

# Reclaiming Discernment: A Situated Paradigm for Human-Centered Decision Support and Learning

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## Appendix B: Design Guidelines for Applying the Situated Discernment Paradigm

This appendix presents a series of progressively refined guidelines that illustrate how the Situated Discernment Paradigm (SDP) can be applied in real-world contexts of human-centered decision support and learning. The initial guideline was generated in response to a prompt I crafted for Gemini, asking for support for student decision-making using the Field of Discernment Matrix. While the response was coherent and well-structured, it remained within a conventional framework of procedural rationality and role-based analysis. It is precisely this limitation that triggered my sense of disappointment—an intuition formed through months of developing and teaching within the SDP. That intuition prompted a second prompt: I uploaded the full version of the “Reclaiming Discernment” paper and explicitly invited Gemini to respond in its spirit. The qualitative leap in the revised output is itself instructive: it demonstrates that **without a grounding in the SDP, even advanced generative tools revert to familiar paradigms**. When placed within a structured field of discernment, however, these tools can begin to scaffold something deeper.

The second, revised version of the guidelines reflects how student participation can be deepened when the SDP framework is made explicit. It draws on the full conceptual structure of registers and moments and reorients the Chief Operating Officer (COO)’s decision-making around appropriateness (KSIs) and relational authenticity (KRIs) as well as performance (KPIs).

The third set of guidelines extends this exercise to **Decision Support System (DSS) designers**, asking them to adopt the SDP paradigm not just in theory but as a design orientation. This includes collaborative inquiry with peers, use of the matrix as a design scaffold, and the development of CBIG tools that support discernment across multiple registers.

Crucially, the improvement in generative output once the Gemini system had access to the SDP document is itself a validation of the paradigm: **AI systems, like human learners, perform more meaningfully when situated in a structured field of discernment**. The contrast between pre- and post-upload responses demonstrates how SDP clarifies the normative structure of decision-making for both humans and AI supports.

Taken together, the three guidelines included here offer a compelling demonstration of how the SDP can move from conceptual framework to situated practice—transforming not only learning and design, but our shared understanding of what it means to discern what matters.

### Initial Guidelines for Students: Navigating Strategic Decisions with the Field of Discernment Matrix, generated 6<sup>th</sup> June 2025 with Gemini 2.5 Flash.

**My prompt** (unabridged): Prepare guidelines for students on using the field of discernment matrix. i want them to see that the questions they ask depend on their role in a concrete evolving situation include as an example the question of Air Liquide’s investment in hydrogen for a student whose role is COO of Air Liquide. on the basis of the data available in the universal registration documents of the most recent 5 years (through URD 2024, available since March 6<sup>th</sup>, 2025) the student must prepare for a meeting with their team (other students have chosen the CEO, CFO, CMO and CHRO/CTO roles. the meeting will consider the effectiveness and appropriateness of air liquide’s hydrogen investment strategy using a balanced scorecard/ strategy map. before the meeting the student will have a meeting with class mates that have the same COO role but in a different assigned CAC40 company. in the first meeting the student is asked to come to an understanding of their role what constitutes effective performance (what KPIs should be used by a COO) and appropriate behavior what KSIs and KRIs).

**Gemini:** Here are guidelines for students on using the field of discernment matrix, with a specific example for a COO of Air Liquide focusing on hydrogen investment.

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### Guidelines for Students: Navigating Strategic Decisions with the Field of Discernment Matrix

The "Field of Discernment Matrix" is a powerful analytical tool that helps individuals make complex decisions by systematically evaluating options against a set of criteria. However, its effectiveness hinges on understanding that **the questions you ask and the criteria you prioritize depend critically on your role in a concrete, evolving situation**.

This guide will walk you through applying this matrix, emphasizing the importance of role-specific inquiry.

## I. Understanding the Field of Discernment Matrix

At its core, a discernment matrix involves:

1. **Defining the Decision:** Clearly state what needs to be decided.
2. **Identifying Key Stakeholders:** Who is impacted by this decision, and whose perspectives are crucial?
3. **Establishing Criteria:** What factors will influence the decision? These should be measurable where possible.
4. **Assigning Weights:** How important is each criterion? (e.g., on a scale of 1-5 or 1-10).
5. **Generating Options/Alternatives:** What are the different paths you could take?
6. **Evaluating Options Against Criteria:** Score each option based on how well it meets each criterion.
7. **Calculating Weighted Scores:** Multiply the option's score by the criterion's weight.
8. **Analyzing and Deciding:** Sum the weighted scores for each option to identify the most favorable.
9. **Considering Risks and Unintended Consequences:** Beyond the scores, what could go wrong, and what other effects might arise?
10. **Formulating Recommendations and Next Steps:** What is your proposed course of action?

## II. The Crucial Role of Your Position: Asking the Right Questions

The most critical step, often overlooked, is **framing the right questions** based on your specific role within the organization. A CEO, CFO, COO, CMO, and CHRO/CTO will approach the same strategic decision with different lenses, priorities, and information needs.

**Before you even start listing criteria, ask yourself:**

- **What is my primary responsibility in this situation?** (e.g., ensuring operational efficiency, managing financial health, driving market growth, developing human capital, fostering innovation).
- **What data and insights are unique to my function?**
- **What are the key performance indicators (KPIs) that define success for my role?**
- **What are the key success indicators (KSIs) that signal my function is contributing to broader strategic goals?**
- **What are the key risk indicators (KRIs) that I need to monitor to prevent operational failures or negative outcomes?**
- **How will this decision impact my team and their ability to execute?**

By starting with these role-specific questions, you ensure that your criteria are relevant, your evaluation is comprehensive from your perspective, and your recommendations are actionable within your sphere of influence.

## III. Example: Air Liquide's Investment in Hydrogen - The COO's Perspective

Let's apply this to a student acting as the **COO of Air Liquide**, preparing for a meeting to discuss the effectiveness and appropriateness of Air Liquide's hydrogen investment strategy.

**Concrete Evolving Situation:** Air Liquide, a world leader in industrial gases, is heavily investing in hydrogen as a key pillar of its energy transition strategy. The student, as COO, needs to evaluate this strategy's operational aspects to prepare for a balanced scorecard/strategy map meeting with the CEO, CFO, CMO, and CHRO/CTO.

