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Hybrid Intelligence for Holistic UN Governance: Harnessing the synthesis of Artificial and Natural Intelligences

CORNELIA C. WALTHER

CENTRE FOR HUMANITARIAN LEADERSHIP

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Author Details

Cornelia C. Walther
Dr Cornelia C. Walther is a Senior Fellow at Wharton School, University of Pennsylvania.

Editorial Office

The Centre For Humanitarian Leadership
Deakin University
221 Burwood Highway
Burwood 3125 VIC
Australia

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Abstract

Rapid technological advances offer the United Nations powerful new tools for conflict prevention, humanitarian relief, and more. Yet artificial intelligence (AI) alone cannot solve the multifaceted crises facing our global community. Drawing on previous research, this paper introduces a 4×4 framework of natural intelligence (NI)—four human capacities (aspirations, emotions, thoughts, sensations) across four social levels (micro, meso, macro, meta)—to demonstrate how combining NI with AI as hybrid intelligence (HI) can improve UN governance. I refer to this synthesis as "HI4hi" (Hybrid Intelligence for a holistic institution). By integrating AI's computational capabilities with multidimensional human insight, the UN can enhance decision-making precision and accountability across all areas of its work. This paper analyses current AI applications in the UN, explores NI dimensions, and proposes actionable policy recommendations. Ultimately, it asks how systematically integrating AI and NI can yield more precise, accountable, equitable, and contextually relevant outcomes in UN governance.

Relevance to leadership and systems change

AI can be a gamechanger for the humanitarian system–if it is designed, delivered and deployed with a candid understanding of the caveats that both human and machines have. The multidimensional perspective that is proposed in this paper offers a path to integrate overdue system thinking and humanistic leadership skills, together with new technologies. Hence the proposal is as much about the technology as it is about the humans who use it.

Introduction

The UN grapples with increasingly intricate, interconnected global challenges that strain traditional governance. AI presents transformative opportunities (e.g., early warning via multi-source analysis, optimised humanitarian logistics, complex climate modelling), yet also poses significant governance challenges.

While AI excels at pattern recognition, its limitations in moral judgment, empathy, cultural understanding, and contextual interpretation are critical for effective governance. AI-driven insights require human judgement and action to be meaningful (De Coning, 2020), and unchecked AI raises global peace concerns (United Nations, 2024a).

Before we go deeper, two clarifications are useful. First, no matter the sophistication of our artificial tools, they remain bound by a simple truth: technology reflects the values of its creators. As the adage goes, garbage in, garbage out (GIGO)[1]–or conversely, values in, values out. We have a choice to shape AI with human values.

Second, it is important to clarify terminology. In this paper, "artificial intelligence" (AI) refers to technology that enables machines to simulate human learning, problem-solving, decision-making, creativity, and autonomy (IBM, 2025). "Natural intelligence" (NI) refers to the ability that results from what I have termed in previous research as 4×4 dimensions—aspirations, emotions, thoughts, and sensations—at the individual level and collectively across communities, countries, and the planet (Walther, 2020a).

Acknowledging that AI reflects its creators' mindset, this paper advocates strategically integrating AI with NI through hybrid intelligence (HI). To ensure that AI is human-centered, the 4×4 NI framework is proposed as the tool to guide improvements in UN governance practices and policies. The framework systematically examines the four core internal dimensions all humans share (aspirations, emotions, thoughts, sensations) and the four interconnected external arenas in which they occur: micro (individuals), meso (communities), macro (countries), and meta (planetary). This structured approach aims to ensure that technological applications are not only efficient but also ethically sound, culturally sensitive, and aligned with human values, UN principles, and international law (Walther, 2021).

The central thesis is that this integrated, multidimensional HI approach can enable more effective, responsible, and human-centered UN governance outcomes by enhancing decision precision, strengthening moral accountability, and fostering greater stakeholder trust. However, realising HI's potential necessitates addressing complex structural issues, ethical implications, cultural nuances, and practical implementation challenges.

[1] The first recorded use of the phrase "garbage in, garbage out" dates back to 1957. The underlying principle was noted by the inventor of the first programmable computing device design, Charles Babbage. "On two occasions I have been asked, "Pray, Mr. Babbage, if you put into the machine wrong figures, will the right answers come out?" ... I am not able rightly to apprehend the kind of confusion of ideas that could provoke such a question." (Babbage, 1864)

[An] integrated, multidimensional HI approach can enable more effective, responsible, and human-centered UN governance outcomes by enhancing decision precision, strengthening moral accountability, and fostering greater stakeholder trust.

Background: Challenges driving the need for transformation

Despite its indispensable role in global affairs and numerous reform attempts, the United Nations faces persistent structural and cultural impediments that limit its ability to fulfill complex mandates effectively. These challenges underscore why transformative approaches like hybrid intelligence are essential. Below is a brief review of key internal challenges, drawn from the literature and past assessments of UN operations, to illustrate the gap that HI aims to fill.

