# Assessment event 2 of 4: Project Report

## Criteria

### Unit code and name

Cluster | ICT Analysis

BSBCRT404 | Apply advanced critical thinking to work processes

ICTICT426 | Identify and evaluate emerging technologies and practices

ICTSAS432 | Identify and resolve client ICT problems

### Qualification/Course code and name

Select your Qualification/Course code and name from the dropdown.

ICT40120 | Certificate IV in Information Technology

## Student details

Student name

Tiana Zou

Student number

881273817

Version: 20231120

Date created: 20 November 2023

© TAFE NSW 2023  
RTO Provider Number 90003 | CRICOS Provider Code: 00591E

This assessment can be found in the TAFE NSW [Learning Ba](https://share.tafensw.edu.au/share/logon.do?.page=searching.do?in%3DC1b145167-45e0-41ec-9f64-92af668e3e54%26q%3D%26type%3Dstandard%26sort%3Drank%26dr%3DAFTER%26page%3D1)nk.

The content in this document is copyright © TAFE NSW 2023 and should not be reproduced without the permission of TAFE NSW. Information contained in this document is correct at time of printing: 07 March 2024. For current information please refer to our website or your teacher or assessor as appropriate.

# Part 1: Report details

Report to: Gelos Enterprises

Report author: Tiana Zou, Analyst

# Part 2: Emerging technologies

## Introduction

Introduce your topic and describe the purpose of this section of the report.

In today's evolving landscape of emerging ICT technologies, three standout trends include cloud computing, artificial intelligence (AI), and drones. The purpose of this report is to evaluate emerging technologies and provide information about their advantages, disadvantages, and impacts to the workplace. Cloud computing streamlines data management, offering benefits such as scalability and cost-efficiency, but it also poses challenges like data security risks. AI advancements enable automation and insights, yet ethical considerations and job displacement concerns arise. Drones revolutionise lots of industries with their aerial capabilities, but some disadvantages exist.

## Findings

Reference information sources in footnotes or reference list.

### Technology 1

Table 1 Research findings

| Criteria | Description |
| --- | --- |
| Name | Artificial intelligence |
| Purpose, function, attributes and features | Artificial intelligence (AI) encompasses computer systems capable of performing tasks that typically require human intelligence. Its purpose is to automate processes, analyse data, and make decisions based on algorithms and patterns. It can also improve employee and customer experience and streamline manual tasks. |
| General design and operating principles | AI offers advantages such as automation of repetitive tasks, faster data analysis, improved decision-making accuracy, and enhanced productivity. It also enables the discovery of insights from large datasets and the development of personalized experiences for users. Additionally, it has the function to take data (often through inputs, automating data gathering or through observation) and internally analyse and train that data into useful insights. |
| Advantages | AI has benefits in customisation of its functions (through code, AI data training and creation of models), scalability (through its ability to be hosted serverless and provide software updates to employees and users), and provide time-saving benefits.  It facilitates predictive analytics, process optimization, and the development of intelligent virtual assistants. It also enables productivity by reducing time spent on more redundant and manual work and promote efficient so that employees can focus their time on other priorities. |
| Organisational opportunities | Implementing AI presents opportunities for organisations to streamline operations, innovate products and services, gain competitive advantage, and improve customer experiences. It can also provide a monetary and financial benefit for organisations as its benefits can streamline into other practices, hence improving efficiency overall for other parts of the company that may not be directly related to the technology department. |
| Disadvantages | Challenges associated with AI include initial implementation costs, potential errors or biases in algorithms, job displacement concerns, and ethical considerations regarding data privacy and security. It is also a fast-changing industry and would need constant innovation – hence time – spent to ensure that it is compliant and up to date with privacy standards.  Additionally, AI systems may require specialised skills for development and maintenance. |
| Organisational threats | Organisational threats related to AI include cybersecurity vulnerabilities, potential misuse of AI-powered tools, and regulatory compliance challenges.  There are also concerns about AI systems making incorrect or biased decisions, leading to reputational damage or legal repercussions. |
| Impact on current technologies and practices | AI has a transformative impact on current technologies and practices by enabling automation, data-driven decision-making, and personalised experiences.  It can integrate with existing systems, enhances efficiency, and drives innovation across departments that may not be related to technology. |
| Overall evaluation of the potential application of this technology for the ICT Service Desk function | AI holds significant potential for enhancing organizational processes and decision-making. It can be applied in many ways and present numerous advantages to the organisation like efficiency, accuracy of tasks and scalability across the company.  However, careful consideration of ethical, security, and regulatory implications is essential for successful implementation and adoption. |

