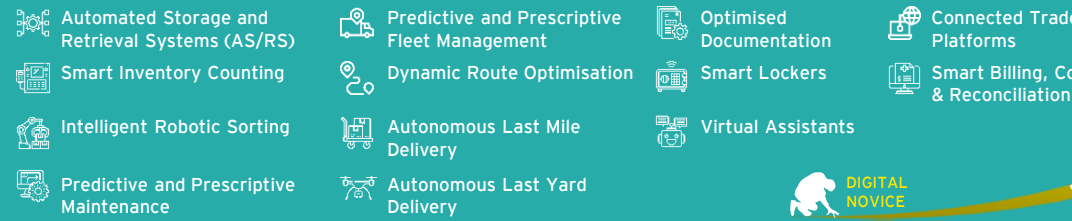


INDUSTRY 4.0 LOGISTICS WORKFORCE

impact on the

I4.0 has the potential to create a vibrant logistics sector for Singapore. A two-fold approach to build I4.0 and workforce capabilities simultaneously will be the most effective way forward to prepare the sector for the future of work.

I4.0 TECHNOLOGY SOLUTIONS STACK



DIGITAL LEADER

DIGITAL PLAYER

DIGITAL NOVICE

Drives productivity gains and higher business outputs

Creates new, high-paying employment opportunities

Transforms job roles from laborious to high value-adding

Attracts and retains new and diverse demographics

I4.0 brings the promise of an attractive logistics sector

NEW I4.0 job roles

Data analysis and management roles



- Data Analyst
- Data Scientist
- Data Architect/Engineer

Software development roles



- Software Developer
- Mobile Developer
- Software Engineer
- Solution/Application Architect
- UI/UX Designer

Digitalisation and automation roles



- Digital Innovation Lead
- Machine Learning Engineer
- Automation Engineer
- I4.0 Maintenance Specialist; ASRS/Drone/AGV Operator; Automation Technician

I4.0 adoption will create new, high-paying I4.0 job roles, typically in PME job roles, although the demand is still emerging

IMPACT OF I4.0 on existing job roles

With I4.0 adoption, ALL job roles will undergo change

Within 3 to 5 years, out of the 56 job roles...



11 job roles will experience a **HIGH** degree of change in job tasks
7 will undergo **displacement**
4 will require **major redesign**



19 job roles will experience a **MEDIUM** degree of change in job tasks, and will require **redesign**



26 job roles will experience a **LOW** degree of change in job tasks and will **change incrementally**. 11 of these are already I4.0 in nature

7 job roles that will UNDERGO DISPLACEMENT

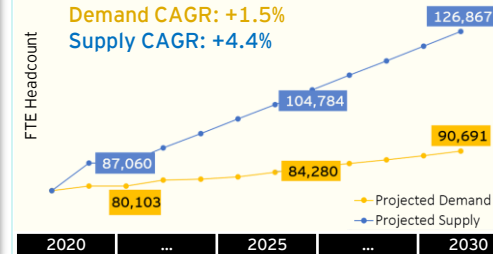
- MHE Operator / Forklift Operator / Warehouse/Inventory Assistant
- Warehouse Storekeeper / Inventory Coordinator / Logistics Coordinator
- Traffic/Dispatch Coordinator
- Import Export Administrative Assistant / Shipping Assistant
- Permit/Shipping/Custom Clearance Coordinator
- Order Fulfilment/Sales Operations/ Customer Service Assistant
- Order Fulfilment/Sales Operations/ Customer Service Coordinator

MANPOWER study

Data trends suggest that **supply may exceed demand between 2020 to 2030**, but this does not factor in the quality of the manpower

Going forward, we need to...

- Sustain efforts to raise sector appeal and attract talent
- Examine actual supply in 1-2 years to decide specific policy interventions



RECOMMENDATIONS for way forward

Encourage I4.0 adoption for sector transformation

Collaborative efforts to drive innovation and enhance I4.0 capabilities alongside manpower transformation

Enhance labour market dynamism

Enhance workforce fluidity, diversity and talent management to maintain a healthy balance in manpower demand and supply

Strengthen the manpower capability-building ecosystem

Create a vibrant ecosystem to prepare individuals and companies to adapt and thrive in an evolving sector

Companies, ecosystem stakeholders and individuals will need to collaborate to prepare the logistics sector for the future

IMPACT OF I4.0 on job tasks

Job roles will evolve to focus on high value-adding tasks



I4.0 will **AUTOMATE** transactional tasks

- Manual, labour-intensive, repetitive, routine
- Administrative, scheduling, coordinating
- Inventory and order tracking, basic customer support, progress-tracking



I4.0 will **AUGMENT** job roles with new value-adding tasks

- Overseeing and managing I4.0 solutions
- Except handling and troubleshooting
- Data analytics, stakeholder management

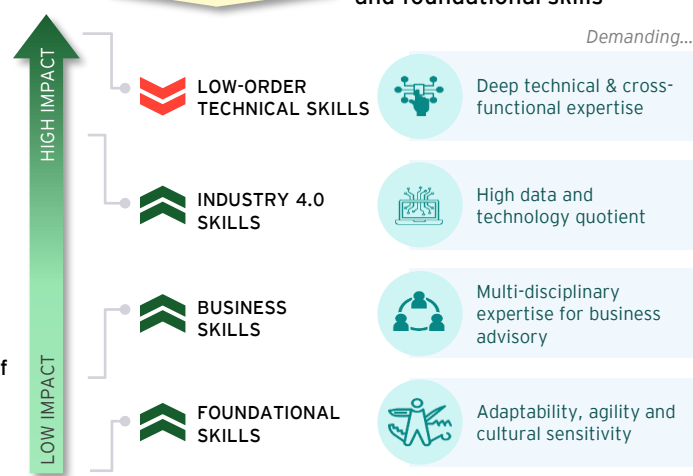


I4.0 will **SUPPLEMENT** the performance of strategic or 'human' tasks

- Strategic planning and business advisory
- Logistics solutioning and innovation
- Risk, safety and compliance management

IMPACT OF I4.0 on skills

There will be a shift in the mix of technical, I4.0, business, and foundational skills



SAFEGUARDING workers

Strategies to safeguard employment and employability

- Job Redesign** to alter job tasks or the way work is performed
- Redeployment** to different jobs in the same or different function
- Relocation** to similar jobs at different locations or work sites
- Upskilling and reskilling** to mitigate the shortened shelf-life of skills

ECOSYSTEM analysis

The current ecosystem sufficiently addresses sector needs

Going forward, it may be further enhanced...

- Strengthening government interventions and grants**
 - Streamline and package similar government interventions
 - Enrich end-user experience
 - Leverage partnerships across stakeholders
- Strengthening training programmes**
 - Enhance marketing efforts for training programmes
 - Prioritise future-focused and bespoke trainings
 - Leverage agile, innovative training delivery methods