CRITICAL THINKING AND BIAS

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amper

Speaker

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☑ Holding certifications in Internal Audit and Risk Management **(CIA, CRMA, COSO INTERNAL CONTROL, COSO ERM).**

☑ **Vicepresident of AGERS**, a Spanish Risk Management Association, **branch of FERMA** (Federation of European Risk Managers).

☑ Professor, Quality Assessment Reviewer, Ambassador, Mentor and Keynote Speaker in renowned organizations such as Institute of Internal Auditors (IIA), Internal Audit Foundation, AGERS, Association of Chartered Certified Accountants (ACCA) in UK and Chartered Institute of Professional Certifications, in Singapur. First Ambassador of "Gardener of Governance" metaphor by Dr. Rainer Lenz in Spain, #4 globally.

ABOUT AMPER

Amper is a Spanish business group with more than 60 years of history, of which more than 35 have been listed on the Spanish continuous market; it has a significant international presence and is a leader in technological, strategic industrial and engineering capabilities within the Defence, Security and Communications; and Energy and Sustainability markets.

Amper Group Transformation

grupoamper

1956
Antonio Peral founds Amper Radio SL

1976
Change of name to Amper S.A.

1982
Telefónica buys the 100% of the company

1986
Listing on the Madrid and Barcelona Stock Exchanges

1994
Creation of *Amper Programas* with THALES

2005
EPICOM Acquisition

2013
Exit of Telefónica
Debt refinancing begins
Sale of EPICOM

2014
Preliminary insolvency proceedings

2015
Pre-contest exit

2017
NERVIÓN Acquisition

2018
Sale of the South Pacific Telecommunications Businesses

2019
NÚCLEO Acquisitions
PROES Acquisition

2020
Purchase of pending capital SACYR *Nervión*
Acquisition of 51% of ELINSA

Presentation of the Strategic and Transformation Plan 2023-26 at Madrid Stock Exchange

Capital increase with preferential subscription rights, successfully completed with 114% oversubscription

Sale of *Nervión* Industrial Services, *Nervión Minería* and ECS Colombia

2022
ZELENZA acquires 7.9% of Amper's shares

2023
YEAR ZERO OF THE NEW AMPER

Amper is awarded with the largest contract in its history, in Offshore Wind for Navantia

Strategic alliance between Amper and Hitachi Energy

2025

TRANSFORMATION PLAN

- Strategy and business model
- Value proposition
- Financial Model
- Organisational and systems Model
- People Model
- Corporate Model
- Marketing and Communication

STRATEGIC PLAN

TO BUILD THE **LEADING** SPANISH BUSINESS GROUP IN **STRATEGIC** TECHNOLOGICAL, INDUSTRIAL AND ENGINEERING **CAPABILITIES**; IN THE DEFENCE AND SECURITY, ENERGY AND SUSTAINABILITY, AND TELECOMMUNICATIONS SECTORS; **REACHING BY 2026:**