### Technology 2

Table 2 Research findings

| Criteria | Description |
| --- | --- |
| Name | **Cloud Computing** |
| Purpose, function, attributes and features | Cloud computing involves delivering various computing services (such as servers, storage, databases, networking, software, and analytics) over the internet.  Its purpose is to provide access to scalable and flexible resources on-demand, allowing organizations to innovate, scale, and adapt rapidly without investing in physical infrastructure. |
| General design and operating principles | It offers attributes like scalability, flexibility, accessibility, reliability, and cost-effectiveness. It allows users to access resources from anywhere with an internet connection. Features include Infrastructure as a Service (IaaS), Platform as a Service (PaaS), Software as a Service (SaaS), and serverless computing. |
| Advantages | Cloud computing provides advantages such as cost savings, scalability, flexibility, reliability, and security. It eliminates the need for upfront infrastructure investment and enables organizations to pay for only the resources they use. It can also be accessed, provisioned and without the need of a physical service and does not.  It offers scalability to handle fluctuating workloads, flexibility to access resources from anywhere, and reliability through redundant infrastructure and data backups. |
| Organisational opportunities | Implementing cloud computing presents opportunities for organizations to optimize costs, improve agility, accelerate innovation, and enhance collaboration.  It enables organizations to scale resources quickly, experiment with new ideas, and deliver products and services faster to market. |
| Disadvantages | Challenges associated with cloud computing include concerns about data security, compliance with regulations, vendor lock-in, and potential downtime or service disruptions.  It requires careful planning and management to ensure data protection, compliance, and cost optimization. |
| Organisational threats | Organisational threats related to cloud computing include data breaches, data loss, service outages, vendor failures, and regulatory non-compliance.  Organizations need to implement robust security measures, disaster recovery plans, and compliance strategies to mitigate these threats. |
| Impact on current technologies and practices | Cloud computing transforms current technologies and practices by providing on-demand access to computing resources, enabling remote work, and facilitating collaboration.  It simplifies infrastructure management, accelerates development cycles, and enables organizations to focus on innovation rather than IT maintenance. |
| Overall evaluation of the potential application of this technology for the ICT Service Desk function | Cloud computing offers significant potential for enhancing organizational efficiency, scalability, and innovation. It can offer limitless capabilities for the organisation from cost savings to improvements in ways of working.  However, organizations must carefully evaluate security, compliance, and cost considerations to ensure successful implementation and adoption. |

### Technology 3

Table 3 Research findings

| Criteria | Description |
| --- | --- |
| Name | **Drones** |
| Purpose, function, attributes and features | Drone technology involves unmanned aerial vehicles (UAVs) capable of flying autonomously or remotely controlled by operators. Its purpose is to perform various tasks such as aerial surveillance, data collection, photography, delivery, and inspection in areas inaccessible or hazardous to humans. |
| General design and operating principles | Drone technology offers attributes like manoeuvrability, versatility, aerial perspective, and real-time data acquisition. It is designed to capture and provide real-time insights and data to the operator.  Features include different types of drones (fixed-wing, rotary-wing, hybrid), payload options (cameras, sensors, packages), and autonomous flight capabilities. It can be operated and leveraged through internet and cloud technologies and be controlled in a ‘hybrid’ banner. |
| Advantages | Drone technology provides advantages such as cost savings, efficiency improvements, safety enhancements, and data accuracy. It enables organizations to perform tasks more quickly, safely, and cost-effectively than traditional methods, especially in remote or hazardous environments.  Drones offer real-time data acquisition, aerial mapping, and surveillance capabilities, enhancing situational awareness and decision-making. This is useful for insurance companies providing damage analysis after a natural disaster, data analysis and gathering for geographical events and more. |
| Organisational opportunities | Implementing drone technology presents opportunities for organisations to improve operational efficiency, enhance safety measures, and gain competitive advantages.  It enables organisations to access inaccessible areas, conduct inspections more frequently, and deliver goods or services faster. |
| Disadvantages | Challenges associated with drone technology include regulatory restrictions, privacy concerns, limited payload capacity, and weather dependence. Organisations need to navigate regulatory frameworks, obtain permits/licenses, and address public concerns to ensure responsible and ethical drone use. It is also very costly to provision and operate. |
| Organisational threats | Organisational threats related to drone technology include security vulnerabilities, airspace congestion, unauthorized drone operations, and accidents/collisions. Companies need to implement safety protocols, cybersecurity measures, and risk management strategies to mitigate these threats. |
| Impact on and changes required to current technologies and practices | Drone technology transforms current technologies and practices by enabling aerial surveillance, data collection, and delivery services.  It enhances data acquisition, mapping, and monitoring capabilities, revolutionising industries such as agriculture, construction, logistics, and emergency response. |
| Overall evaluation of the potential application of this technology for the ICT Service Desk function | Drone technology offers significant potential for enhancing organisational operations, safety, and innovation. It can be largely beneficial and complement other technologies in and organisation to provide innovative services to customers. It is largely impactful and can help organisations overcome challenges in data gathering and promote companies to be at the forefront of their industry.  However, organisations must address regulatory, privacy, and safety considerations to ensure responsible and sustainable drone use. Continuous training, monitoring, and compliance are essential for successful implementation and adoption.  Top of Form  Bottom of Form |

