Maritime Workforce Transformation Guidebook

Transforming our maritime workforce through designing better jobs

April 2023

Foreword from SMF

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Dear Partners of Maritime Singapore,

A fundamental building block of Singapore's success as a global hub port and an international maritime centre is our relentless investment in talent; hence the impetus to ensure the availability of a competent workforce. We are pleased that the private and public sectors, together with the unions, are working closely to nurture a skilled talent pool to foster the growth of the maritime sector.

In this context, the Singapore Maritime Foundation as the conduit between the public and private sectors, and as the connecting node for diverse industry players, had appointed professional services organisation, Ernst & Young Advisory (EY), to enhance the attractiveness of maritime jobs through a job redesign pilot for two roles – technical superintendent and vessel operator.

Through this pilot, we sought to demonstrate the feasibility and benefits of job redesign, and to provide analysis and recommendations for these jobs. We hope to explore future job redesign implementations in the maritime industry across more roles to elevate the attractiveness of maritime careers.

The lessons drawn from pilot participants – Pacific Carriers Limited (PCL) and Pacific International Lines (PIL) – are distilled into this Workforce Transformation Guidebook. I would also like to acknowledge and thank the Maritime and Port Authority of Singapore for its support in this endeavour.

I hope that you will find this Guidebook useful in supporting and spurring job redesign adoption in your organisation.

Hor Weng Yew

Chairman

Singapore Maritime Foundation

Foreword from MPA

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The maritime sector is the backbone of global supply chains and helps to move more than 80% of the world's goods. We salute and thank all our maritime colleagues who have worked tirelessly to make all these possible. Technology advances in digitalisation and decarbonisation have brought about many opportunities where we can make our maritime jobs safer, greener, and more productive. Maritime Singapore has a key role to attract, nurture and transform our maritime workforce to meet the evolving needs of our industry and also allow the shipping sector to play a role to reduce not only its own emissions, but to transport new maritime fuels to enable decarbonisation in major societies.

The purpose of this Workforce Transformation Guidebook is to distil valuable lessons from our job redesign (JR) pilot project with our industry participants – Pacific Carriers Limited (PCL) and Pacific International Lines (PIL) in two maritime-specific job roles - Technical Superintendents and Vessel Operators, which require some level of seafaring and sailing experience.

Through this JR pilot project, the team demonstrated that traditional maritime roles can be redesigned to strengthen employee value propositions. This can be achieved through widening career pathways, re-imagining entry requirements and redesigning training to access a wider talent pool. The end-goals are to raise workforce productivity, make maritime careers more attractive and improve retention of existing workforce. These will need to be further enhanced as standards and training for electrification and the new maritime fuels become ready, as well as where more maritime workers are trained to reap the benefits of innovative technologies, such as 3D printing and drones.

I would like to take this opportunity to thank Singapore Maritime Foundation, PCL and PIL for participating in the JR pilot project, and Ernst and Young for distilling the key lessons and putting together this valuable transformation guidebook.

We hope that the guidebook will provide a fillip to the job redesign movement and encourage more maritime companies to take their first step in job redesign and transform their workforce.

Teo Eng Dih

Chief Executive

Maritime & Port Authority of Singapore

Content page

Executive Summary

Global trends are re-shaping our Maritime industry …

Competitive talent landscape

Changing career aspirations of youths: The rising affluence and evolving aspirations of youth may deter them from entering the Maritime industry due to perceived laborious nature of work and a lengthy career journey. Entry-level seafarers currently take an average of up to 7 - 10 years of experience before reaching the rank of Captain/Chief Engineer. This could potentially deter youths from pursuing a Maritime career.

Limited talent pool: Organisations often face difficulties in recruiting young talent to fill roles within the industry. Other than changing career aspirations, some may perceive a lack of competitive remuneration and/or the challenging working conditions and seek careers in alternative sectors.

Requirement for sea experience: Staffing challenges continue to hamper recruitment efforts for roles within the industry, due to the challenging working environment and extensive amount of time that individuals are required to be at sea. While it may be easier to fill shore-based roles, some of these roles may also require extensive prior seafaring experience.

Digitalisation

Emerging technologies: Emerging technologies like Artificial Intelligence (AI) and Industrial Internet of Things (IIOT) augment job holders' capabilities in completing their tasks. For example, IIoT sensors capture, transmit and provide real-time information to systems. Coupling AI capabilities with data collection via sensors, job holders are able to make more informed, data-driven decisions.

Increased connectivity: Quicker information exchange will be facilitated between the vessels and shore, with the global push towards digitalisation and infrastructural shift towards 5G connection. This sets the stage for more support for emerging technologies such as autonomous vessels.

Enhanced need for cybersecurity: Digitalisation of ships has resulted in increased vulnerabilities for malicious actors to exploit. To ensure minimal operational disruptions and data loss, organisations will need to continuously invest in suitable cybersecurity systems to ensure a more robust and secure operating system that safeguard their digital ship solutions.

Sustainability

International decarbonization push: The International Maritime Organisation (IMO) has pledged to reduce greenhouse gases through various legally binding treaties, indexes and management plans. In support of decarbonisation, Singapore's Maritime and Port Authority (MPA) has launched the Maritime Decarbonisation Blueprint 2050, pledging to achieve net zero emissions.

Increasing adoption of alternative marine fuels on board vessels: To reduce carbon emissions, the industry is embracing alternative sources of fuel to power operations. Possible alternatives to diesel include Green Hydrogen and Green Ammonia. However, technologies needed to safely handle and mass-produce these alternative fuel sources are still nascent.

Electrification and automation of port equipment and tools: With the push for digitalisation and sustainability within the industry, port operators are increasingly digitalising their operations to increase efficiency while minimising their carbon footprint.

