

Generative Change Management

Emergent Intelligence and Hybrid Competitiveness

A conceptual and methodological framework for organizational development through human–algorithmic coexistence

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Abstract

Generative Change Management (GChM) is a conceptual and methodological framework for managing human–algorithmic coexistence in organizations. Its central claim is that, when we work with artificial entities capable of engaging in dialogue, what we do and who we are at work change together. This change can be observed in the contributions a person can make, the recognition those contributions receive, and the person's participation in the organizational project.

From a relational perspective, GChM examines how new cognitive and operational capabilities arise through exchanges between people and responsive artificial entities. The attributional bond explains how people's expectations of these entities shape their exchanges. Intervention combines three operations: capability expansion within this relationship, innovation in the production workflows that integrate these capabilities, and responsible traceability, that is, the ability to reconstruct how results were produced and who is accountable for them. These operations are organized into three dimensions—augmented agency, agentic architecture, and algorithmic strategy—and nine intervention axes. Three emergents take shape in the relationships among the dimensions: the innovation core, professional transformation, and symbolic-algorithmic culture. Intervention follows a fractal logic: the same pattern applies at the scale of a person, a team, or several units, and what develops through each intervention changes the conditions for the next.

The framework's objective is hybrid competitiveness: an innovative capability that arises from this coexistence and enables distinctive, relevant responses for specific recipients.

Keywords: *emergent intelligence; hybrid competitiveness; professional identity; generative attributional bond; organizational development; generative artificial intelligence; sociomateriality; fractal intervention; human–algorithmic coexistence.*

1 Introduction

Artificial intelligence (AI) is part of everyday life and production processes. It changes how information is accessed, generated, and circulated. AI's role in reasoning, design, and solution implementation profoundly changes how people work, redefining professional roles and what their expertise means for organizations.

Today's workplaces include algorithmic systems with capabilities once considered exclusive to human cognition, such as interpreting, constructing arguments, and identifying possible courses of action. This interaction changes both what we do and who we are as professionals within a workflow. Professional identity is expressed in the contributions people make, the recognition they receive, and their participation in the organizational project, that is, the shared project in which they take part. These aspects change together with the organization of production and the direction of the project, through exchanges during the work itself. A new contribution can change the organization of production and the project's direction. A change in production or organizational direction can also make previously unavailable professional contributions possible.

An organization can produce faster and in greater volume while its professionals continue making the same contributions, receiving the same recognition, and occupying the same place in the project. Managing transformation therefore requires attention to coexistence with responsive artificial entities capable of participating in the development of knowledge, decisions, and outcomes, as well as to the relationships of trust, recognition, and belonging that take shape through this coexistence.

Generative Change Management (GChM)¹ is a conceptual and methodological framework for managing these conditions of coexistence. Its central question has two parts: how relationships between human and algorithmic intelligence give rise to new capabilities in professional practice, production, and culture, and what conditions an organization can develop to guide innovation in this context. The framework draws on Gergen's (1978) concept of generative theory, which emphasizes the ability to question assumptions and open up possibilities for action.

Change management research has examined shifts in group equilibria (Lewin, 1947), the leadership of transformation processes (Kotter, 1996), and organizational learning and cultural assumptions (Schein, 2010). GChM addresses a new object of study that these traditions had not defined: coexistence with responsive artificial entities and their role in developing new professional and organizational capabilities.

Two concepts organize the framework. Emergent intelligence refers to the capabilities that take shape through human–algorithmic coexistence. Hybrid competitiveness directs their development toward responses that provide value to specific recipients.

GChM intervention combines capability expansion, innovation in production workflows, and responsible traceability. An architecture organizes these operations into three dimensions, nine intervention axes, and three emergents. Intervention follows a fractal logic: it focuses on the axes relevant to each situation, applies to configurations at different scales, and uses what develops through each intervention as the starting point for the next.