### Conclusion

Evaluation of research findings, selection of one ICT technology to implement and explanation of how it will resolve the ICT problem.

After reviewing the findings on artificial intelligence (AI), cloud computing, and drone technology, it's evident that each technology offers unique advantages and opportunities for enhancing organisational efficiency and innovation. Among these, artificial intelligence emerges as a particularly promising solution for resolving existing ICT problems. By implementing AI within the ICT Service Desk function, organisations can leverage its capabilities to automate processes, improve decision-making accuracy, and enhance overall productivity. AI's ability to streamline operations, analyse vast amounts of data, and provide personalised experiences aligns well with the challenges faced by ICT departments. Furthermore, AI's potential to integrate with existing systems and drive innovation across departments positions it as a transformative solution for addressing ICT problems. However, careful consideration of ethical, security, and regulatory implications is crucial for successful implementation and adoption. Therefore, prioritising AI implementation can pave the way for overcoming ICT challenges and fostering organisational growth in the digital age.

### Recommendations

Table 4 Recommendations

| No. | Action | Job role / Department responsible |
| --- | --- | --- |
| 1 | Invest in AI training | Technology Division leads |
| 2 | Hiring more AI professionals | Human Resources |
| 3 | Initiate projects and prototypes | Technology Division leads |
| 4 | Continuous optimisation of existing AI technologies | Technology teams and managers |
| 5 | Partnerships with other AI technology companies | Technology Division leads |
| 6 | Assessment current processes and seek areas of improvement | Technology Division leads and managers |

# Part 3: Emerging practices

## Introduction

Introduce your topic and describe the purpose of this section of your report.

In today's fast-paced workplaces, three key trends stand out: digitising routine tasks, embracing hybrid and remote work setups, and prioritising mental health and well-being. The purpose of this report is to explore these emerging practices and outline their advantages, disadvantages and impacts to the current workforce. Digitisation streamlines tasks using technology and offers benefits like cost savings but also facing challenges like cybersecurity risks. Hybrid and remote work models provide flexibility, but communication hurdles and cybersecurity concerns arise. Mental health initiatives aim to create supportive environments but face stigma and resource constraints. By understanding these practices, companies can enhance efficiency and employee satisfaction in the modern workplace.

## Findings

Reference information sources in footnotes or reference list.

### Practice 1

Table 5 Research findings

| Criteria | Description |
| --- | --- |
| Name | **Digitisation of routine tasks** |
| Purpose, function, attributes and features | The purpose for the digitisation of routine tasks are streamlining and enhancing efficiency by converting manual tasks into digital processes. Automation of repetitive tasks, reducing human effort and minimising errors is also important. It also allows for the speed, accuracy, scalability, and improved data accessibility. Integration with digital platforms, data analytics, real-time updates, and customisable workflows. |
| Advantages | It has shown advantages of efficiency, accuracy, and cost savings to the organisation. The scalability of digitalised processes, often through applications or code, can handle increased workloads, provide data insights, ensure consistency, and overall, contribute to saving time. |
| Organisational opportunities | Digitisation presents opportunities for strategic focus, competitive advantage, improved customer experience, data-driven decision-making, global reach, resource optimisation, innovation culture, improved compliance, and cost savings. |
| Disadvantages | Initial costs, employee resistance to change, security concerns, dependence on technology, job displacement, data privacy issues, and maintenance challenges are among the disadvantages associated with digitisation. |
| Organisational threats | Heightened cybersecurity vulnerabilities, rising costs associated with digitisation and cybersecurity measures, and challenges related to regulatory compliance in the rapidly evolving digital landscape pose threats to organisations. |
| Impact on current technologies and practices | Digitalisation affects not only whole jobs but also the composition of jobs, by altering the task profiles within them. This means that some tasks within an existing occupational role disappear (as they are automated or no longer needed in a digital workplace). Some roles are changed. For example, manual/physical work processes are digitised. Also, new roles might be created – for example, the rise of cyber security and data roles. |
| Overall evaluation of the potential application of this practice to employees and the organisation | The digitisation of routine tasks offers significant benefits in terms of efficiency and cost savings but requires addressing challenges such as initial costs, employee resistance, security concerns, and regulatory compliance. It can be highly beneficial for a workplace if adopted carefully with the employees in mind.  Continuous investment in technology, training, and cybersecurity measures is essential to optimise the benefits of digitisation while mitigating associated risks. |