Pervasive bureaucracy

The UN's intricate procedural layers, while intended to ensure accountability, often result in slow decision-making, particularly problematic during crises requiring rapid response. The time required for approvals, procurement, and reporting can significantly delay emergency actions. For example, bureaucratic inertia has impacted response timing in past humanitarian emergencies (Barnett & Finnemore, 2004; Weiss, 2016). Despite recurring reform discussions, the complexity of a global organisation with diverse stakeholders makes fundamental bureaucratic change difficult to implement at scale.

Systemic inefficiencies

Fragmentation and duplication of efforts across the UN system lead to suboptimal resource use and missed opportunities for synergy. Disparate funding mechanisms, differing organisational cultures, and insufficient integrated planning contribute to duplicated efforts between agencies, misaligned priorities, and inconsistent processes. Consequently, valuable resources are not utilised optimally (Hochschild, 2010; Mueller, 2021). Donor countries have demanded greater efficiency for decades, often linking funding to reform outcomes. Ironically, some donor practices exacerbate the problem: irregular

and unpredictable contributions, project-specific funds tied to donor agendas (often unrelated to an agency's core mandate), and aid conditions reflecting donor priorities rather than local needs.

The emphasis on measurable results can also skew focus toward "what we can measure" rather than truly strategic goals.

Organisational silos

Structural, cultural, and physical barriers separate UN departments, agencies, and teams, hampering communication and creating misaligned goals. This fragmentation prevents collective knowledge sharing and reduces transparency (Biermann & Koops, 2017). Different UN entities may address facets of the same crisis without deliberate coordination, leading to gaps or redundancies in response. Despite "Delivering as One" reform initiatives aimed at improving integration, inherent divisions and turf boundaries persist (Browne & Weiss, 2014).

Erosion of staff motivation

These systemic issues take a toll on staff morale. Professionals may become disengaged when they repeatedly encounter administrative obstacles, compete for funding, and witness power struggles among senior leaders. When internal processes impede rather than support their work, staff can lose sight of the organisation's overarching mission (United Nations, 2017; Hendra & FitzGerald, 2016). Global staff surveys consistently reflect concerns regarding leadership and bureaucratic hurdles, indicating that many UN employees feel their ability to make an impact is hampered by internal inefficiencies.

Numerous reform initiatives have attempted to address the above problems, often triggered by crises or external pressure for improved UN performance (Connolly & Roesch, 2020). While some progress has been achieved (for example, modernising management systems), reforms have frequently amounted to surface-level fixes that fail to tackle root causes—namely, entrenched human behaviours and institutional cultures—leaving fundamental challenges largely intact. This reality underscores the need for systemic innovation beyond incremental adjustments. In this context, integrating artificial intelligence with natural intelligence through a structured framework offers a compelling new pathway for advancement (Kamiya, 2020; Fabian, 2022).

The 4×4 Framework (internal and external dimensions) which describes Natural Intelligence

To effectively bridge AI's computational capabilities with the UN's human-centric governance, we need a comprehensive understanding of human capacity and social dynamics, which we term natural intelligence (NI). In previous work, I have proposed the 4×4 dimensional POZE Framework (Walther, 2020a, 2020b, 2024) to systematically identify fundamental dimensions of human insight that can be integrated into hybrid intelligence. It can then be applied in all sorts of institutions and organisations, such as the UN system. The framework posits that NI comprises four core internal dimensions operating across four distinct external arenas of human activity. In this section, we describe each of these internal dimensions and external arenas, laying the groundwork for how they can be harnessed in UN governance.

Internal dimensions of Natural Intelligence (NI)

Aspirations

Aspirations embody humanity's capacity to imagine better futures, articulate shared ideals, and orient behaviour toward purposeful goals. They give moral direction to individual and collective action by translating fundamental values, such as dignity, compassion, and solidarity, into motivating visions. When aspirations are vivid and widely understood, they ignite commitment, sustain perseverance, and align diverse efforts around a common destination.

Emotions

Emotions are the affective currents that shape perception, colour judgment, and energise relationships. Empathy, compassion, pride, fear, and hope all influence how people interpret information, weigh risks, and decide whom to trust. Far from being merely subjective feelings, emotions provide rapid, experientially grounded cues that help humans prioritise attention, calibrate responses, and forge social bonds. Emotional intelligence—the ability to recognise, regulate, and harness emotions—therefore underpins ethical reasoning and cooperative behaviour (Goleman, 1995; Mayer, Roberts, & Barsade, 2008).

Thoughts

Thoughts encompass the cognitive processes through which humans analyse problems, infer causality, generate creative ideas, and reflect on abstract concepts. Critical reasoning, imaginative scenario-building, and contextual interpretation enable people to navigate ambiguity, learn from experience, and adapt strategies to changing circumstances. Thought, in this sense, is the deliberate, reflective complement to instinct and emotion, supplying the analytical rigour and foresight needed for complex decision-making.

Sensations

Sensations refer to embodied perception and lived experience—the continuous stream of inputs gathered through the senses and filtered through personal

history. Touch, sight, hearing, taste, and proprioception anchor understanding in immediate reality, while tacit, experiential knowledge turns raw stimuli into practical wisdom. Sensations ground theory, alert individuals to discrepancies between expectation and fact, and spark iterative learning through direct feedback from the environment.