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To stay ahead, Singapore has refreshed the Industry Transformation Map (ITM) for 2025, with a core focus on Talent and Workforce Transformation

A key aim of the ITM[1] is to grow the sector by $2 billion, or 2-3% annually between 2020 and 2025

To achieve three overarching goals…

- Catalyse Innovation
- Drive productivity improvements
- **Enhance skills of the Maritime workforce**
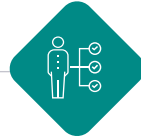
…through four key strategies

1. Ensure relevance and resilience of MaritimeSG as a key node in the global supply chain

2. Support Maritime SMEs and Start-ups to grow into global champions

3. **Develop a future-ready maritime workforce equipped with global skillsets**

4. Build a vibrant and innovation ecosystem to actively develop new growth areas

Through various Job Redesign to reskill and upskill current workers with an emphasis on **digitalisation and sustainability**

Facilitating **mid-career conversions**, including sea-to-shore pathways

New roles require **in-demand skills** e.g.:

- Data Analytics
- Cybersecurity
- Design Thinking
- Green Ship Design
- Chemical Engineering
- Sustainability Management
- Automated Terminal Ops
- Carbon Accounting
- Sustainable Maritime Policy and Law

[1] https://www.smf.com.sg/sea-transport-industry-transformation-map-itm/

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The case for Workforce Transformation in the Maritime Sector

The need for workforce transformation

Global trends and domestic developments in Maritime sector will require companies to transform

Review business strategies
- ‣ New business strategies
- ‣ Accelerating the rate of technology adoption
- ‣ Investing in sustainability practices

Evolve talent strategies
- ‣ Enhancing sea-to-shore pathways to provide a better career value proposition
- ‣ Rethinking traditional 'prerequisites' for certain shore-based roles to widen talent pool
- ‣ Focus on equipping workforce with emerging skills development

Job redesign as holistic catalyst for workforce transformation

Key to workforce transformation is to holistically reimagine and redesign jobs by changing tasks or how work is performed, to meet new demands

People
- ‣ Changing organizational roles, structure and reviewing human capital practices

Process
- ‣ Streamlining processes to reduce manual effort and enable innovation

Technology
- ‣ Using technology to improve productivity or enable new ways of working

People · Process · Technology

Outcomes of workforce transformation and job redesign

| Improved performance | Lean processes | Empowered employees |

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Two roles, Technical Superintendent and Vessel Operator, were selected for a pilot job redesign project to improve attractiveness to the workforce

Technical Superintendent

The Technical Superintendent plays an integral role in the Maritime industry and is deemed as the vital link between ship and shore operations. They manage the smooth end-to-end operations of vessels, ensuring their compliance with technical, financial, safety and legislative requirements.

Vessel Operator

The Vessel Operator acts as the organisation's primary link with the ship's crew on matters relating to vessel movements and cargo operations. They liaises with the ship master to plan and execute the voyage and port/cargo operations. They also liaises with regulatory bodies, terminal operators and port service providers, such as agents and bunker suppliers, maintains customer contact, and responds to problems that may arise from the voyage.

Recommendations and Interventions

People

- ‣ Introduced a new Assistant Technical Superintendent role in order to encourage a greater pool of local and diverse talents to take on the role

- ‣ Recommended creation of Senior Manager (Chartering and Operations) role to integrate both teams

- ‣ Designed career pathways for the role to improve talent attraction, engagement and retention

Process

- ‣ Created a knowledge bank to centralise information on vessel issues to accelerate the knowledge transfer process

- ‣ Streamlined Tableau dashboards for improved efficiency of ship reporting and monitoring

- ‣ Recommended trial of sustainability solutions such as emission monitoring and/or energy management to raise awareness of sustainability goals

Technology

- ‣ Recommended leveraging Internet of Things and Artificial Intelligence to manage and monitor ship performance and to ensure that the vessel performs as per the charter party

- ‣ Recommended adopting an E-record book to reduce human errors and manual processes occurring daily

- ‣ Recommended enhancing existing information search experience by leveraging machine learning technology

Expected Benefits to the Job Roles

Improved job attractiveness to the local workforce

Incumbents job size enlarged and/or job value increased

Improved efficiency in work due to adoption of new technology and streamlining of processes

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Use this guidebook to kickstart your company's workforce transformation journey through job redesign

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A guidebook to help companies kickstart, scale and sustain the momentum of their workforce and organisational transformation

Maritime Case Studies — Learn from your peers

‣ Showcases the job redesign efforts within the Maritime industry by piloting with 2 job roles, Technical Superintendent and Vessel Operations

‣ Details of key considerations and the entire process of job redesign from a people, process and technology standpoint

Self-Help Guide and Appendix — Begin your own journey

‣ Detailed self-help guides on the following topics to aid companies embarking on workforce transformation:
  ‣ Job-Redesign
  ‣ Change Experience
  ‣ Learning & Development

‣ Guides consist of case studies, templates and toolkits for companies to self-serve

Supporting Resources — Additional help

‣ Relevant programmes within the Maritime industry to support workforce transformation efforts

‣ Detailed information regarding:
  ‣ Productivity Solutions Grant – Job Redesign
  ‣ Career Conversion Programme

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Maritime Case Studies

A pilot Job Redesign project was launched to study how 2 key roles could be redesigned so that learnings could be applicable for the Maritime industry

Difficulty in attracting and retaining talent for these roles, especially Singaporeans

Problem Statement

Key trends like **digitalisation** and **sustainability** will affect how jobs and skills will change

The Pilot

Companies

PCL

PIL
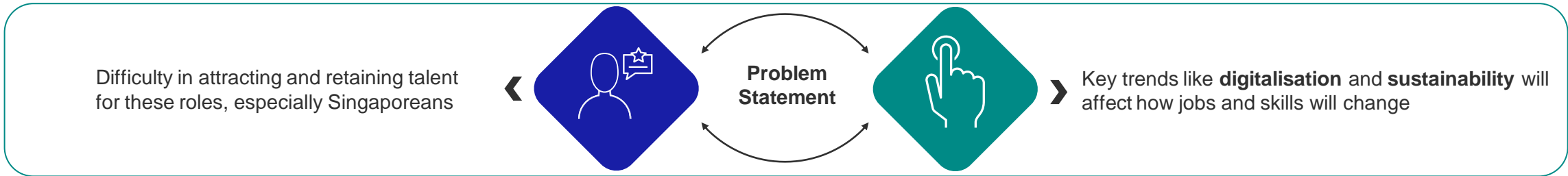
Job Roles

Technical Superintendent

Vessel Operator

Why these job roles?

Pilot companies were chosen to represent the different types of vessels operated (dry-bulk, break bulk, tankers and container liners).

These job roles are critical to the Maritime industry but face a critical shortage of talent supply, especially local Singaporeans. A quality talent pipeline is key to maintaining Singapore's status as an International Maritime Centre.
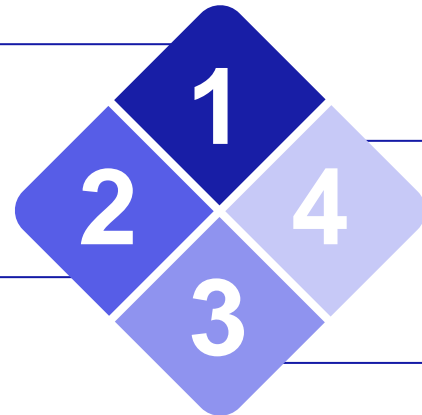
1 Pilot job roles have limited opportunities for career mobility and incumbents tend to stay within the same track throughout their entire career. This may prevent them from developing and growing their careers to the fullest potential.