€884m SALES

€100m 11% EBITDA

Strategy – Business Model

Strategy

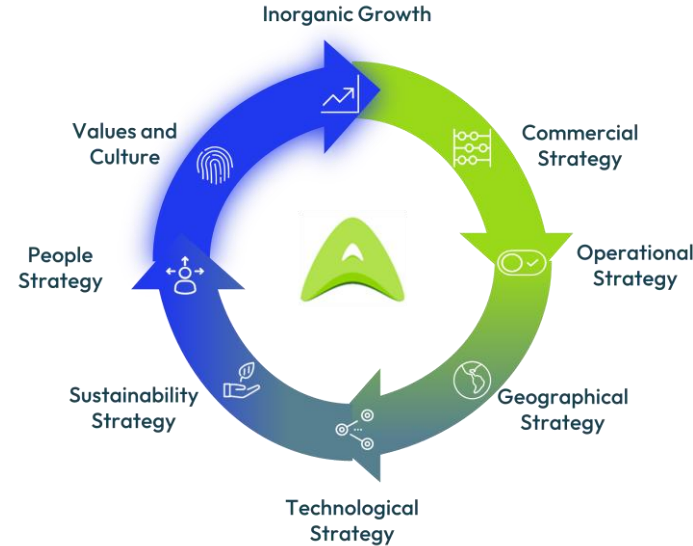**DEFENCE, SECURITY AND COMMUNICATIONS**

To contribute to the process of organizing and structuring the sector, and to the implementation of a harmonized Spanish Defence and Security strategy to safeguard national strategic capabilities; and to contribute to the efficient and sustainable digitalization of companies and public institutions, ensuring the continuity of all services in a hyper-connected society.
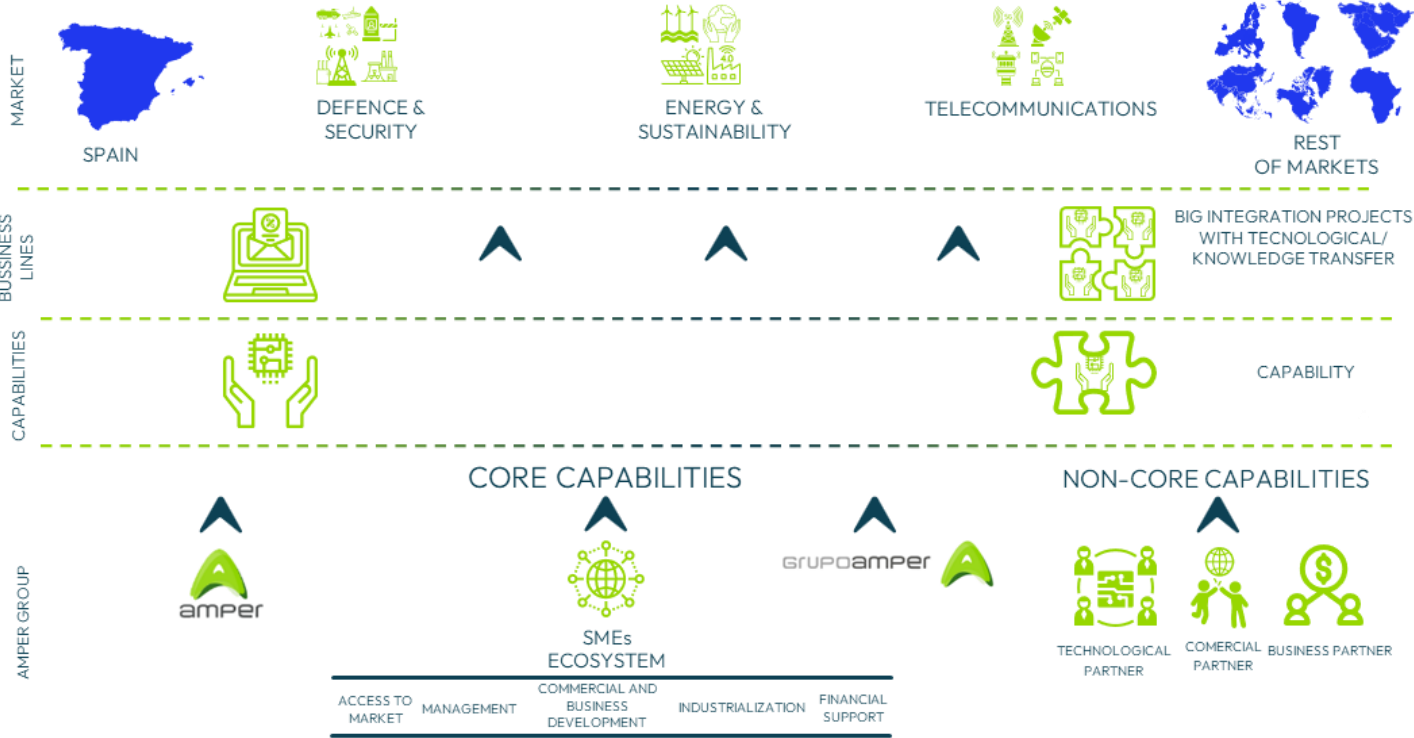
ENERGY Y SUSTAINABILITY

To be a benchmark supplier of capabilities that contribute to achieving the goal of zero net emissions by 2050. Energy capabilities are strategic for society, as are defence and security.

