



**Transcript of Speech delivered by Dr Janil Puthucheary,
Senior Minister of State,
Ministry of Communications and Information,
at National Youth Tech Championship (18 Aug)**

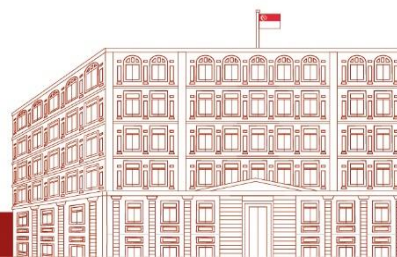
Mr Ben King, Managing Director, Google Singapore,

Mr Lew Chuen Hong, Chief Executive, Infocomm Media Development Authority

Colleagues, parents,

Principals, teachers and students,

1. Good afternoon. I am very pleased to join you for the inaugural National Youth Tech Championship (NYTC).
2. Technology is very much a part of our lives. We are pushing the boundaries and doing more and more.
3. The reason I am bringing this up is that it is the application of the technology which is really going to take us forward. It is the integration of the different components of the technology that is going to allow us to do innovative and different things. And more importantly, it gives us the opportunity to think through dealing with real world problems, and not just 'can I shave off one or two minutes in my journey?' or 'can I make an easy purchase?' because those are 'hashtag' first world problems.
4. But we have real world problems to which we would like to apply our technology today. And that we would like to inspire you, the next generation of technologists and engineers, to address real world problems, including healthcare, for example.
5. People became very much aware of telemedicine during the COVID-19 pandemic. Because of my prior profession, I know that we have been wrestling with telemedicine for at least the last 30 years and we never quite got it right. Did we get it right in COVID-19? We made a lot of strides and they do say that COVID-19 accelerated digitalisation faster than any Chief Information Officer (CIO). But there are still problems. Today at MOH working with the healthcare providers, we are still trying to push the boundaries around our telemedicine provisions. How do you make sure that the interaction is natural and that we protect the privacy of the patient as well as share the data in the right way and give the right information to help you make the right decisions? It is not quite as simple as you would have believed. So there is still a lot of work to be done. And even if you get the consultation right, how do you then close the loop to make sure that the right medicines arrive at your doorstep?
6. Today, we can order all kinds of things online. It seems very fast and convenient. But with all transactions, things can go a little bit wrong. You move that approach into the healthcare space and it has very significant implications. We need to solve those problems using the kinds of technologies that you are playing and learning with today.
7. Another example especially here in Singapore, is that the air-conditioning is either too hot or too cold. If you look around, some of us are wearing jackets and some of us are sweating, but air-conditioning uses up quite a lot of energy and it has an impact on our carbon footprint and our energy utilisation is something that we need to pay a lot of attention to, if we are going to make



our buildings comfortable, optimise our learning spaces for what we have to do, but yet use energy efficiently and reduce our carbon footprint, and optimise our control systems.

8. Clearly, that is the way in which we have to go in order to make best use of our carbon footprint and ensure our energy utilisation is in order, to manage our urban and office environment. Implementing it at a granular level, in every building, and making sure that controls are finely tuned is not so easy.

9. There are things to be done and real-world problems to be solved using technology. How do we help the next generation of engineers and technologists think about these things? It's not enough to be a power user and that's one of the lessons that we have worked out over time. You cannot just be someone who is very happy with technology because then you are just the user of technology. What we need is to inspire a generation of technology creators – people to build stuff. And for that, you've got to really understand how the nitty gritty components work, how each line of code makes a difference, where small errors lead to catastrophic failures and where the opportunities are to bring together different components and create something new and different.

10. That's an important part of what we do – not just turn kids loose on technology and hope they have fun with it, but try to guide them in ways that get them to understand the nitty gritty of technology and the tiny details that then become building blocks so that they can think about creating and building things themselves using their knowledge. How do we do that?

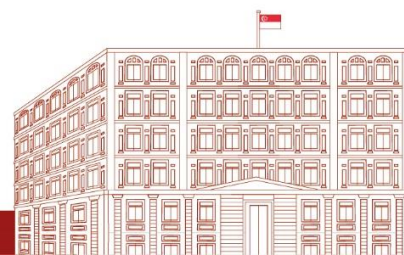
11. In schools, we have the Code for Fun Enrichment Programme hoping to develop computational thinking and foundations of logic and math amongst primary and secondary school students. But that's just getting you started.