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3 Both job roles have heavy reliance on prior sea-faring experience as a job requirement and numerous working tasks that are manual, making them suitable for job-redesign with a key outcome of improving job attractiveness.

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EY Building a better working world   SMF Singapore Maritime Foundation   MPA Singapore   MARITIME SINGAPORE

Background on pilot company: Pacific Carriers Limited (PCL)

Pacific Carriers Limited (PCL)

About the company

Incorporated in 1973, Pacific Carriers Limited (PCL) has since transformed into a global maritime logistics solutions provider to commodity multinationals, energy companies and international traders. Through PCL's partnerships, the lives of millions of households in Southeast Asia and other parts of the world have been improved with their efforts to transition from traditional energy sources to cleaner LPG.

Type of Company:
‣ Owns & operates a diversified fleet of bulk carriers, multi-purpose vessels, product tankers and gas carriers

Fleet Size:
‣ Approximately 40 vessels

Geographic Scope of Operations:

Beijing	Hamburg	Jakarta	Kuala Lumpur
Manila	Mumbai	New York	

Fleet Division Structure (Technical Superintendent)

Fleet Management/ Technical
(Technical Fleets & Technical Support)

Technical Services Division/ COE
(Continuous improvement initiatives & IT Support)

Ship Management
(Marine Assurance and Operations Support)

Group HSEQA & Training
(Environment compliance and training)

Crewing
(Crewing operations, recruitment, payroll, etc.)

The Fleet Management/ Technical Department's core responsibility is to oversee the smooth vessel operations, resolving technical vessel issues, maintaining vessel seaworthiness, managing ship budget and expenditure and ensuring compliance to legal and environmental regulations throughout all vessel operations.

Tanker and Gas Division Structure (Vessel Operations)

Commercial
(Business Development, Contractual Agreements, etc..)

Operations
(Vessel Movements and Cargo Operations Support)

Postfix
(Invoices, Insurance, etc.)

The Operations department's core responsibility is to liaise with both external and internal stakeholders for various matters, in order to ensure smooth voyages and compliance to various regulations

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Background on pilot company: Pacific International Lines (PIL)

Pacific International Lines (PIL)

About the company

Incorporated in 1967, Pacific International Lines (PIL) is the largest carrier in Southeast Asia and is ranked 12th among the world's top container shipping lines. PIL's fleet voluntarily participates in various safety, security, environmental programmes and continues to find ways to further enhance ship equipment designs, leveraging new technologies and enhancing operational efficiencies to reduce carbon footprint.

Type of Company:

‣ Container shipping line
‣ Owns operates a fleet of dry cargo vessels, bulk carriers, multipurpose carriers and container vessels

Fleet Size:

‣ Approximately 100 vessels

Geographic Scope of Operations:

| China | East Asia | Africa | Middle East |
| South America | Oceania | | |

Fleet Division Structure

Marine Personnel Department (MPD)
(Planning, Training, Operations etc.)

Fleet Support
(Bunkering & Insurance)

Marine Procurement & Contracts
(Procurement & Warehouse)

Dry Docking & New Building
(Continuous improvement initiatives)

Technical Department
(Technical Fleets & Technical Support)

The Technical Department's core responsibility is to oversee the smooth operations of all PIL fleet vessels, resolving technical vessel issues, maintaining vessel seaworthiness, managing ship budget and expenditure and ensuring compliance to legal and environmental regulations throughout all vessel operations.

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The job redesign pilot was completed in 4 months, with a 3-phase approach

Diagnose

- **Understanding** business direction and strategy to anchor job redesign efforts
- **Gathering** inputs from various sources to better understand job roles and key challenges

Comprehensive understanding of various aspects of the job role to be redesigned through:

1. **Focus group discussions** to understand job-holder's day-to-day responsibilities and challenges faced
2. **Interviews** with Line Managers to understand their current and future expectations of the role to be redesigned
3. **Job shadowing** with selected incumbents to understand current processes and technology used in the organization

Design

- **Scope and prioritise use cases** to design recommendations
- **Validate and iterate** recommendations to with stakeholders

Build job redesign solutions through:

1. **Detailed Job Redesign recommendations** that incorporates industry, company and employee perspectives
2. **Review value chains** relevant to job roles and identifying areas impacted by the job redesign
3. **Co-creation of implementation and change management blueprints** together with various stakeholder groups

Implement

- **Implementation support for** technology adoption
- Post-job redesign analysis **to measure success and effectiveness** of recommendations

Experience transformation and assess effectiveness of job redesign by conducting:

1. **Fortnightly implementation support sessions** to check-in on trial implementation progress and provide required support
2. **Post-job redesign analysis** to assess effectiveness of job redesign, which includes setting and measuring KPIs covering from different aspects

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… using EY's People, Process, Technology framework for job redesign …

People

Process

Technology

‣ How can organisation structure, roles, and people skills be enhanced to improve attraction and retention of talents?

‣ How can workforce and human capital practices be uplifted to improve career value proposition for the maritime workforce?

‣ How can technology enable current work to be done more productively?

‣ How can technology enable new possibilities in the ways of working?

‣ How can process(es) be streamlined to enhance productivity?

‣ How can process(es) be redesigned to enable business agility and innovation?

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… where pilot companies are expected to benefit from the following key outcomes

Company

Improvement in productivity and reduced operating / manpower costs

Clearer career value proposition to incumbent and potential employees to these job roles

Detailed roadmap to scale up workforce transformation to support business needs over the next 2 years

Employee

Time savings from reduction of non value-added tasks, allowing greater job satisfaction and engagement

Improved job attractiveness to the local workforce

Clarity on key current and emerging competencies to acquire and upskill

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Technical Superintendent

Job Redesign Pilot Role #1 Technical Superintendent (TS): Current TS role

This JR Case Study features recommendations based on our JR efforts for both PIL and PCL's Technical Superintendent. These TS manage ships across Dry-bulk/Break-bulk, Tanker & Gas and Container Liners.

Current Job Description

The TS plays an integral role in the Maritime industry and is deemed as the vital link between ship and shore operations. They manage the smooth end-to-end operations of vessels, ensuring their compliance with technical, financial, safety and legislative requirements.