### 1. Understanding the COO's Role, Performance, and Behavior:

- **Role:** The COO is responsible for the day-to-day operations of the company, ensuring efficiency, productivity, quality, and cost-effectiveness. For Air Liquide's hydrogen business, this means overseeing the production, logistics, distribution, and maintenance of hydrogen infrastructure.
- **Effective Performance (KPIs for a COO related to Hydrogen Investment):**
  - **Production Efficiency:**
    - **Hydrogen Production Volume (tons/year):** Absolute volume and growth rates.
    - **Electrolyzer Utilization Rate (%):** How effectively are production assets being used?
    - **Energy Consumption per kg of Hydrogen:** Efficiency of the production process (especially for green hydrogen).
    - **Water Consumption per kg of Hydrogen:** Resource efficiency.
    - **Operational Downtime (%):** Unplanned interruptions in production.
  - **Supply Chain & Logistics:**
    - **On-Time Delivery Rate (%):** Reliability of hydrogen supply to customers.
    - **Distribution Network Efficiency (e.g., km/kg H<sub>2</sub> transported):** Cost and environmental impact of transport.
    - **Storage Capacity Utilization (%):** Effective use of storage infrastructure.

- **Logistics Costs per kg of Hydrogen:** Efficiency of transportation.
- **Safety & Quality:**
  - **Safety Incident Rate (Lost Time Injury Frequency Rate - LTIFR):** Critical for hazardous materials like hydrogen.
  - **Hydrogen Purity Levels (%):** Meeting customer specifications and industry standards.
  - **Customer Complaints related to Supply/Quality:** Feedback on operational performance.
- **Cost Management:**
  - **Operating Expense Ratio for Hydrogen Business:** Efficiency of operational spending.
  - **Maintenance Costs per unit of Production Capacity:** Cost-effectiveness of asset management.
  - **Capital Expenditure (CapEx) Efficiency for Hydrogen Projects:** How effectively are investment funds translated into operational capacity.
- **Appropriate Behavior (KSIs and KRIs for a COO related to Hydrogen Investment):**
  - **Key Success Indicators (KSIs):** These are forward-looking indicators that signal progress towards strategic objectives.
    - **Successful Commissioning of New Hydrogen Production Sites:** On-time and on-budget deployment of new plants.
    - **Achieved Synergies from Integrated Hydrogen Value Chain:** Evidence of efficiency gains from connecting production, logistics, and distribution.
    - **Employee Competency Development in Hydrogen Technologies:** Proportion of workforce trained in new hydrogen processes.
    - **Successful Pilot Projects for New Hydrogen Applications:** Demonstrating operational viability for new markets (e.g., heavy mobility, industrial decarbonization).
    - **Supplier Reliability for Key Hydrogen Components (e.g., electrolyzers, storage tanks):** Ensuring a robust supply chain for growth.
  - **Key Risk Indicators (KRIs):** These are early warnings of potential problems.
    - **Equipment Failure Rates above Threshold:** Indication of maintenance issues or design flaws.
    - **Regulatory Non-Compliance Incidents:** Risks related to safety, environmental, or operational regulations for hydrogen.
    - **Supply Chain Disruptions for Key Inputs (e.g., renewable electricity, water):** Potential for production bottlenecks.
    - **Cost Overruns on Major Hydrogen Projects:** Financial risk due to inefficient project management.
    - **Increased Employee Turnover in Hydrogen-Related Roles:** Loss of critical expertise.
    - **Cybersecurity Incidents Affecting Operational Technology (OT) Systems:** Risk to plant control and safety.

## 2. Meeting with Same-Role Classmates (COO in different CAC40 companies):

In this meeting, the Air Liquide COO student should focus on:

- **Sharing and comparing KPIs, KSIs, and KRIs:** How do other COOs measure operational success and manage risk in their respective industries (e.g., energy, manufacturing)? Are there commonalities or unique challenges?
- **Discussing best practices in operational excellence:** What strategies are other COOs using to drive efficiency, reduce costs, and ensure safety in their companies?
- **Benchmarking operational performance:** How do their operational metrics compare to Air Liquide's, considering industry specifics?
- **Understanding diverse operational challenges:** Gaining insights into how different industries handle scaling new technologies, managing complex supply chains, and addressing sustainability goals from an operational perspective.
- **Identifying potential areas for cross-company learning or collaboration (hypothetically):** For example, shared challenges in managing large-scale industrial projects or integrating new digital technologies.

## 3. Preparing for the Internal Meeting (with CEO, CFO, CMO, CHRO/CTO) using a Balanced Scorecard/Strategy Map:

The COO's input will be crucial for the "Internal Business Process" perspective of the Balanced Scorecard and will feed into the overall strategy map.

**The COO's Field of Discernment Matrix (Example for Hydrogen Investment):**

**Decision:** Evaluate the effectiveness and appropriateness of Air Liquide's hydrogen investment strategy from an operational perspective.

**Key Stakeholders (for COO's view):** Operations teams, Engineering & Construction, R&D (for new processes), Supply Chain, Maintenance, Safety & Environment, Project Management.

**Criteria (from COO's perspective, drawing on KPIs, KSIs, KRIs):**

Criterion (Operational Focus)	Weight (1-5)	Rationale (COO's POV)
Operational Efficiency & Productivity	5	Directly impacts cost of goods sold, profitability, and ability to scale. (e.g., Electrolyzer utilization, energy/water efficiency, production volume growth).
Safety & Regulatory Compliance	5	Non-negotiable for hazardous materials; critical for reputation, license to operate, and avoiding costly incidents. (e.g., Safety incident rate, compliance audits).
Reliability & Uptime of Assets	4	Ensures consistent supply to customers and maximizes return on significant capital investment. (e.g., Downtime, maintenance costs, equipment failure rates).
Supply Chain Robustness & Cost-Effectiveness	4	Guarantees availability of inputs (e.g., renewable energy, water, raw materials) and efficient delivery of hydrogen to market. (e.g., On-time delivery, logistics costs, supplier reliability).
Scalability & Adaptability of Operations	3	Ability to rapidly expand hydrogen production and distribution to meet growing demand and adapt to evolving technologies. (e.g., Time to commission new plants, flexibility of processes).
Cost Management & Capital Efficiency	4	Ensuring investments translate into competitive operational costs and acceptable return on capital for new projects. (e.g., CapEx efficiency, operational expense ratio).
Innovation & Technology Integration	3	Embracing new production methods (e.g., advanced electrolysis) and integrating digital tools for operational optimization. (e.g., Adoption rate of new tech, efficiency gains from digital initiatives).
Talent & Workforce Readiness	3	Availability of skilled personnel to operate and maintain new hydrogen facilities. (e.g., Employee training completion rates, skilled labor availability, turnover in critical roles).
Environmental Footprint of Operations	4	Alignment with sustainability goals and stakeholder expectations, especially for "green" hydrogen. (e.g., GHG emissions reduction from own operations, water usage reduction).
Operational Risk Mitigation (KRIs monitored)	5	Proactive identification and management of operational risks to prevent disruptions and ensure business continuity. (e.g., Trends in key risk indicators like equipment failures, cybersecurity alerts, or regulatory non-compliance).

