

Digital Work Systems Tool

THIS TOOL OUTLINES KEY DIGITAL WORK SYSTEMS COMMONLY USED IN WORKPLACES AND SUGGESTED CONTROLS TO ELIMINATE OR REDUCE THE POTENTIAL RISK THEIR USE MAY INTRODUCE TO THE WORKPLACE.

Digital work system means an algorithm, artificial intelligence, automation or online platform used by an employer to allocate tasks, coordinate production, organise processes, manage inventory, manage staff, issue directives, or assess employee performance.

Digital work systems can be broadly classified into industrial analytics or people analytics. Industrial analytics include systems which:

- Deliver real-time instructions and feedback to workers on their performance
- Predict staffing and resourcing needs
- Identify potential sites for labour-saving technologies to be implemented
- Implement labour-saving technologies in the production process (automation),
- Optimise and coordinate the sequence of tasks and complex processes
- Anticipating maintenance and replacement needs
- Synchronise output with fluctuations in consumer demand
- Synchronise labour inputs with fluctuations in consumer demand
- Synchronise production with inter-company activity (i.e. supply chains)

People analytics concentrate on the worker, consumer or client. People analytics can include digital systems which:

- Monitor, evaluate and rank, worker performance,
- Calculate and ensure adherence to schedules and deadlines,
- Inform decisions on hiring, firing, disciplining, and promoting,
- Analyse workers' behavioural, cognitive, and emotional states,
- Analyse workers' biometric data including sleeping habits, fingerprints, retina and iris scans, physical fitness, vocal tone, and facial expressions,
- Modify workers' behaviour through incentives, punishments and strategic withholding of information,
- Influence workers' relationships with one another, and
- Calculate and issue remunerations and entitlements.

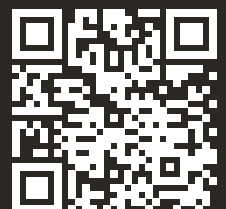
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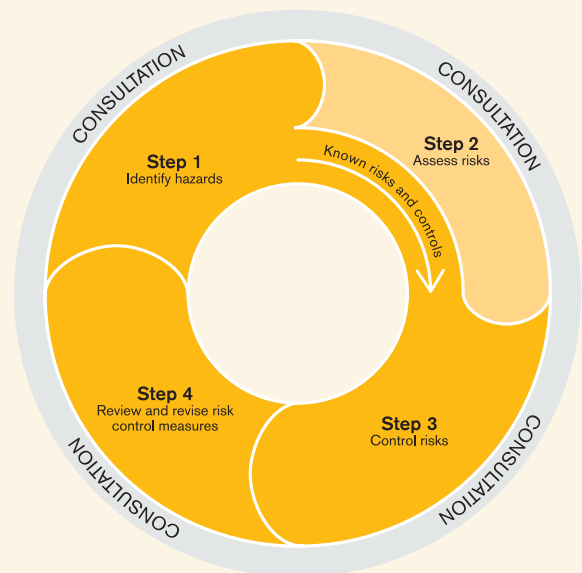
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HOW TO DEVELOP A PREVENTION PLAN

Note that the same basic risk management framework should be applied as to all other hazards and risks:

1. Identify the hazards associated with the automation, digital surveillance and algorithmic management
2. Identify and assess the risks
3. Check existing controls and identify new controls for any gaps
4. Remember certain risks (e.g. hazardous manual handling, psychosocial risks, plant) need to be managed using a regulated hierarchy of control



Remember:

- Victorian OHS laws mandate that employers consult prior to making decisions that may affect health and safety.
- In addition, Australian industrial law mandates that employers conduct ongoing consultation over major changes to the workplace, including on the rollout of significant digital workplace systems.
- Digital work systems can transform every element of the work environment. In some cases, the introduction of a digital system can have impacts on the content and intensity of work, the prevalence of hazards, the speed and pace of production, the privacy of the worker, or the interpersonal culture of an organisation.
- OHS frameworks are not the only way to address issues caused by digital work systems.
- HSRs may also consider other legal levers such as working with union delegates and unions to negotiate clauses in Enterprise Agreements or in workplace policies, to regulate how digital work systems will operate.