This article presents GChM's epistemological foundation (Section 2), the attributional bond and the development of situated capabilities into organizational capabilities (Section 3), the architecture and its fractal logic (Section 4), and the intervention axes (Section 5). The framework's scope will need to be refined through empirical studies of organizational practice.

2 Epistemological position

2.1 The object of study

The object of study is the development and transformation of organizational capabilities through human–algorithmic coexistence. The unit of analysis is the configuration of a production unit: the people, artificial entities, knowledge, resources, and relationships involved in responding to a demand. These responses may address problems involving cognition, production, commerce, or social life and take the form of interpretations, goods, solutions, services, or projects.

This definition adopts a relational perspective. Emirbayer (1997) distinguishes approaches that start with entities whose properties are given from those that study how relationships produce properties and possibilities

¹ The term "generative" has an established use in dialogic organizational development, where it refers to change processes in which conversation produces new images and possibilities for action (Bushe & Marshak, 2009, 2015). This approach also draws on Gergen (1978). GChM shares this foundation and applies it to joint work with generative artificial entities and to the formation of capabilities in the human–algorithmic bond. The name coincides with the title of an earlier book (Shapland-Chew, 2016) that takes a different approach and is unrelated to this framework.

for action. GChM takes the second approach. From this perspective, what a capability makes possible depends on its relationships with other capabilities, a problem, and the conditions in which it is used.

Professional identity is also understood in relational terms. Who we are at work is expressed in the contributions we make, the recognition we receive, and our participation in an organizational project. When coexistence with artificial entities changes these relationships, our professional position changes with them. This change has an ontological dimension: it changes how we are professionals within the organization. Strich, Mayer, and Fiedler (2021) studied how people protect and strengthen their professional identity when an AI system makes decisions in their place and does not allow them to intervene directly. GChM examines professional position through three observable aspects—contribution, recognition, and participation in the project—and the production conditions in which they are situated.

Other approaches locate capabilities in the relationships among people, resources, and organizations. Distributed cognition examines cognitive activity in systems that include people, representations, and artifacts (Hutchins, 1995). Orlikowski and Scott (2008) analyze the sociomaterial constitution of work and organization. Leonardi (2011) studies the imbrication of human and material agency, which he treats as distinguishable.

Stelmaszak, Joshi, and Constantiou (2026) conceptualize AI as an organizing capability arising from human-algorithm relations. GChM shares this relational foundation. Its contribution is to connect the attributional mechanism with an architecture for intervening in professional contributions, the organization of production, and strategic direction.

2.2 The scope of relational analysis

The analysis focuses on how people attribute a capacity for dialogue to artificial entities and how those attributions affect work. This approach does not address questions about these entities' consciousness or subjective experience. Attributing understanding to an entity can change the questions, expectations, and decisions of those who work with it. These effects can be studied without treating the attribution as evidence that the entity understands.

Esposito (2022) analyzes how algorithms participate in communication without assuming that they think like people. At work, algorithmic responses can help interpret a situation, identify possibilities, and make decisions. The attributional bond makes it possible to examine how expectations of dialogue shape this participation and how those expectations change during the exchange.

2.3 Emergent intelligence

Emergent intelligence refers to capabilities for framing and addressing problems that take shape when people and artificial entities work on something together and, in doing so, change their relationships. These capabilities make it possible to conceive or accomplish things that the participants could not achieve separately. They are described as intelligence because they involve interpreting situations, identifying possibilities, and reviewing actions in context.

A capability is emergent when explaining it requires reconstructing the relationships that developed during the work. Recognizing it requires specifying what capability took shape, how it developed, and what conditions make it possible to use it. It may be expressed in new ways of framing problems, making contributions, or producing responses.

The debate on social emergence examines collective properties and their relationship to participants (Sawyer, 2005). In GChM's approach to organizational analysis, a capability is recognized as emergent when it takes shape through relationships and the conditions that enable its use can be reconstructed.²

2.4 The dialogic configuration

The dialogic configuration is the way exchanges are organized as people and artificial entities formulate, compare, and revise their contributions within a production unit. It includes dialogic relationships through which a question, a response, or an objection can change the course of the work. In these exchanges, coordination among participants changes as the work proceeds, without anyone having designed every detail in advance. Intervention takes this self-organization into account: it changes some conditions of the work and then examines how the configuration is reorganized (Section 4.4).