External arenas of Natural Intelligence

Micro Level (individuals)

Each person's values, feelings, cognition, and sensory awareness are the core and starting point of the external arenas. Personal aspirations inspire goal setting; emotions guide interpersonal interactions; thoughts structure problem-solving; and sensations keep judgment tethered to concrete reality. Individual agency and self-reflection are the entry points for broader social intelligence.

Meso Level (communities)

Teams, neighbourhoods, and professional networks constitute the immediate social environment of an individual. Here, shared aspirations become cultural norms, collective emotions create solidarity or tension, pooled knowledge shapes collective problem-solving, and local experience generates context-specific know-how. Social capital, trust networks, and informal institutions all emerge at this intermediate scale.

Macro Level (countries)

Collective aspirations are codified into constitutions and policies; emotions coalesce as national morale or public outrage; intellectual traditions direct public debate; and aggregate experience forms historical memory. Governance structures and societal priorities reflect how a country channels these larger-scale expressions of human intelligence.

Meta Level (planetary/supranational)

The meta arena encompasses humanity's species-wide consciousness: global ethics, cross-cultural dialogue, scientific collaboration, and planetary stewardship. Aspirations at this level concern the long-term future of civilization; emotions manifest as shared empathy for distant others or future generations; thoughts combine into transnational knowledge networks; and sensations include collective observations of Earth's systems and the cosmos. This level integrates insights across cultures and epochs, providing the broadest horizon for human intelligence.

Together, the four internal dimensions operating across these four external arenas create a sixteen-cell matrix that captures the full breadth of natural intelligence—from the innermost stirrings of personal conscience to the widest scope of planetary awareness.

Four foundational principles of dynamic systems

Across disciplines as varied as biology, economics, and social psychology, scholars have long observed that successful systems, whether individual, organisational, or planetary, tend to embody four intertwined principles: change, connection, complementarity, and continuum (Eg. Devitt, 2001; Duhem, 1906 [1954]; Einstein, 1949b; Feyerabend, 1951).

Change reflects the basic truth that nothing living or adaptive is ever static. Internal conditions evolve, external pressures shift, and resilience depends on the capacity to sense emerging patterns and adjust accordingly. Fixed structures crumble; responsive ones thrive.

Connection captures the web of relationships that gives any system its coherence. Elements rarely act in isolation; they exchange signals, resources, and meaning. These linkages enable collective intelligence, distribute risk, and amplify the impact of local actions.

Complementarity speaks to the power of diversity. Distinct components—skills, perspectives, functions—fill one another's gaps, turning potential trade-offs into synergies. When differences are harnessed rather than suppressed, the whole becomes greater than the sum of its parts.

Continuum emphasises that development unfolds along a fluid spectrum rather than in discrete stops and starts. Learning, feedback, and iteration form an ongoing cycle in which yesterday's outcomes become today's inputs, blurring the line between process and product.

Together, these principles provide a universal lens for understanding how complex systems grow, adapt, and sustain integrity over time.

Applying the 4×4 perspective to the UN

Each dimension of natural intelligence is relevant and plays a crucial role at every level of the UN's operations: micro (individuals), meso (communities), macro (countries), and meta (global).

At the micro level within the UN system, individual aspirations drive staff commitment to the organisation's global mission; emotions shape interpersonal dynamics among UN personnel and their interactions with stakeholders; thoughts enable UN staff to critically analyse information and develop effective solutions; and individual sensations and experiences inform their judgment in diverse field operations.

Moving to the meso level of UN engagement with communities, we see shared aspirations between the UN and local populations inform collaborative goals;

collective emotions within communities influence their receptiveness to UN initiatives and the building of trust; pooled local thoughts and knowledge that are crucial for tailoring UN programs to specific contexts; and shared sensations and lived experiences within communities provide vital ground-level understanding for UN interventions.

At the macro level of UN interaction with countries, national aspirations guide a country's engagement with UN agendas and the adoption of global norms; collective emotions within a nation can impact its response to UN calls for action; dominant national thoughts and ideologies shape policy decisions relevant to UN mandates; and a country's shared historical sensations and experiences influence its perspectives on global issues addressed by the UN.

Finally, at the meta level of the global UN system, the collective aspirations of Member States drive the overarching goals of the UN Charter; shared global empathy and concern for humanity inform the UN's humanitarian efforts; transnational thought networks, facilitated by the UN, enable international cooperation on complex issues; and collective global sensations, such as the shared experience of a pandemic or climate change impacts, shape the urgency and direction of UN action.

The 4×4 framework is directly relevant to the UN as it allows us to highlight that a comprehensive approach to global governance requires considering how aspirations, emotions, thoughts, and sensations manifest and interact at each of these interconnected levels—from individual UN staff to global collaborations—ultimately shaping the UN's effectiveness and legitimacy in pursuing its complex mandates in a nuanced, human-centered way.