OTHER RESOURCES FOR DIGITAL WORK SYSTEMS

Victoria:

- Victorian Legislation - [Occupational Health and Safety \(Psychological Health\) Regulations 2025](#)
- WorkSafe - [Compliance Code: Psychological Health](#)
- Explore psychosocial hazard fact sheets at [Psychosocial hazard fact sheets | WorkSafe Victoria](#)

Other jurisdictions have also published information and passed legislation on this topic. (These do not apply in Victoria, but are useful in assessing the state of knowledge about hazard identification and risk control)

- [Model code of practice: Managing psychosocial hazards at work](#) - a valuable resource and guidance for employers, employees and HSRs in developing their state of knowledge around management of psychosocial hazards
- Comcare recognizes intrusive surveillance as a hazard - [Intrusive surveillance | Comcare](#)
- [NSW Work Health and Safety Regulation 2025](#) - Division 11 of these regulations includes matters relevant to the determination of control measures

1. The information in this tool has been crowd-sourced from HSRs at the 2025 VTHC HSR Conference
2. The information in the following tables is not exhaustive

Monitoring software

Examples of monitoring software	Examples of risks that can be increased by monitoring software, and what the effects can look like	Examples of actions HSRs can take for monitoring software
<ul style="list-style-type: none"> • Keystroke logging software • Screen capture/monitoring software • Internet activity/browser tracking • App Usage /Work apps downloaded on personal devices • Internet activity/Network traffic monitoring • Email and communication monitoring • Remote desktop monitoring • Mood assessments based off language used or facial expressions/Automatic consumer interaction ratings • AI-based productivity tracking tools • Mouse movement detection • Drone surveillance • Global position system tracking (GPS). • Monitoring swipe cards, sign in times, log in and log out times. • Monitoring telephone calls, conversations, interactions with colleagues or customers. • Telematics (communication of digital information over long distances) • Fatigue monitoring software which uses eye-tracking or retinal monitoring. • Health and wellbeing programs which forecast productivity or need for leave / medical accommodations. 	<ul style="list-style-type: none"> • High job demand/work intensification <ul style="list-style-type: none"> • High or unrealistic workloads/time pressure • Discrimination - women workers, workers with disabilities, migrant workers or workers from diverse backgrounds may be subject to greater monitoring and scrutiny than their peers. • Arbitrary decision-making based off flawed monitoring system. • Low job control <ul style="list-style-type: none"> • Work is micromanaged, excessive monitoring • Work is machine or computer paced • Loss of task variety as workers are driven to focus only monitored/track tasks. • Poor workplace relationships <ul style="list-style-type: none"> • Loss of trust and conflict • Management lack empathy and defer to automated decision making • Forced competitive ranking systems between workers which creates division between them. • Poor organisational justice <ul style="list-style-type: none"> • Unfairness or bias in decision-making by algorithms • Lack of transparency around decision-making and work outcomes • Lack of respect or dignity in the treatment or management of staff • Poor interpretation of emotional cues • Function creep - e.g. monitoring proposed for quality or training purposes being used for performance management or disciplinary purposes • Anxiety, insomnia, headaches, increased blood pressure, decreased confidence, irritability • Employees feel that they must be perfect at all times • Physical hazards arising from time pressures, fatigue and anxiety • Absenteeism / presenteeism • Withdrawal / disengagement 	<ul style="list-style-type: none"> • Explore alternative options to review employee performance and task completion • Monitor and record negative externalities from monitoring systems (i.e., productivity falls because workers are being pushed only to do monitored tasks instead of work that might be crucial for the organization but is hard to measure or quantify). • Conduct inspections, surveys, risk assessments, speak with DWG to identify concerns of and effects on DWG members • Request access to information the employer may have regarding: <ul style="list-style-type: none"> • Incident and injury reports • Results of well-being surveys • Absenteeism rates / worked hours reports • Minutes of OHS meetings • Information on processes • Overtime worked (including for remote workers) • Negotiate a binding code of conduct for the use of digital surveillance - consider: <ul style="list-style-type: none"> • Limit use to essential requirements (with 'essential' to be strictly defined to law-enforcement, training, and health and safety matters). • No disciplinary decisions made by technology, and no disciplinary decisions to be made using surveillance footage / data unless the worker and/or their union can review the piece of surveillance in question. • Develop performance measures based on criteria that are within employees' control • Clearly communicate expected performance measures that are achievable and reasonable. • Limits on who accesses data and how long it is stored • Right to turn off tracking out of hours • No work apps on personal devices • Remind DWG members to turn off all company devices and location tracking when finishing work for the day, cover cameras etc. • Total transparency about how monitoring will occur at the workplace and when WFH

