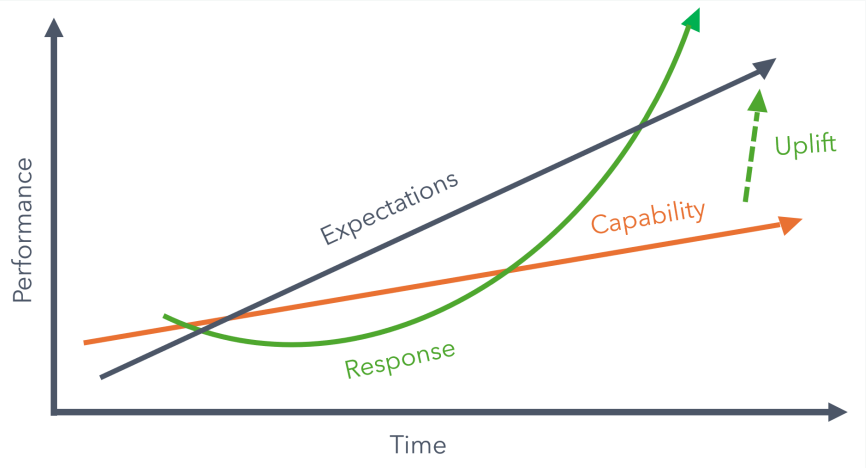
"A broad, cross-industry digital transformation is fundamentally changing the way businesses operate and deliver value to their customers. To remain competitive, most businesses will have to undergo some level of digital transformation – from digitizing their internal operations to improving their customer interactions."[13]

To reduce workplace statistics, we must consider how digital systems could promote health, safety, and wellbeing, and support a reduction in work-related fatalities and injuries.

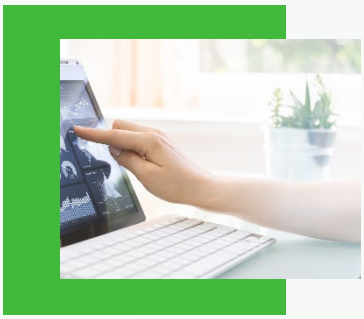
- Ease & speed of providing WHS information to the organisation
- Set up workflows & automated processes to reduce the likelihood of human error
- Auditable records of compliance & non-compliance readily available
- Track activity & progress with alerts, reminders, and performance reporting
- Improvement in workplace health & safety leadership and culture

[12] Safe Work Australia Key WHS Statistics (2024)
[13] Kelly Waffle and Benjamin Kotovic, Hinge Marketing

As business expectations rise for health, safety and wellness rise, capability in the organisation must respond and uplift the way in which these important areas are resourced and managed.



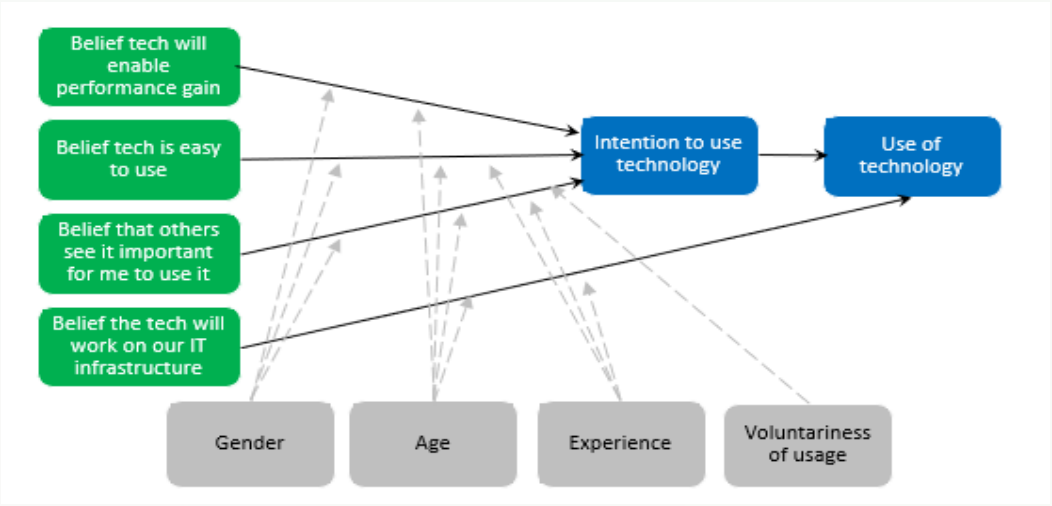
Recognising the importance of drawing on expertise to assist business in moving forward, Kitney and Mapien combined their expertise to explore research and undertake a targeted industry survey to help identify more specifically, the factors that will influence digital adoption to support health, safety and wellbeing management.