Strategic Levers

- Inorganic Growth
- Commercial Strategy
- Operational Strategy
- Geographical Strategy
- Technological Strategy
- Sustainability Strategy
- People Strategy
- Values and Culture

Business Model

MARKET
SPAIN · DEFENCE & SECURITY · ENERGY & SUSTAINABILITY · TELECOMMUNICATIONS · REST OF MARKETS

BUSSINESS LINES
BIG INTEGRATION PROJECTS WITH TECNOLOGICAL/ KNOWLEDGE TRANSFER

CAPABILITIES
CAPABILITY

AMPER GROUP
CORE CAPABILITIES · NON-CORE CAPABILITIES

amper · SMEs ECOSYSTEM · GRUPOAMPER

TECHNOLOGICAL PARTNER · COMERCIAL PARTNER · BUSINESS PARTNER

ACCESS TO MARKET · MANAGEMENT · COMMERCIAL AND BUSINESS DEVELOPMENT · INDUSTRIALIZATION · FINANCIAL SUPPORT

Amper in Figures

1.496m
Shares

20.3k
Shareholders

32
Investees, subsidiaries and companies

+20
Countries with projects

2.1k
Employees

700
Active Clients

40
Clients with more than €1m in sales

€35m
EBITDA 2024

€540m
Backlog as 31-12-2024

€419m
Sales 2024

¿Who is more punctual?

Who has a criminal record?

Who would you prefer as a leader?

Who is better at technology?

ANSWERS GIVEN HAVE ORIGINATED IN YOUR SUBCONSCIOUS

CONSEQUENCE OF YOUR BIASES

WHAT IS A BIAS?
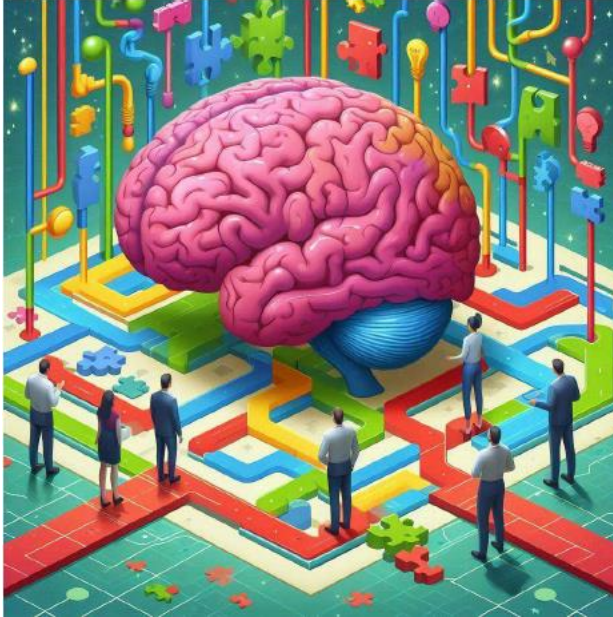
- It is the automated criteria for classifying facts, findings, risks, situations, people…

- Criteria that, in most cases, are based on factors of which <u>we are not aware</u> and that always, always **condition** our opinion and our decisions.

BIASES ARE **<u>UNAVOIDABLE</u>** ➡ YOU HAVE THE <u>ABILITY AND RESPONSIBILITY</u>

TO **<u>MAKE THEM CONSCIOUS</u>**

WHAT IS A BIAS?

- **Neural connections** in our brain consume a large amount of energy.

- Making decisions requires several calculations and consume energy.

- To save energy, our brain restrict the number of neural connections needed, creating learned patterns of conduct.

*Psychologists have identified up to **fifty biases**, and these biases are at the heart of most of our decisions and do not always make us act fairly and rationally.*

TYPES OF BIASES

- Due to:

    - Limits on the mind´s attention.
    - Individual motivations.
    - Mental shortcuts called "heuristics".
    - Social pressure.
    - Emotions.

TYPES OF BIASES

projection
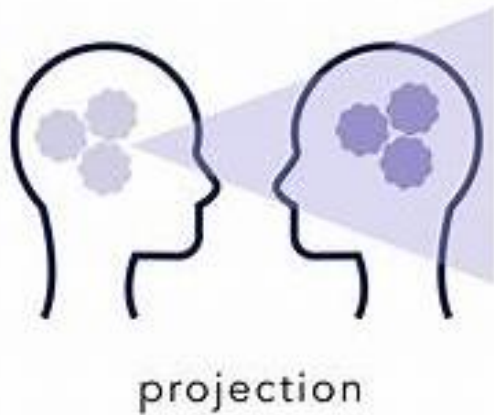
- Overestimation of our future selves, considering our beliefs and thoughts will be the same in the future, no matter what the circumstances are.

- CONSEQUENCE: Short-sighted decisions.