Biometric data

Examples of biometric data	Examples of risks that can be increased by biometric data and what the effects can look like	Examples of actions HSRs can take for biometric data
<ul style="list-style-type: none"> • Pulse rate monitor • Blood tests • Genetic tests • Eye movement scanning • Facial recognition systems • Fingerprint and iris scanners • Voice recognition systems • Biometric time clocks • Emotion detection software 	<ul style="list-style-type: none"> • Poor workplace relationships <ul style="list-style-type: none"> • Loss of trust and conflict • Violation of bodily autonomy normalised as a condition of employment. • Poor organisational justice <ul style="list-style-type: none"> • Unfairness or bias in decision-making by algorithms • Question biometric data used to justify decisions in the absence of scientifically verifiable ways (i.e. a system uses eye monitoring to assert that a worker was negligently distracted while driving a truck, but the system has not been scientifically tested or peer reviewed for its validity). • Lack of transparency around decision-making and work outcomes. • Lack of respect or dignity in the treatment or management of staff • Identity theft and data breaches more broadly • Significant encroachment of workplace demands into personal life. Health and wellbeing programs that monitor workers' diets, sleep or physical fitness can make workers feel pressured to change how they spend their personal time so as to not 'fall behind' from colleagues. • Workers with disabilities, or other unique physical markers, could be marked as underperforming because digital work systems misinterpret or misidentify their behavioural / biological markers. • Poor management of privacy concerns. • Anxiety, insomnia, headaches, increased blood pressure, decreased confidence, irritability • Employees feel that they must be perfect at all times • Punishment of workers for having conditions that are either not their fault or entirely the fault of the employer / work environment i.e. a worker develops a chronic illness, a musculoskeletal condition or employment-related fatigue as a result of excessive workload and monitoring stress. This causes the worker to be fatigued at work, and a biometric system picks this up and punishes them for reduced performance. Biometric monitoring systems can be used by employers to reframe excessive workload as a fault of the worker. • Physical hazards arising from time pressures, fatigue and anxiety • Absenteeism / presenteeism • Withdrawal / disengagement 	<ul style="list-style-type: none"> • Explore options to eliminate use of biometric data- e.g. can a fob or card be used instead for access? • Where some kind of biometric data collection is unavoidable, urge for the least intrusive method to be favoured. • Conduct inspections, surveys and risk assessments, speak with your DWG to identify the concerns of, and effects on, employees • Request access to information - e.g. incident reports, results of surveys, minutes of OHS meetings, technical information on biometrics monitored and the methods of monitoring and where and how the data is stored • Ensure consultation occurs: <ul style="list-style-type: none"> • Before decision to introduce new technology • When determining how technology will be used • To establish clear policy, procedure and accountability around management of data • Negotiate a code of conduct for the use of biometric data: <ul style="list-style-type: none"> • Develop process for destruction of biometric data upon end of employment • Develop process for employees to access own biometric data • Limits on who accesses data • Time limit on data storage • No work apps on personal devices • No personal apps on work devices <p><i>Note that incorporating this code into an Enterprise Agreement would allow the dispute procedure to be enacted in the event of a breach</i></p>