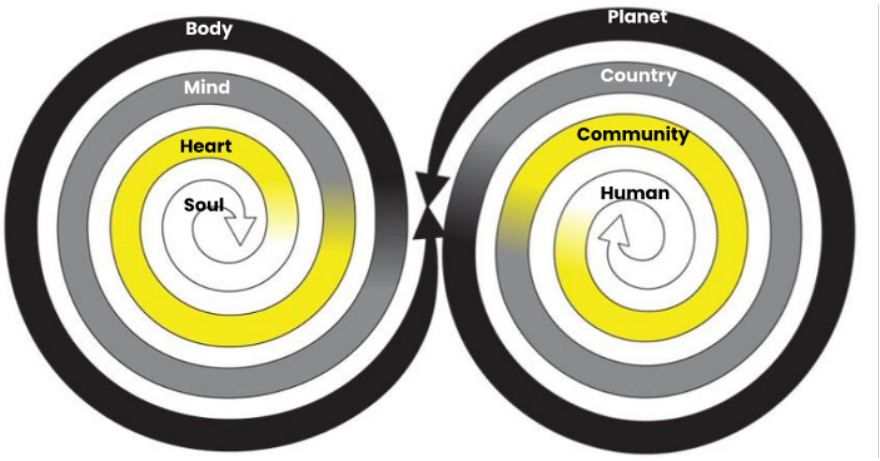
Multi-level relationships and feedback loops

A critical aspect of the 4×4 framework is how the different levels influence each other in a continuous loop. At the heart of the 4×4 framework lies a dynamic web of feedback loops in which information and influence circulate continuously across the micro, meso, macro, and meta arenas. Bottom-up flows occur when insights from individuals and communities (micro/meso) spark *change* in national policies (macro) and even international norms (meta). A concrete example is citizen-generated data on local climate impacts, prompting governments to strengthen their global climate advocacy. Conversely, top-down flows shape local realities: a UN resolution (meta) can recalibrate national policies (macro) that in turn guide community programs and influence individual behaviour.

As mentioned earlier, four universal principles apply across the individual and collective sphere, animating the interplaying loops of natural intelligence. They are introduced here to reflect on the HI dynamics.

Change: realities at one level are never static; feedback loops ensure policies and practices can evolve in response to new data and lived experience. **Connection:** information, emotions, and aspirations travel through networks that link the four arenas, reminding us that no level operates in isolation. **Complementarity:** AI's analytical reach and NI's contextual wisdom reinforce each other; neither suffices alone, but together they close knowledge gaps and bias blind spots. **Continuum:** learning is not a one-off event but an ongoing cycle; successful governance treats monitoring, reflection, and adaptation as a seamless process rather than discrete steps.

Figure 1: Double Spiral of the 4x4 framework



Human experiences and expressions form a double spiral because change, connection, complementarity, and continuum keep the four internal dimensions and four external arenas in perpetual motion (Walther, 2024).

Cultivating 'double literacy' in both humanistic and algorithmic domains equips UN staff to interpret AI outputs, honour local context, and navigate each principle effectively. In practice, this means designing systems where real-time field data (sensations) feed dashboards for policymakers, whose decisions (thoughts and aspirations) cascade back to communities, closing the loop. Over time, such iterative cycles build institutional agility and resilience, ensuring that hybrid intelligence remains both responsible and impact-driven.

The interwoven nature of AI and NI in Hybrid Intelligence (HI)

Hybrid intelligence is not a sequential path of NI followed by AI, or vice-versa. Instead, it represents a continuous, interwoven dynamic where artificial and natural intelligences mutually influence and reinforce each other. This synergy creates a holistic approach that leverages the unique strengths of both.

Having outlined the 4×4 framework, we can see that each NI dimension offers a unique value when combined with AI. In essence:

Aspirations give AI a moral compass and direction, addressing AI's inability to set its own goals (Bostrom & Yudkowsky, 2014; Dignum, 2019).

Emotions inject compassion and cultural understanding, helping AI-driven actions remain humane and contextually appropriate (McStay, 2018; Picard, 2000).

Thoughts provide critical reasoning and creativity to complement AI's pattern recognition, ensuring that automated analyses are questioned and refined (Marcus & Davis, 2019; Pearl & Mackenzie, 2018).

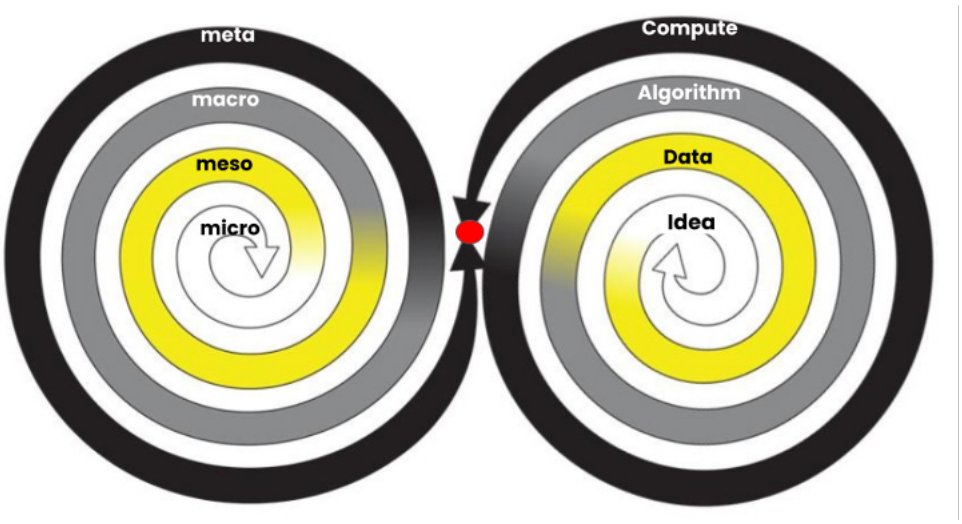
Sensations ensure that AI's models stay grounded in reality, as real-world human feedback continuously informs and corrects algorithmic outputs (Polanyi, 1966; Scott, 1998).