Oversee crew management matters

‣ Ensure team members are trained, coached and mentored in alignment with industry standards and organisation needs

‣ Contribute to Marine Personnel Department (MPD) processes such as recruitment, interviews, deployment and performance management of staff

Manage activities for seaworthiness and ship's technical issues

‣ Ensure vessel is running efficiently and sustainably, optimising fuel consumption and carbon emissions at all times

‣ Keep up-to-date on the technical requirements of the newest equipment information from the maintenance and operations aspect

‣ Monitor and review reports on ship performance data such as fuel and lubricating oil excess consumption using digital solutions
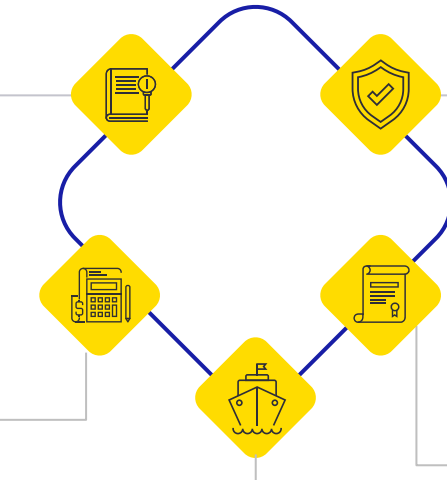
Ensures safety of vessel operations

‣ Work closely with the safety department to ensure safety practices are upheld and compliant throughout the end-to-end operations of vessels

Manages ship budget and expenditure

‣ Ensure accurate budget forecasting and manage vessel operations within the approved budget

‣ Review reports on budget against monthly key performance indicators and targets, and work within the budget on a day-to-day basis

Oversee ship compliance to regulatory requirements and legislation

‣ Keep up-to-date on all ship-related incidents, accidents, major repairs or technical issues that may impact reliability of vessel's operations

‣ Keep up-to-date with latest and upcoming regulatory and compliance requirements

General Qualifications/Background

Conventionally, the TS role requires a Diploma/Degree in relevant professions (Marine Engineering, Maritime Studies, etc.). Among Maritime companies, it is not uncommon for the role to also require 7-10 years of prior seafaring experience (Certificate of Competency 1).

The fact that the TS role is highly technical, and generally requires significant duration of prior seafaring experience, make it challenging for companies to find suitable candidates for this role in Singapore.

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The current TS role is being impacted by external trends and internal factors, which pose challenges and opportunities in talent attraction and engagement amidst a highly competitive landscape

External Trends

- Changing career aspirations of talent
- Emerging technologies
- Emphasis on Sustainability

Internal Factors

Transition towards a more holistic Vessel Management operating model

‣ The current operating model is such that TS do not have authority over all areas related to the vessel (e.g. Crewing), preventing them from being able to execute certain decisions for the vessel. There is a need to explore redesigning the operating model to align management expectations to actual accountabilities for the TS.

TS need to be better People Leaders and Managers

‣ The shift towards a more holistic Vessel Management operating model requires TS to be better at leading and managing vessel crew, through building a culture of high performance and high maintenance standards on board. There is greater need for TS to demonstrate empathy and build better relationships to engage ship crew.

Tedious and manual processes

‣ Core work processes (e.g. daily ship monitoring) are time consuming and involve high manual effort. These can be further augmented or automated by digital solutions.
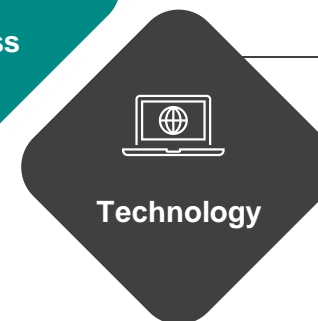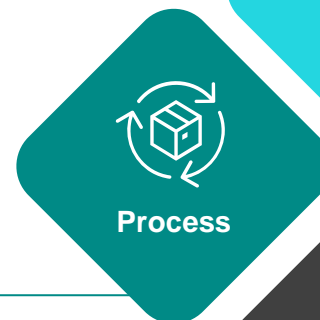
Management Expectations of Job Role

People

Process

Technology

Limited talent pool

‣ Current talent pool is generally limited to those with prior industry experience, many of whom are ex-seafarers with 7 to 10 years of experience.

Lack of career progression opportunities

‣ Perceived limited career opportunities and lack of clarity on viable lateral and vertical career pathways for TS today. Most TS stay within the Technical Department till the end of their career.

Digitalisation at the nascent stage

‣ Increased emphasis on adopting more data-driven approaches to decision-making means intensified and accelerated need for adopting emerging technology and digital solutions. This reduces TS's reliance of making decisions based on past experience or 'gut-feel'.

Today, the TS role is primarily helmed by seafarers with over 10 years of seafaring experience. Moving forward, given the limited pool of local talents, as well as the key thrusts impacting the future of the TS role, **there is a need to re-design the future job role to enhance attractiveness and streamline core work processes using digital solutions.**

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Given future workforce trends and business needs of the pilot companies, the TS role will need to evolve its value proposition to be more of a People Leader, Value Generator and Data-Driven Decision Maker

Technical Problem Solver
Today

- Provides technical guidance and solutions for the on-board crew to <u>solve</u> problems
- Perceived as a cost centre

Vessel Manager
Tomorrow

- Beyond being a technical expert, provides leadership and technical guidance for on-board crew to <u>solve</u> and <u>prevent</u> problems
- Seen as a value generator

	Today	Tomorrow
Vessel Management	I am seen as a Technical Expert	Beyond a Technical Expert, I am also a People Leader who develops and guides my crew
Data Driven	I make decisions based on my past experiences and expertise	I leverage on various digital solutions and analyse data to make better decisions
Sustainability First	I comply with regulations and audits to ensure the environment is not harmed	I adopt a sustainable first approach and mindset towards ship operations and maintenance
Career Value Proposition	I troubleshoot and solve technical problems for my vessels	I am a leader who guides and provides direction holistically for all aspects of my vessels

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Job Redesign Pilot Role #1 Technical Superintendent (TS): 'To-Be' TS role

This JR Case Study features recommendations based on our JR efforts for both PIL and PCL's Technical Superintendent. These TS manage ships across Dry-bulk/Break-bulk, Tanker & Gas and Container Liners.

'To-Be' Job Description

The TS is a vital link between ship and shore management. Beyond contributing technical expertise, they are responsible for holistic vessel management through safe, efficient and cost-effective performance of ships assigned to them, by building a strong culture of high maintenance standards amongst crew members and overseeing day-to-day operations. With the ongoing transition towards vessels being more digital, the TS role has evolved to be more data-driven and analytical in decision making. He/she adopts a sustainable-first mindset in conducting vessel operations and maintenance. With further technology adoption driving productivity gains, the future TS may also manage more ships.