**Options (Hypothetical strategic approaches for hydrogen investment):**

- **Option A: Focus on large-scale industrial green hydrogen production (e.g., direct supply to large industrial customers).**
- **Option B: Diversify into hydrogen mobility infrastructure (e.g., refueling stations, logistics for fuel cell vehicles).**
- **Option C: Emphasize R&D in novel hydrogen production technologies (e.g., thermochemical, biological).**
- **Option D: Prioritize geographical expansion in emerging hydrogen markets.**

**Evaluation (using data from URDs 2020-2024):**

- **Accessing URDs:** The student would download and meticulously review the Universal Registration Documents from Air Liquide for the years 2020, 2021, 2022, 2023, and 2024 (available since March 6, 2025). Key sections to focus on for a COO:
  - **Management Report:** Look for discussions on operational performance, industrial activities, project execution, safety, and supply chain.
  - **Extra-Financial Performance Declaration (or Sustainability Statement):** This section often contains detailed information on environmental performance (GHG emissions, water usage), safety records, and employee-related metrics.
  - **Financial Statements (Notes to Consolidated Financial Statements):** Provides insights into CapEx, depreciation, and operational expenses, which can be linked to efficiency and cost management.
  - **Strategic Outlook/Highlights:** Identify the company's stated priorities and progress in hydrogen.
  - **Risk Factors:** Understand the operational risks identified by the company.
- **Extracting Relevant Data (Examples):**
  - *From URD 2024:* "In 2024, Air Liquide delivered another very strong operational performance. Our transformation plan, announced in mid-2024, is currently being rolled out across the entire Group. These actions led to an unparalleled improvement in our operating

margin of +110 basis points excluding the energy impact in 2024." This indicates strong operational execution.

- *From URD 2024*: "After 2 consecutive years of significant decrease in CO2 emissions in absolute value in 2023 and 2024, achieving the inflection point planned around 2025 in the ADVANCE strategic plan is confirmed. In 2025, the evolution of CO2 emissions should be limited." This speaks to the environmental footprint and operational efficiency related to decarbonization efforts, crucial for hydrogen.
- *From URD 2023*: "The Group develops solutions contributing to climate and the energy transition—particularly with hydrogen—and takes action to progress in areas of healthcare, digital and high technologies." This confirms the strategic emphasis on hydrogen.
- *From URD 2022/2023 discussions of "large-scale hydrogen technologies for industry and mobility"*: Provides context for the scope of hydrogen investments.
- *From Moody's Credit Opinion (often linked in URDs or investor sections)*: "Air Liquide disclosed that around 49% of the 2023 revenues of the Large Industries segment were related to hydrogen, carbon monoxide as well as cogeneration. This also includes sales of hydrogen from electrolysis." This provides quantitative data on the existing hydrogen business.
- *From URDs on CapEx trends*: Look for increased investment in specific segments or technologies.
- *From URDs on safety performance*: Review LTIFR and other safety metrics.
- **Scoring Each Option**: Based on the extracted data and COO's understanding of operational implications, score each option (e.g., 1-5) against each criterion. For example, Option A (large-scale industrial) might score highly on "Operational Efficiency & Productivity" if Air Liquide has a proven track record in large-scale industrial gas production, but perhaps lower on "Scalability & Adaptability" if it's less flexible to market shifts.

#### 4. Balanced Scorecard / Strategy Map Input (from COO's perspective):

The COO's matrix analysis will feed directly into the Balanced Scorecard and Strategy Map, particularly under the **Internal Business Process Perspective**.

- **Example Balanced Scorecard Contribution (COO)**:
  - **Financial Perspective**: *Indirectly contribute through cost reduction and asset utilization for hydrogen operations.* (e.g., Reduced cost of hydrogen production per kg, improved ROCE for hydrogen assets).
  - **Customer Perspective**: *Ensure reliable and high-quality hydrogen supply.* (e.g., On-time delivery rates, customer satisfaction with supply).
  - **Internal Business Process Perspective**: *This is the COO's core contribution.*
    - **Optimize Hydrogen Production Processes**: (e.g., Project completion rates for new plants, reduction in energy intensity of production, increased electrolyzer efficiency).
    - **Enhance Hydrogen Supply Chain and Logistics**: (e.g., Reduced distribution costs, improved safety in transport and storage, increased network density).
    - **Drive Operational Excellence and Safety**: (e.g., Decreased safety incident rate, successful implementation of new operational technologies, higher asset uptime).
  - **Learning & Growth Perspective**: *Develop capabilities and foster innovation in hydrogen operations.* (e.g., Employee training hours in new hydrogen technologies, successful integration of digital twins for plant management).
- **Strategy Map Contribution**: The COO's analysis will help identify the operational processes and capabilities (e.g., efficient hydrogen production, robust logistics, strong safety culture) that are critical to achieving the higher-level financial and customer objectives of the hydrogen strategy. For instance, "Optimizing Hydrogen Production Processes" (Internal) will directly enable "Meeting Customer Demand for Green Hydrogen" (Customer) and indirectly contribute to "Maximizing Return on Hydrogen Investments" (Financial).

#### Conclusion

By rigorously applying the field of discernment matrix, and critically, by asking questions tailored to your specific role, you can provide a nuanced, informed, and actionable contribution to strategic discussions. For the Air Liquide COO student, this means focusing on the operational backbone of the hydrogen strategy, ensuring that the ambitious investments translate into efficient, safe, and reliable execution. The Universal Registration Documents are your primary data source, allowing you to ground your analysis in real-world company performance and strategic direction.

