DIGITAL GOVERNANCE INITIATIVE

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PART 2

In-person courses

Digital Governance and Occupational Safety and Health

(DG & OSH)

Instructor's guide

Last version

2025

Forewords

The term "digital governance" does not have a single, universally recognized originator. Instead, it emerged gradually in the early 2000s as digital technologies began playing a central role in organizational strategy and public service delivery.

However, several influential organizations and thought leaders played a key role in shaping and formalizing the concept. The United Nations and the OECD were among the first international bodies to discuss "digital governance" in relation to e-government and digital government transformation. The OECD's E-Leaders Handbook on the Governance of Digital Government (first published in the 2010s) helped define digital governance as the set of leadership, organizational, and regulatory frameworks needed to manage digital transformation in government. Afterwards, the U.S. government's Digital.gov platform started to be very influential in this field.

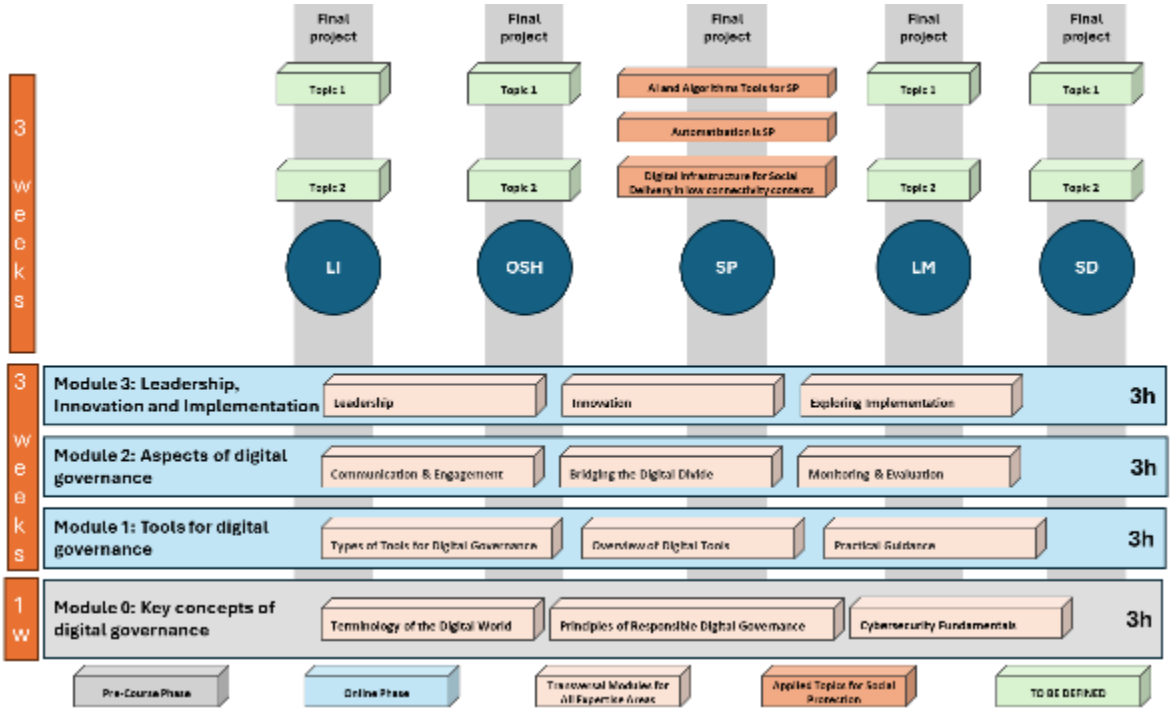
The digital world and digital transformation can be broken down into six key elements: purpose, data, methodology, tools, people and processes. Therefore, to be truly effective at digital governance, you must learn to govern each of these elements, both individually and as a whole. That's why this course provides knowledge that looks to tackle these elements from different angles, but, always remembering that people and organizational culture are at the heart of everything. This is why skills like applying ethics, using a human-centered design approach, and ensuring digital inclusion and coordination with others (including elements like interoperability) are so important. After all, in social protection, we work with people for people, and the successful application of digital governance directly impacts their lives.

Thus, digital governance refers to the structures, policies, roles, and processes that guide how digital technologies are used, managed, and regulated within an organization or society. It ensures that digital initiatives align with broader organizational or societal goals, comply with laws and standards, uphold public values, and mitigate digital risks such as data misuse, security breaches, or algorithmic bias.

This is what you will learn in this Digital Governance Initiative

Digital governance is not just about IT control; it is a comprehensive approach that involves leadership, strategy, compliance, ethics, and people.

