The Future Manufacturing and Promoting Sustainable Employment

Issues and challenges on the future manufacturing such as Industry 4.0 in Singapore

Singapore's Economic Profile

- Singapore economy grew **2.1% in 2015.** The output from **manufacturing** accounts for up to **20 % of Singapore GDP.**

- Total employment growth slowed to **1% for 2015**. This is due to **weak** global economy and **tightened** foreign labour policy.

- Unemployment remains low at **1.9%** as the **labour demand remains strong** with the tightening of foreign workforce.

Electronics Sector in Singapore

- Key sector - Contributes about 5% of GDP
- Accounts for over 75000 Jobs, approximately 20 % of the manufacturing workforce
- Leading location for advanced semiconductor industry players, 1 in 10 ICs fabricated.
- More than 1 million wafers produced per month
- Wide range of Activities ranging from manufacturing , R&D and even Regional HQ functions.

Issues and Challenges faced

- Gap between aspirations of PMEs (professional, managerial and executives) and the jobs available
- Managing rising wage cost
- Supporting low wage workers
- Aging workforce
- Changing workforce demographics – Traditional Unionism relevance?

Changes for the future

- Necessity to create high value added jobs

- Finding new value proposition for new "norm"

- Participate in the transformation journey

- Co- create in the life long learning journey

Industry 4.0

- Transformation journey towards SMART FACTORY.

- High level of **Automation**, **Data Analytics** , higher efficiency .

- Eliminating **mundane** and **laborious** work. Reduce reliance on unskilled foreign labor.

- Traditional Operators will be **upskilled** to take on higher value added tasks such as troubleshooting .

Industry 4.0

- Singapore Workforce Development Agency (WDA) launched a national program with the following objectives
- Future ready PMES equipped with advanced manufacturing knowledge in **advanced robotics** and **automation**, **additive manufacturing**, **big data analytics** and computing, optical and laser engineering and advanced materials.
- It aims to cater to a wide audience - from management executive to engineers, product designers and technical specialists - and will be rolled out progressively in 2016.
- Funding provided for working professionals to take on courses.

Industry 4.0

RFID/Barcode Tagging

Automated Visual Inspection System

RFID

Robotics, e.g. AGVs

Automated Material Handling System

Industry 4.0

Case Study #1

**Hitachi Chem Singapore Printed Circuit Board ("PCB") Plant**

- Using robotic arms to replace operators in (i) loading & unloading and (ii) pick and place
  - Trained 300 workers in new skills to handle new products & machines

- Most automated Hitachi Chem PCB plant in the world
  - Improved reliability & reduction in human errors
  - 10% increase in capacity

- Hopes to use Singapore site as the standard for all other global sites when implementing automation technologies