TYPES OF BIASES

Anchoring Bias:
How We Cling to
the First Piece of
Information We Get

fallacyinlogic.com

- Brain forms a bias related to the first things seen and heard.

TYPES OF BIASES

- Human tendency to irrationally believe that new information supports your existing view even when it doesn´t.

TRUTH DEFAULT BIAS:

- By default we consider all people tell us is true, unless our doubts cannot be explained or rationalized.

TYPES OF BIASES

Human beings naturally possess an inclination towards something known as 'Authority bias'
They deem to be in a position of authority
Authority bias

AUTHORITY BIAS:

- Tendency to assign greater value to or be influenced by an authority even when one believes them to be wrong.

- Example: dentists advertising toothpastes to convince consumers.

STATUS QUO BIAS:

- Preference for the current state of affairs, resulting in <u>resistance to change</u>.

CRITICAL THINKING

DEFINITION

- A disciplined process of evaluating information to make reasoned judgments.

- Essential skills:

BREAKING DOWN

COMPLEX INFORMATION

ASSESSING CREDIBILITY AND

RELIABILITY OF EVIDENCE

INFERENCE: DRAWING LOGICAL

CONCLUSIONS

Example: When auditing an IT system, critical thinking helps differentiate between genuine errors and potential fraud.

WHAT IS SKEPTICISM

A mindset that challenges **assumptions** and seeks **corroborating evidence.**

CONSCIOUS AND UNCONSCIOUS BIAS   →   **ROADBLOCKS AND BARRIERS TO SKEPTICISM**

WHAT IS SKEPTICISM

Can we trust the information source?

Can we trust the information systems?

Can we trust Management?

WHAT IS SKEPTICISM

SKEPTICISM SCALE

CYNIC   **BELIEVER**
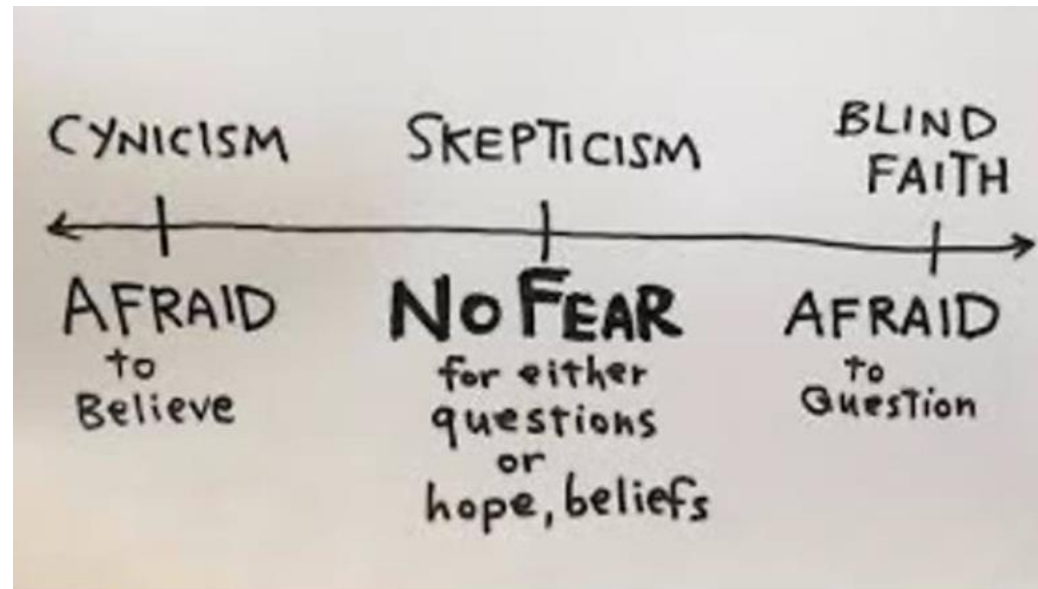
← **DOUBTER** →

↓

INTERNAL AUDITORS ARE PROFESSIONAL DOUBTERS

FACTS

WHAT IS SKEPTICISM

DOUBT AS TO THE TRUTH OF SOMETHING

STANDING WATCH!!

There has never been <u>a greater need for skepticism</u> in our work and life than *Right now*!

