THE T-FACTOR
NEW TECHNOLOGIES & INTELLIGENCE ANALYSIS LEARNING

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"Whatever the complexities of the puzzles we strive to solve and whatever the sophisticated techniques we may use to collect the pieces and store them, there can never be a time when the thoughtful man can be supplanted as the intelligence device supreme"

(Kent in 1965, as cited by Davis 1999)
LEAVING BEHIND THE INTELLIGENCE CYCLE

CIA TRADITIONAL INTELLIGENCE CYCLE

- Requirement?
- Lineal?
- Cyclical?
- Theoretical?
- Intelligence requirement?
- Human Factor?
- Analysis?
- Evaluation?
- Affected by new technologies?
INTELLIGENCE ANALYSIS PROCESS

PAST

STAKEHOLDERS
- Government
- Think tanks
- Academia
- Intelligence community
- Others:
  - Citizens
  - NGOs
  - Private sector
  - Media
  - Interest groups

Intelligence Requirements “for what”

PRESENT

ANALYSTS
- Collecting
  - “Connect the dots”
    - Scanning
    - Monitoring
    - Analysis
    - Dissemination

DECISION MAKER
- “Take decisions”
  - Strategic
  - Tactical
  - Operational

FUTURE

STRATEGIES, PLANS & ACTIONS
- Still decision-making
  - “Design decisions”
    - Strategic
    - Tactical
    - Operational

ACTIONS EFFECTS

FEEDBACK

SOURCES
- Data
- Information
- Creativity and imaginations outcomes
- Homeland security observations
- Knowledge*

EVALUATION PROCESS

Intelligence + Experience + Over Time
CONS OF THE USE OF TECHNOLOGY IN INTELLIGENCE ANALYSIS

✓ Technological solutionism
✓ Data paralysis
✓ Need to detect new risks and opportunities
✓ Cost. Short life cycle of technological developments
✓ Degree of maturity
✓ Fail managing signal from noise or reducing uncertainty
PROS OF THE USE OF TECHNOLOGY IN INTELLIGENCE ANALYSIS

 ✓ Manage complexity
 ✓ Limit cognitive biases
 ✓ Manage the volume, volatility and variety of information, and especially its unstructured character
 ✓ Overcome human limitations to process and interpret large amounts of data and information
 ✓ Support analytical tasks
 ✓ Improve the presentation of intelligence products, especially through the support of visualization technologies.
 ✓ Training and developing new skills
## Technological Challenges in Intelligence Analysis

### External

<table>
<thead>
<tr>
<th>Environment VUCA</th>
<th>Identification of trends</th>
<th>Prospective challenge</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>Wild Cards</td>
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<tr>
<td>Information</td>
<td>Infoxication</td>
<td>Quantitative challenge</td>
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<tr>
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<td>Reliability and credibility of information</td>
<td>Qualitative challenge</td>
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</table>

### Internal

<table>
<thead>
<tr>
<th>Organization</th>
<th>Leadership</th>
<th>Organizational challenge</th>
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<tbody>
<tr>
<td></td>
<td>Change management</td>
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<td></td>
<td>Digital transformation</td>
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<tr>
<td>Analysts</td>
<td>Cognitive biases</td>
<td>Cognitive challenge</td>
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<td></td>
<td>Impacts of technology on cognitive skills</td>
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<td>Obsolescence of knowledge and skills</td>
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TECHNOLOGY AND COGNITIVE SKILLS
## TECHNOLOGICAL CHALLENGES IN THE PROCESS OF INTELLIGENCE ANALYSIS

<table>
<thead>
<tr>
<th>INTELLIGENCE TASKS</th>
<th>CHALLENGE</th>
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| **Planning and direction**       | Technological surveillance  
                                Technological requirements  
                                Identify end-user requirements  
                                Option: own development or commercial product  
                                Cost-benefit analysis  
                                Security concerns   |
| **Collecting, monitoring and processing** | Collecting tools. Crawls. Entity extraction.  
                                New demand in intelligence services: Tools for verification  
                                Training using OSINT tools  
                                Security concerns   |
| **Analysis**                     | Previous agreement: human-driven analysis and technology-enabled analysis  
                                Training using analytical tools. Complex, because implies knowledge in different domains (data mining, statistics…)  
                                Develop computer support for structured and advanced techniques of analysis (for example ACH with Bayesian support)   |
| **Dissemination**               | Develop visualization tools, integrated with analytical capabilities  
                                Training. Complex (for example Tableau)   |
OPERATIONS SECURITY

Case:
myactivity.Google.com
Example: Duck Duck Go

Search engines

Identity management

Operating systems

Masking identity

Proxies
TOR
VPN
Tor Gateways

HaveIBeenPwned.com
Hackead-Emails.com
KeePass
Profiles Social Media
Mails: ProtonMail, mail2tor.org, cock.li, airmail.cc

Tails
Whonix
Qubes OS
"Education is an admirable thing, but it is well to remember from time to time that nothing that is worth learning can be taught." Oscar Wilde
## IMPORTANCE OF VUCA AS A CONTEXT

### COMPLEXITY
Each event is conditioned by a multiplicity of causes and factors, each of which is interrelated with third events. This situation generates a high level of confusion that prevents us from having a clear vision of the situations that we face.

### VOLATILITY
Changes are rapid, almost unpredictable, making it difficult to identify trends or patterns and reducing the stability of processes. The type, the magnitude, the volume and the speed with which they occur make analysis tasks more difficult.