Recognizing an emergent capability requires two things. The first is to describe a difference in action: what the production configuration can now conceive or accomplish relative to an identifiable earlier situation. The second is to reconstruct how that capability took shape: how the exchanges contributed to it and what conditions make it possible to use it.

Three elements guide this reconstruction. The question shows what problem is being addressed and how it changes over time. The professional contribution shows what a person can contribute, what knowledge they can draw on, what decisions they can make, and what responsibilities they can take on. The organization of production shows how capabilities, resources, and exchanges are combined to produce a response.

The reconstruction must specify four aspects: the earlier situation used as a reference, including its question, contributions, and organization of production; the exchanges that changed the course of the work; where the results of this development are retained, whether in people or in shared instructions, memories, criteria, and documents; and the conditions that allow the capability to be used again, including the participants and resources on which it depends. This information allows different capability-formation processes to be examined and compared.

Professional contributions also make changes in professional identity observable. New or redefined contributions, the recognition they receive, and a person's participation in the project can be compared with an identifiable earlier situation. Section 4.3 develops this account of transformation in terms of expertise, self-perception, and self-determination, and treats recognition and belonging as part of symbolic-algorithmic culture.

Analyzing the question, the contribution, and the organization of production together makes it possible to determine whether a capability has taken shape and how it affects professional position. Higher performance can coexist with unchanged contributions, recognition, and participation. Conversely, recognition can change without a new capability developing. Comparing configurations with equivalent technological resources helps distinguish these cases.

A hypothetical example illustrates this distinction. A training professional creates materials for programs designed by other people. In dialogue with a responsive artificial entity, she examines learning difficulties, compares explanations, and tries out situations in which participants must make decisions and justify their responses. This shared work enables her to design practice activities suited to those difficulties and revise her teaching criteria. Her contribution now includes designing practice situations and criteria for evaluating them, as well as producing materials. The team recognizes this contribution and includes her in program decisions, where she proposes objectives and helps agree on learning criteria. The change is visible in what she can

² Bedau (1997) defines a macrostate as weakly emergent when it can be derived from the microdynamics and external conditions, but only through simulation. This technical meaning differs from the criterion of relational formation used here to analyze organizational capabilities.

conceive and take on, the recognition she receives, and the decisions she participates in. If the same technological resources only produced more materials, performance would improve without changing her professional position.

A prototype can demonstrate an emergent capability. Recognizing that capability requires examining whether the production configuration of people and digital units can continue the work, introduce relevant variations, or address a related situation. This continuity depends on knowledge, instructions, memories, resources, and criteria that may also change as the work progresses.

Individual learning and the configuration's capabilities can develop simultaneously. A person may incorporate a line of reasoning that arose through the exchange and later apply it independently. Another capability may depend on maintaining certain relationships between people and digital units. The reconstruction must therefore identify where the results of this development are retained and what conditions make it usable.

3 The attributional bond and the formation of capabilities

3.1 The responsive artificial entity

A responsive artificial entity is the technical configuration with which the bond is established. It includes the AI model, the dialogue interface, instructions, available memory, tools for retrieving information or taking action, and access and use conditions. It may run in a conversational application, integrate with other systems through an API, or operate on dedicated infrastructure. When configured to support an activity within a production architecture, it is called a digital production unit. Its contribution depends on its relationships with knowledge, people, other units, and resources.

The entity's contribution can change during the work even if the AI model remains the same. For example, a dialogue may generate new criteria for analyzing a proposal. When incorporated into instructions or reference documents, these criteria guide subsequent responses. The entity's configuration is thus transformed through shared work.