**My experience**: This was disappointing, not really in the spirit of SDP, even the acronyms KSI and KRI were misinterpreted. So I uploaded "Reclaiming discernment..." v2.2 6<sup>th</sup> June 2025 as part of my next prompt.

## Revised Guidelines for Students: Navigating Strategic Decisions with the Field of Discernment Matrix (Emphasizing Situated Discernment)

**My next prompt:** Now as a teacher having read the paper reclaiming discernment what corrections and improvements would you make to the guidelines to better reflect the spirit and the explicated content of the situated participation paradigm.

**Gemini:** Having read "Reclaiming Discernment: A Situated Paradigm for Human-Centered Decision Support and Learning", the initial guidelines can be significantly enhanced to better reflect the spirit and explicit content of the Situated Discernment Paradigm (SDP). The core idea is to move beyond a purely procedural view of decision-making to one that emphasizes the **discerning subject, value-orientation, and situated participation**. Here are the corrections and improvements, structured to integrate the key concepts of SDP:

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### Revised Guidelines for Students: Navigating Strategic Decisions with the Field of Discernment Matrix (Emphasizing Situated Discernment)

The "Field of Discernment Matrix" is not merely a tool for systematic evaluation; it is a conceptual scaffold that supports **self-appropriation and collaborative inquiry into what matters**. Its effectiveness hinges on understanding that **discernment is a situated, value-oriented process, and the questions you ask, criteria you prioritize, and the very nature of your engagement depend critically on your role in a concrete, evolving situation**.

This revised guide will walk you through applying this matrix, emphasizing the importance of role-specific, value-attuned inquiry within the **Situated Discernment Paradigm (SDP)**.

#### I. Understanding the Situated Discernment Paradigm (SDP) and the Field of Discernment

The SDP models decision-making not as a discrete act of choice, but as a **participatory, value-oriented process of discerning what matters**. It reframes decision quality in terms of **appropriateness** rather than just performance.

At its heart is the **Field of Discernment**, which arises from the tension between **registers of participation** (modes through which you experience and reflect) and **moments of value engagement** (dimensions along which value is realized in decision-making).

**Key Principles of Discernment (Precepts of Good Decision-Making):** As you engage with the matrix, internalize these guiding precepts:

- **Be attentive, be intelligent, be reasonable, be responsible** (Loneragan): Cultivate interior self-appropriation.
- **Live in the tension** (Voegelin): Embrace the "metaxy"—the in-between space where reality unfolds through your participation.
- **Be tactful** (Gadamer): Develop a sensibility that respects proportion, timing, and difference.
- **Attend to the Good** (Murdoch): Maintain a sustained, non-egocentric attention to what truly matters.
- **Participate** (Lave & Wenger): Recognize that value realization occurs through situated involvement.
- **Do not dominate** (Pettit): Affirm the dignity and agency of others.
- **Institute with and for us all** (Searle): Constitute shared social realities through collective meaning-making.
- **Be edifying:** Seek to clarify without closing, to orient without dominating, and to construct the good in discernment with others.

#### The Field of Discernment Matrix Components:

- **Registers of Participation (How you engage):**
  - **Cognitive:** Understanding facts, concepts, and relationships.
  - **Existential:** Grappling with meaning, purpose, and personal commitment.
  - **Hermeneutic:** Interpreting contexts, histories, and perspectives.
  - **Practical:** Focusing on actions, tasks, and getting things done.
  - **Critical:** Questioning assumptions, challenging norms, evaluating appropriateness.
  - **Societal:** Considering broader social impacts, collective good, and institutional realities.
- **Moments of Value Engagement (What you are attending to):**
  - **Value:** The underlying core beliefs or ideals.
  - **Principle:** Guiding rules or truths derived from values.
  - **Procedure:** Step-by-step instructions for tasks.
  - **Process:** A series of actions or operations leading to an outcome.

- **Activity:** Specific actions being performed.
- **Practice:** Embodied, shared ways of doing things within a community.
- **Performance:** Measurable outcomes or results.

The matrix helps you **locate the focus of your attention** (a moment like 'performance' or 'principle') and reflect on **how your engagement is shaped by different registers**. It makes visible where miscommunications and errors of discernment can occur when participants operate from different registers or conflate different moments.

## II. The Crucial Role of Your Position: Asking the Right Questions to Cultivate Discernment

Your role shapes your **situated discernment**. A CEO, CFO, COO, CMO, and CHRO/CTO will approach the same strategic decision with distinct lenses, priorities, and information needs.

**Before you even start listing criteria, engage in self-appropriation by asking:**

- **What is my primary responsibility in this situation?** This isn't just about tasks, but about **what matters** from my functional perspective (<https://www.google.com/search?q=e.g., ensuring operational efficiency, managing financial health, driving market growth, developing human capital, fostering innovation>).
- **What data and insights are unique to my function, and in which register(s) of participation do I primarily operate?** (<https://www.google.com/search?q=e.g., A COO might lean heavily on the 'practical' and 'critical' registers when assessing processes and performance, but also need to engage the 'societal' register for sustainability>).
- **What are the Key Performance Indicators (KPIs) that define success for my role as performance outcomes?**
- **What are the Key Situation Indicators (KSIs) that assess the appropriateness of fit between my participation and the object of discernment?** These reveal if choices are "out of sync with what matters most."
- **What are the Key Relationship Indicators (KRIs) that assess the authenticity of stakeholder engagement?** These focus on the quality of relationships and trust.
- **How will this decision impact the "value," "principles," "procedures," "processes," "activities," and "practices" within my sphere, and what potential "performances" will result?**
- **How can I ensure my engagement is attentive, intelligent, reasonable, and responsible?**

By starting with these role-specific and SDP-informed questions, you ensure your criteria are relevant, your evaluation is comprehensive from your perspective, and your recommendations contribute to **authentic discerning participation in the apprehension and realization of value**.

## III. Example: Air Liquide's Investment in Hydrogen - The COO's Perspective

**Concrete Evolving Situation:** Air Liquide is investing heavily in hydrogen for energy transition. As COO, you must evaluate the operational aspects of this strategy for a Balanced Scorecard/Strategy Map meeting with other executives, ensuring both performance and appropriateness.