Algorithmic management

Examples of algorithmic management	Examples of risks that can be increased by algorithmic management and what the effects can look like	Examples of actions HSRs can take for algorithmic management
<ul style="list-style-type: none"> AI-driven scheduling and workload management AI-driven payroll software and dynamic wage setting. Used to predict and allocate resources e.g. peak periods Performance tracking algorithms Automated data-driven decision-making systems Predictive analytics for worker performance Task automation Predictive maintenance Inventory management <ol style="list-style-type: none"> Descriptive ADM refines data already collected about the workplace such as employee absences, customer sentiments, staff turnover and output to make descriptions about the work environment. For example, assessing an employee's productivity. <p style="text-align: center;"><i>"I had [surveillance] used to attack my work ethic and I felt very violated." B, Early Childhood Educator¹</i></p> Prescriptive ADM generates specific recommendations, instructions or directives to workers or managers about organisational decisions, i.e. assigning deadlines for tasks to be completed.² <p style="text-align: center;"><i>"If we decline too many jobs, the algorithm takes note. If we're delayed by traffic, the algorithm sends warnings, threatening to deactivate us if we don't speed up." Ustav Bhattarai, TWU Rideshare Driver and HSR³</i></p> Predictive ADM relies on data collected about the present to forecast future changes, trends or developments. For example, using a range of psychological and personal data to make predictions about a worker's likelihood of staying in a job long term.⁴ 	<ul style="list-style-type: none"> High job demand/work intensification <ul style="list-style-type: none"> High or unrealistic workloads/time pressure Algorithmic management and automated decision making can often be used by employers to justify decisions that have already been made, while giving them a neutral or objective veneer. Anti-worker practices, employer risk-taking or hazard exacerbation disguised as matters of procedure necessitated by advice from an advanced system. Low job control <ul style="list-style-type: none"> Work is micromanaged, excessive monitoring Work is machine or computer paced Physical hazards arising from time pressures, fatigue and anxiety: Algorithmic management systems are often trained on US labour standards and WHS frameworks which are lower than Australia's. Algorithmic management can be used to introduced harsher and more dangerous workplace practices into Australia via stealth. Unrealistic targets resulting from no human input to development of KPIs Bad algorithmic design based on inherent biases <ul style="list-style-type: none"> Systems are trained on material that contains every bias, prejudice and omission of analogue society. They are capable of stereotyping and replicating systematic disparities. 72% of Australian bosses make no effort to mitigate bias in AI systems used at work (Responsible AI Index, 5 September 2024, Fifth Quadrant.) Breakdown or diffusion in organisational accountability, responsibility and liability. Decisions are made by systems without a single human manager taking responsibility for explaining, rationalizing or justifying them. Subsequently, workers have no clear sense of where to report the negative effects or externalities from these decisions or who is responsible for them. Less focus on quality service - more focus on statistics Function creep - use of data for performance management or disciplinary purposes No permitted variation to expectations for individual circumstances - not factoring in cultural, gender, age, religious, social, neurodiversity differences Potential discrimination against individuals on part-time or flex rosters De-skilling - humans forgetting how to assess data or make decisions. Loss of nuanced work that is valuable but difficult to quantify Management can't explain decisions Employees can't contest decisions Anxiety, insomnia, headaches, increased blood pressure, decreased confidence, irritability Increased absenteeism High staff turnover 	<ul style="list-style-type: none"> Explore options to eliminate - substitute with human or team decision making. Allocation of human accountability and explainability for decisions and liability for impacts. Conduct inspections, surveys and risk. Ensure outcomes of audits and assessments are shared with the workers, speak with your DWG to identify the concerns of, and effects on, employees. Request access to information - e.g. incident reports, results of surveys, technical information on algorithmic management and targets, including how targets are set Ensure consultation occurs: <ul style="list-style-type: none"> Before decision to introduce new technology When determining how technology will be used Prior to algorithm design to ensure relevant data is targeted To establish clear policy, procedure and accountability around management of data Negotiate a code of conduct for the use of algorithmic management: <ul style="list-style-type: none"> Commitment to apply human oversight to AI decisions (noting the issue of ratifying algorithmic output under time and institutional pressure.) Employee input to critique and refine system Agreed process to review individual KPIs to match abilities Develop process for reviewing decisions Ensure proper training and support provided before working in systems measured by algorithmic management Limits on who accesses data <p style="text-align: center;"><i>Note that incorporating this code into an Enterprise Agreement would allow the dispute procedure to be enacted in the event of a breach</i></p>

¹B, Early Childhood Educator. VTHC Workplace Surveillance Survey, 2024.