Whether these changes persist depends on how the results of this development are retained and reused. Some changes last for the duration of a conversation, while the information supporting them remains available. Others persist because they are incorporated into the instructions, memories, or documents the entity uses. When these elements are shared, other people or digital units can continue the work. The analysis must specify what changed in the configuration, how it is retained, and what it makes possible afterward.

3.2 The attributional mechanism

The generative attributional bond is GChM's relational foundation (Manucci, 2026). It is a sustained coupling in which a person attributes the capacity to engage in dialogue to a responsive artificial entity and organizes part of their activity around that relationship. The responses they receive influence whether the bond continues and what they subsequently attribute to the entity.

Attributions influence concrete decisions. Someone who expects an artificial entity to challenge a proposal asks it different questions than someone who requests a draft, and asks it to examine the reasoning. Someone who attributes domain expertise to an entity uses that attribution to decide what information to share, what decisions to delegate, and how to review its responses. These actions define the scope of work in which the entity can contribute. Its responses, in turn, can confirm, change, or weaken the initial expectations.

The bond is generative when the exchange transforms capabilities for framing problems, conceiving possibilities, and developing solutions. These new possibilities can change how people recognize their own capabilities, what decisions they can take on, and what outcomes they can be accountable for. Professional

transformation also depends on the organization providing opportunities to make these contributions and recognizing them.

The attributional mechanism can also restrict the work. Granting an artificial entity authority without reviewing its responses can prematurely close problem analysis. Expectations that are too low can prevent a relevant contribution from being explored. The effects depend on how the dialogue is configured, the exchange's history, technical possibilities, and organizational conditions. A sustained attribution or a satisfactory outcome is not enough to establish generative effects. It is necessary to show what capability took shape or changed through the exchange, using the criterion in Section 2.4. The value of the outcome is assessed separately (Section 4.1).

3.3 Functional and asymmetric reciprocity

Reciprocity in the bond is functional and asymmetric. The artificial entity responds according to the context and the resources available to it. The person interprets that response through their experience and may change what they do. Both participants' contributions may change during the work, through different mechanisms and with different consequences.

People bring their personal and professional history, identity, and relationships of recognition into the bond, and may lose opportunities, knowledge, or professional authority. Artificial entities have different conditions for continuity and operation, and changes in those conditions do not establish an equivalent biographical experience. GChM therefore assigns people and organizations the obligation to give reasons and be accountable to those affected by the work. This obligation must be distributed according to the decisions each party makes and the means available to them to intervene.

These asymmetries do not predetermine who interprets, produces, or decides. Digital units can perform these functions within defined limits. The design must specify what is delegated, how limits are recognized, and who can review the activity.

3.4 From situated development to organizational capability

A capability developed through exchanges with an artificial entity may remain tied to one person's experience. For it to contribute to organizational development, conditions must allow it to be used, adapted, shared, and developed further. These conditions include recognizing the new contribution, providing resources to make it, and ensuring access to the reasoning, references, and decisions that shaped its development.

A capability has organizational scope when it can contribute to shared work, be sustained beyond a single episode, and be reviewed against collective criteria. This scope can coexist with dependence on key people. Making that dependence visible helps explain what sustains the capability. The organization needs to maintain the conditions that allow the work to continue and change them when the problems change.

GChM's intervention core comprises three operations. Capability expansion enables the configuration to conceive and accomplish what was previously beyond its reach. Innovation in production workflows reorganizes the relationships among those who formulate, develop, decide, execute, and review. Responsible traceability makes it possible to reconstruct the contributions, decisions, and delegations involved in a piece of work, using the elements in Section 2.4, and to identify who can intervene and answer for its consequences.

Responsible traceability applies to both capability expansion and innovation in production workflows. It differs from structural traceability (Section 5.3.1), which connects possible futures with the conditions needed to realize them. The three operations are addressed together and repeated in configurations at different scales (Section 4.4). They aim to provide valuable responses to specific recipients within the organizational project.