### 1. Understanding the COO's Role, Effective Performance (KPIs), Appropriate Behavior (KSIs & KRIs):

- **Role:** The COO ensures efficient, productive, high-quality, and cost-effective daily operations. For Air Liquide's hydrogen business, this means overseeing production, logistics, distribution, and maintenance of infrastructure.
- **Effective Performance (KPIs for a COO related to Hydrogen Investment) - focused on the 'Performance' moment of value engagement:**
  - **Production Efficiency:** Hydrogen Production Volume (tons/year), Electrolyzer Utilization Rate (%), Energy Consumption per kg of Hydrogen, Operational Downtime (%).
  - **Supply Chain & Logistics:** On-Time Delivery Rate (%), Distribution Network Efficiency (<https://www.google.com/search?q=e.g., km/kg H2 transported>), Logistics Costs per kg of Hydrogen.
  - **Safety & Quality:** Safety Incident Rate (LTIFR), Hydrogen Purity Levels (%).
  - **Cost Management:** Operating Expense Ratio for Hydrogen Business, Maintenance Costs per unit of Production Capacity, Capital Expenditure (CapEx) Efficiency for Hydrogen Projects.
- **Appropriate Behavior (KSIs and KRIs for a COO related to Hydrogen Investment) - focused on 'Appropriateness of Fit' and 'Authenticity':**
  - **Key Situation Indicators (KSIs) - assessing operational appropriateness and fit:**
    - **Alignment of Operational Procedures with Strategic Values:** Are the specific processes for hydrogen production, distribution, and safety genuinely reflecting Air Liquide's stated commitment to sustainability and innovation?
    - **Fit of Current Operational Practices with Future Market Demands:** Is the current operational setup for hydrogen flexible enough to adapt to evolving market needs?

([https://www.google.com/search?q=e.g., sudden shifts in demand for mobility vs. industrial hydrogen](https://www.google.com/search?q=e.g.,+sudden+shifts+in+demand+for+mobility+vs.+industrial+hydrogen))?

- **Integration of New Technologies into Existing Operations:** How smoothly are new hydrogen technologies ([https://www.google.com/search?q=e.g., advanced electrolyzers, new storage solutions](https://www.google.com/search?q=e.g.,+advanced+electrolyzers,+new+storage+solutions)) being integrated without disrupting current efficiency or safety?
- **Operational Readiness for Scalability:** Is the infrastructure and workforce prepared to scale up hydrogen production and distribution significantly and quickly if the market accelerates?
- **Key Relationship Indicators (KRIs) - assessing authenticity of operational stakeholder engagement:**
  - **Quality of Collaboration with Technology Providers:** Is the partnership with electrolyzer manufacturers truly collaborative, or is it merely transactional? Does it foster shared problem-solving and trust?
  - **Employee Engagement and Buy-in for Hydrogen Operations:** Do employees involved in hydrogen operations feel genuinely invested in the strategy, or are they just executing tasks? Is their expertise valued?
  - **Trust with Local Communities for Infrastructure Projects:** How are relationships with communities near new hydrogen production or distribution sites being managed? Is there genuine dialogue and consideration for their concerns, or just formal consultation?
  - **Reliability and Reciprocity in Supply Chain Partnerships:** Are relationships with suppliers ([https://www.google.com/search?q=e.g., renewable energy providers](https://www.google.com/search?q=e.g.,+renewable+energy+providers)) based on mutual benefit and reliability, or is it a power dynamic that could lead to vulnerabilities?

**2. Meeting with Same-Role Classmates (COO in different CAC40 companies):** This is a critical moment for multi-agent dialogue as a reflective CBIG practice. Focus on:

- **Comparing KPIs, KSIs, and KRIs:** Discuss how other COOs define and measure operational success, appropriateness, and authentic relationships within their diverse industries. Identify commonalities in operational challenges and unique insights from their contexts.
- **Discussing Context-Based Insight Generation (CBIG) Tools:** Share how different industries utilize symbolic, generative, reflective, narrative, and analytic-discursive tools to support discernment in their operational challenges.
- **Benchmarking Operational Excellence through the lens of SDP:** How do their operational metrics and approaches to managing the Registers of Participation and Moments of Value Engagement compare to Air Liquide's?
- **Understanding Diverse Operational Challenges:** Gain insights into how different industries handle scaling new technologies, managing complex supply chains, addressing sustainability, and fostering value-oriented participation from an operational perspective.

**3. Preparing for the Internal Meeting (with CEO, CFO, CMO, CHRO/CTO) using a Balanced Scorecard/Strategy Map:**

The COO's input, deeply informed by SDP, will be crucial for the "**Internal Business Process**" perspective of the Balanced Scorecard and will feed into the overall Strategy Map. This is where your **Field of Discernment Matrix** analysis becomes central.

**The COO's Field of Discernment Matrix (Illustrative for Hydrogen Investment):**

**Decision:** Evaluate the effectiveness and appropriateness of Air Liquide's hydrogen investment strategy from an operational perspective, ensuring value-oriented participation.

**Key Stakeholders (for COO's view):** Operations teams, Engineering & Construction, R&D (for new processes), Supply Chain, Maintenance, Safety & Environment, Project Management.



## Populating the Matrix (Illustrative Nodes for COO):

**Table A1** Field of Discernment Matrix – Chief Operating Officer (COO) Perspective on Air Liquide's Hydrogen Strategy. This matrix maps key concerns (KPIs, KSIs, KRIs) across registers of participation and moments of value engagement, illustrating how situated discernment can be scaffolded in a strategic decision context (Note this title and caption were added by the author post-generation)