BEFORE

AFTER

Sustainable Industrial Policies Employed in Singapore
Tripartism

# Tripartism: A strong & effective 3 partners relationship
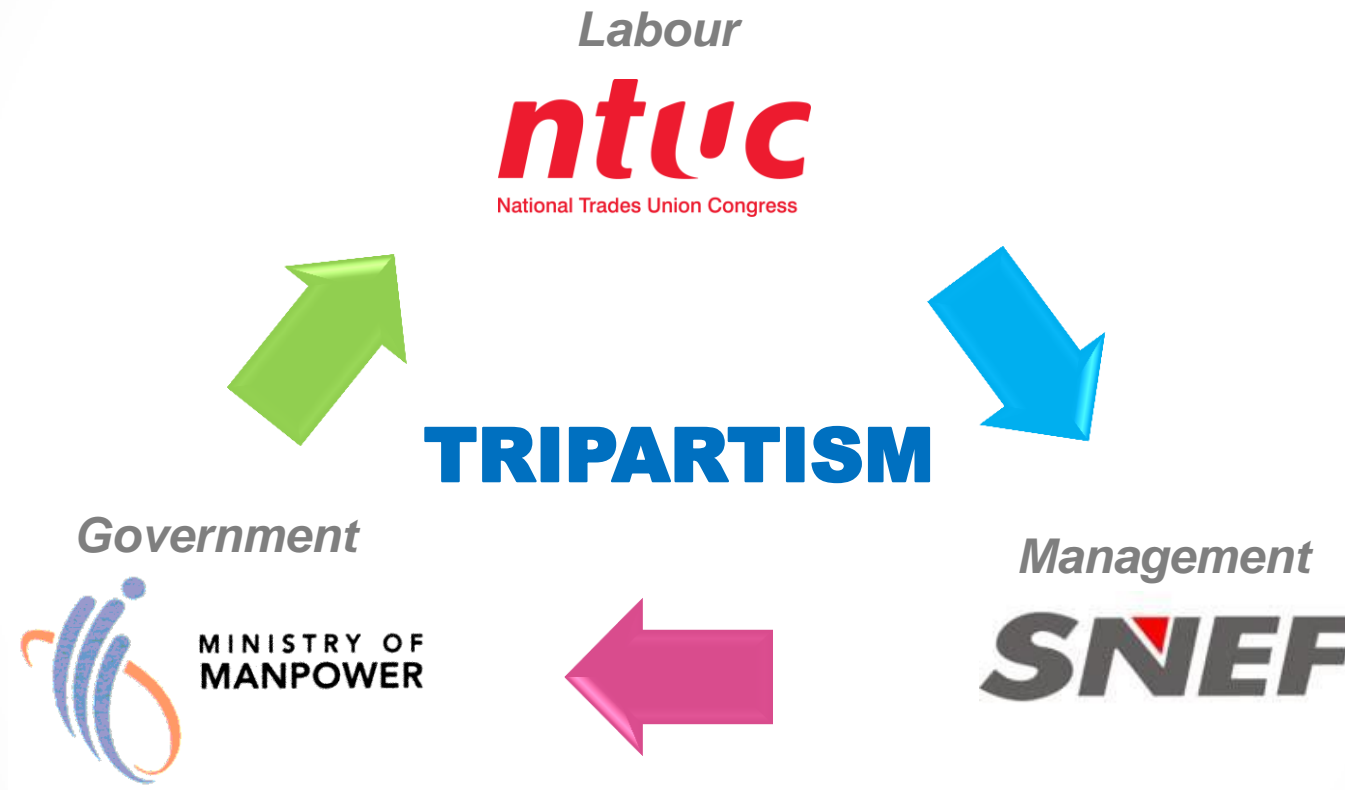
Tripartism

- **1950s:** an urgent need to attract businesses as well as to create jobs for Singaporeans.

- Unions affiliated to the National Trades Union Congress (NTUC) moved away from traditional adversarial LMR➔ work towards compromise and **win-win situations.**

- A tripartite relationship thus emerged between **the government, employers and the NTUC.**

- **Frequent dialogue sessions** involving all three parties, created platforms in which concerns are raised and solutions proposed.

Tripartism

- International Forum on Tripartism - "Tripartism for Sustainable Growth and Development"

- It is also a platform to facilitate an exchange of views on the continued importance of tripartism in helping Singapore achieve sustainable growth and progress.

- Collective push towards **inclusive** and **sustainable** growth moving forward