²Moore, Phoebe. 2019. "The Mirror for (artificial) intelligence: In whose reflection?" Special Issue of the Comparative Labor Law and Policy Journal, Vol. 41(1), p. 59.

³Ustav Bhattarai. Inquiry into the Digital Transformation of Workplaces. Public Hearings. House Standing Committee on Employment, Education and Training. 9 August 2024, p. 8.

⁴Moore, Phoebe. 2019. "The Mirror for (artificial) intelligence: In whose reflection?" Special Issue of the Comparative Labor Law and Policy Journal, Vol. 41(1), p. 55; McDonald, Fiona. Inquiry into Workplace Surveillance, Public Hearings. Legislative Assembly Economics and Infrastructure Committee. 26 September 2024, p. 20

Location and movement tracking

Examples of location and movement tracking	Examples of risks that can be increased by location and movement tracking, and what the effects can look like	Examples of actions HSRs can take for location and movement tracking
<ul style="list-style-type: none"> • GPS tracking (in vehicles, phones, or ID badges) • RFID tracking in warehouses or offices • Geofencing technology • Wearable tracking devices • Proximity detection for vehicle safety • Automated safety systems for lone workers • Tracking employees, assets and processes • Monitoring employee location, movement and desk occupancy • Monitoring travel times and locations 	<ul style="list-style-type: none"> • Use of location tracking to influence industrial disputes and lawful union activity: i.e. monitoring participation at union meetings, attendance at sites of protected action, and other personal activities by workers. • High job demand <ul style="list-style-type: none"> • Unrealistic time pressure • Low job control <ul style="list-style-type: none"> • Work is micromanaged, excessive monitoring • Physical hazards arising from time pressures, fatigue and anxiety, increased slips, trips, falls • Discrimination, intensified scrutiny and questioning against women, workers with disabilities, and those with caring responsibilities • Function creep - use of tracking for performance management or disciplinary purposes • Privacy and data security fears • Lack of sleep, increased blood pressure from anxiety about being tracked • Encourages risky behaviour and shortcuts • Fears about family safety and exposure to monitoring • Inflexible routes determined by incorrect data or lack of understanding about the job requirements • Negative health impacts related to ability to access break times and toilet breaks • Functionality reliant on internet access 	<ul style="list-style-type: none"> • Explore why tracking is necessary (e.g. safety, productivity etc.). Are there less intrusive ways to achieve the goal? • Conduct inspections, surveys and risk assessments, speak with your DWG to identify the concerns of, and effects on, employees, identify absenteeism and injury trends • Request access to information - e.g. incident reports, results of surveys, technical information on location and movement tracking devices, including how routes are determined • Ensure consultation occurs: <ul style="list-style-type: none"> • Before decision to introduce new technology • When determining how technology will be used • Prior to tracking design to ensure relevant location and movement is targeted • To establish clear policy, procedure and accountability around management of data • Negotiate a code of conduct for the use of location and movement tracking: <ul style="list-style-type: none"> • Agreed process for worker feedback • Commitment to not use location and movement data for disciplinary purposes • Develop process for reviewing decisions • Ensure proper training and support provided before location and movement tracking begins • Limits on who accesses data <p><i>Note that incorporating this code into an Enterprise Agreement would allow the dispute procedure to be enacted in the event of a breach</i></p>