A. OVERVIEW



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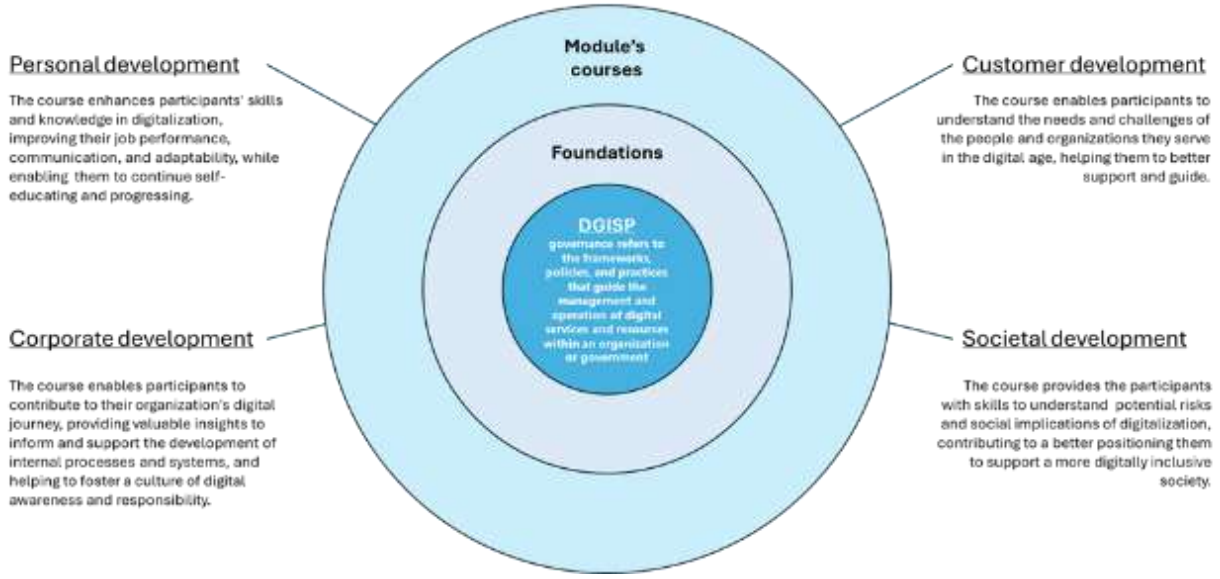

This course is organized in two parts: **Part 1** is a set of self-guided modules that helps the participant become familiar with foundational concepts particularly important for digital governance, such as privacy and data protection, artificial intelligence and automation, cybersecurity, content moderation, digital accessibility, public trust, and accountability, among others. Thus, Part 1 (self-guided modules) prepares the participant to fully benefit from the specialized themes explored in Part 2. **Part 2** (specialized in-person courses), in turn, enables the participant to go in depth and apply the knowledge more effectively to their specific field of work.

Here the part 2: Digital Governance and OSH

Content

THE USE CASE

The following use case will be used as much as possible in all sessions. It will help establish the context and allow participants to work more coherently and cohesively across the different topics.

An occupational safety and health expert receives a report of repeated chemical exposure complaints from workers in a small manufacturing plant. Several workers have shown signs of respiratory issues. At the same time, a labor inspector is informed by a trade union about poor ventilation and long working hours at the same facility. A social protection officer learns that affected workers are not accessing healthcare or sickness benefits. Migrant workers at the site may be particularly vulnerable due to language barriers and lack of awareness of their rights, something being identified by the labor migration expert. Meanwhile, a social dialogue expert observes that there is no functioning workplace safety committee, and communication between workers, management, and union representatives is minimal or confrontational, limiting constructive problem-solving and joint action.

This situation is not isolated to a single company. It reflects a broader pattern affecting several small and medium enterprises (SMEs) in this region, impacting a significant number of workers, particularly migrants. The scale of the problem demands a coordinated, multi-actor response from occupational safety and health experts, labor inspectors, social protection officers, and social dialogue facilitators to address systemic issues and ensure safe, fair, and inclusive working conditions across the region.

Before beginning: reflect

Please take a moment to think about the situation described above. Reflect on the following questions. You are welcome to write them down or just think through them or through additional questions you might even want to come up with your own additional questions:

Self-Reflection Questions

- Which actors need to be involved to solve the problem?
- Do you see value on facilitating communication among the different people involved?
- Can you identify any digital tools or systems that could help?
- Which elements of this story remind you of your own experience?

As you go through the reflection, you may already start thinking:

- “This is about more than just my sector…”
- “Technology alone is not the solution, but it certainly helps.”
- “What technology might be useful?”
- “I see how this connects with governance, participation, and inclusion.”

DIGITAL GOVERNANCE AND OCCUPATIONAL SAFETY AND HEALTH (OSH)

Time	Day 1: Foundations & Inspection	Day 2: AI, Predictive & Prevention	Day 3: Infrastructure, Sensors & Data	Day 4: Governance, Accountability & Change	Day 5: Synthesis & Action
09:00 - 10:30	**Session 1** : Opening Ceremony and Keynote: Digital Governance (Plenary)	**Session 5** : AI for Early Warning Systems: From Machine Learning to Deep Risk Analysis (Focus on anomaly detection in real-time environments).	**Session 9** : Governing Real-Time Data: Protocols for IoT Sensors, Wearables, and Environmental Monitoring.	**Session 13** : Defining Accountability in Digital OSH: Structuring Roles for Labor Inspectors & Safety Managers in Automated Systems.	**Session 17** : Final Course Wrap-up: Key Takeaways and Policy Implications (Plenary)
10:30 - 11:00	**Morning Break**	**Morning Break**	**Morning Break**	**Morning Break**	**Morning Break**
11:00 - 12:30	**Session 2** : Interoperability Across OSH & Health Systems: Breaking Data Silos for Integrated Injury and Sickness Tracking.	**Session 6** : Predictive Analytics for Decision-Making: Using Dynamic Dashboards for Targeted Inspections and Resource Allocation.	**Session 10** : Occupational Exposure Data Governance: Structuring National Safety Data Sheets (SDS) and Exposure Databases for Compliance.	**Session 14** : Strategic Communication Skills for OSH Leaders: Building Trust and Managing Digital Resistance (Focus on worker surveillance fears).	**Session 18** : Closing Ceremony (Plenary / ITC-ILO)
12:30 - 14:00	**Lunch Break**	**Lunch Break**	**Lunch Break**	**Lunch Break**	**END OF COURSE (12:30)**
14:00 - 15:15	**Session 3** : Governing Digital Safety Management Systems (SMS): OSH's Role in Automated Safety Documentation, Internal Audits, and Hazard Reporting Compliance.	**Session 7** : Automation Strategies in OSH: Moving Beyond Checklists to Real-Time Compliance and Hazard Mitigation Control.	**Session 11** : Human-Centered Design (HCD) in Safety Platforms: Designing a High-Usability Hazard Reporting Interface.	**Session 15** : Peer-to-Peer Assessment: Final Capstone Presentations (Part 1)	—
15:15 - 15:45	**Afternoon Break**	**Afternoon Break**	**Afternoon Break**	**Afternoon Break**	—
15:45 - 17:00	**Session 4** : Ethics of Monitoring: Privacy, Worker Consent, and the Governance of Surveillance Technology in High-Risk Environments.	**Session 8 (WORKSHOP)**: Case Study on Risk Scoring: Using AI to Prioritize and Triage High-Hazard Facilities for Immediate Intervention (statistics).	**Session 12** : Applying HCD Findings to Data Visualization for Compliance Enforcement and Public Reporting.	**Session 16** : Peer-to-Peer Assessment: Final Capstone Presentations (Part 2)	—