Registers of Participation	Moments of Value Engagement						
	Value (What matters)	Principle (Guiding truths)	Procedure (How we do it)	Process (Series of actions)	Activity (Specific actions)	Practice (Embodied doing)	Performance (Measurable outcomes)
<i>Cognitive</i>	Safety of Operations (Core value)	"Zero Harm" principle (Explicit rule)	SOPs for H2 handling (Documented steps)	H2 production workflow (Flow of operations)	Performing safety audit (Specific task)	Culture of safety reporting (Habitual behavior)	Safety Incident Rate (LTIFR) (KPI)
<i>Existential</i>	Reliability to Customers (Commitment)	"Promise to Deliver" (Implicit commitment)	Emergency response protocols (Preparedness)	Supply chain crisis management (Response)	Calling backup suppliers (Decisive action)	Living up to customer trust (Existential commitment)	Customer Supply Reliability (KSI) (Appropriateness of commitment)
<i>Hermeneutic</i>	Long-term Sustainability (Interpreted future)	"Responsible Energy Transition" (Interpreted mandate)	Environmental impact assessments (Reporting framework)	Strategic planning for green H2 (Forward-looking process)	Analyzing market trends (Interpreting signals)	Adapting to evolving regulations (Ongoing interpretation)	Green Hydrogen Share of Portfolio (%) (Reflects interpretation)
<i>Practical</i>	Operational Efficiency (Goal for execution)	"Lean Operations" (Guiding method)	Maintenance scheduling (Daily routine)	Plant upgrade execution (Hands-on transformation)	Troubleshooting equipment (Direct intervention)	Continuous improvement workshops (Hands-on problem-solving)	Electrolyzer Utilization Rate (%) (Operational KPI)
<i>Critical</i>	Ethical Sourcing (Scrutinized value)	"Fair Labor Standards" (Evaluated principle)	Supplier audit processes (Verification steps)	Supply chain risk assessment (Systemic evaluation)	Reviewing supplier contracts (Detailed scrutiny)	Challenging status quo in procurement (Active critique)	Supplier Diversity (KSI) (Appropriateness of sourcing)
<i>Societal</i>	Community Well-being (Shared good)	"Social License to Operate" (Recognized norm)	Public consultation guidelines (Community engagement steps)	Stakeholder engagement process (Community relations)	Hosting town hall meetings (Direct outreach)	Building trust with local leaders (Cultivating relationships)	Community Satisfaction Index (KRI) (Authenticity of relationship)

## Using URD Data (2020-2024):

- Accessing URDs:** Review the Universal Registration Documents from Air Liquide for the specified years. Key sections for a COO include:
  - Management Report:** Look for discussions on operational performance, industrial activities, project execution, safety, and supply chain.
  - Extra-Financial Performance Declaration (or Sustainability Statement):** Details on environmental performance (GHG emissions, water usage), safety records, and employee-related metrics.
  - Financial Statements (Notes):** Insights into CapEx, depreciation, and operational expenses, linking to efficiency and cost management.
  - Strategic Outlook/Highlights:** Identify the company's stated priorities and progress in hydrogen.
  - Risk Factors:** Understand identified operational risks.
- Populating the Matrix with Evidence:** For each relevant "node" in the matrix, pull specific data points, statements, or trends from the URDs. For example:
  - Performance (Cognitive/Safety):** "Our LTIFR improved by X% in 2024, demonstrating strong safety culture across operations."
  - Practice (Societal/Community):** "Engaged in over Y community consultation meetings for new industrial projects in 2023, reflecting our commitment to social license."
  - Process (Practical/Plant Upgrade):** "Successful commissioning of Z new hydrogen electrolysis units on schedule and within budget in 2024, enhancing our production capacity."

- **Value (Existential/Reliability):** "Our focus on customer uptime remains paramount, with significant investments in network resilience in 2023 to ensure uninterrupted supply."
- **Critique and Discernment:** The URDs will provide factual performance data (KPIs). Your discernment comes in asking:
  - Do these *performances* truly align with the stated *values* and *principles*?
  - Are the *procedures* and *processes* appropriate to the situation, or are there hidden assumptions or "category mistakes" in how different aspects are being discussed?
  - Are our *practices* fostering the *authenticity* of stakeholder relationships (KRIs)?
  - Are our chosen *activities* genuinely fitting the *situation* (KSIs)?

#### 4. Balanced Scorecard / Strategy Map Input (from COO's perspective):

Your Field of Discernment analysis will directly inform the **Internal Business Process Perspective** of the Balanced Scorecard, showing how operational effectiveness contributes to the overall strategy.

- **Internal Business Process Perspective (COO's core contribution):**
  - **Optimize Hydrogen Production Processes:** (<https://www.google.com/search?q=e.g., Project completion rates for new plants, reduction in energy intensity of production, increased electrolyzer efficiency - all linked to 'Process' and 'Performance' moments under 'Practical' and 'Cognitive' registers>).
  - **Enhance Hydrogen Supply Chain and Logistics:** (<https://www.google.com/search?q=e.g., Reduced distribution costs, improved safety in transport and storage, increased network density - linked to 'Process' and 'Practice' under 'Practical' and 'Critical' registers>).
  - **Drive Operational Excellence and Safety:** (<https://www.google.com/search?q=e.g., Decreased safety incident rate, successful implementation of new operational technologies, higher asset uptime - linked to 'Value', 'Principle', 'Practice', and 'Performance' across multiple registers>).
- **Contribution to other BSC Perspectives:**
  - **Financial Perspective:** *Indirectly contribute through cost reduction and asset utilization for hydrogen operations.* (<https://www.google.com/search?q=e.g., Reduced cost of hydrogen production per kg, improved ROCE for hydrogen assets>).
  - **Customer Perspective:** *Ensure reliable and high-quality hydrogen supply.* (<https://www.google.com/search?q=e.g., On-time delivery rates, customer satisfaction with supply>).
  - **Learning & Growth Perspective:** *Develop capabilities and foster innovation in hydrogen operations.* (<https://www.google.com/search?q=e.g., Employee training hours in new hydrogen technologies, successful integration of digital twins for plant management>).

**Strategy Map Contribution:** Your analysis will highlight the operational capabilities and processes (<https://www.google.com/search?q=e.g., efficient green hydrogen production, robust and safe logistics network, skilled hydrogen workforce>) that serve as critical enablers for achieving the higher-level financial and customer objectives of the hydrogen strategy. For instance, "**Achieving Best-in-Class Hydrogen Production Efficiency**" (an Internal Business Process objective) directly enables "**Becoming the Preferred Supplier of Green Hydrogen**" (a Customer objective), which in turn contributes to "**Sustainable Financial Growth**" (a Financial objective).

By embracing the SDP, you are moving beyond a purely mechanical application of a matrix. You are cultivating your capacity for **attentive, intelligent, reasonable, and responsible judgment**, ensuring that your decisions as a COO are not only effective in performance, but also **appropriate** to the situation and **authentic** in relationship to all that matters.