INTERNATIONAL
FORUM ON
TRIPARTISM

Tripartism for Sustainable
Growth and Development

26 October 2015
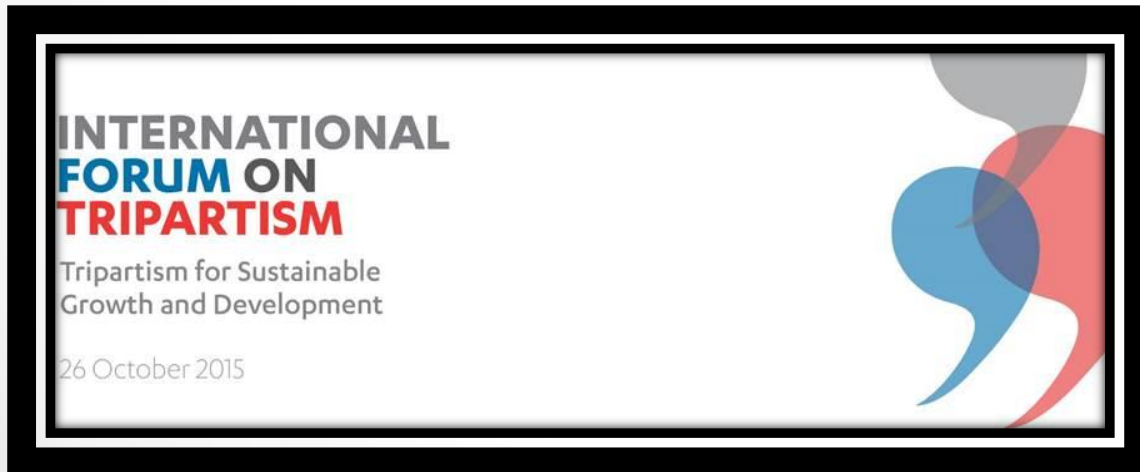
Sustainable Industrial Policies Employed in Singapore

Progressive Wage Model

Progressive Wage Model: Up the 4 ladders

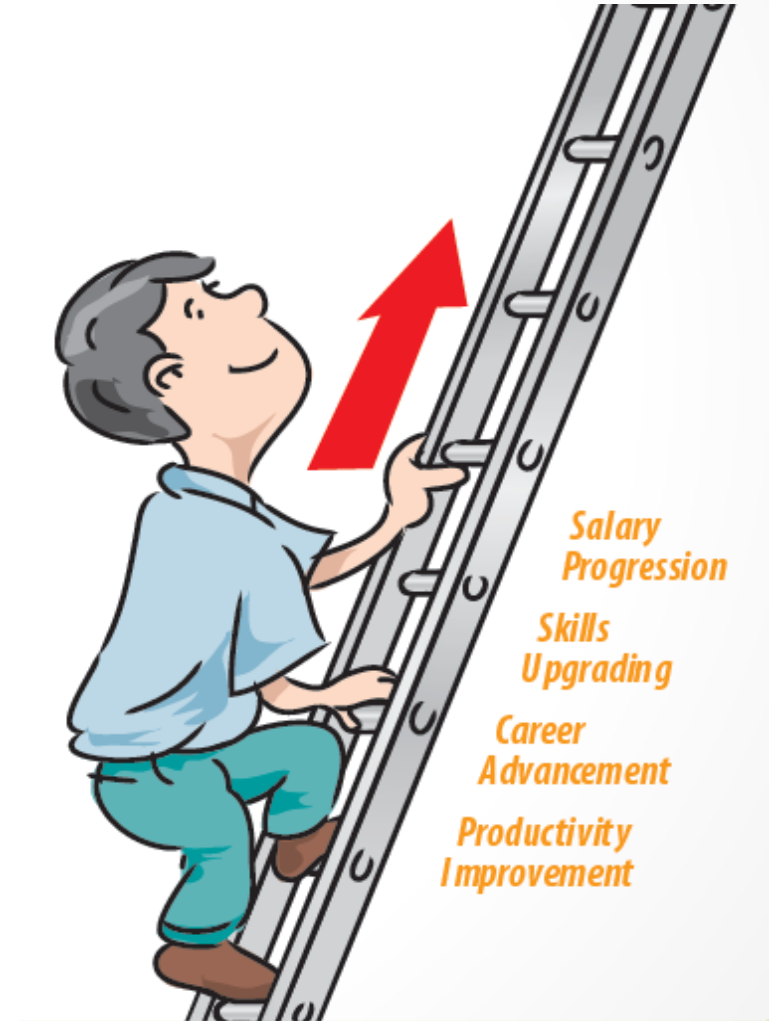To raise wages in line with productivity

WAGES

Skills

Productivity

Career

Progressive Wage Model: Up the 4 ladders

- **Principles of PWM.**
- **4 distinct ladders namely Wages, Skills, Productivity and Career Progression.**

Fair to progressive

Steady Process

Win-win for all parties

Review all 4 pillars

Y shaped career

Internal equity

Salary Progression

Skills Upgrading

Career Advancement

Productivity Improvement

Progressive Wage Model (PWM)

- The PWM was introduced by the Labour Movement in 2012.
- **Objective** : increase the salaries through enhancement of skills and improving productivity.
- Facilitates the enhancement and creation of higher value added jobs
  ➔ higher wages for the worker.

Improved overall productivity which helps sustain economic growth.

Sustainable Industrial Policies Employed in Singapore

National Wages Council

National Wage Council

- Formed in the **1972,** over **4 decades** of track record
- **Tripartite** body made up of employer, union and government representatives.
- The group is tasked to **formulate wage guidelines and recommendations** to be in line with long-term economic growth.
- Annual recommendations
- Taking into account **low wage and vulnerable workers.**

Sustainable Industrial Policies Employed in Singapore

SkillsFuture

Skills Future: A call for lifelong learning

- The Skills Future initiative was announced by the government
- **Opportunities to develop their fullest potential throughout life**, starting from as early as when the individual is still at school.
- From 1 January 2016, eligible Singaporeans will be provided with SkillsFuture credit of $500 to **tap on to pay for relevant courses to upgrade and equip themselves with skills relevant to their current work, or even to pick up a new skill.**
- Over **10000** courses are available

Skills Future: A call for lifelong learning

- National Skills Framework
- Education and Career Guidance (ECG)
- Individual Learning Portfolio
- Earn & Learn Program
- Enhanced Internship
- SkillsFuture Study Awards

Skills Future: A call for lifelong learning

Electronics Sectoral Manpower Plan

Overall objective
To establish a **future-ready**, **manpower-lean** productive workforce with a **strong Singaporean core**

Industry Priorities #1
Grow local semiconductor leaders

Industry Priorities #2
Ensure opportunities for skills upgrading to meet future manufacturing requirements

Industry Priorities #3
Improve talent attraction and retention

Strategy #1
Establish talent development programmes to identify and train local talent

Strategy #2
Enhance current training provisions to cater for future manufacturing competency development

Strategy #3
Create greater awareness of career opportunities & demonstrate progression pathways in electronics sector

Sustainable Industrial Policies Employed in Singapore
Maximise Labour Participation

Maximise Labour Participation

- Re-employment of Older Employees

- Job Redesign towards Evergreen Jobs

- Back to Work Women

- Flexible Work Arrangements

Thank You