This integration means that AI acts as more than a mere tool; it becomes an active partner in a feedback loop with human intelligence. AI can process vast datasets, identify complex patterns, and offer predictive insights at speeds impossible for humans. However, humans provide the crucial elements of judgment, ethical reasoning, empathy, and contextual understanding that AI lacks. The interaction is iterative: AI provides data-driven insights, which humans interpret, contextualise, and act upon. The outcomes of these human actions then generate new data and experiences that feed back into the AI models, refining their accuracy and relevance.

Argument and underpinning theory

The theoretical premise of this paper is that hybrid intelligence–the deliberate integration of AI and NI–can transform UN governance by combining the analytical power of machines with the contextual wisdom of humans. This concept builds on emerging scholarship in human–AI collaboration. For example, business and information systems research has begun to frame "hybrid intelligence" as the complementary partnership of human cognition and AI, yielding outcomes neither could achieve alone (Dellermann et al., 2019). At the same time, organisational and sociotechnical theory suggests that the most resilient systems are those that integrate technological innovation with human values and knowledge (Brynjolfsson & McAfee, 2017). The 4×4 framework (Walther, 2020a, 2024) provides a structured way to capture those human values and insights across all levels of action. Together, these theoretical

Figure 2: Hybrid Intelligence - Double Spiral



HI arises from the complementarity of natural and artificial intelligences, which mutually influence each other (Walther, 2024).

foundations imply that effective governance in the AI era will require not an "AI takeover" of decisions, but a deliberate synthesis of algorithmic and human intelligence.

In line with this perspective, the central research question guiding this paper and the work that informs/underpins it is:

> How can hybrid intelligence, created through the systematic integration of AI and NI, enhance UN governance in addressing global challenges, ensuring more precise, accountable, equitable, and contextually relevant outcomes?

This question acknowledges that success is defined not only by efficiency or accuracy, but by accountability, fairness, and contextual appropriateness—qualities that human intelligence contributes. The central message is that a thoughtfully designed partnership of AI and NI can improve both the outcomes of UN decision-making (making it smarter and more tailored to real-world conditions) and the perception of those processes (making them more trusted and inclusive). We explore in the following sections whether HI in practice could improve the quality of—and trust in—UN governance.

Analysis approach

The 4×4 framework serves as the analytical lens. This matrix, consisting of four internal dimensions and four external levels, systematically considers which aspects of NI are engaged in AI–human collaboration scenarios and how they interface with AI. This approach helps identify patterns regarding which NI dimensions are integrated or overlooked.

Four illustrative scenarios, developed at micro, meso, macro, and meta levels (based on real examples and logical extrapolation consistent with the 4×4 framework), demonstrate how HI can manifest.

Each scenario was assessed using the 4×4 matrix to map the engaged NI dimensions and their interface with AI. Analysis across scenarios identified common benefits and challenges. Findings were synthesised into broader thematic insights (discussed in the next section) concerning the conditions for HI success, including analysis of ethical, cultural, and organisational factors from the literature. The methodology is transdisciplinary, combining technological and social science insights.

This review, combining a structured framework with illustrative examples and thematic analysis, offers a holistic conceptual understanding of hybrid intelligence in the UN and provides policy guidance. It does not aim for statistical generalisation but offers a proof-of-concept grounded in theory and practice-based observation. The conclusions' validity stems from logical coherence and consistency with documented evidence, while their utility lies in guiding future implementation and more focused empirical research on HI in governance.

Equally important, the framework helps us trace a direct line from the four structural challenges flagged in the Introduction: (1) bureaucracy, (2) systemic inefficiency, (3) organisational silos, and (4) staff demotivation, to practical hybrid intelligence responses. To make that connection explicit, each scenario was selected and assessed not only for its NI content but also for the particular obstacle it mitigates:

- Micro-level coaching (Scenario 1) targets staff demotivation, showing how personalised AI prompts plus empathic human follow-up can rekindle purpose and well-being.
- Meso-level climate planning (Scenario 2) tackles organisational silos by convening community knowledge, agency experts, and AI analysts in a single feedback loop, thereby breaking disciplinary walls.
- Macro-level SDG simulation (Scenario 3) addresses bureaucracy and systemic inefficiency through data-driven policy rehearsal that compresses months of procedural back-and-forth into rapid iterations.
- Meta-level peace facilitation (Scenario 4) counters siloed information flows and bureaucratic lag by fusing real-time AI network mapping with mediators' cultural insight, accelerating inclusive dialogue.