### Guidelines for DSS Designers: Crafting Discernment-Oriented Decision Support Systems for COOs

#### My next prompt:

Now prepare guidelines for decision support system designers asked to generate a dss for coo's in the spirit of the situated discernment paradigm, encourage them in their role of dss designer to prepare for a meeting with the coo of for example air liquide, by first engaging in dialogue with their dss designer community of practice about what constitutes effective (KPIs) and appropriate (KSIs and KRIs) design m. then suggest how they could use the field of discernment matrix to design a dss that would help the air liquide coo in the sort of strategy map meeting students were asked to simulate

#### Gemini:

Here are guidelines for Decision Support System (DSS) designers, encouraging them to adopt the spirit of the Situated Discernment Paradigm (SDP) when developing tools for COOs, and preparing them for a strategy meeting simulation.

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## Guidelines for DSS Designers: Crafting Discernment-Oriented Decision Support Systems for COOs

In the spirit of the Situated Discernment Paradigm (SDP), your role as a DSS designer extends beyond optimizing performance. You are tasked with designing systems that **scaffold discernment**, supporting the COO in attending to what truly matters – values, principles, and the appropriateness of actions and relationships, not just measurable outcomes. This requires a profound understanding of the COO's situated reality and an **ethics of participation**.

### I. Understanding Your Role as a DSS Designer in the SDP

As a DSS designer, you are not creating a system to **automate discernment**, but to **support it**. Your goal is to develop **Context-Based Insight Generation (CBIG) tools** that extend the human subject's capacity to explore perspectives, rehearse meanings, and anticipate implications within situated judgment.

Your work is grounded in **participatory realism**, meaning that you believe reality becomes luminous through the subject's active and responsible engagement in situations that matter. This requires designing systems that:

- **Re-center the human subject:** The COO is not a "processor" but a "discerning participant".
- **Orient towards value:** Beyond utility, integrate what truly matters to the COO and the organization.
- **Support situated engagement:** Acknowledge that decisions are embedded in concrete, evolving contexts.

### II. Engaging Your DSS Designer Community of Practice: Defining Effective and Appropriate Design

Before designing for a specific COO, engage your DSS designer community of practice (CoP). This collaborative inquiry is crucial for collectively discerning what constitutes **effective** (KPIs) and **appropriate** (KSIs and KRIs) DSS design within the SDP framework. This mirrors the "multi-agent dialogue" concept – using diverse perspectives to deepen insight.

**1. Effective DSS Design (KPIs for DSS Designers):** How do we measure the *performance* of our DSS in supporting the COO's decision-making?

- **User Engagement Rate:** Percentage of COOs actively using the DSS for strategic decisions.
- **Time-to-Insight:** Average time taken for COOs to gain critical insights for a given problem using the DSS.
- **Data Integration Efficiency:** Speed and accuracy of integrating diverse operational data sources into the DSS.
- **System Uptime and Responsiveness:** Reliability and performance of the DSS.
- **Feature Adoption Rate:** Percentage of available DSS features utilized by the COO.
- **Cost-Effectiveness of Development and Maintenance:** Financial efficiency of the DSS lifecycle.

**2. Appropriate DSS Design (KSIs and KRIs for DSS Designers):** How do we ensure our DSS design is *appropriate to the situation* and fosters *authentic relationships* within the COO's decision-making process? This is where SDP's unique contribution comes in.

- **Key Situation Indicators (KSIs) for DSS Design - Assessing Appropriateness of Fit:**
  - **Alignment with COO's Decision-Making Style:** Does the DSS support the COO's natural cognitive processes (attention, insight, judgment, decision) rather than imposing a rigid procedural rationality?
  - **Contextual Adaptability:** Can the DSS easily adapt to evolving operational situations and unexpected changes in the business environment (e.g., supply chain shocks, new regulations)?
  - **Clarity of Value-to-Performance Links:** Does the DSS clearly visualize how operational *activities* and *processes* contribute to *principles* and *values*, not just *performance*?
  - **Support for Multi-Register Inquiry:** Does the DSS enable the COO to easily shift between and integrate insights from cognitive, practical, critical, and societal registers of participation when evaluating operational data and strategy?
  - **Prevention of "Category Mistakes":** Does the DSS design help prevent the COO from conflating different *moments of value engagement* (e.g., treating a procedure as a value)?
- **Key Relationship Indicators (KRIs) for DSS Design - Assessing Authenticity of Engagement:**
  - **Facilitation of Cross-Functional Dialogue:** Does the DSS design genuinely foster collaboration and shared understanding between the COO and other executive roles (CEO, CFO, CMO, CHRO/CTO) in their strategy map meetings?
  - **Trust in DSS Insights:** Does the COO perceive the DSS as a reliable and trustworthy "prosthetic support", or merely a black box?
  - **Empowerment of Operational Teams:** Does the DSS provide insights that empower the COO's teams, fostering their "legitimate peripheral participation" in operational decision-making, rather than disempowering them?

- **Feedback Loop Integration:** Does the DSS design incorporate mechanisms for the COO and their teams to provide continuous feedback, allowing for authentic co-creation and iterative improvement of the system?
- **Ethical Posture of DSS:** Does the DSS reflect an "ethics of participation" , avoiding "domination" by optimizing for narrow metrics at the expense of broader values or relationships?

### III. Using the Field of Discernment Matrix to Design a DSS for the Air Liquide COO

Now, apply the **Field of Discernment Matrix** as a **meta-CBIG tool** to guide the design of a DSS that helps the Air Liquide COO in their strategic meeting concerning hydrogen investment. This matrix helps you identify *where* and *how* insight is needed, and *what kind* of tool or process might be appropriate.

**1. Map the COO's Strategic Context onto the Matrix:** Consider the Air Liquide COO's role in the hydrogen investment strategy, and how they would need to engage across registers and moments.