NEED FOR SKEPTICISM

Risk categories
- Economic
- Environmental
- Geopolitical
- Societal
- Technological

2 years

1st	Misinformation and disinformation
2nd	Extreme weather events
3rd	State-based armed conflict
4th	Societal polarization
5th	Cyber espionage and warfare
6th	Pollution
7th	Inequality
8th	Involuntary migration or displacement
9th	Geoeconomic confrontation
10th	Erosion of human rights and/or civic freedoms

10 years

1st	Extreme weather events
2nd	Biodiversity loss and ecosystem collapse
3rd	Critical change to Earth systems
4th	Natural resource shortages
5th	Misinformation and disinformation
6th	Adverse outcomes of AI technologies
7th	Inequality
8th	Societal polarization
9th	Cyber espionage and warfare
10th	Pollution

Source
World Economic Forum Global Risks
Perception Survey 2024-2025.

Misinformation and disinformation is _Number 1_ risk globally

NEED FOR SKEPTICISM

Artificial Intelligence (IA), Social Networks, Neuroscience

Creativity, critical thinking, emotional intelligence and Problem-solving

THERE IS A NEED TO *ENHANCE* OUR SKEPTICISM AND EXERT <u>INDEPENDENT</u> <u>AND CRITICAL THINKING</u>

SKILLS UNLIKELY TO BE REPLACED BY AI

DOMAIN III: ETHICS AND PROFESSIONALISM.

PRINCIPLE 4: EXERCISE DUE PROFESSIONAL CARE.

STANDARD 4.3 PROFESSIONAL SKEPTICISM.

SKEPTICISM IN INTERNAL AUDITORS

FOUNDATIONAL SKILL
FOR INTERNAL AUDITORS

INVOLVES *CRITICAL ASSESSMENT*
OF AUDIT EVIDENCE

ATTITUDE THAT INCLUDES
A QUESTIONING MIND

KEY DRIVER TO AUDIT QUALITY

ENHANCING SKEPTICISM

CULTIVATE A QUESTIONING MINDSET

ALWAYS QUESTION

BE INQUISITIVE

ANALYSE ALTERNATIVE EXPLANATIONS

SEEK THE UNDERLYING REASONS AND MOTIVATIONS

DEPLOY ROOT CAUSE ANALYSIS

ENHANCING SKEPTICISM

DEVELOP ANALYTICAL SKILLS

BREAK DOWN OF COMPLEX INFORMATION INTO SMALLER PARTS

⬇

ANALYSE EACH PART THOROUGHLY

USE OF DATA ANALYTICS TOOLS TO EXAMINE LARGE DATASHEETS

⬇

IDENTIFICATION OF PATTERNS, ANOMALIES AND TRENDS

CRITICAL THINKING

ENHANCING SKEPTICISM

DEVELOP ANALYTICAL SKILLS

DECISION MATRIX

ROUND ROBIN BRAINSTORMING

ROOT CAUSE ANALYSIS

DECISION TREES

BRAINSTORMING

PARETO ANALYSIS

MIND MAPPING

S.C.A.M.P.E.R.

FIVE WHYs TECHNIQUE

PROBLEM-SOLVING TOOLS

ENHANCING SKEPTICISM

MAINTAINING OBJECTIVITY

INDEPENDENCE

AVOID BIAS

JUDGEMENTS NOT INFLUENCED

AWARE OF YOUR OWN BIAS AND TRY TO MITIGATE THEM

ENHANCING SKEPTICISM

CONTINUOUS LEARNING AND DEVELOPMENT

ENHANCING SKEPTICISM

EFFECTIVE COMMUNICATION

DISCUSS WITH PEERS

FEEDBACK

SHARING PERSPECTIVES FROM DIFFERENT ANGLES

RECEIVE *CONSTRUCTIVE CRITICISM*

NETWORKING

ENHANCING SKEPTICISM

USE OF TECHNOLOGY

LEVERAGE TECHNOLOGY AND AUDIT TOOLS

CONTINUOUS MONITORING SYSTEMS

TO ASSIST IN IDENTIFYING INCONSISTENCIES AND ANOMALIES IN DATA

PROVIDE *REAL-TIME* DATA AND ALERTS

ENHANCING SKEPTICISM

UNDERSTAND THE BUSINESS AND INDUSTRY

INDUSTRY KNOWLEDGE

STAY UPDATED

KNOWING COMMON RISKS, CHALLENGES AND PRACTICES

KEEP ABREAST OF LATEST DEVELOPMENTS, REGULATIONS AND TRENDS IN THE INDUSTRY

IDENTIFICATION OF UNUSUAL PATTERNS AND RED FLAGS

TO IDENTIFY UNUSUAL PATTERNS OR RED FLAGS

ENHANCING SKEPTICISM

DOCUMENT AND REFLECT

REFLECTION

⬇

LESSONS LEARNED FROM THE PAST

KEEP DETAILED RECORDS

⬇

AUDIT PROCESSES, FINDINGS AND RATIONALE BEHIND YOUR DECISIONS

METACOGNITION

"THINKING ABOUT THINKING"

