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Speech by Minister for Defence, Dr Ng Eng Hen at the Innovation Symposium 2019 Awards Presentation Ceremony

29 Oct 2019

Senior Minister of State Mr Heng Chee How,

Member of Parliament Mr Henry Kwek,

Permanent Secretary (Defence), Mr Chan Yeng Kit,

Chief of Defence Force, Lieutenant-General Ong Su Kiat Melvyn,

Permanent Secretary (Defence Development), Mr Joseph Leong,

Distinguished guests,

Senior Commanders,

Ladies and gentlemen,

Welcome one and all to the first Innovation Symposium. In previous years it was called PRIDE, which stands for PRoductivity and Innovation in Daily Efforts. But this is the inaugural re-branded PRIDE Symposium, now called the Innovation Symposium. Let me take you through a bit of history of the PRIDE Symposium and why the organisers decided on the name change. If you remember, PRIDE started in 1981. But when PRIDE started, PRIDE was something that MINDEF/SAF used. PRIDE rode on WITS or the Work

Improvement Team Scheme, which the whole of the Singapore Civil Service started the same year. If WITS was focused on how, MINDEF/SAF used PRIDE to give emphasis to why. So in other words, instead of just trying to encourage people to improve work processes, PRIDE was focusing on why you should do it. The message was you are not trying to improve work processes as an end unto itself. As a whole organisation we wanted to be the best in class. We wanted motivated and enlightened employees who were always looking to improve our performance not only in big items, but in the day-to-day. And that was the reason for the emphasis on daily effort in PRIDE.

Success Stories over PRIDE's History

And over the years, PRIDE has resulted in many improvements to the thousands of daily tasks all of you perform in the workplace. Some which led to significant savings in time, manpower, and cost. Let me give you a few examples.

Many of us who are old enough will remember how we used to move stores. Before, we formed chains of people and then we would pass the stores from one person to the other. It was very good for team building and bonding, but not very efficient as you can imagine. In 2000, the Republic of Singapore Navy (RSN) replaced this process with the SIMPLEX Box. It was a box that could hold 40 rounds of ammunition, be lifted by a crane, and loaded directly into the gun trays of our ships.

Another example. This one had significant cost savings. In 1988, this was relatively early. The Republic of Singapore Air Force's (RSAF) 111SQN developed a local repair capability for the antenna of the E2C Hawkeye aircraft with cost savings of S$1.75 million. Quite a large sum in those days, the 1980s.

It is not just savings in cost or manpower, but also ideas that came out of PRIDE that made life a lot easier, and points of engagement, much more productive for the SAF. In 2008, the app, iPrepNS (information on Preparation for National Service) and web portal were launched. This was an interactive, multi-media website, much needed for a new generation of NS enlistees born in the digital age. I remember there was a time I was both in Ministry of Education (MOE) and MINDEF. And one of the concerns was that our schools have already gone very much into information technology (IT), in their lesson plans and assessment sheets. If after that experience, [preenlistees] they go on to an SAF that is not so IT-enabled, the

engagement would go down, and would have a different assessment or impression of the SAF. So it was very timely in 2008 when this was rolled out.

The Enhanced Innovation Programme

If you look across the landscape of PRIDE projects have made a real difference over the years. But more importantly, PRIDE has succeeded in building a culture where more servicemen and women take ownership to improve the work processes they are involved with every day. You are trying to improve your own work systems. So you might ask, if PRIDE has been successful, why change it? A few reasons. First, as the SAF increasingly automates and uses technology across the system which takes more people out of the loop, it gets harder for individuals to change processes. That is just inevitable, because processes are supported by backend operations that are not readily visible to the user, and therefore harder to change. Second, many of these processes are now integrated. So you change one component, but you do not realise that, backend, there are systemic links that need to be accounted for. Those are the reasons why the organisers felt that PRIDE should be changed to the Innovation Symposium. But let me make it clear that the change is not meant to reduce the emphasis or belief that all of us can effect change on the ground for day to day activities, but indeed to strengthen that culture, and continue to enable individuals or groups to achieve the same aims. So I would look at the change to the Innovation Symposium as a PRIDE Plus, rather than a PRIDE Minus. We will give more resources. We will roll out concomitant initiatives to empower teams and units to energise innovation as a ground up movement. Let me today talk about three new broad initiatives that will be rolled out.

First, leadership is critical to foster the right kind of environment for the innovation spirit to thrive. The inaugural Leaders' Summit will be held this year, so that leaders and commanders can discuss how to foster and sustain this kind of environment in MINDEF/SAF.

Second, we want to make sure that in this innovation movement, we do not perpetuate the ground conditions that hamper innovation. Let me name a few initiatives. We often heard this repeated feedback: Good ideas are there, many servicemen and employees when they go through their day to day work have good ideas. But, the bureaucracy stifles and strangles these good ideas. Sometimes it is true, sometimes it is not. Whatever it is, the Digital and Corporate Transformation Division (DCTD) together with the RSN, have come up with Innovation Playbook. This is a user-friendly pocket guide to help all servicemen and women

learn about the processes and the methods to get around roadblocks in the system and to find the right resources to support the idea. The idea is, you or your team have got a good idea, but you face bureaucracy, so you turn to this handbook.