Research for Digital Adoption

Kitney and Mapien undertook a cross-industry and cross-level review of research to explore digital adoption in industry.

Findings from the research into technology adoption such as Venkatesh et al. (2003) Unified Theory of Acceptance & Use of Technology Framework, and Venkatesh and Bala (2008) Technology Acceptance Model[14] (see diagram below) identified individual and workplace factors that influence digital adoption.



[14] Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2003)

These explorations helped to identify areas to consider for digital adoption for health, safety and wellness management. Examples of these include:

Expectation Management

- Attitudes and perceptions, true or not, about specific technology has a significant impact on user adoption.

Love for technology

- The more that people have a genuine interest to play and explore technology, the swifter the adoption in organizations.

Peer pressure

- As with all experiences in life, peers' perspective towards specific technology will speed us up or slow us down.

It works

- In the views of the user, all aspects of the system should work as they were intended.

THRIVE Digital Adoption Survey

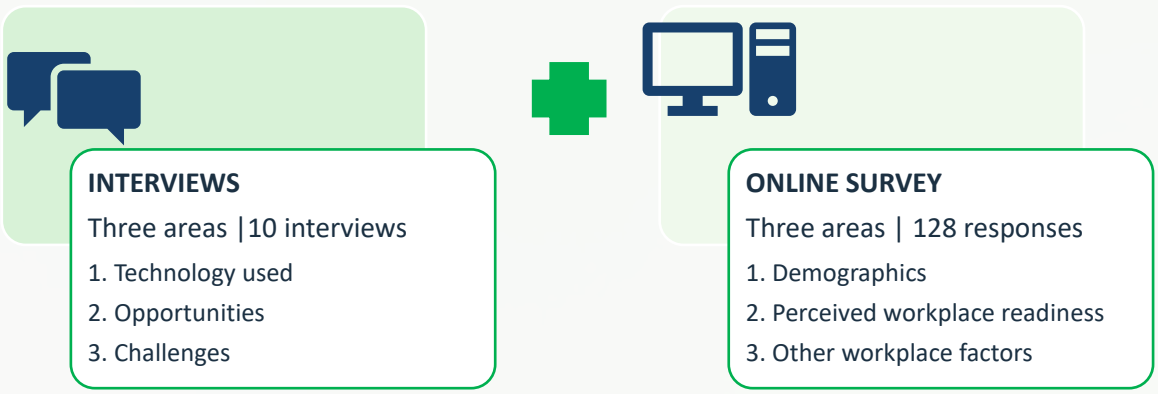
About

Using information from industry research, Kitney and Mapien developed and undertook the THRIVE Digital Adoption Survey as a foundation for insights in supporting digital adoption for health, safety and wellness. This was achieved through interviews and an online survey.

Interviews and Survey

A total of 10 interviews were conducted exploring three key areas: (1) technology usage, (2) opportunities, and (3) challenges, providing valuable insights across these domains.

The online survey targeted business managers, IT professionals, and 'end users' and assessed their intention to use technology to improve health, safety and wellbeing, across three key areas: (1) demographics, (2) perceived workplace readiness, and (3) other workplace factors.

