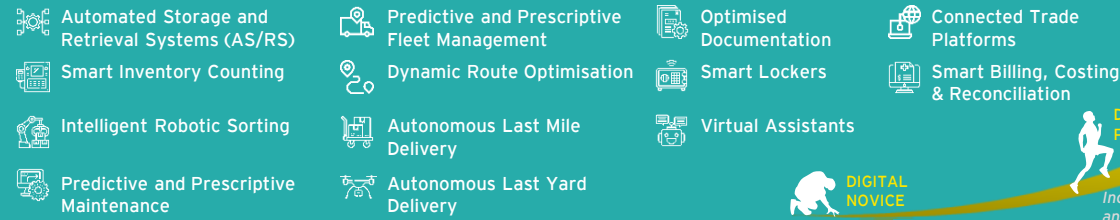


# INDUSTRY 4.0 LOGISTICS WORKFORCE

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



- 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

### 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



**LOW-ORDER TECHNICAL SKILLS**



Deep technical & cross-functional expertise

*Demanding...*

**INDUSTRY 4.0 SKILLS**



High data and technology quotient

**BUSINESS SKILLS**



Multi-disciplinary expertise for business advisory

**FOUNDATIONAL SKILLS**



Adaptability, agility and cultural sensitivity

### 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

## 4-STEP ROADMAP FOR COMPANIES

### Step 1: EMBARK ON DIGITAL TRANSFORMATION

Adopt a purpose-led approach to digitalisation using I4.0 technologies

### Step 2: ASSESS IMPACT ON JOB ROLES AND SKILLS

Assess the impact of I4.0 on your workforce based on technology solutions implemented and their maturity levels

### Step 3: DEVISE TALENT MANAGEMENT STRATEGIES

Use innovative strategies to mitigate the impact of I4.0 on employees and prepare them to be future-ready

### Step 4: GARNER ECOSYSTEM SUPPORT

Leverage the manpower capability-building ecosystem to prepare individuals to adapt and thrive in an evolving sector