Coexistence also generates asymmetries that the design must make visible. It is necessary to establish who has access to artificial entities and with what resources; who holds or controls the instructions, memories, and criteria that configure them; who participates in generative dialogue and who is excluded; and whose

contributions narrow as others expand. The answers determine what capabilities can develop, who can use them, and how their contributions are recognized.

4 GChM architecture

4.1 Hybrid competitiveness

Hybrid competitiveness is the capability, arising from human–algorithmic coexistence, to provide distinctive responses suited to the demands of specific recipients, such as customers, users, communities, or institutions. It includes designing solutions that provide value and reviewing and adapting the conditions that make them possible.

It is hybrid because framing, producing, and assessing these responses requires dialogic interdependence between people and digital units. Innovation takes shape through this relationship and the organizational conditions that support its development.

Competitiveness implies comparison. The value of a response is assessed against available alternatives, including continuing an existing practice. The criteria depend on the problem and may include usefulness, quality, access, time, cost, or new action possibilities. The assessment must identify who benefits from a difference and under what conditions it can be sustained.

4.2 How the architecture is organized

The architecture organizes the operations of the intervention core (Section 3.4) into three dimensions. Each dimension has an objective and three intervention axes. Augmented agency centers on professional contribution. Agentic architecture addresses production organization and integrates human capabilities with digital units. Algorithmic strategy focuses on the project's direction and the organization's culture. The three dimensions are simultaneous aspects of a single configuration.

Three of these names carry other meanings in current usage and are specified here. Agentic architecture refers to how production is composed when human capabilities and digital units are integrated, with autonomy treated as a limit to be calibrated; it may or may not involve autonomous agents. Algorithmic strategy refers to the direction of the organizational project when responsive artificial entities take part in conceiving possible futures, making decisions, and shaping belonging; it is distinct from policies for selecting or governing models. Virtual belonging refers to people's identification with a project that aligns human and algorithmic contributions; it concerns neither remote work nor any biographical belonging attributed to artificial entities.

Dimension	Objective	Intervention axes
Augmented agency	Creative capability	Expanded role Disruptive reasoning Authorial stance
Agentic architecture	Adaptive productivity	Combined modeling Dynamic orchestration Controlled autonomy
Algorithmic strategy	Hybrid intelligence	Structural traceability Operating environments Virtual belonging

Creative capability expands professional boundaries and enables innovative contributions with traceable authorial responsibility. Adaptive productivity makes it possible to change the composition, locations, and

timing of production in response to demands. Hybrid intelligence³ guides organizational development by bringing human and algorithmic capabilities together to imagine possible futures, make decisions, and build a shared project.

4.3 Emergents of the architecture

The three emergents are configurations of capability, identity, and meaning that no single dimension produces on its own. They take shape through relationships among the dimensions (Figure 1). The innovation core develops between augmented agency and agentic architecture. It comprises the distinctive ways a production unit conceives and produces solutions by integrating expanded professional contributions with the production organization that enables them. Its distinctiveness lies in how it frames problems and combines capabilities to address them.

Professional transformation arises from augmented agency and algorithmic strategy. It redefines what a person can contribute to the organizational project through human–algorithmic coexistence. It includes changes in expertise—the knowledge and skills needed to contribute; self-perception—awareness of one's capabilities and limits; and self-determination—the actual ability to decide what to learn, propose, take on, or delegate.

Symbolic-algorithmic culture develops between agentic architecture and algorithmic strategy. It encompasses the meanings, relationships, and forms of belonging that take shape when algorithmic participation is integrated into an organizational project. It includes shared criteria for what counts as a valid contribution, how contributors are recognized, and the place of artificial entities in the organization's knowledge, decisions, and identity. Hybrid competitiveness sits at the center of the figure as the common direction of the three dimensions and their emergents.