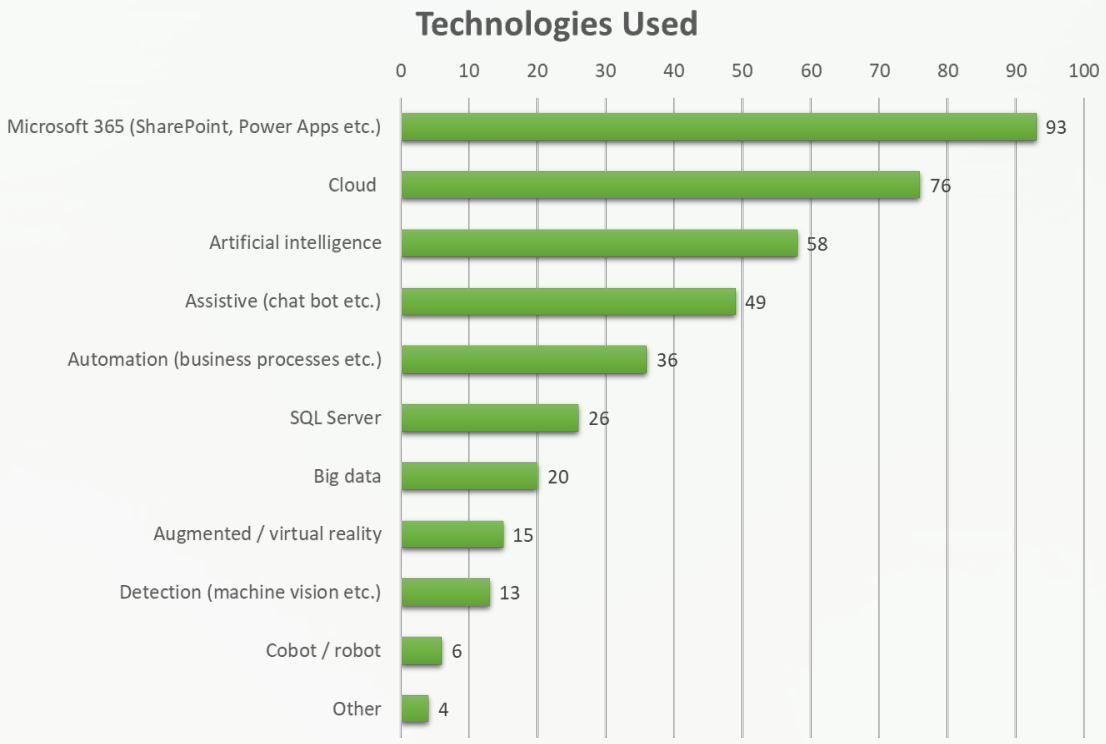


With intention to use technology the single best predictor of technology adoption, this was analysed against participant's personality factors, obstacles and enablers of technology adoption, and the factors identified by Venkatesh and Bala (2008)'s research into technology acceptance.

These areas are listed below:

- Perceived usefulness (is safety technology useful useful?)
- Perceived ease of use (Is the technology easy to use?)
- Computer self-efficacy (Do you have confidence in using tech?)
- Perceptions of external control (Is use of technology influenced by things outside of your control?)
- Computer playfulness (Extent to which "playing" with tech is one's style…a strong predictor of adoption based on previous research!)
- Computer anxiety (comfort using technology)
- Perceived enjoyment (extent to which it's a positive experience to use tech)
- Subjective norm (Perception that others use the technology)
- Voluntariness (whether use of safety technology is optional or mandated)
- Image (reputation the tech has in a business)
- Job relevance (extent to which use of safety tech is relevant to performing core duties of role)
- Output quality (does the tech create desirable results / outcomes?)
- Result demonstrability (are there clearly demonstrated results / benefits from the tech?)
- Behavioural intention (extent to which one intends to use the target tech)

The THRIVE survey asked respondents to identify the types of systems used in their company, with Microsoft 365 technology the main software used in their business.