There is another unhealthy condition that we often hear, that I have a good idea, leadership is supportive but the momentum just dies out. We all have had those moments right? You cannot turn all ideas into workable solutions, I do not think that is a realistic goal. But the good ones you must quickly move to fruition. So, the response to specific complains about, or a lack of momentum, is to develop "working prototypes". Nevertheless, if a working model, even unfinished and with many flaws, can be made based on new ideas, at the very least, the persons with the ideas plus the people around them can visualise the possibilities. So, to facilitate the development of prototypes, those who innovate with ideas will have access to sandbox environments to test out digital prototypes. This is already happening in the Live Digital Testbed at RSS Singapura – Changi Naval Base. This is a platform which is equipped with dedicated servers and digital infrastructure that mimics real MINDEF/SAF networks. This is serious business. It can fuse information from different sources to pilot Internet-of-Things solutions in different settings, whether they are office settings, road networks, training and medical facilities; and analyse the behaviour of users in the sandbox.

There is a third initiative. It is called the "Accelerator Programme". It moves these working prototypes to Full-Scale Development. The Accelerator programme brings users, stakeholders, technical resources, and industry best practices to form a viable business plan and secure funding within three months. I explained three broad initiatives; What is the intended impact? So let's imagine with me if you will that these broad initiatives are there with me. Thank god we have an app and a hotline to help people with ideas to get around bureaucratic roadblocks, they removed their gears to working prototypes and the Acclerator Programme helps them to have working prototypes for full scale development. So let's imagine then, for instance, we have a person or team – let's call them the X-Men, come up with a good idea after two months of brain-storming. It takes another month to get around bureaucratic roadblocks with the help of the Innovation Playbook. The X-Men get excited when they see their idea developed into a digital model and stress tested in the sandbox, within two months and their working prototype passes the sandbox test and gets accelerated into a business plan, to be put into operations two months later. Are you keeping tab? That is seven months. Possible? To have seven months from the ideas that you have to proof-of-concept to be rolled out to day-to-day life. I am told that the programme has already

benefitted six projects, including the Live Digital Testbed, and the SafeGuardian and NSBuddy apps. So I think this is a good significant move to accelerate our innovation enterprise.

Innovation Projects this Year

I think we can to do this for the right reasons. Yes, it's important to save time, save money, but our commitment to help every MINDEF/SAF employee realise their ideas recognises that without these contributions, you cannot transform your organisation because your organisation is basically made up of people and if you energise the people that are within your organisation, your department, your unit, and if they feel empowered and they can actually change processes for the better, you have a very powerful culture and you will have a very compact and progressive unit. Let me give you some examples. We had Air Force Engineers from 817SQN, they had an idea to replace the Light Emitting Diodes (LEDs) that failed on one of the F-15's Wing Position Light. But when they looked at the manual, this is Boeing's manual, it dictated that you cannot change one light, but you have to change the entire component. Our engineers looked at it, thankfully they were unfazed and they met with bureaucracy because I guess maybe Boeing said for safety reasons so on and so forth, you cannot. You have got to change the whole component. These engineers say but I know and I can change the LED. So, they took the extra step, they engaged Boeing multiple times to convince Boeing that their idea was a better solution – in fact, 16 times faster and nearly 300 times cheaper, the emphasis on 300 times cheaper, to achieve the same outcome. As a result, Boeing has now incorporated our solutions into the F-15 technical manual, and now other Air Forces around the world are also benefitting and they are applying. So, well done Air Force.

Let me give you another example. All of you know the importance of your signatures or whoever's signatures right? People come to you and say you must sign this otherwise I cannot move it, I cannot get reimbursed. But if you think about it, today, millions, if not billions of dollars are transacted through electronic authentication. So, why do you need signatures for projects? I had to too, when I do my Meet-the-People Session (MPS), I have loads of forms I have to sign .The fear of course is forgery, that if you didn't have this, you could forge and projects could go through, audit would be a problem and accountability is an issue. Well, our Defence Finance Organisation (DFO) has implemented secure and tamper-proof digital signatures, and this is using Adobe Sign and this made eminent sense, and has reduced the processing time for financial documents by 70% and is significant time-savings for people to

have to chase you and for you to have to sign them. You no longer have to chase down people for their physical signatures. As with good ideas, other agencies will say, "why not us too?" and indeed, the Ministry of Finance (MOF) plans to roll out their scheme to the Whole-of-Government. So again, kudos the Defence Finance Organisation.

Army's Maintenance & Engineering Support (MES) formation has a team which designed and built Do-It-Yourself (DIY) drones using 3D-printing for the body and this has reduced the time from about 18 months with the usual procurement process, to four months. They have now produced six working prototypes which have been field tested, and passed the safety and security assessments. So look out for these DIY 3D printed drones which will soon be deployed across Army units for trials.

We have also got some teams applying ideas because the new SAF needs to process a lot of data and a team from the C4I Community developed an app to automate counting and classification of ships. This took people many hours and is now reduced to a few seconds.

Conclusion

These are good signs. These success stories demonstrate that MINDEF/SAF is climbing up the innovation ladder. We have been at it for four decades. And our people now with the right ethos, working in an environment whose leaders are supportive, and with boost-up facilities and resources to accelerate change, can make a big difference.

Today, we want to recognise and congratulate all 68 award winners across MINDEF/SAF for exemplifying the innovative spirit and dedication to help our organisation progress year after year.

Thank you very much.

Fact Sheet:

- Fact Sheet: Innovation Symposium 2019 Award Winners (MINDEF_20191029001_1.pdf)

News Release:

- MINDEF and the SAF Empowers Personnel to Innovate and Boost the SAF's Transformative Edge (MINDEF_20191029001.pdf)