- **Registers of Participation:** Think about how the COO needs to function:
  - **Cognitive:** Understanding hydrogen production data, technical specifications, and market projections.
  - **Existential:** Grappling with Air Liquide's commitment to energy transition and its long-term purpose in the hydrogen economy.
  - **Hermeneutic:** Interpreting industry trends, regulatory changes, and stakeholder expectations for hydrogen.
  - **Practical:** Managing day-to-day operations, project execution, and resource allocation for hydrogen initiatives.
  - **Critical:** Evaluating the risks and appropriateness of current hydrogen investments, challenging assumptions.
  - **Societal:** Considering the broader environmental and social impact of hydrogen production and distribution.
- **Moments of Value Engagement:** Consider what aspects of hydrogen investment the COO needs to discern:
  - **Value:** Air Liquide's core commitment to sustainability, innovation, and industrial leadership.
  - **Principle:** Guiding principles for responsible hydrogen deployment (e.g., safety-first, circular economy).
  - **Procedure:** Standard operating procedures for hydrogen production, storage, and transport.
  - **Process:** End-to-end process of hydrogen project development, from R&D to commercialization.
  - **Activity:** Specific tasks within hydrogen operations (e.g., electrolyzer maintenance, logistics route optimization).
  - **Practice:** The collective way hydrogen operations are performed, including safety culture, maintenance routines, and supply chain management.
  - **Performance:** Measurable outcomes like hydrogen production volume, energy efficiency, cost per kg, safety rates.

**2. Identify Critical Nodes for DSS Support:** Focus on the intersections (nodes) in the matrix where the COO most needs support for discernment in the strategy meeting. Prioritize nodes that, if unsupported, could lead to "category mistakes" or "errors of temporal/structural discernment".

- **Example Critical Nodes for Air Liquide COO (Hydrogen):**
  - **(Practical, Process):** DSS to visualize and analyze the efficiency of hydrogen production processes, identifying bottlenecks and opportunities for improvement.
  - **(Critical, Performance):** DSS to present performance data (KPIs) alongside "appropriate" metrics (KSIs, KRIs), allowing the COO to critically evaluate if the *measured performance* is truly aligned with the *intended value*.
  - **(Hermeneutic, Value):** DSS that allows the COO to explore different interpretations of "green hydrogen" and its implications for operational strategy, linking broad societal expectations to specific investment choices.
  - **(Societal, Relationship (KRI)):** DSS features that provide insights into stakeholder feedback and community engagement around hydrogen projects, helping the COO assess the authenticity of these relationships.

### 3. Design CBIG Tools for Each Critical Node

For each identified critical node, propose specific CBIG tools to provide discernment support. Remember, these tools should **scaffold, not automate**.

### Field of Discernment Matrix (Reflective Scaffold):

This will be the central conceptual framework. We'll present the "Registers of Participation" on one axis and "Moments of Value Engagement" on the other. This visual will help the COO articulate where they are focusing their attention and how they are engaging with the situation.

### Context-Based Insight Generation (CBIG) Tools (various categories):

1. **Symbolic Tools** : We'll integrate a "Strategy Map" within the DSS, allowing the COO to visualize the cause-and-effect relationships between strategic objectives and their operational contributions to hydrogen investment. This can also include dashboards with real-time KPIs (e.g., "Hydrogen Production Volume," "Electrolyzer Utilization Rate").
2. **Reflective Scaffolds**:
  - **KSIs Dashboard**: A dedicated section to display and track **Key Situation Indicators (KSIs)** for the hydrogen strategy. For instance, a "Supply Chain Adaptability Index" (e.g., ability to pivot suppliers for renewable energy, rated green/yellow/red) could indicate the appropriateness of the operational setup in a volatile energy market. The DSS could prompt the COO to provide qualitative assessments or justifications for these indicators.
  - **KRIs Heatmap**: A visual representation of **Key Relationship Indicators (KRIs)** related to hydrogen partners (e.g., "Supplier Trust Score," "Community Engagement Sentiment"). This would highlight areas where stakeholder relationships might be less authentic or require more attention. The DSS could allow for quick qualitative inputs from the COO or their team.
  - **Decision Journal/Log**: A feature within the DSS for the COO to record their "reflective essays" on key hydrogen decisions, capturing their "What?", "So what?", and "Now what?" insights, linking decisions to values and commitments.
3. **Generative Tools (AI Integration)** : The DSS could incorporate an AI-powered "Dialogue Partner". The COO could input a strategic challenge related to hydrogen, and the AI could:
  - Simulate stakeholder responses (e.g., "What would the CFO say about the CapEx for this new hydrogen plant?" or "How might environmental NGOs react to this project?").
  - Provoke thought by suggesting alternative operational strategies for hydrogen or contrasting different approaches to managing supply chain risks.
  - Help the COO "rehearse" arguments or anticipate concerns for the strategy meeting.
4. **Narrative Devices** : Beyond the reflective journal, the DSS could allow for the quick capture of "mini-narratives" or anecdotes from the field related to hydrogen operations, providing rich, qualitative context for quantitative data.
5. **Analytic-Discursive Tools** : The DSS could provide frameworks or visualizations for multi-criteria decision analysis (MCDA) specifically tailored to hydrogen project evaluation, allowing the COO to weigh operational factors alongside ethical, social, and environmental considerations. This helps in structured deliberation and social construction of insight.

### 4. Orient the DSS to the Precepts of Good Decision-Making: Ensure the DSS design implicitly or explicitly encourages the COO to uphold the SDP precepts:

- **Be attentive**: Design dashboards that highlight critical operational trends and anomalies without overwhelming the user, fostering their "attention to experience".
- **Be intelligent**: Provide tools for "insight into patterns", such as root cause analysis for operational issues or predictive modeling for maintenance.
- **Be reasonable**: Offer clear pathways for "judgment of fact and value", by juxtaposing KPIs with KSIs and KRIs, prompting critical evaluation.
- **Be responsible**: Facilitate "decision or commitment to action" by allowing the COO to record decisions, assign responsibilities, and track outcomes directly within the system.
- **Live in the tension**: Design the interface to clearly show potential trade-offs (e.g., cost vs. sustainability, speed vs. safety), inviting the COO to reflect in the "metaxy".
- **Attend to the Good**: Ensure that sustainability metrics, ethical sourcing data, and social impact information are prominently available and linked to operational decisions.

By approaching DSS design through the lens of the Situated Discernment Paradigm, you are creating not just a tool, but an **ecology of discernment**, enabling the Air Liquide COO to make more informed, appropriate, and authentic decisions regarding their critical hydrogen investment strategy.

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