THRIVE Research - Results and Insights

Interviews

Interviews provided a summary of perspectives from safety professionals, exploring what successful adoption entails, specific steps that enabled change for them, and any additional advice to support the adoption.

What are examples of success?

"Electronic permit to work systems, contractor management, audit tools, electronic controls on equipment, chemical management"

What worked well?

"Consultation with the workforce, starting with "why" to get buy in, accepting it may not be 100% but keep improving, effective branding"

What can be done to make it easier to adopt?

"Having time to explore, scheduling time for meetings, consultation, solving issues, "buy-in", early exposure to solutions, cultural change".

What didn't go so well?

"Only partly suiting business needs, not simple to use, time consuming, cost, difficult to set up and maintain".

What were the barriers?

"People no understanding the benefits, poor digital literacy, internet access, experience with technology, individual personalities".

What are the challenges for the future?

"Access to technology, digital literacy, lack of resources, finding the right solution, moving away from old thinking".

Greatest benefits and obstacles to using technology to enhance health, safety, and wellbeing

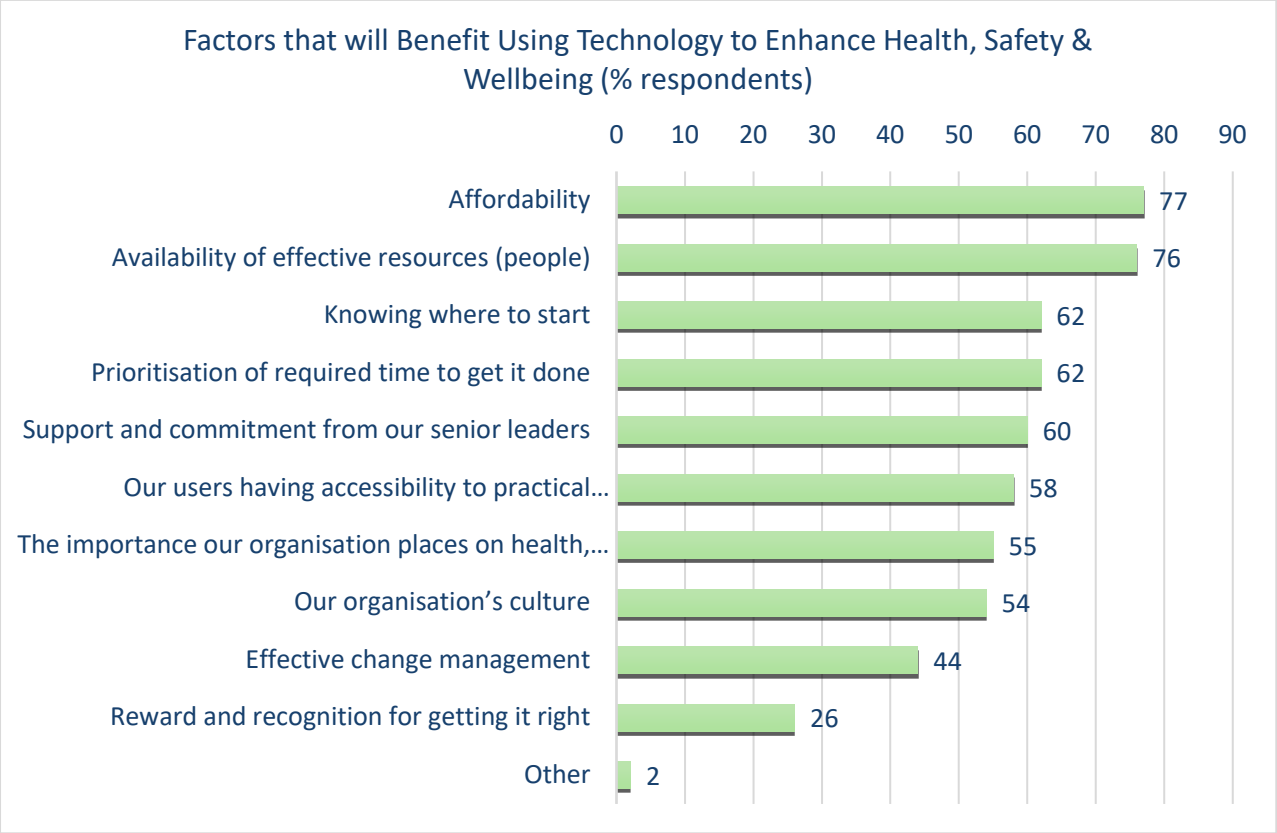
Separate questions were asked to identify what aids or hinders digital adoption, reducing biases. Key insights included:

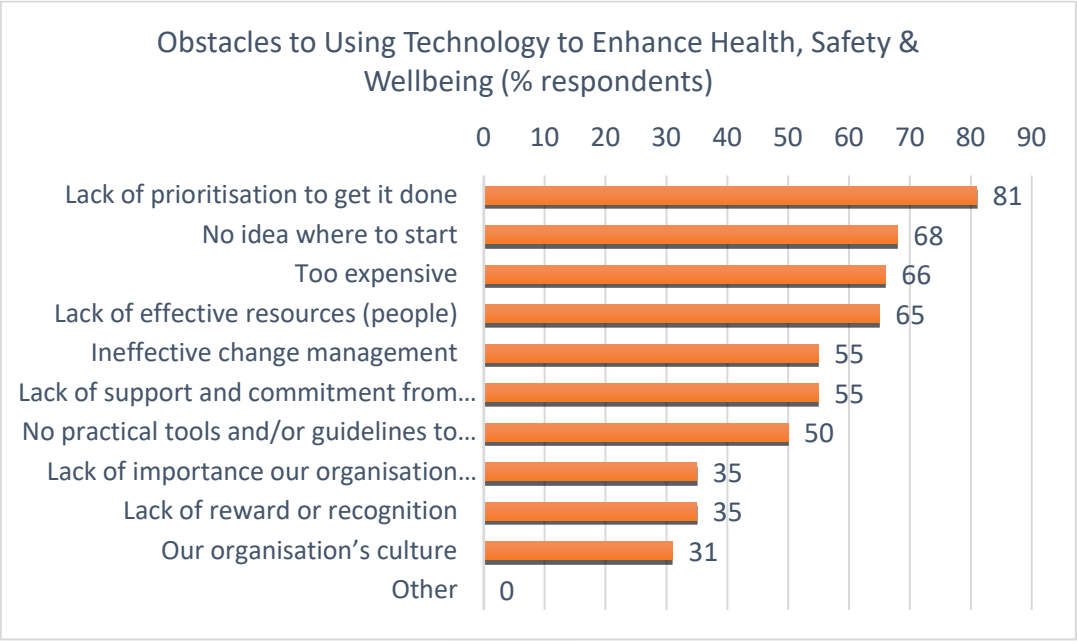
Enablers

- Affordability, resource assurance, clear direction for implementation, and senior leader support were seen as significant factors enabling digital technology to enhance health, safety, and wellbeing.

Obstacles

- The most significant obstacles included a lack of priority for progress, unclear starting points, resource shortages, and high costs.


Factors that will Benefit Using Technology to Enhance Health, Safety & Wellbeing (% respondents)
0
10
20
30
40
50
60
70
80
90
Affordability
77
Availability of effective resources (people)
76
Knowing where to start
62
Prioritisation of required time to get it done
62
Support and commitment from our senior leaders
60
Our users having accessibility to practical...
58
The importance our organisation places on health,...
55
Our organisation's culture
54
Effective change management
44
Reward and recognition for getting it right
26
Other
2