A. Day 1: Foundations & Risk Governance

1. Day 1, Session 1: Opening Plenary: Digital Governance as the Strategic Imperative

1.1 Description & Objectives:

This mandatory session frames Digital Governance not as an IT function, but as the strategic steering mechanism for achieving safer, healthier, and more sustainable OSH outcomes. The objective is to analyze how robust governance principles drive the entire purpose and process of OSH digitization.

1.2 Key Content to Teach (Curricular Core Line):

- **The Six Elements of the Digital World:** The concepts of **purpose, data, tools, methodology, people, and processes** are the repeated elements to be found in any digital world project. Instructors should explain them, focusing on the OSH context (e.g., **Purpose** is preventing harm; **Data** is near-miss reports; **People** are safety inspectors and workers).
- **Governance vs. Management: The Strategic Distinction:** Explain clearly that Governance sets the rules (e.g., "All high-risk incidents must be digitally logged within 1 hour"), focusing on compliance and accountability. Management executes the rules (e.g., deploying the logging system). Focus on the OSH executive role in setting the core safety purpose.
- **The Quadruple Bottom Line in DG:** Moving beyond efficiency (cost reduction/speed of inspection) to include **Equity, Inclusion, and Sustainability** as core governance metrics for digital OSH programs. OSH digital systems must be governed to protect the most vulnerable workers (Equity/Inclusion) and ensure long-term data security (Sustainability).

1.3 Interactive element based on a core use case:

Policy Paradox: The new government has ordered us to increase our service coverage by half (50%) in just one year, using only the technology we already own. This means we have to make fast, possibly reckless, changes to our system. To ensure fairness

(**Equity**) is valued more than just quickness (raw speed), what is the very first step you must tell the governing board (Governance Committee) to take?

1.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'Before we dive into technical systems, let's understand some challenge for digital governance'.
- **Scenario:** Introduce the concept of 'Algorithmic Safety Blind Spots' where digital risk assessment systems, trained on historical data, fail to identify emerging, novel risks (e.g., new chemical exposures or mental health stressors) because they are not in the training data. This forces a discussion on governing the **methodology** of risk assessment.
- **Pacing Tip:** Allow 20 minutes for group discussion on the Policy Paradox, forcing them to define a formal governance body (a **process** decision) before they propose a technical solution.

2. Day 1, Session 2: Digital Tools for Proactive Risk Management: Governing the Methodology

2.1 Description & Objectives:

This session focuses on the advanced application of digital **tools** for shifting OSH from reactive incident response to proactive risk prevention. The objective is to analyze the governance frameworks required to select the right **methodology** and ensure the data captured is timely and actionable.

2.2 Key Content to Teach (Curricular Core Line):

- **From Lagging to Leading Indicators (Data/Methodology):** Teach the governance required to mandate the collection of "leading" indicator data (e.g., near-miss reports, unsafe condition observations, worker feedback) over "lagging" indicators (injuries/fatalities). This shift requires governing a new data collection **methodology**.
- **Governing Digital Risk Registers (Tools):** Discuss the governance of centralized digital risk registers. Focus on the required **process** for risk scoring, mandatory

review cycles, and ensuring the register is accessible to all relevant **people** (management, workers, inspectors).

- **Sensor and Wearable Data Governance:** Examine the ethical governance of data collected from workplace sensors or worker wearables. The governance framework must define the **purpose** for data collection, limits on surveillance, and mandatory transparency rules (Equity/Inclusion).

2.3 Interactive element based on a core use case:

Mandating Leading Indicators: In the Core Use Case (chemical exposure), the OSH expert previously only collected 'injury frequency rates' (lagging data). What governance rule (**Process**) must the OSH committee implement to mandate the collection of two new leading indicators (**Data**) from the manufacturing plant—indicators that would have identified the problem *before* respiratory issues appeared?

2.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'Digital OSH is not about counting dead bodies; it's about predicting future ones. That requires governing the way we measure.'
- **Scenario:** Introduce the use of AI to analyze maintenance logs to predict equipment failure. What governance checkpoint ensures that the AI's predictions are communicated to workers (**People**) in a clear, non-jargon way, fulfilling the Inclusion bottom line?
- **Pacing Tip:** Use examples of simple digital forms or apps that capture leading indicator data efficiently.