12. Then we take it a little bit further into the Infocomm Media Club programme that teachers and students here are all very familiar with. But for the parents, let me explain a little bit. We want to help the kids develop deep skills and expertise. We want them to have the relevant industry exposure. We want them to understand what are the opportunities and career pathways that they might be exposed to in the future in this sector. We have the Infocomm Media Club programme that is backed by industry partners such as Intel, Meta, Microsoft, and Google. Students can attend courses and bootcamps to learn about AI, learn about immersive media, learn about digital making and game development.

13. We also take them to visit places. Some of you had the opportunity to visit our Centre of Excellence for Testing & Research of Autonomous Vehicles in NTU (CETRAN), and look to see how we can improve or accelerate the development of autonomous vehicles and create that opportunity for businesses in Singapore. We had the participants observe the trials and testing. And we hope that as the students learn about these real-world applications, they can think through how they might have a career in these industries.

14. But then you want them to apply the skills that they have learned and nothing drives that application quite so much as a competition, like our inaugural National Youth Tech Championship, co-organised in partnership with Google Cloud. We have created this for schools to come together, compete and apply those skills and drive the kind of process that I described earlier on, showcasing skills and pitting their talents against each other.

15. Today, 230 Infocomm Media Club members from 51 secondary schools participated in this competition – this shows the breadth and depth of our students' interest in this technology. It also shows that's just the start. This is the first time that we've done it and there has been such an interest in this.



16. To the student participants here, what I hope you've had is an enriching experience. I hope you've learned something new and developed new skills. I hope you've understood something different about the technology sector, about opportunities, working in the industry at places like Google and other partners about the kinds of careers and pathways that you can develop for yourself, just as you have learned about the concepts of artificial intelligence and machine learning, and the application to control devices such as drones.

17. Some of what I'm saying is not so new and in technology, things go around in cycles. One of the things that goes round in cycles is a concern about what technology will do for jobs. AI is no different. There's a concern that with the deployment of AI, jobs and livelihoods may be affected.

18. But history has shown us that actually, while there is a lot of transformation and change, ultimately the use of technology creates more opportunities. You end up creating more jobs and more opportunities, provided you have the opportunity to train and to develop the skills in our people. That's what we want to make sure happens and that we also make sure that no one gets left behind. We want to bring our entire society with us on this journey of digital transformation, whether it's AI, or whatever comes next.

19. We think it's important that the young people also have imbued themselves with those values. How can technology be a force for good and help all our people around us?

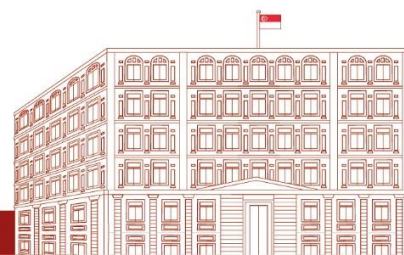
20. We have examples of this. Students from the Bedok South Secondary School's Infocomm Media Club taught programming to underprivileged children at Heartbeat@Bedok, as part of VIVITA's Tech Saturday initiative. Through creating simple games using the online Scratch interface, we hope that this is an example of the secondary school students at Bedok South inspiring even younger children to take up the pursuit of technology and join their Infocomm Media Club one day.

21. We have a participant here today, Wang Zerui, who used his talents to help his peers as part of the Apple Swift Accelerator and Worldwide Developers Conference (WWDC) earlier this year. Zerui won the Swift Student Challenge with his app, Graph Theory that helped fellow students better understand graphs and their properties, enabling them to learn math and visualise data. Well done and congratulations for all the work that all of you do.

22. In conclusion, I would like to thank quite a few people. I'd like to thank the participants and students for committing themselves to this and throwing themselves – heart and soul – into the efforts, the Championship, the coding and learning from each other and from the engineers at Google and the various mentors that you've had. I hope you've learned those very important life skills – communication, teamwork, working out how to problem solve, and ultimately how to use technology for all our benefit.

23. I very much want to extend my appreciation to Google, for partnering IMDA to organise this inaugural Championship. It is only because we are able to bring these strong partnerships from industry, together with our academicians, our teachers, our educators, the schools and the whole community of educators that we have. This is not something to be taken for granted and it's not something that happens easily in every other part of the world. It's not something that happens automatically even here in Singapore. It requires quite a lot of work from the education fraternity, industry and our IMDA colleagues to then think through how to curate this type of partnership. It requires willing partners on all sides, and I'm very glad that we have such willing partners.

24. All of us see the benefit of this type of industry-education alliance to support the aspirations of our young people. And please do come on board as part of our Digital for Life



movement to use technology as a force for good and bring all of Singapore and Singaporeans along this journey with you.

25. Congratulations to all the teams. I hope you've enjoyed yourself and I hope you've developed a lifelong passion for technology. I encourage you to continue honing your digital skills and build a better, brighter digital future for Singapore. Thank you all very much.