Obstacles to Using Technology to Enhance Health, Safety & Wellbeing (% respondents)
0
10
20
30
40
50
60
70
80
90
Lack of prioritisation to get it done
81
No idea where to start
68
Too expensive
66
Lack of effective resources (people)
65
Ineffective change management
55
Lack of support and commitment from...
55
No practical tools and/or guidelines to...
50
Lack of importance our organisation...
35
Lack of reward or recognition
35
Our organisation's culture
31
Other
0

Going Deeper into the Results

Building on the Technology Adoption Model (Venkatesh and Bala, 2008) research, Kitney and Mapien's study explored which human factors contribute to the adoption of digital technology in a health, safety and wellness context. Analyses calculated the correlation between each factor overall and for demographics such as role, gender, age, and level in the organization.

The survey identified differences for business managers, IT professionals, or end-users.

For **business managers**, the main reasons they decide to use technology are if it's relevant to their job and business and has shown good results before. This is true for both men and women. However, younger managers didn't find these factors as important. Instead, their decision is influenced by their personality traits, like being agreeable and conscientious.

This means experienced managers focus on the practical benefits of technology, while less experienced ones are influenced by their personal traits.

For **IT professionals**, there were no clear factors that predict their intention to use technology, regardless of age or job level. However, female IT professionals might be more likely to use technology if it has shown good results before. The lack of clear predictors suggests that IT professionals might not be influenced by specific factors and might use technology regardless of other considerations.

Over 50% of IT professionals said the main obstacles to using technology are:

- Cost
- Availability of staff
- Knowing where to start
- Issues related to end users
- Prioritizing time
- Support from senior leaders

Many of these obstacles are related to people in the organization, suggesting that focusing on end-users and leaders can help IT professionals.

For **end-users**, the most important factor for using technology is its relevance to their job. There is some indication that more conscientious and agreeable users are also more likely to use technology, but this needs more research.

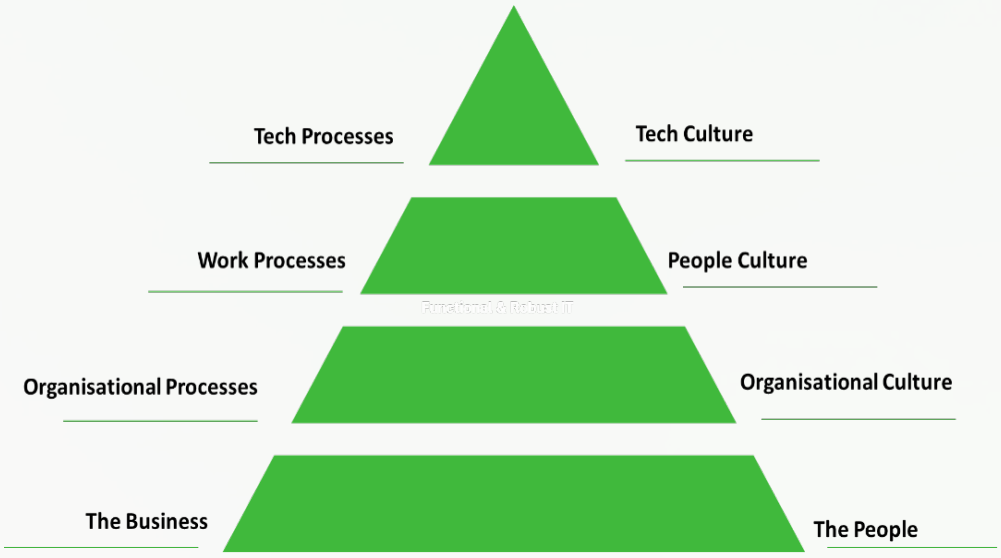
Job relevance is especially important for younger employees (under 35) and those in lower-level positions, regardless of gender. Interestingly, the ease of use and usefulness of the technology were not significant factors, highlighting that job relevance is more critical.

Insights for Industry

For organisation's looking to buy, plan, or implement digital solutions to improve health, safety and wellbeing, the table below summarises risks and opportunities identified through industry research and Kitney and Mapien's THRIVE survey. These insights can help organisations navigate the challenges and leverage the opportunities when implementing digital health, safety and wellbeing solutions.