Lead crew management efforts and drive high-performing culture

- Contribute technical expertise to partner content creators to develop training materials
- Empower crew members to provide their preliminary assessment of vessel issues and propose recommendations
- Drive culture of high standards in ship maintenance amongst crew members

Manage activities for seaworthiness and ship's technical issues

- Ensure vessel completes designated maintenance activities in a timely manner, leveraging data analytics tools
- Perform root cause analysis using data analytical tools for breakdowns and defects and follow up with interventions
- Conduct regular monitoring of ships to ensure technical compliance in ship equipment and ship performance via remote surveillance
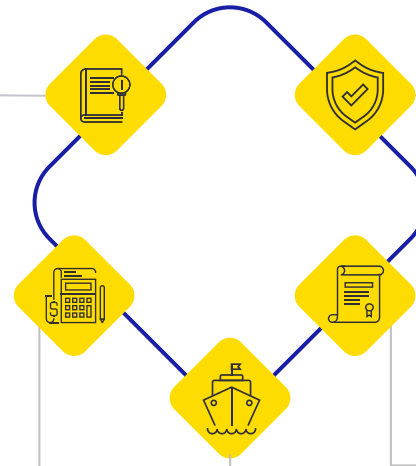
Manages ship budget and expenditure

- Ensure accurate budget forecasting and manage vessel operations within the approved budget
- Review and provide clarifications on budget reports against monthly key performance indicators and targets

Ensures safety of vessel operations

- Work closely with the safety department to ensure safety practices are upheld and compliant throughout the end-to-end operations of vessels

Oversee ship compliance to regulatory requirements and legislation

- Maintain Knowledge Management base and keep updated on prevailing regulations and legislations. This also includes keeping update on all ship-related accidents, major repairs or technical issues that may impact reliability of ship's operations

General Qualifications and Experience

The qualifications expected would be Diploma or Degree holder of a relevant disciplines. They should have knowledge of maintenance systems and technical, procurement and logistics processes.

The TS should have strong leadership and people management skills, communication skills and interest in sustainability related initiatives. Additionally, digital fluency is required.

Preferred qualifications include a COC class 1, with 7-8 years of seafaring experience.

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Holistic job redesign for the TS role covers interventions across People, Process and Technology

Technical Superintendent*

People

Interventions to enhance career opportunities, widen talent pool, future-proof and increase relevance of skillsets to improve talent attraction and retention factors for the TS role

Create a **Skills Map**
Develop **Career Pathways**
Enhance **Assistant TS role**

Process

Interventions aimed at improving work process efficiency, reducing manual effort and providing TS with tools to enable more data-driven decision making in resolving technical vessel issues

Digitalise **daily ship monitoring process**

Streamline **Data Visualisation** platform

Technology

Interventions aimed adopting digital tools to improve the quality of outcome of the ship data reporting process. This alleviates manual effort and reduces human errors when recording/reporting data and will require less of the TS's time to investigate and rectify reports

Adopt **E-Record book** solution

These JR interventions are exercised within the context of the 2 pilot companies, and are based on their specific business needs, scope of operations and stage of maturity; please note that these recommendations only serve to illustrate the JR journey of the pilot companies, and are not meant to be prescriptive across the whole Maritime industry.

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People: Interventions aimed at improving talent attraction and engagement for TS role within pilot companies

People Interventions

Interventions are aimed at enhancing talent attractiveness & retention by boosting **career opportunities**, relevance and **future-proofing of skillsets** and **diversifying talent pool** of incumbents

Time frame	Intervention	Pain-points addressed	Benefits	Relevant Trend addressed
Short term	Map out **vertical and lateral career pathways** for the role	‣ Lack of career progression opportunities	‣ Enhanced career prospects with possibilities of both vertical and lateral movements	‣ Changing career aspirations of the youth ‣ Limited talent pool ‣ Transition towards a Vessel Management Operating Model
	Introduction of a new **Assistant TS role**	‣ Current **talent pool is limited** to only those with prior industry experience	‣ Greater pool of local and diverse talents to take up the TS role	
	Redesign **future accountabilities** for the job role	‣ **Mismatch of expectations of the accountabilities** of the new TS role	‣ Clarity of job scope and responsibility established; specific competencies required for TS role are identified	
Medium term	Review **training needs** and **identify appropriate interventions** to close **skills gap**	‣ **Lack of visibility on training needs** of incumbents	‣ Skills Maps provide a structured avenue to identify training needs in terms of specific competencies required	‣ Transition towards a Vessel Management Operating Model
Long term	Review and **redesign organisation structure** to reinforce **vessel management model**	‣ Organisation structure is currently by functional teams and is **silo-ed in nature**	‣ Accountability for overall vessels to reside with Vessel Manager to allow for decision making and coordination within organisation	

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We also introduced the Assistant Technical Superintendent role to widen the talent inflow possibilities into the TS role…

Assistant Technical Superintendent (ATS) role is a **Technical Superintendent (TS) role with a smaller span of control – they will manage 1 to 2 ships with guidance from Technical Superintendents.** The ATS role will **not** require extensive seafaring experience. Different types of training will be provided to the incoming ATS depending on the experience that they have. The introduction of the ATS role does not preclude individuals being directly appointed to the TS role if they are deemed to have met the requirements of the TS role (i.e. ATS role is not a prerequisite for individuals qualified for TS).

Key considerations for creating the ATS role from business and employee's standpoint

Ease transition from sea-to-shore
Smoother transition into the onshore role with this interim role for:
- Chief Engineers of less than 2 years of experience or;
- Crew at more junior grades

More career opportunities for individuals
Provides opportunity for Technical Assistants or other similar level employees within the organization who aspires to be a TS to **take on an interim role and have their competencies assessed,** with provision of required training for them to step up to the ATS role

Widen talent pool for Technical Superintendent
External hires can also be considered using the minimum qualifications of the new JD

Expected outcomes with the introduction of the ATS role

Greater retention of sea-to-shore employees
With a smaller span of control for individuals that have transited from sea to shore, it would **enable greater retention of employees from this group** as can focus on managing 1 to 2 ships and have guidance from TSs as they embark on their journey in taking on the larger role

Provision of alternative routes for aspiring TSs
Individuals who aspire to become a TS without the typical extensive years of seafaring experience now have an **opportunity to have their competencies assessed to review if they are suitable for the ATS role**, which will eventually lead them to the Technical Superintendent role should they be assessed to have the relevant skills and competencies

