

# Technology Syndicate

Trends	Implications	Key Takeaways
Rate of technology advance	The rapid pace of advance poses a challenge across a variety of other domains, such as policy, organizational structures , laws and regulations, societal use norms, and cultural adaptation to name but a few.	<ul style="list-style-type: none"> <li>• Different ethical interpretations of the use of new technologies can strain the Alliance</li> </ul>
	Exploitation of state of the art technology will require a change to Defence and security organizations' acquisition and life cycle management processes or they will be unable to keep pace, potentially resulting in less than state-of-the-art capabilities in some areas.	<ul style="list-style-type: none"> <li>• Changed mindset is needed (i.e. use of Beta-versions)</li> <li>• Possible Interoperability issues due to different rates of development in Allies</li> </ul>
	Because of the rate of technology advance, the Alliance will need to be comfortable with uncertainty and surprising use of emerging technologies.*	<ul style="list-style-type: none"> <li>• Behaviours need to adjust to the rate of technology advance.</li> </ul>

This trend is still valid and increasing.

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<b>Access to Technology</b>	Access to technology enables disruptive behaviours, allowing individuals to become non-state actors and acquire capabilities similar to those of states (in some areas).	<ul style="list-style-type: none"> <li>Nations need to be prepared to operate without technical advantage.</li> </ul>
	Others (Non-state and some state actors) may be less constrained as to how they employ (beta or unproven) technologies, unlike state actors who are obliged to remain within internationally agreed norms such as the Law of Armed Conflict or product approval processes.	<ul style="list-style-type: none"> <li>Restrictions to product development processes</li> <li>Some State Actors may also be unconstrained</li> </ul>

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<b>Global network development</b>	The increase in global networks results in vulnerabilities from a defence and security perspective. The element of surprise (for example in covert operations) is increasingly challenged due to these dynamic networks.	
	Global networks will have the ability to promote the transfer of information at an unprecedented rate without discrimination based on the intent of the end user; potentially placing valuable knowledge in the hands of non-state actors with malicious intent. However, it also provides the opportunity to engage and transfer information to a much larger population for exploitation and global opinion shaping.	<ul style="list-style-type: none"> <li>The opportunities of the global network have to be leveraged.</li> </ul>
	Data procedures (procedures and mindset) need to be adjusted to account for the evolving nature of the global networks.*	
	Small, unpredictable effects can be amplified due to the global network.*	

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Dominance of commercial sector in technological development	Government Industrial Base will not drive technological development in all areas the defense sector. Some R&D areas are not covered in the commercial sector, and Nations need to have a strategic view of the defence industrial base so we don't lose skills that we can't recover. *	<ul style="list-style-type: none"> <li>Targeted Government R&amp;D will be needed to ensure technology advantage.</li> </ul>
	State acquisition approaches are not in keeping with the commercial sector, which is driven by and responds to a different market, one that currently demands quick advances over high quality control. Maintaining state-of-the-art capabilities may require serious changes in national R&D and acquisition policies.	<ul style="list-style-type: none"> <li>No Change</li> </ul>
	Exploiting commercial-off-the-shelf (COTS) may seem appealing due to the lower cost and rapid rate of advance, however, the quality control, security, and fit-for-purpose implications should not be underestimated.	<ul style="list-style-type: none"> <li>Changed mindset is needed (i.e. use of Beta-versions)</li> </ul>
	Product support and alignment with national procurement programmes and regulations will remain a challenge in the area of COTS.	<ul style="list-style-type: none"> <li>No Change</li> </ul>

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<p>Dominance of commercial sector in technological development</p>	<p>The dominance in commercial sectors may result in a denial of governments ability to access latest commercial innovations or technical solutions/data/etc.*</p>	<ul style="list-style-type: none"> <li>Commercial control of IP does not allow Government to adapt technologies.</li> <li>Improved interagency and multinational cooperation is needed</li> </ul>

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Dependency on certain technologies	As militaries fall back onto single stream technological solutions, there will continue to be an erosion of skills and mindset, that would enable the necessary resilience to counter these vulnerabilities. There also needs to be resilience built into design and use of systems. We also need to retain the ability or mindset to solve problems in alternate ways without leading technology.	<ul style="list-style-type: none"> <li>• Changing behaviors is key.</li> <li>• Nations need to be prepared to operate without technical advantage.</li> </ul>
	There is an increased necessity to protect critical infrastructure that doesn't belong to the military, as it increasingly becomes part of how military capability is delivered.	

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# *Convergence*

- Convergence has a large impact on accelerating change trend
- Add a forward to describe the impacts of convergence/confluence of both trends and technologies in the forward to SFA to describe the impacts it has overall – not specific to technology.