Four illustrative scenarios, developed at micro, meso, macro, and meta levels (based on real examples and logical extrapolation consistent with the 4×4 framework), demonstrate how HI can manifest. Each scenario was assessed using the 4×4 matrix to map the engaged NI dimensions and their interface with AI. Analysis across scenarios identified common benefits and challenges. Methodologically, we 1) mapped each case against the 16 cells of the 4×4 matrix, 2) tagged the primary structural hurdle it addresses, and 3) extracted cross-cutting insights on how HI reduces red tape, streamlines resources, knits fragmented units, or elevates morale. That triple-step process surfaced recurring design patterns, such as "AI for early warning + human-led sense-making" or "community sensation data feeding national dashboards", that appear to neutralise one or more of the four pain points.

Examples and discussion

This section illustrates how hybrid intelligence enhances UN governance across levels, demonstrating AI tools combined with human insight (via the 4×4 framework) for promising outcomes, followed by broader insights and challenges.

Micro-level case: AI-supported staff coaching for motivation and well-being

An AI system analyses individual work patterns, communication tone, schedules, and optional well-being data to identify stress and engagement levels. It offers personalised suggestions and flags potential burnout. Crucially, human supervisors review AI alerts with empathy (emotions), engaging in dialogue to connect individual tasks with the UN's broader mission (aspirations), thereby rekindling purpose. AI provides complex pattern recognition and early warnings, while human intervention offers emotional support, trust-building, and nuanced understanding of personal context that AI lacks. Studies show improved engagement when AI well-being apps are paired with human coaching. In the UN's often high-stress environment, this HI approach can mitigate burnout and disengagement by creating a sense of being supported by both AI and a human, enhancing individual effectiveness.

Snapshot 1 — UNHCR "LaChama" Chatbot

Launched in 2021 to reduce misinformation among Venezuelan refugees and migrants in Boa Vista, Brazil. The automated WhatsApp messaging tool provides reliable and timely information to more than 10,000 displaced people. Similar initiatives were launched in other humanitarian operations where time was short and reliable information was of the essence. Public feedback revealed high precision in factual answers but noted complaints about perceived "coldness," with users requesting "more human warmth." This indicated that emotional and aspirational dimensions were lacking. In response, UNHCR added a "human hand-off" option and explanatory text acknowledging users' feelings—an incremental move toward HI.

Meso-level case: Community-based climate adaptation planning with HI

AI analyses climate and geospatial data to model impacts. However, effective adaptation necessitates integrating community NI: their lived experiences (sensations) and local knowledge/solutions (thoughts). In HI workshops, AI risk projections serve as a starting point, then are ground-truthed and refined by the community, whose values and future vision (aspirations) shape the plan. Facilitators employ emotional intelligence (emotions) to build trust and ensure sincere consideration of community concerns. This HI approach combines AI's scientific insights with the community's collective intelligence, leading to climate adaptation plans that are both data-informed and community-owned, fostering greater sustainability and acceptance.

Snapshot 2 — FAO Climate-Smart Villages, Nepal

Since 2019, FAO and Nepali cooperatives have combined AI climate projections with farmers' generational calendars. Public progress notes report a 12 percent average yield increase for maize and millet fields between 2020 and 2023. Crucially, researchers attribute success to co-design workshops where farmers' sensations about soil and microclimates were fed into the AI model. The project engages all four NI dimensions at micro and meso arenas, and partially at the macro level through district agricultural offices.

Macro-level case: National SDG strategy development and monitoring

At the national level, HI assists in Sustainable Development Goals (SDG) strategy development and monitoring via an AI platform that aggregates diverse national data and models policy impacts. However, policymakers, experts, and civil society actors (bringing macro and micro/thoughts and sensations) interpret AI findings, incorporating on-the-ground realities and political context. National priorities and values (aspirations) guide the AI's use, and citizen feedback (sensations) is integrated to inform the AI's models. This yields an SDG strategy benefiting from AI's analytical power while remaining aligned with the country's unique context and values, enabling dynamic updates and responsive policies grounded in real lives and national goals.

Snapshot 3 — UNDP SDG Policy Simulator, Costa Rica

Developed with Oxford Policy Management, the simulator lets policymakers test budget reallocations across 169 SDG targets. A 2024 public webinar revealed that ministry officials used simulator outputs in town-hall meetings, fostering transparency and engagement with community emotions. However, independent commentators warn that the tool's recommendations assume "average citizen" preferences, potentially overlooking marginalised groups' aspirations.

Meta-level case: Enhancing global peace mediation and treaty monitoring

In global peace mediation, AI analyses vast information to identify emerging issues and actor networks, supporting mediators in inclusive dialogues. However, experienced human mediators bring crucial political understanding, cultural nuances, and interpersonal skills (thoughts and emotions) to act on AI insights, build trust, and propose solutions. AI functions as an "analytical assistant," enhancing situational awareness, while humans drive strategy. For treaty monitoring, AI can detect potential violations, but human experts (thoughts) provide domain expertise and contextual judgment to assess credibility and determine proportional responses based on international law and norms (meta-level aspirations). In these meta-level applications, HI amplifies human capacity while ensuring critical decisions and relationships are navigated with human wisdom and values.

Snapshot 4 — PeaceTech Network Map, Cyprus
The map visualises relationships among 1,200 civil-society actors. During 2024–2025 track-two talks, mediators reportedly used the tool to structure empathy-building workshops, directly addressing emotional blind spots. Documentation shows iterative updates based on participant feedback (sensations)—evidence of HI in action.