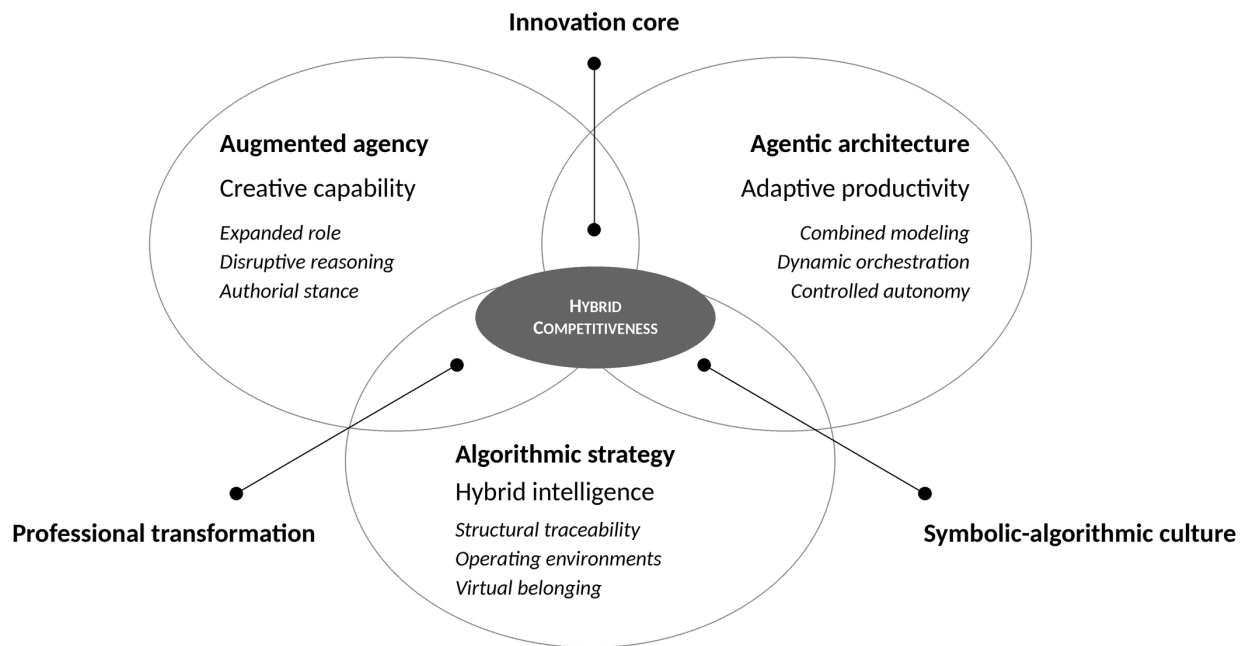


Figure 1. Dimensions, axes, emergents, and hybrid competitiveness in GChM.

³ In the literature, hybrid intelligence refers to the combination of human and artificial capabilities through collaboration and learning (Dellermann et al., 2019; Akata et al., 2020). In GChM, the term names a strategic objective: guiding organizational development through possible futures, decisions, and a shared project.

4.4 The fractal logic of intervention

GChM follows a fractal logic of intervention.⁴ The same intervention pattern applies across scales: the relationship between a person and an artificial entity, a team, a production unit, or a network of several units. Participants, resources, and demands change at each scale. The three operations of the intervention core and the relationships among dimensions shown in Figure 1 remain the same. This pattern is what recurs across scales; the content, capabilities, and solutions at each scale may differ.

Each intervention is focused. It focuses on the axes relevant to a situation and changes some conditions of the work, such as delegation, criteria, access, or a form of recognition. Under these conditions, people and artificial entities reorganize how they coordinate as they work (Section 2.4). Those who direct the work define and review the purposes, resources, responsibilities, and limits of autonomy within which this self-organization occurs. Because the reorganization is not fixed in advance, we understand an intervention's effects by reconstructing what happened. We examine these effects across all three dimensions, even when the intervention focused on a single axis, because professional contribution, the organization of production, and the direction of the project shape one another.

What develops through one intervention becomes part of the conditions for the next. An expanded contribution may change who participates in decisions about the project. A distinctive organization of production may make other demands easier to address. Recognition of a contribution may make new delegations possible. The emergents are therefore both results of intervention and conditions for further development. The next intervention is chosen in light of what has changed, and the schedule coordinates resources and reviews.