### Practice 2

Table 6 Research findings

| Criteria | Description |
| --- | --- |
| Name | **Hybrid and remote work** |
| Purpose, function, attributes and features | Hybrid and remote work models aim to provide flexibility to employees by allowing them to work from home or alternate between remote and in-office work.  The purpose is to improve work-life balance, reduce commuting time, and increase productivity through a more flexible work environment. |
| Advantages | Improved work-life balance, reduced commuting time and costs, increased productivity, flexibility in work schedules, access to a broader talent pool, and reduced carbon footprint due to fewer commutes. |
| Organisational opportunities | Enhanced employee satisfaction and retention, access to a diverse talent pool regardless of geographical location, potential cost savings on office space and utilities, increased productivity through fewer interruptions, and improved continuity during emergencies or disruptions. |
| Disadvantages | Challenges in communication and collaboration, potential feelings of isolation or disconnection among remote employees, difficulty in monitoring performance and accountability, and concerns about maintaining company culture and cohesion. |
| Organisational threats | Increased cybersecurity risks due to remote access to company networks and data, potential compliance issues related to data protection and privacy regulations, and difficulties in maintaining team cohesion and collaboration. |
| Impact on current technologies and practices | Remote work necessitates the use of technology for virtual meetings, collaboration tools, and remote access to company systems. It may require adjustments in management practices to ensure effective communication, collaboration, and performance management in a distributed work environment. |
| Overall evaluation of the potential application of this practice to employees and the organisation | Hybrid and remote work models offer significant benefits in terms of flexibility and work-life balance but require careful consideration of communication strategies, performance management practices, and cybersecurity measures to address potential challenges effectively.  Continuous investment in technology, training, and support is essential to optimise the benefits of hybrid and remote work while mitigating associated risks. |

### Practice 3

Table 7 Research findings

| Criteria | Description |
| --- | --- |
| Name | **Mental Health and Employee Wellbeing** |
| Purpose, function, attributes and features | Mental health and employee well-being initiatives aim to support and promote the psychological and emotional health of employees in the workplace.  The purpose is to create a supportive work environment that fosters resilience, reduces stress, and enhances overall well-being through various programs, policies, and resources. It allows employees a safe space to destress and create a space to engage in meaningful conversations. |
| Advantages | The advantages are improved morale, job satisfaction, productivity, retention, and organisational performance. Initiatives can help reduce burnout, stress, and often, anxieties related to work.  Over time, it has been shown to reduce absenteeism, healthcare costs, and turnover rates as a positive work environment is fostered. |
| Organisational opportunities | Mental health and employee well-being initiatives create opportunities for building a supportive culture, enhancing employer branding, attracting, and retaining top talent, and fostering innovation and creativity.  They also contribute to compliance with legal and regulatory requirements related to workplace health and safety and demonstrate corporate social responsibility. |
| Disadvantages | Challenges such as stigma, lack of awareness or resources, resistance to change, and competing priorities within the organization may hinder the implementation and effectiveness of mental health and well-being initiatives.  Additionally, there may be concerns about the potential costs associated with implementing and sustaining these programs over time. |
| Organisational threats | Failure to address mental health and well-being issues in the workplace can lead to increased stress, burnout, absenteeism, turnover, and legal liabilities for the organization.  Ignoring mental health concerns may also result in decreased employee morale, productivity, and overall organizational performance. |
| Impact on current technologies and practices | Mental health and well-being initiatives may involve leveraging technology platforms for providing access to resources, training, and support services.  They may also require adjustments in organisational practices, such as flexible work arrangements, performance management, and leadership training, to create a supportive work environment. It may also involve additional training and courses to align employees with the organisation’s strategic direction towards mental health. |
| Overall evaluation of the potential application of this practice to employees and the organisation | Prioritising mental health and employee well-being is essential for fostering a positive work culture, improving organizational performance, and mitigating risks associated with stress and burnout.  Continuous investment in resources, training, and support services is necessary to create a workplace that promotes mental health and well-being for all employees. |

### Conclusion

Evaluation of research findings, selection of one ICT practice to implement and explanation of how it will resolve the ICT problem.