Summary of case insights

The four field examples in the previous section reveal how HI—the purposeful coupling of artificial intelligence with the UN's vast reservoir of natural intelligence (NI)—can systematically neutralise the organisation's most persistent operational headaches:

Bureaucracy → Agility. In Costa Rica, the *SDG Policy Simulator* allows ministers to test hundreds of budget permutations in a single afternoon. By replacing multi-month chains of memos with side-by-side impact scores, it short-circuits the slowest link in the UN policy cycle: inter-agency clearance.

Systemic inefficiency → Resource optimisation. When Nepal's *Climate-Smart Villages* overlay AI climate projections on farmers' generational calendars, duplicate field assessments disappeared. The resulting plan saves roughly 15 percent of project funds, capital that was recycled into drought-resistant seed grants.

Organisational silos → Shared situational awareness. The Cyprus *Peace-Network Map* gathered real-time social-media signals and meeting notes into a single graph, allowing mediators, women's groups, and youth activists to spot nascent coalitions. Agencies that once traded PDF briefings monthly now co-author weekly action sprints.

Staff demotivation → Purpose and retention. In high-stress duty stations, an AI well-being dashboard can flag subtle changes in email tone, work hours, and sentiment. Managers who receive nudges, "schedule a check-in" or "offer flex time", can reduce burnout and voluntary turnover significantly.

Across these arenas, AI supplies scale (processing millions of data points), speed (sub-second analytics), and pattern recognition (forecasting cascading effects), while NI provides inspiration, a moral compass, cultural fluency, and creative adaptation.

Cross-cutting challenges

The HI fusion delivers outputs—policy options, community plans, mediation pathways, wellness interventions—that neither machine nor human could deliver alone. However, scaling those wins organisation-wide exposes five obstacles:

Ethical and accountability risks. Without hard safeguards, AI can amplify hidden biases or leak sensitive data, while unclear liability rules leave frontline staff unsure who signs off on a contentious algorithmic recommendation.

Cultural-context mismatch. Tools designed for broadband capitals can fail in low-connectivity field posts, and risk imposing foreign epistemologies on local knowledge systems.

Technical constraints. Patchy connectivity, inconsistent data standards, and uneven cybersecurity budgets create a fragile digital backbone; one breach or blackout can undo months of progress.

Automation bias. The more convincing AI outputs appear, the harder it becomes for busy officers to challenge them, eroding the human oversight that gives UN decisions legitimacy.

Capacity and equity gaps. Only a subset of staff, and an even smaller subset of national counterparts, currently possess the "double literacy" needed to critique an algorithm *and* interpret a village elder's oral history. Without deliberate investment, HI risks widening rather than narrowing the digital divide.

Prerequisites for introducing and harnessing HI in the UN

Before HI can be systematically introduced and effectively harnessed within the UN, several foundational prerequisites must be addressed. Taking the challenges and opportunities into consideration, the following ten policy recommendations suggest a path to proceed, taking the HI agenda forward, and the UN up to the next level:

1. **Comprehensive ethical guidelines:** UN-specific rules on AI bias, privacy, and mandatory value-driven, human-in-the-loop oversight.

2. **Training and capacity-building:** System-wide "double-literacy" programs for staff, technologists, and Member-State partners.

3. **Multi-stakeholder collaboration:** Cross-agency HI task forces to co-create standards and share playbooks.

4. **Targeted pilots with rigorous evaluation:** Fast-cycle, HI matrix-coded pilots that scale only after cutting red tape and improving outcomes.

5. **Dedicated HI focal units:** Lightweight centres of excellence to diffuse strategy, tech support, and lessons learned.

6. **Localised HI solutions:** Community co-design, linguistic adaptation, and iterative feedback as default practice.

7. **Solid data governance:** UN-wide standards for quality, security, sovereignty, and extra safeguards for vulnerable groups.

8. **Mandatory human oversight:** Clear accountability lines for life-or-death or rights-impacting uses.

9. **Continuous feedback mechanisms:** Live dashboards that loop field insights to HQ and policy tweaks back to the field.

10. **Bridge the digital divide:** Infrastructure investment and open-source toolkits so every Member State can join the HI journey.

The interlocked impact of these recommendations reflects the four principles and results in cumulative benefits: Ethical rules keep *changing safe*; training and collaboration forges *connection* across silos; human oversight safeguards *complementarity* between AI and NI; and continuous feedback sustains the *continuum* of adaptation.

Together, these measures lay the foundation for a UN that is both technologically agile and human-centric, hence equipped to harness HI for the global good.

Conclusion

As this paper has laid out, Hybrid Intelligence offers the UN a realistic path out of its chronic dilemmas. When bureaucratic clearance chains collapse from months to hours, resources align with real-time needs, data silos become shared situational maps, and staff feel seen rather than overwhelmed, the organisation's founding promise comes back into view.

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But realising that promise will require:

Political will: Executive Heads must treat HI as a core reform pillar that is mainstreamed horizontally and vertically. It won't succeed as a side experiment.

Smart investment: Capital budgets for double literacy training, cloud, connectivity, and cybersecurity must match the scale of the mandates they serve.