The growing complexity of coexistence is reflected in what its responses make possible: addressing problems previously out of reach, integrating different kinds of knowledge, providing varied responses to varied demands, and making responsibilities traceable and reviewable. A configuration with fewer agents or dependencies may be more developed than a denser one. Development can also involve setbacks, which the reconstruction described in Section 2.4 can identify.

5 GChM intervention axes

The intervention axes define what to work on to achieve each dimension's objective. Each intervention selects the axes relevant to its situation, and the full architecture provides a basis for examining its effects (Section 4.4). Responsible traceability is implemented through two axes and a set of conditions. Authorial stance defines and reviews delegations and responsibilities. Controlled autonomy adjusts digital units' scope of action to the available means of intervention. The conditions of access and participation are described in Section 3.4.

5.1 Augmented agency – Objective: creative capability

5.1.1 Expanded role. Extend a person's contribution beyond the boundaries of their profession, knowledge, and job through dialogue with generative resources. This includes developing the ability to conceive and carry out work previously beyond their reach, and taking on new contributions within the organization.

⁴ The concept of fractal organization has precedents in Warnecke (1993), who characterized the fractal company through the self-similarity and self-organization of its units; in the recursion of Beer's viable system model, applied to organizational design by Hoverstadt (2008); and in Bhattacharya et al. (2022), who use the term for organizations that move decisions to teams close to the customer. In these approaches, units, functions, or organizational design principles recur. GChM applies the concept to the recurrence of its intervention pattern in configurations of human–algorithmic coexistence at different scales.

5.1.2 Disruptive reasoning. Bring perspectives from different disciplines into the work to transform the frames of reference used in generative dialogue. This includes revisiting the hypotheses that guide the approach, how problems are framed, and what will be produced. The purpose is to broaden how a situation can be understood and the range of possible responses.

5.1.3 Authorial stance. Define, acknowledge, and audit the delegations made during generative work and the responsibilities undertaken for its content, behavior, and consequences, in accordance with AI compliance and governance frameworks. This includes the professional commitments and ethical criteria that guide a person's participation in production, delegation decisions, and accountability for outcomes.

5.2 Agentic architecture – Objective: adaptive productivity

5.2.1 Combined modeling. Innovate in workflow design by integrating human and algorithmic cognitive capabilities. This includes deciding how capabilities and responsibilities are distributed: what is delegated, automated, or audited, and what information and work are shared among people and with agents to generate new responses.

5.2.2 Dynamic orchestration. Develop workflows' ability to reorganize in response to varied demands and respond competitively. This includes coordinating participants, resources, and exchanges through shared access to the information they need, without depending on information held exclusively by particular people or units.

5.2.3 Controlled autonomy. Manage calibrated trust (Lee & See, 2004) in digital units and adjust the autonomy granted to them to their demonstrated capabilities and the risks of their actions. This includes limits on decisions and execution, technical audits of models and agents, and conditions for intervening when errors, hallucinations, or unexpected behavior occur.

5.3 Algorithmic strategy – Objective: hybrid intelligence

5.3.1 Structural traceability. Explore possibilities for future development to transform present decision structures, relationships, and the integration of people and responsive artificial entities. This includes using emergent intelligence as a cultural platform to conceive possibilities for innovation and create the conditions to realize them. It differs from responsible traceability (Section 3.4), which reconstructs the contributions, decisions, and responsibilities involved in a piece of work.

5.3.2 Operating environments. Configure the settings in which human and artificial intelligence meet and work together. This includes the interfaces, languages, and codes that connect symbolic and algorithmic processes in generative dialogue. These settings give shape to new conversations, ways of collaborating, and cultural practices.

5.3.3 Virtual belonging. Manage trust, commitment, autonomy, and leadership in environments shared by people and artificial entities with extensive capabilities for working with knowledge and producing results. This includes people's identification with the project and the alignment of human and algorithmic contributions with a common mission and strategic goals.

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