

## Challenge-Capacity Requirements

	Type of Challenge*	Example	Type of Learning Required
Interacting Variable: Agent's Level of Mastery and Familiarity with Challenge†	<b>Predictable</b>	<p>Anything that can be routinized and has already been figured out by somebody somewhere– e.g.,</p> <ul style="list-style-type: none"> <li>• Conducting a stakeholder analysis or literature review</li> <li>• Changing the oil in your car</li> </ul>	<p><b>Conventional</b></p> <ul style="list-style-type: none"> <li>• Identify issue or barrier (Note: in some cases, like a medical diagnosis, this requires a lot of skill)</li> <li>• Learn and apply the standard operating procedures (SOP)</li> <li>• Note: In some cases, both the issue and the SOPs that have been developed (formally or informally) might be unknown to you – so the learning process will involve inquiring to find out how the issue has been addressed by others (e.g., you might conduct a literature review or environmental scan; post a question on Facebook; check the Internet, etc.)</li> </ul>
	<b>Emergent (complex/variable)</b>	<p>Anything where the patterns can't be predicted very far out with any certainty (although a relatively narrow range of possibilities can often be predicted within more limited time horizons), e.g.,</p> <ul style="list-style-type: none"> <li>• Preparing to summit Everest</li> <li>• Facilitating a community development project</li> </ul>	<p><b>Adaptive - Emergent Learning, Real-Time Adaptation</b></p> <ul style="list-style-type: none"> <li>• Develop a disciplined understanding of the situation dynamics                             <ul style="list-style-type: none"> <li>○ Analyze the patterns associated with the system your working with</li> <li>○ Identify barrier characteristics and the possible range of events (Note: Important to draw on the lore and doctrine associated with the system your working with and test those models against reality)</li> </ul> </li> <li>• Develop a flexible and provisional plan based on that understanding – one that helps you/the group to identify an effective learning path and prepare for all contingencies</li> <li>• Closely monitor emergent situations</li> <li>• Develop efficient, real-time adaptive controls (i.e., adjust as you go)</li> </ul>
	<b>Contested/ Negotiated (intelligent adversaries and/or unreliable allies)</b>	<p>Any activity that is opposed by others (because it disrupts existing power arrangements, threatens dignity/survival, etc.), e.g.,</p> <ul style="list-style-type: none"> <li>• Addressing poverty or inequality</li> <li>• Running for political office</li> </ul> <p>Any instance where you have people working alongside you who don't really know what they're doing and/or don't have the character skills required to manage themselves effectively, e.g.,</p> <ul style="list-style-type: none"> <li>• The ways in which Trump undermines his own party</li> <li>• The kind of 'help' you get from people who make whatever you're doing simultaneously harder and less effective</li> </ul>	<p><b>Adaptive - Ethical/Strategic learning</b></p> <ul style="list-style-type: none"> <li>• Develop a disciplined understanding of the situation dynamics                             <ul style="list-style-type: none"> <li>○ Analyze the opposition's intentions, capabilities, habits, and weaknesses; anticipate the range of possible counter-venture moves</li> <li>○ Know your own and your allies' strengths and weaknesses</li> </ul> </li> <li>• Closely monitor emergent situations</li> <li>• Develop a flexible and provisional plan that helps you to:                             <ul style="list-style-type: none"> <li>○ Address internal weaknesses</li> <li>○ Exploit counter-venture weaknesses</li> <li>○ Anticipate all contingencies including potential counter-venture moves and internal defections; secure against catastrophic developments</li> <li>○ Avoid narrow path dependencies</li> <li>○ Move to the next stage of development (i.e., the place that can be realistically reached from the current stage)</li> </ul> </li> </ul>

			<ul style="list-style-type: none"> <li>• Develop efficient real-time adaptive controls</li> </ul>
	<b>Pioneering</b>	<p>Creating/doing anything that has never been done before,<sup>‡</sup> e.g.,</p> <ul style="list-style-type: none"> <li>• Developing a new discipline or theory like Human Learning Ecology</li> <li>• Designing the first airplane (Wright Brothers) or the first reusable rocket (Elon Musk)</li> </ul>	<p><b>Adaptive - Innovation</b></p> <ul style="list-style-type: none"> <li>• Develop a disciplined understanding of the situation dynamics <ul style="list-style-type: none"> <li>○ Identify and analyze all the casual dynamics and linkages related to the innovation (i.e., solution space)</li> <li>○ Identify resources and disciplines required</li> </ul> </li> <li>• Identify learning path (what would need to be mastered in order to affect change)</li> <li>• Test and refine solutions</li> <li>• Identify potential consequences of solutions over time and across larger situations (i.e., assess potential side effects, externalities, blow back, fixes that fail)</li> </ul>

\*All of these can overlap.

<sup>†</sup>The agent's level of mastery and familiarity (see map 101) impacts perceptions of uncertainty. Some of the uncertainty that dominates in the early stages can disappear as the agent develops further skills and resources.

<sup>‡</sup>May have been done before but the agent isn't aware of it and therefore can't draw on what has already been learned. Therefore they have to engage in an R&D themselves.