3. Day 1, Session 3: Digital Twin and Advanced Visualization: Governing Modeling and Simulation

3.1 Description & Objectives:

This session explores the governance of complex digital models, such as Digital Twins, used to simulate safety scenarios and structural changes. The objective is to analyze the governance of the underlying **methodology** and **data** to ensure the models are accurate, reliable, and legally admissible.

3.2 Key Content to Teach (Curricular Core Line):

- **Governing the Digital Twin Data Inputs (Data/Methodology):** Teach that the reliability of the Digital Twin (**Tool**) depends entirely on the governance of the real-world **data** inputs (sensor calibration, structural integrity reports). Focus on the formal **process** for data verification and model validation.
- **Legal Admissibility of Simulation:** Discuss the governance framework that defines when a simulation from a Digital Twin can be used as evidence in an OSH investigation (e.g., to prove negligence). This requires governing the **methodology** of model development.
- **Ethics of Virtual Prototyping:** Examine the ethical governance of using Digital Twins to simulate worker exposure or injury scenarios. Who (**People**) must formally approve the simulation's scope, and how is the privacy of the building/worker **data** protected (Sustainability)?

3.3 Interactive element based on a core use case:

Simulation: Using the Core Use Case, the OSH expert wants to use a Digital Twin of the manufacturing plant to simulate installing a new ventilation system. What specific governance rule (**Process**) must be put in place to ensure that the simulation **data** is shared with and validated by the workers' representatives (**People**), ensuring that the proposed solution works for them and not just the engineers?

3.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'A digital model is a mirror of reality, but bad governance can make it a funhouse mirror.'
- **Scenario:** Introduce a scenario where a Digital Twin simulation suggests a safety improvement is too costly, leading management to dismiss it. What governance structure (a committee of **people**) has the authority to challenge the simulation's cost **data** and prioritize safety over efficiency?
- **Pacing Tip:** Use visuals to explain the complexity of a Digital Twin model and the many layers of data it relies on.

4. Day 1, Session 4: Cybersecurity and Data Chain of Custody: Governing Integrity

4.1 Description & Objectives:

This session focuses on securing OSH data, which is highly sensitive and legally critical. The objective is to establish the governance structures that ensure the integrity of evidence (Chain of Custody/**process**) and the security of worker health data (Cybersecurity/**data**).

4.2 Key Content to Teach (Curricular Core Line):

- **Governing the Chain of Custody (Data/Process):** Teach the governance required to establish an unbroken digital trail (**Process**) for all OSH inspection data, incident reports, and evidence. This ensures the **data** is legally admissible and has not been tampered with.
- **Cyber Resilience Governance:** Discuss how governance must mandate not just prevention, but resilience, the ability for the OSH system to quickly recover data and functionality after a cyberattack, ensuring long-term program sustainability.
- **Mandating Multi-Factor Authentication (MFA) (Tools/People):** Discuss how governance must mandate that all **people** accessing sensitive OSH databases use MFA, enforcing a secure **process** for login, especially for external inspectors or investigators.

4.3 Interactive element based on a core use case:

Data integrity: During the investigation in the Core Use Case, the chemical exposure sensor data (**Data**) is found to have a gap of 4 hours. How does the OSH governance body investigate this breach in the digital Chain of Custody (**Process**), and who (**People**) is ultimately accountable for the integrity of that specific dataset?

4.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'In OSH, corrupted data can be as dangerous as corrupted equipment. We must govern data like evidence.'
- **Scenario:** A state OSH server is hit by ransomware, locking all incident reports. What is the immediate, governance-mandated communication **process** to

reassure workers and employers that safety enforcement will continue without interruption?

- **Pacing Tip:** Emphasize that a strong Chain of Custody governance protects the integrity of the entire OSH system and its purpose.

B. Day 2: Advanced Data & AI

5. Day 2, Session 5: AI in OSH: From Predictive Analytics to Risk Prioritization

5.1 Description & Objectives:

This session provides an overview of AI application in OSH (e.g., predicting high-risk workplaces, analyzing incident trends). The objective is to establish the governance principles that must guide the **purpose** and ethical limits of AI adoption, focusing on accountability and transparency.

5.2 Key Content to Teach (Curricular Core Line):

- **Governing the "Why" of AI (Purpose):** The instructor should emphasize that AI adoption in OSH must be governed by an explicit and measurable contribution to harm reduction and the Quadruple Bottom Line (Equity, Inclusion, Sustainability). If the AI doesn't advance these metrics, its use is ethically dubious.
- **AI for Proactive Inspection Targeting (Methodology):** Discuss governing the **methodology** of AI-driven risk scoring to prioritize inspections. The governance body must ensure the scoring model is not biased against smaller, vulnerable enterprises (Equity).
- **AI Auditing and Explainability (Process):** Teach the necessity of mandatory impact assessments *before* AI deployment, including formal governance sign-off that addresses potential harm. An OSH inspector (**People**) must be able to explain *why* the AI flagged a specific site.

5.3 Interactive element based on a core use case:

Risk oversight: Use the Core Use Case. The OSH AI system flags the small manufacturing plant as "low risk" because its prior injury history (**Data**) is minimal. This ignores the current migrant worker complaints. What governance intervention (**Process**) is needed to force the AI **methodology** to integrate real-time, qualitative worker feedback into its risk score?

5.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'AI can see patterns we miss, but only if we govern the data we feed it. It's a mirror, not a magic ball.'
- **Scenario:** Discuss using Generative AI to summarize complex safety standards for workers with low literacy. What governance checkpoint ensures the AI-generated summary maintains legal accuracy and does not dilute mandatory safety requirements?
- **Pacing Tip:** Highlight that AI in OSH should support the inspector, not replace them.