Health and wellbeing tracking

Examples of health and wellbeing tracking	Examples of risks that can be increased by health and wellbeing tracking, and what the effects can look like	Examples of actions HSRs can take for health and wellbeing tracking
<ul style="list-style-type: none"> • Wearable health tracking devices (heart rate, stress levels) • Fatigue monitoring systems • AI-powered ergonomic monitoring • Disease symptom and contact tracing apps • Evaluating workplace wellbeing programs and resources for effectiveness 	<ul style="list-style-type: none"> • Poor workplace relationships <ul style="list-style-type: none"> • Loss of trust and conflict • Poor organisational justice <ul style="list-style-type: none"> • Unfairness or bias in decisions based on health and wellbeing data • Lack of respect or dignity in the treatment or management of staff • Poor interpretation of health and wellbeing data • Physical hazards arising from time pressures, fatigue and anxiety • Function creep - use of health or wellbeing data for performance management or disciplinary purposes • Privacy and data security fears • Lack of sleep, increased blood pressure from anxiety about being tracked • Pressure to work through injury • Increased presenteeism • Fear related to fitness-for-work status • Encourages risky behaviour and shortcuts • Discrimination - disability, illness, gender, age, culture 	<ul style="list-style-type: none"> • Explore options to eliminate - e.g. provide safe environment for staff conversations and feedback, surveys to track staff stress levels, revised rosters to address fatigue • Conduct inspections, surveys and risk assessments, speak with your DWG to identify the concerns of and effects on employees • Request access to information - e.g. incident reports, results of surveys, minutes of OHS meetings, technical information on the methods of monitoring, absenteeism and worked hours reports • Ensure consultation occurs: <ul style="list-style-type: none"> • Before decision to introduce new technology • When determining how technology will be used • To establish clear policy, procedure and accountability around management of data • Negotiate a code of conduct for the use of health and wellbeing tracking: <ul style="list-style-type: none"> • Develop process for destruction of data upon end of employment • Develop process for employees to access own health and wellbeing data • All health and well-being data reports to be de-identified • Limits on who accesses data • Time limit on data storage • No work apps on personal devices • No personal apps on work devices <p><i>Note that incorporating this code into an Enterprise Agreement would allow the dispute procedure to be enacted in the event of a breach</i></p>

Cobots (Collaborative robots)

Examples of COBOTs	Examples of risks that can be increased by COBOTs and what the effects can look like	Examples of actions HSRs can take for COBOTs
<ul style="list-style-type: none"> • Wearable health tracking devices (heart rate, stress levels) • Fatigue monitoring systems • AI-powered ergonomic monitoring • COVID-19 symptom and contact tracing apps • Used to automate assembly, material handling, quality control and packaging processes • Used to perform repetitive movement tasks 	<ul style="list-style-type: none"> • High job demand/work intensification <ul style="list-style-type: none"> • High or unrealistic workloads/time pressure • Low job control <ul style="list-style-type: none"> • Work is machine or computer paced • Micromanagement • Poor change management • Poor organisational justice - loss of trust • Lack of training for workers interacting with COBOTs • Physical hazards arising from interactions with COBOTs, e.g. collisions • Inability to over-ride COBOT decisions or programming • Loss of trust • De-skilling - workers no longer trained to perform COBOT tasks • Fear of blame due to COBOT faults and errors 	<ul style="list-style-type: none"> • Explore options to eliminate - re-design of workflow • Reduce use by limiting COBOT use only to dangerous tasks, determined by risk assessment process • Conduct inspections, surveys and risk assessments, speak with your DWG to identify the concerns of, and effects on, employees, identify absenteeism and injury trends • Request access to information - e.g. incident reports, results of surveys, technical information on COBOTs, task allocation and programming • Ensure consultation occurs: <ul style="list-style-type: none"> • Before decision to introduce new technology • When determining how technology will be used • To establish clear policy, procedure and accountability around management of COBOTs • Negotiate a code of conduct for the use of COBOTs: <ul style="list-style-type: none"> • Must include safety features e.g. force-limiting sensors, soft edges, slower movements, emergency stop switch, complies with ISO 10218 - Robotics - safety requirements • Training for operators prior to interaction • Process for logging faults • Ensure specialists are available to trouble-shoot • Work areas must be marked / defined / geofenced • Regular maintenance schedule implemented <p><i>Note that incorporating this code into an Enterprise Agreement would allow the dispute procedure to be enacted in the event of a breach</i></p>