Among these practices, implementing mental health and employee wellbeing initiatives appears to be the most critical and valuable. Prioritising employee mental health not only enhances morale and productivity but also mitigates risks associated with stress, burnout, and absenteeism. By fostering a supportive work environment and providing access to resources and support services, organisations can create a culture that values employee well-being.

To resolve the problem, Gelos Enterprises should implement mental health and employee wellbeing initiatives. This could involve establishing support programs, providing access to counselling services, promoting work-life balance, and offering training on mental health awareness. By prioritising employee well-being, Gelos Enterprises can create a positive work culture that enhances morale, productivity, and organisation performance while mitigating risks associated with stress and burnout. Continuous investment in resources, training, and support services is necessary to ensure these initiatives remain successful and sustainable.

### Recommendations

Table 8 Recommendations

|  |  |  |
| --- | --- | --- |
| No. | Action | Job role / Department responsible |
| 1 | Implement mental health and employee wellbeing initiatives like company parties, trips, fitness offers. | ‘People and Culture’ department |
| 2 | Establishing support programs, providing access to counselling services | People and Culture’ department |
| 3 | Provide training and education | People and Culture’ department and relevant division leads or managers |
| 4 | Promote healthy habits like healthy eating, financial health, and support mental health | All employees and leaders |
| 5 | Leadership training for managers and people-leaders on employee mental health | People and Culture’ department |
| 6 | Establish a committee or dedicated team to lead these initiatives | People and Culture’ department |

### Reference list

American Psychological Association. (2020). Mind/body health: Stress. Retrieved from https://www.apa.org/topics/stress/index.

Centers for Disease Control and Prevention. (2020). Workplace health promotion: Mental health. Retrieved from https://www.cdc.gov/workplacehealthpromotion/tools-resources/workplace-health/mental-health/index.html.

Deloitte Insights. (2019). Digitization, digitalization, and digital transformation: Confuse them at your peril. Retrieved from https://www2.deloitte.com/us/en/insights/digital/digital-transformation/what-is-digital-transformation.html.

Harvard Business Review. (2017). Digital transformation in tech companies: A playbook. Retrieved from https://hbr.org/2017/06/digital-transformation-in-tech-companies-a-playbook.

Harvard Business Review. (2021). How to embrace remote work: An HBR Quick Take. Retrieved from https://hbr.org/video/6212618313001/how-to-embrace-remote-work.

McKinsey & Company. (2018). The future of work in technology. Retrieved from https://www.mckinsey.com/industries/technology-media-and-telecommunications/our-insights/the-future-of-work-in-technology.

McKinsey & Company. (2021). Remote work after COVID-19: New opportunities for contact centers. Retrieved from https://www.mckinsey.com/business-functions/operations/our-insights/remote-work-after-covid-19-new-opportunities-for-contact-centers.

Mental Health America. (n.d.). Workplace wellness: Taking care of your mental health on the job. Retrieved from https://www.mhanational.org/workplace-wellness-taking-care-your-mental-health-job.

National Institute of Mental Health. (2020). Mental health information: Statistics. Retrieved from https://www.nimh.nih.gov/health/statistics/index.shtml.

PwC. (2021). The future of work: From remote to hybrid. Retrieved from https://www.pwc.com/us/en/library/covid-19/from-remote-to-hybrid.html.

World Health Organization. (2020). Mental health in the workplace. Retrieved from https://www.who.int/teams/mental-health-and-substance-use/promotion-prevention/mental-health-in-the-workplace.

Johnson, M. (2020). "Unlocking the Potential of Drones: A Comprehensive Guide." DroneDeploy. Retrieved from https://www.dronedeploy.com/learn/guide-to-drones/

Smith, A. (2021). "The Complete Guide to Cloud Computing: What You Need to Know." Cloudwards. Retrieved from https://www.cloudwards.net/what-is-cloud-computing/

Smith, J. (2021). "The Impact of Artificial Intelligence on Business Operations." Harvard Business Review. Retrieved from https://hbr.org/2021/05/the-impact-of-artificial-intelligence-on-business-operations

Watson, K. (2019). "Artificial Intelligence and Its Role in Transforming Industries." TechCrunch. Retrieved from https://techcrunch.com/2019/11/20/artificial-intelligence-and-its-role-in-transforming-industries/