6. Day 2, Session 6: Big Data Analytics for Systemic Risk Identification: Governing Data Fusion and Interpretation

6.1 Description & Objectives:

This session focuses on governing the combination and analysis of large, disparate datasets (Big Data) to identify systemic OSH risks (e.g., links between working hours and injury rates across a sector). The objective is to govern the **data** fusion **methodology** and interpretation.

6.2 Key Content to Teach (Curricular Core Line):

- **Governing Data Fusion (DCI and OSH Data):** Instructors must explicitly cover how DCI principles enable the fusion of OSH data with external data (e.g., Social Program data, Labor Market data) to identify systemic risks. Governance must define the legal **process** for this fusion.
- **Statistical Governance of Correlation vs. Causation:** Teach how governance must enforce clear **methodology** rules to prevent OSH leaders from mistaking data correlations (e.g., high turnover and high injury rates) for direct causation, leading to poor policy decisions.
- **Ethics of Cluster Identification:** Discuss the governance challenge of identifying high-risk "clusters" (e.g., regions, sectors). Governance must ensure that this aggregated **data** is used for proactive intervention, not for discriminatory targeting (Equity/Inclusion).

6.3 Interactive element based on a core use case:

Systemic Risk Discovery: The OSH expert wants to prove that the manufacturing plant's chemical exposure issue is part of a systemic problem in the local industry (Core Use Case). What governance structure (**People**) must authorize the fusion of the plant's OSH data with (a) Social Protection data on respiratory health claims and (b) Labor Inspection data on ventilation violations, to build the case for systemic action (using DCI principles)?

6.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'One incident is a tragedy. A pattern of incidents is a governance failure.'
- **Scenario:** Discuss the governance around publicly releasing "safety scores" for companies. While transparent, this may drive high-risk companies out of the formal sector. How does governance balance transparency with maintaining coverage?
- **Pacing Tip:** Emphasize that OSH leadership requires using data to address the 'forest,' not just the 'trees.'

7. Day 2, Session 7: Digital Automation in OSH: Governing the Inspection Process

7.1 Description & Objectives:

This session focuses into governing the extent and limits of digital automation in OSH inspections and reporting. The objective is to analyze automation as a governance decision, determining where human judgment (**People**) must be preserved for complex safety assessments.

7.2 Key Content to Teach (Curricular Core Line):

- **Governing Human-in-the-Loop Inspections (People/Process):** Teach the governance framework that defines which parts of an OSH inspection can be automated (e.g., form completion, checklist validation) and which parts require mandatory human judgment (e.g., assessing workplace culture, interviewing workers).

- **Automation for Accessibility and Inclusion:** Discuss how governance can mandate that automation **tools** (e.g., digital checklists, reporting apps) are designed to be accessible to all workers and inspectors, including multilingual support, fulfilling the Inclusion bottom line.
- **Accountability for Automation Failure:** Define the governance rules (**Process**) that establish clear accountability when an automated system (e.g., a drone inspection) misses a critical safety hazard. Who (**People**) is ultimately responsible for the policy violation?

7.3 Interactive element based on a core use case:

Automating vs. Inspecting: In the Core Use Case, the OSH agency wants to automate the verification of the plant's mandatory safety certification documents. Identify the two parts of the inspection process: 1) The most efficient part that should be fully automated (**Efficiency**). 2) The part that *must* remain human-driven (**Purpose/Equity**) to uncover the issues behind the chemical exposure and non-reporting.

7.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'Automation should free up the inspector to do the hard work: assessing risk and speaking to people, not filling out forms.'
- **Scenario:** Discuss using AI-powered cameras to monitor worker fatigue. While efficient, this creates surveillance concerns. How does governance weigh the safety improvement against the loss of worker privacy?
- **Pacing Tip:** Focus the discussion on how technology supports, rather than replaces, the inspector's expert judgment.

8. Day 2, Session 8: Managing Organizational Change in OSH Digital Transformation

8.1 Description & Objectives:

This session focuses on the "People" and "Methodology" elements of change management. The objective is to equip OSH leaders with the governance **methodology** to lead digital change, ensuring that the organization (staff, inspectors, and management) adopts the new **tools** and **processes**.

8.2 Key Content to Teach (Curricular Core Line):

- **Governing the Digital Upskilling Strategy (People/Methodology):** Teach the governance requirement that mandates a formal, funded strategy for upskilling all OSH personnel (from inspectors to data scientists). This addresses the **People** constraint on digital transformation.
- **Governing Resistance to Change (Process):** Discuss how governance can establish a formal **process** for managing resistance from long-serving staff who prefer paper-based systems, using incentives and mandatory training rather than punitive measures.
- **Pilot Program Governance:** Define the governance **process** for running small-scale pilot programs for new OSH **tools**. Governance must define the success metrics, the timeline, and the authority to scale up or shut down the pilot based on the results.

8.3 Interactive element based on a core use case:

Overcoming Institutional Inertia: The OSH inspector who preferred paper records (Core Use Case) is now required to use a new digital inspection app (Tool). Propose two mandatory governance actions (**Process/People**) the OSH Director must take to ensure the inspector adopts the new system, focusing on positive reinforcement and skill development, not just enforcement.

8.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'The best tool in the world is useless if the people tasked with using it don't believe in it.'
- **Scenario:** A new digital reporting tool dramatically increases the number of reported near-misses. Management is nervous about the optics. How does governance communicate that this apparent increase in incidents is actually a sign of **success** (improved data quality and reporting culture)?
- **Pacing Tip:** Share examples of successful change management from other high-risk sectors (e.g., aviation safety).

