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What's with all the hype about Defence Space Command?

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Since the launch of *Sputnik 1* in 1957 by the USSR, space has been a strategic area of interest largely accessible only by select nations with large industrial bases. In recent decades, though, improved technology and innovative approaches have reduced costs and increased the availability and variety of space services and products from non-state providers. As a consequence, access to the space domain has been democratised, and become more integrated, for most countries and societies, including Australia.

Indeed space-based technologies are critically relied upon by the modern day society. Navigation through global navigation satellite systems is a case in point. In fact, space-based technologies play such an important role in everyday life that in its National Space Strategy, the UK government estimates the loss of access to global Positioning, Navigation and Timing (PNT) services for just five days could lead to an economic loss of £5.2 billion (London Economics, 2017; National Space Strategy, 2021).

Where one nation stands to gain advantage, competition and conflict are inevitable. Such is the human condition. In this context, *Defence* has come to the realisation that it can no longer be a passive consumer of space-based technologies and must be able to operate tangible assets and sovereign capabilities to maintain Australia's security and prosperity into the future. This is why *Defence* has decided to establish a *Space Command* in January 2022. The purpose of this blog is to argue that for the *Space Command* to be successful, it must not be a copy and paste of other military commands.

As one of the first military branches dedicated for the space domain, the *US Space Force* is a good place to look for initial ideas for *Space Command*'s organisation. In this context, *Chief of Space Operations* of the *US Space Force* General John Raymond accepts that 'space is hard*'* (Raymond, 2021) and suggests that '**agility**, **innovation** and **boldness**' are the traits of space forces (Space Capstone Publication, 2020). Arguably those may have been the traits of any military force at their inception. However, hierarchical structures coupled with no-fail bureaucracies appear to have paved the way for risk aversion and slow response times (Shoebridge, 2021). In such environment, the delivery of capabilities is measured in terms of years while innovative ideas are stifled through endless governance.

So, how does *Space Command* weave agility, innovation and boldness into its fabric and ensure that it remains consistently like a start-up in its 'Day 1' (Slater, 2021)? The answer to that question may come from outside the military.

The establishment of *Space Command* represents an exceptional opportunity for *Defence*. Tensions within the space domain continue to rise due to a congested and contested realm prompting General Raymond to declare space as a warfighting domain (Washington Post Live, 2021). With this backdrop, the opportunity to establish a new command is likely to be a once-in-a-generation activity with long term consequences (McInnes, 2021). *Defence* must approach this 'hard problem' deliberately, and design within *Space Command*'s foundations the bedrocks of agility, innovation and boldness and prevent it from being bound by traditional Service limitations.

The elements of organisational design are one mechanism that can be used to establish *Space Command*. Organisational design elements are routinely used in large businesses to transform their business models. Organisational design encompasses many elements beyond 'culture' and 'structure' linking organisational goals and strategy; resources and competencies of the organisation's people; the functions, activities and roles of the organisation; its systems and processes; its organisational boundaries; structure; and association with technology; as well as its external environment. By making them work in cohesion, the result is greater than the sum of each element observed through the organisation's culture reflected as a feedback loop. More importantly, each element of organisational design provides tangible levers for the Executive to pull and shape the behaviour of their people. The following paragraphs provide some examples on how *Space Command* can use the various organisational design elements to create an agile, innovative and bold culture from the outset.

A goal or strategy focussing on a 'fail fast' philosophy is generally associated with lean start-up methodology. A fail fast philosophy leads to rapid testing and implementation. It seeks to take the stigma out of the negative perceptions due to failure by emphasising that the knowledge gained from failed attempts increases the likelihood of success. For instance, after *SpaceX*'s Starship SN9 exploded upon landing, its principal integration engineer John Insprucker said 'we got a lot of good data, and the primary objective — to demonstrate control of the vehicle in the subsonic re-entry — looked to be very good, and we will take a lot out of that' (Howell, 2021). Up until the failure of SN9, *SpaceX* had multiple failures, each costing approximately US$100 million in lost revenue while prototypes were rapidly developed for testing and intentionally pushed to fail (Howell, 2021). *SpaceX* finally achieved a successful launch and landing with SN15. The knowledge and trust gained through *SpaceX*'s failures and rapid implementation were the reasons behind NASA approaching *SpaceX* for a US$2.9 billion contract to build a lunar lander by 2024 (Lopatto, 2021). In this light, the *Space Command* will need to implement a strategy based on a philosophy that inspires agility, innovation and boldness that should be relayed to its staff and external stakeholders from the beginning. However, such strategy will likely become 'shelf ware' without other supporting elements.

Systems and processes are important tools that highlight the things that the organisation cares about and how they should be handled in certain situations such as the understanding of risk and allocation of resources (Yildrim, 2021). In this context, *Defence*'s existing principle of no-fail and highly bureaucratic *One Defence Capability* system would run against *Space Command*'s desire for agility and innovation during its early stages. The *One Defence Capability* model encompasses four phases during which acquisition processes can take years to reduce the risk of project trouble such as failures and cost blowouts (Shoebridge, 2021). *Defence*'s structures and business processes have been built incrementally over decades influencing not only the organisation but also the mental models of its personnel, pushing them towards risk aversion. There are rare exceptions of the model working relatively fast such as the recent acquisition of four extra CH-47 Chinook helicopters (ADM, 2021). Arguably this was achieved using a known platform to fill a capability gap requiring rapid remediation due to the grounding of the *Defence*'s MRH-90 helicopters. Accordingly, *Space Command* will need to operate outside the *One Defence Capability* program for agility and innovation by developing a robust system to communicate its purpose, reasons for risk taking and readily identify lessons behind failures including those intentional ones. Notwithstanding, if the internal systems and processes contradict and clash with the environment, within which the organisation exists, they will become redundant.

Understanding the organisation's boundaries and environment can enable equifinality in achieving outcomes. For instance, implementing a 'fail fast' mantra may not be palatable for a government organisation due to the previously mentioned capability lifecycle processes. However, Jeff Bezos the founder of Amazon and Blue Origin argues that while failures may attract negative attention initially, a single big winning bet can easily cover for the previous failures as the teams learn and push boundaries (Gilbert, 2019). Accordingly, rather than doing it all in-house an option might be to cooperate more closely with industry and partners to share the burden of rapid learning. This might alleviate the overall public's concerns on the use of tax payer funds for perceived failures and it can also be a means to rapidly grow Australia's space industry. In this context, *Space*

Command will need to find new ways to do business to inculcate agility, innovation and boldness into everyday functions which may include hybridisation of the existing capability management systems via proxies. Such methods can then give room for the organisation's culture to differentiate itself from the existing norms of sister Services.

The establishment of the *Space Command* presents an opportunity to design from a blank canvas. It does not need to be a copy and paste of other military commands – in fact, it must not be if it is to truly succeed. *Space Command* should make deliberate decisions on its organisational design by working through each element that will enable the Executive to bypass the constraints of traditional Services. Further, it should accept the discomfort of innovation and try new ways of doing business. Such actions will ensure that *Space Command* is agile, innovative and bold, and the conditions for future success will be set from the beginning. Ultimately, a true representation of *Space Command*'s successful establishment will be observed when it is considered as part of Australia's national power and used as such by the Government.

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Ulas Yildirim is on *Twitter @lightningulas*. The views expressed in this blog are the author's and do not reflect the official position of the RAAF, the Department of Defence nor the Australian government.

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