Creation of talent pipeline for the TS role
With the alternative talent pool being tapped for the ATS role, a **talent pipeline can be created for the TS role** upon reviewing the competency of the ATS group. The issue of the lack of suitable individuals to fill the TS role can then be addressed

Maritime Workforce Transformation Guidebook

… and multiplied the potential career pathways across the organisation

Within the Fleet Division

Across other Divisions

Vessel ICT	Technical	Health, Safety, Environment and Quality Assurance	Crewing	Commercial	Trade Management	Operations and Procurement

Head of Fleet

Head, Vessel ICT	General Manager, Technical	General Manager, HSEQA	General Manager, Crewing	Senior Manager, Commercial	General Manager, Trade Management	General Manager, Ops & Procurement
Manager, Vessel ICT	Senior Technical Superintendent	Manager, HSEQA	Manager, Crewing	Manager, Commercial	Manager, Trade Management	Manager, Ops & Procurement
Asst. Manager, Vessel ICT	Technical Superintendent	Superintendent, HSEQA	Assistant Manager, Crewing	Assistant Manager, Commercial	Assistant Manager, Trade Management	Assistant Manager, Ops & Procurement
Senior Executive, Vessel ICT	Asst. Technical Superintendent	Senior Executive, HSEQA	Senior Executive, Crewing	Senior Analyst, Commercial	Senior Executive, Trade Management	Senior Executive, Ops & Procurement
		Executive, HSEQA	Executive, Crewing	Analyst, Commercial		

Seafaring roles

Notes

‣ Career pathways are adapted from company-specific career maps developed for PCL and PIL.

‣ The possible movements within and across divisions was based on skills required for each job role based on the <u>Skills Framework for Sea Transport</u> and validated further with the pilot companies.

‣ Illustrated career pathways are curated by job functions. Companies referencing this mapping for their own use should further take into account skillsets of their incumbent employees and whether they have additional relevant experience, when designing career mobility opportunities.

Legend

↑ Denotes vertical movement up the career pathway

→ Denotes lateral movement between job roles in a single direction

↔ Denotes bi-directional lateral movements between job roles

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Process: Interventions aimed at improving TS productivity with concrete time and effort savings
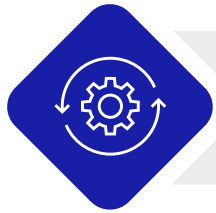
Process Interventions

Interventions are aimed at improving **process efficiency** and **reducing manual effort** to **improve the quality of life** of the TS role, which in turn increases the role's attractiveness

Time frame	Intervention	Pain-points addressed	Benefits	Relevant Trend addressed
Short term	‣ **Digitalise daily ship monitoring process**	‣ **High manual effort** and **time spent** by TS to **rectify errors** found in daily ship reports ‣ TS resorting to **making decisions based on individual experience instead of data insights**	‣ Significant reduction in manual effort and rate of human errors in daily ship reports ‣ Reduction in time required by TS to investigate and rectify report errors ‣ Streamlining of data visualization tool will enable the TS to make data-driven decisions more easily instead of relying on individual experience	‣ Digitalisation of processes ‣ Increased connectivity
Long term	‣ Drive initiatives to assess and implement **potential sustainable solutions** such as **Carbon Capture technology**	‣ **More sustainability initiatives need to be adopted to comply with increasingly complex regulations**	‣ Accelerates the progress towards reaching zero emissions goal ‣ Increased efficiency in running of the vessel due to more sustainability efforts in effect	‣ Emerging technologies ‣ Emphasis on Sustainability

Maritime Workforce Transformation Guidebook

Technology: Interventions aimed at automating processes, leveraging data insights for better decision making
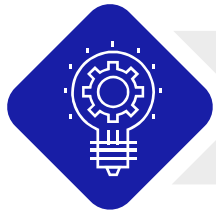
Technology Interventions

Interventions are aimed at augmenting digital tools into core work processes to **enhance efficiency, quality of output, future-proofing** and bringing **more relevance of the TS's skillsets** with the trends of the Future of Work

Time frame	Intervention	Pain-points addressed	Benefits	Relevant Trend addressed
Short term	‣ **Adoption** of **E-record book** for **ship data reporting**	‣ **High manual effort** and **time spent by TS to rectify errors**	‣ Reduction in effort by TS in rectifying human errors and solution can flag out anomalies	‣ Digitalisation of processes
Medium term	‣ Leverage **Internet of Things** (IoT) and **Artificial Intelligence** (AI) to **manage and monitor ship performance**	‣ Currently **vessel tracking** is done through **physical inspection** ‣ TS **makes decisions** based on **gut feel**	‣ Enables real time tracking of fuel consumption and vessel performance aiding data driven decision making	‣ Digitalisation of processes ‣ Requirement for sea experience ‣ Emerging technologies ‣ Increased connectivity
Long term	‣ Explore use of **video analytics** solutions to **augment ship monitoring and surveillance**	‣ TS currently does not have real-time visibility on ongoing vessel activities, especially those relating to the crew	‣ Provides TS with real time visibility of crew activities and can flag out anomalies in safety issues	

Maritime Workforce Transformation Guidebook

TS job role will continue to evolve over the next 2 years with interventions being progressively implemented, and job holders leveling up in emerging skills and competencies

Legend — Existing Work Tasks
— **Emerging Work Tasks**

Current Job Role*	Evolution of the Job Role* possible within the next 6 months	Evolution of the Job Role* possible within the next 6-24 months
Oversee crew management matters	**Lead** crew management matters by **empowering them to provide preliminary assessment of vessel issues**	Lead crew management matters, **driving culture of high standards in ship maintenance amongst crew members**
Participate in assigned projects as needed and contribute to continuous improvement initiatives within the department	**Lead continuous improvement initiatives** within the department	**Lead and work with relevant stakeholders to identify potential opportunities to implement sustainability/technology projects by assessing technical, commercial, regulatory and financial feasibility**
Manage ship budget and expenditure in accordance with established requirements	Manage ship budget and expenditure **using digital tools such as data analytics, machine learning and RPA to optimize costs and meet company's policies**	
Conduct regular onboard ship inspections and rely on ship crew's reporting to understand vessel performance and any ongoing technical issues	Leverage **IOT sensors** to **monitor vessel performance remotely in real-time to make decisions and solve problems accordingly**	Leverage suite of **digital solutions,** such as **video analytics, AI and Machine Learning to monitor vessel remotely** and **perform root-cause problem solving.** On-board ship inspections **to build relationships with crew**
Keep up-to-date on latest and upcoming regulatory compliance requirements, all ship-related incidents, accidents or technical issues that may impact reliability of the ship's operations		Keep up-to-date on latest and upcoming regulatory compliance requirements, **especially for those relating to sustainability**. Leverage and maintain **Knowledge Management base** to achieve this.