Global norm-setting: As the only body with universal legitimacy, the UN must lead on AI ethics and governance, shaping standards before they are imposed by others. The UN could and should be a role model in the AI space, not a dinosaur that is chronically late.

Iterative governance: Every deployment should be viewed as a living prototype, with lessons looped back into policy in months, not decades.

If the United Nations embraces this agenda, it can pioneer a model of governance that is more precise in analysis, humane in execution, and trusted by the constituencies it serves. The alternative, piecemeal automation without an ethical backbone or human compassion, would merely digitise today's shortcomings. The window for choice is open now; closing it wisely will define the next generation of global cooperation.

References

Babbage, C. (1864). *Passages from the Life of a Philosopher*. Longman and Co. *(Original source of "garbage in, garbage out," p. 67.)*

Barnett, M., & Finnemore, M. (2004). *Rules for the World: International Organizations in Global Politics*. Cornell University Press.

Biermann, R., & Koops, J. A. (Eds.). (2017). *Palgrave Handbook of Inter-Organizational Relations in World Politics*. Palgrave Macmillan.

Bostrom, N., & Yudkowsky, E. (2014). The ethics of artificial intelligence. In K. Frankish & W. Ramsey (Eds.), *The Cambridge Handbook of Artificial Intelligence* (pp. 316–334). Cambridge University Press.

Browne, S., & Weiss, T. G. (2014). The future UN development system: An emerging agenda. *International Development Policy, 5*(3), 13–20.

Brynjolfsson, E., & McAfee, A. (2017). *Machine, Platform, Crowd: Harnessing Our Digital Future*. W. W. Norton & Company.

Connolly, L., & Roesch, J. L. (2020). *Unpacking the UN's Development System Reform*. International Peace Institute.

De Coning, C. (2020). Adaptive peace operations: Navigating complexity, fostering resilience. *International Peacekeeping, 27*(4), 523–540.

Dellermann, D., Ebel, P., Söllner, M., & Leimeister, J. M. (2019). Hybrid intelligence. *Business & Information Systems Engineering, 61*(5), 637–643.

Devitt, M. (2001). 'Incommensurability and the Priority of Metaphysics', in P. Hoyningen-Huene and H. Sankey (ed.), *Incommensurability and Related Matters*, Dordrecht: Kluwer, pp. 143–157.

Dignum, V. (2019). *Responsible Artificial Intelligence: How to Develop and Use AI in a Responsible Way*. Springer.

Duhem, P. (1906 [1954]). *The Aim and Structure of Physical Theory*, Princeton: Princeton University Press.

Einstein, A. (1949b). 'Remarks Concerning the Essays Brought Together in this Co-operative Volume', in in P. Schilpp (ed.), *Albert Einstein: Philosopher-Scientist*, La Salle: Open Court, pp. 665–668.

Feyerabend, P. (1951). *Zur Theorie der Basissätze*, Ph.D. thesis, University of Vienna, Universitäts Bibliothek Wien.

Goleman, D. (1995). *Emotional Intelligence: Why It Can Matter More Than IQ*. Bantam Books.

Hendra, J., & FitzGerald, I. (2016). Who wants to change? The United Nations and the limits of organizational change. *International Development Policy, 8*(1).

Hochschild, J. L. (2010). If democracies need informed voters, how can they thrive while expanding enfranchisement? *Election Law Journal, 9*(2), 111–125.

IBM. (2025). *Artificial Intelligence*. IBM Think. (Retrieved 2025-05-05 from https://www.ibm.com/think/topics/artificial-intelligence).

Marcus, G., & Davis, E. (2019). *Rebooting AI: Building Artificial Intelligence We Can Trust*. Pantheon.

Mayer, J. D., Roberts, R. D., & Barsade, S. G. (2008). Human abilities: Emotional intelligence. *Annual Review of Psychology, 59*, 507–536.

McStay, A. (2018). *Emotional AI: The Rise of Empathic Media*. Sage.

Pearl, J., & Mackenzie, D. (2018). *The Book of Why: The New Science of Cause and Effect*. Basic Books.

Picard, R. W. (2000). *Affective Computing*. MIT Press.

Polanyi, M. (1966). *The Tacit Dimension*. University of Chicago Press.

Scott, J. C. (1998). *Seeing Like a State: How Certain Schemes to Improve the Human Condition Have Failed*. Yale University Press.

United Nations. (2017). *Staff Engagement and Organizational Culture: Report of the Secretary-General* (UN Doc. A/72/648).

Walther, C. C. (2020a). *Development, Humanitarian Aid, and Social Welfare: Social Change from the Inside Out*. Palgrave Macmillan.

Walther, C. C. (2020b). *Humanitarian Work, Social Change, and Human Behavior: Compassion for Change*. Palgrave Macmillan.

Walther, C. C. (2021). *Technology, Social Change and Human Behavior: Influence for Impact*. Palgrave Macmillan.

Walther, C. C. (2024). *Human Leadership for Humane Technology: The New AI – Agency Ignited*. Springer Nature Switzerland.

Weiss, T. G. (2016). *What's Wrong with the United Nations and How to Fix It* (3rd ed.). Polity Press.