C. Day 3: Interoperability & System Architecture

9. Day 3, Session 9: Interoperability with Social Protection and Labor Inspection (DCI)

9.1 Description & Objectives:

This is a crucial session on multi-actor data exchange. The objective is to analyze the governance required for OSH systems to achieve seamless, legal, and ethical interoperability (**Data** and **Tools**) with other DCI partners, particularly SP and LI.

9.2 Key Content to Teach (Curricular Core Line):

- **Digital Convergence Initiative (DCI) and OSH Data:** Instructors must explicitly cover how DCI principles (shared platforms, common data dictionaries) are the strategic framework for connecting OSH data (e.g., chemical exposure limits, safety training records) with SP and LI systems.
- **Governing Data-Sharing Agreements (Process):** Teach how to draft the formal governance agreements (**Process**) required for data sharing. Focus on defining the permitted **purpose**, the technical **tools** for secure transfer, and the roles (**People**) responsible for compliance.
- **Harmonizing OSH Data Standards (Data):** Discuss the governance necessary to mandate common OSH data standards (e.g., industry codes, injury classifications) across all internal and external OSH systems to ensure interoperability.

9.3 Interactive element based on a core use case:

Defining the Shared Data Set: Using the Core Use Case, the OSH expert has critical data (e.g., air quality readings, specific chemical names) that the SP and LI teams need. Define the specific governance decision (**Purpose**) that authorizes the OSH team to share this data and identify the three non-negotiable **Data** elements that must be included in the DCI-enabled exchange.

9.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'Our shared purpose—protecting workers—is more important than our departmental silos. Governance makes that shared purpose possible.'

- **Scenario:** Discuss a situation where OSH data is shared, but the partner (e.g., the SP agency) uses the data for an unapproved secondary **purpose** (e.g., tax collection). What is the mandatory governance consequence (**Process**) for the partner agency?
- **Pacing Tip:** Emphasize that interoperability success is measured by the quality of the policy, not the technology.

10. Day 3, Session 10: Governance of Predictive Maintenance and Inspection Tools

10.1 Description & Objectives:

This session focuses on the governance of data-intensive OSH **tools** like IoT sensors and predictive analytics. The objective is to analyze how governance ensures these tools contribute to proactive safety without infringing on worker privacy (Equity) or creating false positives.

10.2 Key Content to Teach (Curricular Core Line):

- **Governing Sensor Deployment (Tools/Purpose):** Teach the governance **process** for approving the deployment of new IoT or sensor **tools**. Governance must mandate that the stated **purpose** is harm reduction, not worker performance monitoring.
- **False Positive Governance (Methodology):** Discuss how governance must establish a **methodology** for managing "false positive" alerts generated by predictive **tools** (e.g., a machine learning model flagging a non-issue). Too many false positives erode trust among **People** (workers/inspectors).
- **The Worker Feedback Loop:** Governance must mandate a formal **process** for workers (**People**) to challenge or provide feedback on the sensor data, ensuring the system reflects the reality of the working environment (Inclusion).

10.3 Interactive element based on a core use case:

- **Sensor Overload:** The manufacturing plant (Core Use Case) now installs 50 new air quality sensors (Tools). Who (**People** - a specific role) is accountable for monitoring the data quality from these 50 sensors, and what is the mandatory governance

rule (**Process**) for immediately shutting down a sensor that provides unreliable or contradictory **data**?

10.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'More data does not equal better governance. It equals more liability if the data is faulty or misused.'
- **Scenario:** A predictive maintenance system fails to flag a critical piece of equipment, leading to an injury. The system was "working as designed." Who is accountable for the *design* of the **methodology** that led to the failure?
- **Pacing Tip:** Use case studies where predictive tools led to unexpected, negative governance consequences.

11. Day 3, Session 11: Governing Human-Centered Design (HCD) for OSH Digital Tools

11.1 Description & Objectives:

This practical session emphasizes the governance requirement that all OSH digital **tools** must be designed around the needs and capabilities of the end-users: inspectors, workers, and management (**People**). The objective is to apply a Human-Centered Design (**Methodology**) lens to OSH governance.

11.2 Key Content to Teach (Curricular Core Line):

- **HCD as a Governance Mandate (Methodology):** Teach that governance must mandate HCD principles—involving end-users (People) in the design—as a non-negotiable step in the digital project lifecycle. This ensures the resulting **tool** is actually used.
- **Governing Accessibility and Literacy:** Discuss how the governance body must define and enforce accessibility standards (e.g., large text, multilingual options) for all OSH **tools** to ensure inclusion for older workers or those with low digital literacy.
- **Feedback and Usability Audits (Process):** Governance must mandate a formal, recurring **process** for conducting usability audits and capturing user feedback on OSH **tools** post-deployment, ensuring continuous improvement.

11.3 Interactive element based on a core use case:

The Worker Reporting App: The OSH agency wants to design an app for workers to anonymously report hazards (Core Use Case). List two HCD governance requirements (**Methodology**) to ensure migrant workers with language barriers and low literacy are the primary focus of the app's design (e.g., image-based reporting, automated translation).

11.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'If a tool is technically perfect but no one uses it, it is a governance failure of the highest order.'
- **Scenario:** An OSH reporting app uses highly technical language that only safety engineers understand. This prevents frontline workers from reporting. How does the governance body enforce the design requirement that all language be understandable at a 6th-grade level?
- **Pacing Tip:** Use a quick HCD exercise, such as drawing a sketch of a poorly designed digital safety form versus a well-designed one.

