

Keynote Address by Mr Koh Yong Guan, Chairman SMRT Corporation Ltd, at the Launch of the Postgraduate Certificate in Urban Railway Engineering (Singapore) and Rail Engineering Seminar, Capitol Theatre, on 21 Oct 2016

Good Morning everyone, and a warm welcome to Professor Clive Roberts, Director, Birmingham Centre for Railway Research & Education, University of Birmingham; and to all our partners.

This venue brings back many fond memories. Firstly, I studied at Raffles Institution which was located across the road in the 1960s, and the Capitol was a favourite haunt where we “hanged out” after school in unproductive pursuits. Secondly, it is almost 50 years to the day that I entered the University of Toronto as a first year student in Mechanical Engineering. So, it is particularly gratifying for me to be talking to a group of our engineers today.

Land transport issues in Singapore, and in particular those pertaining to the MRT have attracted a disproportionate share of public interest and political attention in Singapore in recent years. The major disruptive events of December 2011 and more recently last year, have focused continued public interest and attention on the challenges we face. The plus, if you can consider it as such, is they have given the impetus for the Ministry of Transport, the Regulator and Public Transport Operators to re-examine how we finance and manage the whole public transport system. Recent milestones for SMRT in transiting to the New Rail Financing Framework and privatisation under Temasek Holdings should be viewed as steps in this direction, allowing SMRT to focus more sharply on delivering a safe, reliable and commuter-centric public transport service.

In addition, the imperative to rebuild trust and instil confidence in the commuting public on the reliability of the MRT as an option to private cars for daily commute has resulted in the recognition that more investments in engineering are needed in order to maintain and sustain the reliability of the ageing and new systems through their life cycles.

Numerous engineering infrastructure projects are underway to renew the North-South and East-West Lines, our oldest in the network, in what is regarded as the most massive renewal effort on a “live” system anywhere in the world. This includes:

- Changing out all 188,000 old wooden sleepers to concrete ones;
- Replacing and upgrading our Third Rail and Power systems;
- Changing our legacy fixed block signalling system to a Communication-based train signalling system that can reduce the headway interval between trains to as short as 100 seconds; and
- Refurbishing our older generations of trains and expanding our fleet with new trains.

Getting these done on time with the limited hours available each night and without unduly affecting commuter service is a tremendous engineering feat that our colleagues are embarked on. We are on track with all these projects, and most will be completed by 2018. Investing in hardware is not enough. We must also invest in our people, and the software and systems and processes to enable our people to do their work better. In this regard, we have intensified efforts to: (1) Build a Pipeline of Rail

Professionals, (2) Operationalise the Maintenance Operations Centre, and (3) Adopt Predictive Maintenance through Condition Monitoring.

The effort to build a pipeline of Rail Professionals has become not just an SMRT, but an urgent industry effort. There is increasing recognition that the massive investments of some \$60 billion that Singapore is making to double its rail network by 2030, must be supported by the building up of an indigenous rail engineering capability. SMRT alone will more than double our number of engineers to 400 by 2017, from the 191 we had in 2012. More than simply increasing the intake and number of Rail Engineers, we are committed to raising the competency levels of our professional workforce, which includes Senior Technicians, Line Managers, Senior Engineers, Principal Fellows and at the epitome of the profession, the Chartered Engineers.

It is in this context that I am pleased to launch the Postgraduate Certification in Urban Railway Engineering (Singapore) through SMRT's collaboration with the University of Birmingham. The University of Birmingham is a leading university in the UK that offers degree courses in railway engineering. Our engineers can step up in their career and professional development by attaining this Postgraduate Certificate with the University.

Such a programme is most timely. We know that the challenges we face today are complex and multi-disciplinary. It is no longer tenable to solely depend and rely on OEM manuals for technical solutions to overcome and solve problems, as was possible in the early years of our network development. Our local operating conditions and challenges are becoming adaptive in nature. Often, there will be no ready answers. Relying on old mental models to solving problems is no longer sufficient as a formula. It is no longer just for Chief Engineers to be giving top-down engineering prescriptions to solve technical issues. Instead, it is more likely that Rail Engineering professionals at all levels must have the adaptive skills to identify and overcome current and future problems. We want to be able to do this proactively and predictively to avert faults even before they occur.

Besides effective teams, we also need effective corroboration across functional areas, and in the Singapore context across organisations, because the design and build responsibilities are with the LTA, and there is more than one operator. With better and constant data inflow and fusion from predictive and monitoring tools from multiple systems, rail engineers have the opportunity to provide the leadership to sense-make, corroborate findings, and devise innovative solutions collaboratively across functional departments.

Our partnership with the University of Birmingham is an important pillar for us to strengthen the calibre of our engineering professionals. A sound education and technical know-how among our Rail Engineers will be the basis for us to grow adaptive leaders who are ready and able to lead our workforce in solving tomorrow's problems with confidence and innovation. Then, we will be better able to fulfil our mission of providing better journeys for commuters across our growing MRT network.

Thank you.