List of work tasks highlighted is not exhaustive

Maritime Workforce Transformation Guidebook

Key to success of job redesign is in ensuring an optimal change experience for TS through a holistic suite of change interventions

Change Story

▸ The **future Technical Superintendent is part of the business**, and will play a more impactful role in leading and developing their teams towards success

▸ Shift in perception from being a **"Cost-Center"** towards being a **"Value-Generator"**

Role Model

▸ Assign high-potential TSs to take on cross-functional projects and **profile them to showcase benefits of career movements**

Purpose

Personnel
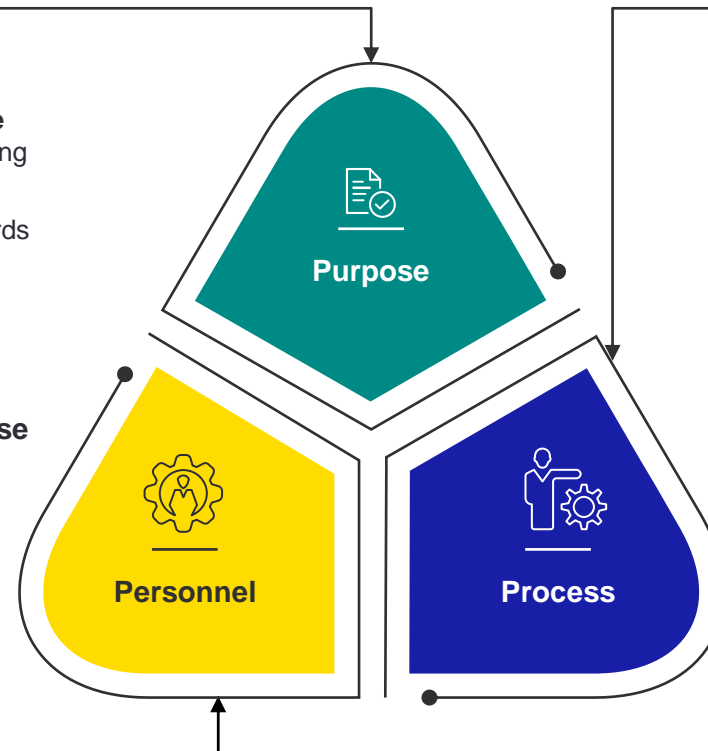
Process

Systems and Processes

▸ **Redesign organisation reporting** lines to facilitate **greater collaboration, communication** and **align processes** between Technical Department and other related teams such as Safety, Crewing and Procurement

Refine KPIs:

▸ To operationalize Vessel Management operating model, there is a need to **better measure TS's leadership abilities**

▸ Start to measure **acquisition of new skillsets** as part of talent management

Stakeholder Engagement

▸ Map out **interests and concerns of different stakeholders**, especially those of the ship crews, and identify ways to manage their perception of TS who may not have seafaring experiences

Developing Skills and Capabilities

▸ Focus on **building individual capabilities** and **readiness** to operationalise both the redesigned TS role, and the newly created Assistant TS role (e.g., conducting **learning needs analysis** and **establishing the training plans** for the 2 roles to enable incumbents to acquire the right skillsets to perform these roles)

Maritime Workforce Transformation Guidebook

Hear from Technical Superintendents in our pilot companies…

Challenges faced… before becoming a TS, I **did not have any prior seafaring experience**, but thankfully, I had worked on **other shore based roles** and were **exposed to skills-based training including projects, that gave me transferrable skills**. Even so, it was not easy at the start to **build rapport with the crew for the vessels** which I was responsible for. Beyond technical skills, **people management skills were integral to building trust and camaraderie** between the crew and myself.

I will benefit from… the introduction of the **Assistant Technical Superintendent** role. I'm glad that others will have an opportunity **to ease more gradually into becoming a full-fledged TS**, where I will be able to impart my knowledge and guide them in growing into the role. Hopefully more interested individuals can join our team with this opportunity!

I am looking forward to… having a **clear pathway for both lateral and vertical movements mapped out for us within PCL**, and the additional skills and knowledge of which I can attain within this system. This will come in handy when I have **conversations with my supervisors on my career development.**

Kumaresh
Technical Superintendent
Pacific Carriers Limited

Challenges faced… as I manage multiple ships, **the daily ship monitoring process is a critical part of my job role** to understand the condition and location of the vessels under my care. This **process is currently quite manual** and I have to **spend considerable time daily to review the different spreadsheets** sent over by the Chief Engineers for each of the vessels.

I will benefit from… the **digitalisation of the ship monitoring process**. My team of Vessel Managers worked with EY to **create a consolidated dashboard view for each of my vessels** which saves me a lot of manual effort and time. Now, I am able to s**pend more time engaging crew members** and **providing guidance in upholding maintenance standards**, and **honing my people management skills**.

I am looking forward to… using more of my **data and digital skills in my role as a Vessel Manager**. My operating environment is also becoming increasingly complex with the **increased emphasis on sustainability**. I'm excited to continue building up my skills and competencies in these areas so that I can contribute even more as a Vessel Manager.

Billy
Vessel Manager (Technical Superintendent)
Pacific International Lines

Maritime Workforce Transformation Guidebook

Vessel Operations

Job Redesign Pilot Role #2 Vessel Operations (VO): The current VO role

This JR Case Study features recommendations based on our JR efforts for PCL's Vessel Operations. These VOs manage the voyages for the Tanker & Gas business unit on a predominantly spot charter basis

Current Job Description

The VO acts as the organisation's primary link with the ship's crew on matters relating to vessel movements and cargo operations. They liaise with the ship master to plan and execute the voyage and port/cargo operations. They also liaise with regulatory bodies, terminal operators and port service providers, such as agents and bunker suppliers, maintains customer contact, and responds to problems that may arise from the voyage.