12. Day 3, Session 12: Governing Mental Health and Psycho-Social Risk Data

12.1 Description & Objectives:

This session addresses the governance of highly sensitive mental and psycho-social health data in the OSH context. The objective is to analyze the governance requirements for data minimization, privacy, and ensuring that digital screening **tools** prioritize worker support (**Purpose**) over punitive action.

12.2 Key Content to Teach (Curricular Core Line):

- **Data Minimization Governance (Data/Process):** Teach the governance rule that mandates collecting the absolute minimum amount of mental health **data** necessary for the stated **purpose** (e.g., aggregated stress scores, not individual therapy notes).

- **The Governance of Anonymity and Aggregation:** Discuss how governance must enforce a **methodology** for mandatory aggregation of psycho-social risk data, ensuring management can see the systemic problem without identifying the individual worker (**Equity/Privacy**).
- **Defining the Purpose Boundary:** Governance must define the legal and ethical boundary between OSH data used for risk reduction and HR data used for performance management. The governance rule must state that OSH data cannot be used for punitive HR actions.

12.3 Interactive element based on a core use case:

- **Psycho-Social Stress:** The manufacturing plant (Core Use Case) has high stress due to long hours. The OSH office implements a mandatory digital stress survey (Tool). What specific governance rule (**Process**) must be put in place to ensure that the individual worker's response (**Data**) cannot be linked back to them by their manager (**People**)?

12.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'The most sensitive data in OSH isn't chemicals; it's feelings. We must govern it with the utmost care.'
- **Scenario:** An AI system flags a worker as high-risk for burnout. The company uses this data to deny the worker a promotion. How does the OSH governance body investigate this misuse of OSH **data** for a non-OSH **purpose**?
- **Pacing Tip:** Emphasize the importance of governance in building the trust required for workers to report psycho-social risks honestly.

D. DAY 4: ACCOUNTABILITY & CHANGE

13. Day 4, Session 13: Roles and Responsibilities in OSH Data Governance: Structuring the OSH Accountability Framework

13.1 Description & Objectives:

This session is dedicated to the "People" and "Process" elements of data governance. The objective is to formalize the OSH accountability structure, defining specific roles (Data Owner, Data Steward, Custodian) and the charter of the Data Governance Committee within the OSH agency.

13.2 Key Content to Teach (Curricular Core Line):

- **The Three Core Roles in OSH Data (People):** Clearly define the roles: **Data Owner** (e.g., the Chief Inspector, accountable for OSH purpose and ethics), **Data Steward** (manages OSH data standards and definitions), and **Data Custodian** (manages the physical OSH database). Governance must define the separation of duties.
- **The OSH Data Governance Committee Charter (Process):** Teach how to draft a formal charter that defines the committee's decision-making process, scope, and authority to enforce compliance regarding all OSH-related digital **tools** and **data**.
- **Accountability for Interoperability:** Discuss how the governance framework specifically assigns responsibility to a **People** role (e.g., the Data Steward) for ensuring OSH data meets the standards required for DCI interoperability with partner agencies (SP/LI).

13.3 Interactive element based on a core use case:

Assigning Accountability for Shared Data: Based on the Core Use Case, the OSH expert has critical exposure **data** needed by the SP and LI teams. Who is the **Data Owner** (the executive accountable for its purpose and ethical use) of this exposure data, and who is the **Data Steward** responsible for ensuring that this data is correctly structured and compliant for DCI sharing? Justify the role assignment.

13.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'In OSH, accountability saves lives. Governance is the blueprint for who owns what risk.'
- **Scenario:** The OSH agency's system is audited and found to be collecting illegal **data** (e.g., genetic information). The technical team claims they only implemented the **tool**. Where does the governance accountability ultimately rest (Data Owner, Steward, or Custodian)?
- **Pacing Tip:** Use a clear organizational chart structure to make the abstract roles concrete for the participants.

14. Day 4, Session 14: Strategic Communication Skills for OSH Leaders: Building Trust and Managing Digital Change

14.1 Description & Objectives:

This session focuses on the "People" and "Purpose" elements of change management. The objective is to equip OSH leaders with the skills to strategically communicate the 'why' of digital governance to workers and employers, ensuring trust and minimizing resistance to new safety **processes**.

14.2 Key Content to Teach (Curricular Core Line):

- **Governing the Narrative (Purpose):** Teach how governance mandates that all digital OSH communication must be led by the program's core humanitarian **purpose** (prevention of harm, worker well-being), not by technical features or enforcement statistics.
- **Crisis Communication Governance (Process):** Discuss how to govern the communication **process** during an OSH digital failure (e.g., a critical safety warning system goes down), ensuring rapid, accurate, and empathetic communication to affected workers (**People**).
- **Communication for Adoption:** Focus on external communication governance—how to communicate the *benefits* of new digital OSH **tools** to employers to encourage voluntary compliance and adoption, emphasizing the efficiency and sustainability benefits.

14.3 Interactive element based on a core use case:

- **The Crisis Statement:** Use the Core Use Case scenario. The OSH leader must issue a public statement to the affected workers at the manufacturing plant, explaining how the new *interoperable* data system (DCI) is now being used to coordinate a multi-actor (SP/LI) response. Write the key **Purpose-driven** headline (Max 10 words) for the statement that builds trust and assures **Equity**.