### AMBIGUITY
The answer to the key questions (who, where, why, when ...) is difficult to establish. Errors of interpretation and the plurality of meanings is a cause and effect of confusion, resulting in an increase in imprecision.

### UNCERTAINTY
Many of the changes that take place are disruptive, evidencing that the past does not have to be an indicator of the future, and hindering our preparation in the face of future scenarios.

- **KNOWLEDGE ABOUT A SITUATION**
  - Own elaboration based on the VUCA presentation model of HRB Harvard

Maybe we will be more motivated out here...
### VUCA Prime Responses

<table>
<thead>
<tr>
<th>Clarity over Complexity</th>
<th>Vision over Volatility</th>
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<tbody>
<tr>
<td>Even chaos can make sense. Generate knowledge maps. Make a dynamic tracking of the existing analyses to detect new evidences (monitoring). Understand each phenomenon from within and from the global perspective simultaneously. Do not use simplistic, mono-causal or mere chance explanations, trying to answer all possible questions.</td>
<td>Think in future as a habit. Imagine scenarios and analyse them in a back-casting process to detect indicators, in order to avoid future risks and threats. The objective and methodology applied must be clearly defined. We must be able to rapidly integrate large amounts of information without the process or tools used, resulting in less precision and speed.</td>
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<tr>
<th>Agility over Ambiguity</th>
<th>Understanding over Uncertainty</th>
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<td>Maximize the ability to learn, make mistakes, communicate, respond and adapt. It requires rapid problem solving and constant decision-making. It must be proactive and be focused on the problem to anticipate the effects even before adopting the answer. The technologies used as support have to be agile and adaptable to users and needs, leaving behind generalist solutions.</td>
<td>The phenomenon that we face must be fully understood. The answer should go beyond our own previous experience and knowledge. It needs to build knowledge networks, with trust and credibility, and use new technologies to strengthen the whole process and progressively improve reasoning skills.</td>
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LEARNING TO LEARN

Game as transversal skill

Skills over the Knowledge

Learning, not teaching

Learning organizations
### HOW TO SURVIVE. SKILLS NEEDED IN A VUCA WORLD

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<tr>
<th>CLARITY over COMPLEXITY</th>
<th>VISION over VOLATILITY</th>
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<tbody>
<tr>
<td>Adaptive thinking</td>
<td>Learn to learn</td>
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<tr>
<td>Lateral thinking</td>
<td>Knowing how to unlearn</td>
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<tr>
<td>Knowledge Management</td>
<td>Continuous training</td>
</tr>
<tr>
<td>Information overload</td>
<td>Antifragility (N. Taleb, 2013)</td>
</tr>
<tr>
<td>management</td>
<td>Creativity</td>
</tr>
<tr>
<td>Diversity management</td>
<td>Agility</td>
</tr>
<tr>
<td>Intellectual curiosity</td>
<td>Motivation</td>
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<tr>
<td>Star-busting creativity</td>
<td>humility</td>
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<tr>
<td>techniques</td>
<td>Cognitive adaptability</td>
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<tr>
<th>AGILITY over AMBIGUITY</th>
<th>UNDERSTANDING over UNCERTAINTY</th>
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<tbody>
<tr>
<td>Critical thinking</td>
<td>Transparency</td>
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<tr>
<td>Experimentation</td>
<td>Confidence</td>
</tr>
<tr>
<td>Learned lessons</td>
<td>Managing overconfidence</td>
</tr>
<tr>
<td>Learn to doubt</td>
<td>(honestly introspective)</td>
</tr>
<tr>
<td>Dismisses the superfluous</td>
<td>Collaboration / teamwork</td>
</tr>
<tr>
<td>Self-driven learning</td>
<td><strong>Technological awareness</strong></td>
</tr>
<tr>
<td>Social pressure management</td>
<td>Creating scenarios / simulations</td>
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<tr>
<td>Proactivity</td>
<td>Idea Generation</td>
</tr>
<tr>
<td>Decision-making engineering</td>
<td>Validation of acquired knowledge</td>
</tr>
<tr>
<td>Team-based decision making quality</td>
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<th>- KNOWLEDGE ABOUT A SITUATION +</th>
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<td>Ability to predict the effects of a situation</td>
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- ** joked as a serious gaming techniques **

| Adaptation of the methodologies to the study objective | Transparency |
| Finding solutions                                      | Confidence   |
| Intelligence analysis process development             | Managing overconfidence |
| Crisis management                                      | (honestly introspective) |
| Time and priorities management                        | Collaboration / teamwork |
| Serious gaming techniques                              | **Technological awareness** |
| Talent management                                      | Creating scenarios / simulations |
| Critical writing                                       | Idea Generation |
| Resolution / decision-making                          | Validation of acquired knowledge |

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<th>Inter-personal skills</th>
<th>Intelling of the crowds</th>
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<td>Leadership in virtual and transcultural teams</td>
<td>Information visualization techniques</td>
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<tr>
<td>High performance team development</td>
<td>Management of virtual teams</td>
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**Explanation:**

- **CLARITY over COMPLEXITY** focuses on clarity and simplicity, emphasizing adaptability, lateral thinking, and knowledge management to navigate information overload and diversity management.

- **VISION over VOLATILITY** stresses the importance of learning to unlearn, continuous training, and creative thinking to handle volatility.

- **AGILITY over AMBIGUITY** highlights critical thinking, experimentation, and learn to doubt to address ambiguity.

- **UNDERSTANDING over UNCERTAINTY** underscores the importance of transparency, confidence, and managing overconfidence, along with collaboration and team-based decision-making.
THANK YOU!!