CONCEPT WAS DEVELOP IN ANCIENT GREEK WITH PLATO AND SOCRATES

REQUIRES QUESTIONING ONESELF, ACKNOWLEDGING IGNORANCE AND EMBRACING DISCOMFORT

REFLECTING AND REGULATING ONE´S OWN COGNITIVE PROCESS
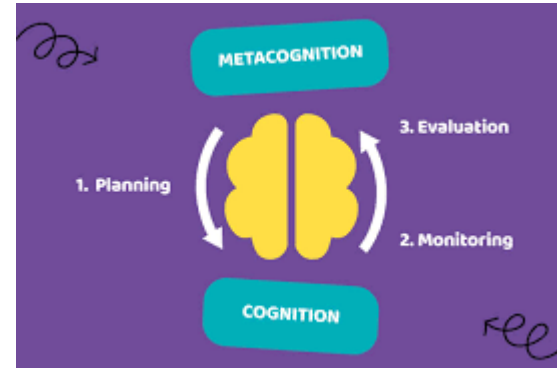
FOSTERS CRITICAL THINKING TO MAKE REASONED JUDGEMENTS

METACOGNITION

TWO MAIN COMPONENTS:

METACOGNITIVE KNOWLEDGE:

UNDERSTANDING HOW YOU THINK AND LEARN

METACOGNITIVE REGULATION:

THE ABILITY TO MONITOR, EVALUATE AND ADJUST YOUR THOUGHT PROCESS IN REAL TIME

TRAINING OF METACOGNITIVE SKILLS

1 **SELF-QUESTIONING BEFORE, DURING AND AFTER AN AUDIT:**

☑ **Before starting an audit:**

- What assumptions do I already have about this process or company?
- Where are my blind spots?

☑ **During the audit:**

- Am I relying too much on previous audits or experiences?
- Have I challenged management's explanations sufficiently?

☑ **After the audit:**

- What mistakes did I make?
- How would I approach this differently next time?

TRAINING OF METACOGNITIVE SKILLS

(2) <u>**WRITE DOWN KEY REFLECTIONS AFTER EVERY ENGAGEMENT:**</u>

- **This practice builds self-awareness and continuous improvement**.

(3) <u>**USING THE "THINK ALOUD" TECHNIQUE:**</u>

- **Auditors can practice verbalizing their thought process to uncover biases and gaps in logic.**

TRAINING OF METACOGNITIVE SKILLS

4 **ENGAGING IN SCENARIO BASED TRAINING:**

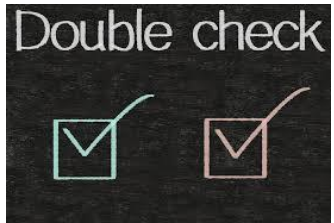- Auditors should simulate real-world challenges and analyze their thought process.

5 **SEEKING PER FEEDBACK AND MONITORSHIP:**

- Encouraging team-based critical reviews can help auditors see their blind spots.
- By engaging in discussion, auditors strengthen their metacognitive awareness.

TRAINING OF METACOGNITIVE SKILLS

6 **PRACTICING THE "DOUBLE-CHECK RULE" BEFORE REPORTING FINDINGS:**

- Before finalizing audit conclusions, auditors should step back and verify their reasoning.

- This reduces errors and ensures more objective audit reports.

CONCLUSIONS

- **Metacognition, critical thinking, and skepticism** are interconnected and vital for effective auditing.

- Auditors who master these skills enhance decision-making, risk assessment, and fraud detection.

- Good auditors detect risks. Great auditors reflect on their thinking.

- Metacognition helps auditors become more skeptical, analytical, and objective.

- The more auditors practice reflection, questioning, and feedback, the sharper their judgment will become.

"Great auditors don't just find the right answers;

they ask the right questions."

5/23/2025

THE END

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