14.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'Trust is the most valuable data we have. Poor communication is the fastest way to lose it.'
- **Scenario:** An AI system is used to identify high-risk construction sites. The OSH leader must explain this to the construction trade union. What communication strategy ensures the union views the AI as a protective **tool** rather than a surveillance mechanism?
- **Pacing Tip:** Role-play different communication responses to an OSH data breach scenario.

15. Day 4, Session 15: Capstone Presentations (Part 1)

15.1 Description & Objectives:

This session is a structured, group-based activity. Participants present a final project, applying the full spectrum of the Digital Governance framework (Purpose, Data, Tools, Methodology, People, Process) to a complex OSH governance challenge they identified from their own organization.

15.2 Key Content to Teach (Curricular Core Line):

- **Structured Feedback Protocol:** The instructor must guide the class in a governance-focused feedback process, ensuring peers critique the projects on the basis of **Purpose** alignment, **Sustainability** integration, and the completeness of the multi-actor **Process** framework (especially DCI integration).

- **Cross-Element Synthesis:** Encourage presenters and the audience to identify how failures in one element (e.g., poor governance of sensor **tools**) led to systemic governance failures (e.g., flawed OSH inspection **methodology**).

15.3 Interactive element based on a core use case:

The Activity Itself: Participants present their Capstone Projects.

15.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'This is where theory meets reality. Show us how your governance framework ensures a safer working world.'
- **Pacing Tip:** Strict time management is essential. Allocate 10-12 minutes per presentation (7-8 minutes for presentation, 3-4 minutes for Q&A). Ensure a designated timekeeper is appointed.

16. Day 4, Session 16: Capstone Presentations (Part 2)

16.1 Description & Objectives:

Continuation of the group Capstone Presentation activity, ensuring all groups have the opportunity to share their proposed Digital Governance frameworks and receive peer feedback.

16.2 Key Content to Teach (Curricular Core Line):

Final Reflection on Cross-Sector Challenges: Use the remaining presentations to highlight common governance challenges that transcend individual OSH domains (e.g., governing the ethics of predictive analytics, achieving cross-agency **data** interoperability).

16.3 Interactive element based on a core use case:

The Activity Itself: Participants present their Capstone Projects.

16.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'Let's use these final presentations to look for universal truths in governance failure and success.'

- **Pacing Tip:** Dedicate the final 15 minutes to summarizing the common governance themes and pitfalls identified across all presentations.
- **Day 5: Synthesis & Action**

17. Day 5, Session 17: Multi-Actor Workshop: Governing the Six Elements

17.1 Description & Objectives:

This is a mandatory, high-energy workshop designed to synthesize the week's learning, reinforce the importance of working in multi-actor teams, and apply the Digital Governance framework to a complex, shared challenge, allowing participants to explore and reflect on what was taught during the week.

17.2 Key Content to Teach (Curricular Core Line):

- **Multi-Actor Problem Definition:** The instructor sets the stage, emphasizing that the most complex governance problems (like the Core Use Case) require coordination across different expertise (OSH, SP, LI, etc.), as even different sectors share similar governance challenges.
- **The Six Elements Challenge:** Participants are divided into teams. Each team is assigned one of the six elements (**Purpose, Data, Tools, Methodology, People, or Process**) and must propose a governance solution for that element, specifically addressing the multi-actor problem defined by the Core Use Case.

17.3 Interactive element based on a core use case:

The Core Use Case Solution: The instructor presents the full Core Use Case (chemical exposure, non-access to benefits, poor dialogue). Teams must use the Core Use Case to propose a formal governance solution (e.g., the 'Tools' team proposes a mandated interoperable reporting app; the 'Methodology' team proposes a new multi-agency risk assessment protocol).

17.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'You are no longer just an OSH expert; you are a Digital Governance leader. Let's solve a truly interconnected problem.'

- **Pacing Tip:** Allow 45 minutes for team work, 30 minutes for report-out (5 minutes per team, max), and 15 minutes for the instructor to synthesize the shared challenges across all six elements.

18. Day 5, Session 18: Closing Ceremony (in plenary / ITC-ILO)

18.1 Description & Objectives:

This final session synthesizes the learning from the previous four days, tying together the six elements of digital governance (Purpose, Data, Tools, Methodology, People, Process) and preparing participants for applying the framework back in their home agencies.

18.2 Key Content to Teach (Curricular Core Line):

- **The Digital Governance Framework (Purpose/Process):** Review the interconnectedness of the six elements, reiterating that governance is the continuous process of aligning all digital efforts back to the core OSH purpose (prevention, worker protection).
- **Sustaining the Governance Mindset:** A final emphasis on leadership accountability, reiterating that digital governance is a continuous process of adaptation, not a one-time project.
- **The Role of International Standards:** Briefly highlight how the governance frameworks discussed align with global OSH standards (ILO Conventions, WHO), providing credibility and leverage for participants' future work.

18.3 Interactive element based on a core use case:

Final Reflection on Purpose: Ask participants to privately write down one governance action they will implement immediately upon returning to their office that directly supports the **Inclusion** bottom line, based on the Core Use Case scenario (e.g., ensuring multilingual access to safety data).

18.4 Facilitator Talking Points for the Instructor:

- **Transition:** 'This is not the end of the course but the beginning of your governance mandate. Your mission is to make the digital world safer and healthier.'

- **Synthesis:** Conclude by highlighting the main lessons: 1) **Purpose** must prioritize worker protection; 2) **Data** integrity is non-negotiable legal evidence; 3) **People** must be governed as partners, not subjects of surveillance.
- **Farewell:** Use an inspirational quote about the role of public service and safety at work.

E. Sources (still to be completed)

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