

PRACTICAL BRIEF

When Technology Changes the Job

A practical review of pace, workload, decision-making, skills and physical demands

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PURPOSE

Help workplace leaders examine how a proposed technology may change the job — not only whether the tool functions as intended.

TASKS

PACE

DEMANDS

JUDGMENT

SKILLS

SAFEGUARDS

VERIFY

Technology adoption is also work redesign

A new system may remove a task, add a verification step, accelerate the flow of work or shift judgment from a worker to software. It may reduce one demand while increasing another. Canadian guidance therefore recommends assessing changes in cognitive, physical, organizational and performance demands, and involving workers who understand how the task varies in practice.¹

The question is not simply whether technology is efficient. It is whether the resulting job is safe, workable, understandable and sustainable under foreseeable operating conditions—including busy periods, exceptions and system failures.

Seven dimensions to review

- 1 Task mix.** What disappears, remains, moves to another role or is newly created?
- 2 Pace and recovery.** Does the tool set the pace, compress pauses or make demand less predictable?
- 3 Cognitive workload.** Are workers monitoring more information, resolving more exceptions or switching attention more often?
- 4 Decision rights.** Which decisions remain human, which are automated and who can challenge an output?
- 5 Skills and learning.** What knowledge becomes more important, and what practice or support is needed?
- 6 Physical demands.** Do force, posture, repetition, duration, movement or exposure conditions change?
- 7 Coordination.** How do handoffs, staffing, supervision, accountability and communication change?

01 | THE JOB-CHANGE REVIEW

Compare the work system before and after

The review should begin with a representative use case and a baseline. Observe the task under ordinary variation, ask workers where the description is incomplete, and document what the proposed tool is expected to change. Avoid assessing only a polished demonstration or ideal workflow.

DIMENSION	BASELINE EVIDENCE	QUESTION AFTER CHANGE
Work sequence	Steps, handoffs, waiting, workarounds.	Which steps are removed, added or displaced?
Pace and workload	Volume, cycle time, interruptions, recovery.	Who or what sets the pace after adoption?
Judgment	Decisions, exceptions, escalation, override.	Can a worker understand and challenge an output?
Physical demand	Force, posture, repetition, duration, environment.	Did demand fall, rise or move elsewhere?
Worker experience	Clarity, autonomy, trust, fatigue, accessibility.	Is the changed job workable for the people affected?
Performance	Quality, delay, rework, throughput, service.	Did the intended operational result occur?

Watch for transferred and hidden work

Technology often changes where work occurs. Data entry may move to front-line staff; exceptions may concentrate in a smaller group; supervisors may spend more time interpreting alerts; maintenance or cybersecurity work may grow. A local improvement can therefore create workload or risk elsewhere.

- Map upstream and downstream roles, not only the direct user.
- Include rare but consequential situations such as outages, unusual loads or disputed outputs.
- Check whether performance targets changed at the same time as the technology.
- Separate training gaps from design problems; more training cannot repair an unusable workflow.

HUMAN OVERSIGHT

For consequential employment or safety decisions, define who reviews the output, what evidence they see, when they may override it, and how a worker can raise a concern. Privacy commissioners also recommend human involvement in consequential employment decisions.²

Worker participation is part of the evidence

Workers can identify variation, workarounds and practical constraints that short observations miss. Participation should begin while the problem and requirements are being defined — not after a tool has already been selected. Explain what information will be collected, why it is needed, who can access it and how long it will be retained.^{1,2}

02 | VERIFY THE CHANGED JOB

Measure intended and unintended effects separately

A technology can improve one outcome and worsen another. Track a small, balanced set of measures and report trade-offs rather than compressing everything into one success score.

OUTCOME	POSSIBLE INDICATORS	DECISION QUESTION
Safety and health	Relevant hazards, discomfort, fatigue, incidents, near misses.	Did risk change as expected?
Job quality	Clarity, autonomy, work intensity, support, accessibility.	Is the job workable and inclusive?
Operational	Quality, time, delay, rework, service, uptime.	Did the use case improve?
Adoption	Use, overrides, workarounds, support requests.	Is the tool being used as designed — and why?
Distribution	Results by role, shift, location or task type.	Who benefits, and who carries new burdens?

TECHNOLOGY IN PRACTICE · ILLUSTRATIVE, NOT AN ENDORSEMENT**Amazon Vulcan (May 2025): a task changes at both ends**

Amazon reports that its Vulcan robotic system is operating in fulfilment centres in Spokane and Hamburg. It picks and stows items in high and low storage locations, while people handle items the system cannot move. The change is therefore not simply 'robot replaces task': ladder work may decline, while exception handling, interaction with the system and some technical roles become more important.

Decision lesson. Assess the work that is removed, the work transferred to people and the new capabilities the changed process requires. The company announcement does not establish the size or durability of any safety or productivity effect.

Source [7]: [Amazon — Introducing Vulcan](#). Company- or industry-reported implementation; results should not be generalized.

A disciplined decision rule

- **Proceed** when the intended benefit is visible, material risks are controlled and affected workers can use the changed process reliably.
- **Revise** when benefits are plausible but the workflow, training, safeguards or support model remain incomplete.
- **Pause** when a critical safety, privacy, accessibility or human-oversight condition is unresolved.

Do not treat a short-term risk score, user-survey result or productivity gain as proof of long-term benefit. Record the limits of the evidence and schedule a later review.

BOTTOM LINE

Treat technological change as job redesign. Define the change, involve the people who do the work, test the whole work system and verify both benefits and new demands before scaling.

Sources and evidence notes

1. CCOHS, [Introducing New Technology at the Workplace](#). Canadian guidance on physical, cognitive, psychosocial and safety implications of technological change.
 2. Federal, provincial and territorial privacy commissioners, [Protecting Employee Privacy in the Modern Workplace](#). Joint Canadian principles for necessity, proportionality, impact assessment, transparency and human involvement.
 3. OECD, [Using AI in the Workplace](#). International synthesis of potential benefits and concerns including work intensity, data use and inequality; findings require contextual interpretation.
 4. OECD, [Employment Outlook 2023 — Skill needs and policies in the age of AI](#). International evidence on changing task and skill composition.
 5. NIST, [AI Risk Management Framework](#). A voluntary framework organized around Govern, Map, Measure and Manage.
 6. CCOHS, [Risk Assessment](#). Canadian guidance on identifying hazards, assessing risk and reviewing controls.
 7. Amazon, [Introducing Vulcan](#). Company account of a tactile robotic picking and stowing system in two fulfilment centres; used only to illustrate task redistribution and evidence questions.
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EVIDENCE STANDARD

This brief synthesizes public guidance and selected evidence for practical decision support. It is not legal advice, a compliance determination, a product endorsement or a substitute for qualified professional judgment. Requirements vary by workplace and jurisdiction.

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