Insight	From Risk to Opportunity
Affordability and Implementation Certainty	**Risk:** Implementing digital solutions without involving users can fail to deliver benefits. **Opportunity:** Transparency at all levels is crucial to show the financial and time requirements for implementation. Without it, stakeholders may resist adoption.
Senior Leaders' Prioritization and Sponsorship	**Risk:** Lack of prioritization by senior leaders can delay access to critical stakeholders, data, and processes. **Opportunity:** Senior leaders influence digital adoption. Using measures to evaluate their sponsorship and clarity of implementation paths is essential. Clear assumptions and monitoring build trust and integrity.
Job Relevance for End Users	**Risk:** End-users may avoid digital systems if they see them as extra work. **Opportunity:** Highlighting "What's in it for me" (WIIFM) is key. Showing how digital solutions benefit users directly, especially through "day in a life" examples, can increase adoption.
Enjoyment of Digital Technology	**Risk:** If users find digital technology a chore, they will avoid it. **Opportunity:** Identify teams with low digital literacy and connect with them empathetically. Provide specific support and focus on function and relevance to improve adoption and overall digital literacy.
Track Record of Success for Business Owners	**Risk:** Business owners may resist new digital solutions fearing they are too experimental. **Opportunity:** Use case studies and testimonials from similar organizations to show proven success. This can reassure business owners and encourage adoption.

The diagram below shows elements that may be barriers, or enablers, for digital adoption and provides a framework to guide organisations on their journey to digital readiness.



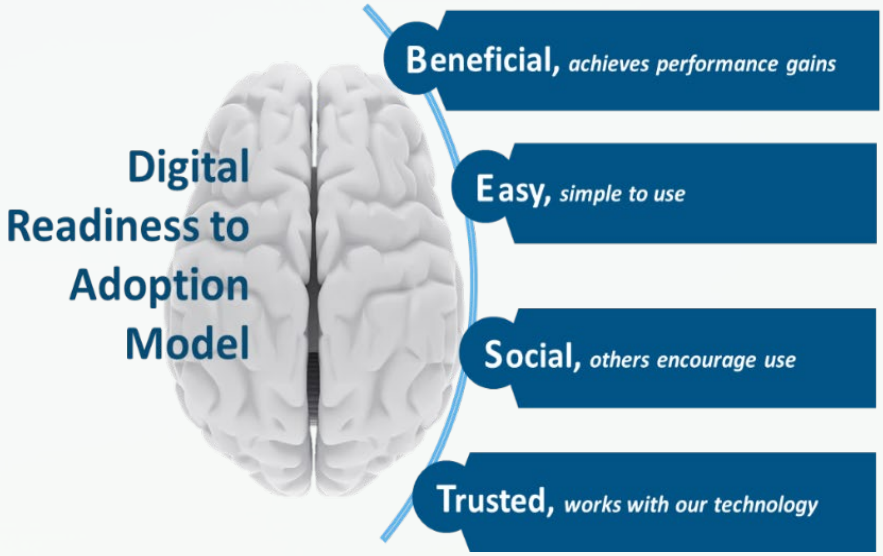
THRIVE Digital Readiness Triangle

Next Steps

In this whitepaper, Kitney and Mapien researched and evaluated various factors that influence the adoption of technological solutions. These factors can be related to the technology itself, the organization, or the individual.

The THRIVE Digital Readiness survey identified key predictors of successful technology adoption, especially when combined with personality traits and demographics.

Kitney and Mapien are pleased to share their findings on the barriers and enablers of technology adoption.



As part of THRIVE's next steps, Kitney and Mapien continue to collaborate and offer solutions that help organisations overcome barriers and optimize enablers for technology adoption.

For more information and insights, please contact us. We'd be pleased to work with you on your journey to successful technology adoption.

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