Plan and execute shipping operations

- Coordinate shipping requirements under voyage charters, time charters and contracts of affreightment
- Coordinate day-to-day operational activities and liaise with charterers, brokers, port agents and/or masters to ensure safe and efficient voyage operation
- Plan voyages to optimise speed, cost reduction and ensure overall performance are in line with expectations
- Liaise with insurance on voyage related matters for all necessary coverage

Plan and execute cargo/port operations

- Work with chartering and charters on voyage commencement to provide insights and reduce downstream issues that might occur
- Coordinate day-to-day operational activities and liaise with charters, brokers, port agents and/or masters to ensure safe and efficient voyage operations
- Liaise with insurance on voyage related matters for all necessary coverage
- Act as a member of the Emergency Response Team as required

General Qualifications/ Background

Conventionally, the VO role requires at least 1 to 5 years of sailing experience or equivalent years of experience in the relevant operations. This makes it difficult for fresh graduates to apply for this role, and for the companies to find suitable candidates for this role given the limited talent pool. As compared to the commercial side, the operations role is perceived to be less attractive.

Monitor vessel performance and ensure compliance

- Ensure compliance to company standard operating procedures including handling of bill of Landings, Letters of Protest and Letters of Indemnity.
- Ensure all voyages are conducted with safety of crew, vessel and protection of environment
- Ensure vessel submit noon reports properly for review of performance against charter party requirements and seek remedial actions as require and guide Master accordingly
- Monitor vessels' idle time and slow steaming requirements whenever applicable
- Monitor Vessel's performance and ensure it is in line with conditions set out in the Charter Party and report to Technical, Commercial, and Senior Management

Maritime Workforce Transformation Guidebook

The current VO role is being impacted by **external trends** and **internal factors**, which pose challenges and opportunities in talent attraction and engagement amidst a highly competitive landscape

External Trends

Changing career aspirations of talent

Emerging technologies

Emphasis on Sustainability

Internal Factors

Transition towards a more Profit and Loss (P&L) mindset

‣ As the business evolves, greater emphasis is placed on having a more profit-conscious mindset to complement their current operational expertise and create value for clients, while maintaining operational excellence

Increased focus on Commercial

‣ To make the VO role more attractive and position their role upstream in the value chain, VOs would need to be equipped with Commercial knowledge.

Desired culture of proactiveness

‣ With all the changes and shifts happening, there is a need to create a culture of proactiveness in VOs to ensure they have the right mindset in adapting to changes and having the willingness to learn

Bureaucratic and manual process

‣ Processes and steps taken to complete daily tasks tends to be tedious due to multiple approvals required before actions can be implemented
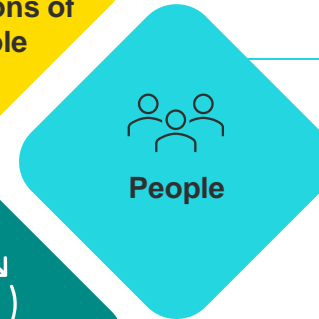
Management Expectations of Job Role

People

Process

Technology

Limited talent pool

‣ Current talent pool is generally limited to those with prior industry experience, mainly those with previous seafaring experience on the deck side

Lack of career progression opportunities

‣ There is limited career opportunities and lack of clarity on viable lateral and vertical career pathways for VOs today. Most VOs either remain in their roles or aspire for a move to the Commercial side

Nascent technological practices implemented

‣ Further technological implementations has to be done in order to enable VOs to make data-driven decisions and enhance efficiency

The current job role of the VO is largely operational and administrative in nature. With the key thrusts impacting the future VO job role, particularly in increased operational efficiency with digitalization, **there is potential to re-design and position the role with a more strategic focus that would complement their current operational expertise.**

Maritime Workforce Transformation Guidebook

Given future workforce trends and key business needs, the value proposition of the VO role will need to be refreshed to remain relevant and competitive

Vessel Operations Today
- Operational in nature and focused on minimising costs
- Cost-control

Voyage Management Tomorrow
- Strategic in nature with a focus on operational excellence
- Sustainability-focused
- Profit-driven

	Vessel Operations Today	Voyage Management Tomorrow
Business Mindset	Operational mindset in ensuring vessel operations run smoothly	Business mindset in combining operational excellence with strategic and design thinking
Data Driven	I make decisions based on my past experience and expertise	I leverage digital solutions and analyse data to make better decisions
Sustainability First	I ensure my vessel operations comply with rules and regulations	I adopt a sustainability first approach and mindset to voyage management
Career Value Proposition	I drive operational excellence for my vessels	I partner the business to drive strategic outcomes and build relationships with key clients

Job Redesign Pilot Role #2 Vessel Operations (VO): 'To-Be' VO role

This JR Case Study features recommendations based on our JR efforts for PCL's Vessel Operations. These VOs manage the voyages for the Tanker & Gas business unit on a predominantly spot charter basis

To-Be Job Description

The Executive/ Senior Executive, Operations acts as the organisation's primary link with the ship's crew on matters relating to vessel movements and cargo operations. They liaise with the ship master to plan and execute the voyage and port/cargo operations. With their operational expertise, they are also expected to play a strategic role in commercial discussions with clients and maintaining a long-term value relationship with them

Plan and execute shipping operations

- ‣ Coordinate shipping requirements under voyage charters, time charters and contracts of affreightment
- ‣ Oversee voyages to optimise speed, cost reduction and ensure overall performance are in line with expectations, from a business and sustainability perspective, with the use of data
- ‣ Work with chartering and charters on voyage commencement to provide insights and reduce downstream issues that might occur
- ‣ Prepare carbon emission data for specific operations process for stakeholder

Plan and execute cargo/port operations

- ‣ Review and develop cargo/stowage plan to prevent co-mingling and blending of cargo, and to optimise capacity utilization
- ‣ Appoint and liaise with port agents to ensure smooth and quick turnaround with use of vessel data
- ‣ Liaise with port agents for ship husbandry matters such as, pilotage/towage, bunkering, ship supplies, crew changes, tank cleaning and de-slopping
- ‣ Prepare and send bills of lading and other cargo documents to relevant authorities, terminal operators and consignees

To-Be Qualifications and Experience

The VO role to be open to fresh graduates with relevant diploma/degree in Maritime studies and/or operations-related.

The VO is required to have strong communication and analytical skills to problem solve and build relationships with clients.

Preferred qualifications include 1 to 5 years of sailing experience or equivalent years of experience in Gas/Tanker operations.

Monitor vessel performance and ensure compliance

- ‣ Ensure compliance to company standard operating procedures including handling of bill of Landings, Letters of Protest and Letters of Indemnity.
- ‣ Ensure all voyages are conducted with safety of crew, vessel and protection of environment.
- ‣ Leverage digital solution to monitor vessel's performance and ensure it is in line with conditions set out in the Charter Party and report to Technical, Commercial, and Senior Management with data driven insights.
- ‣ Oversee Vessel Operations using relevant software and produce routine reports as required.

Maritime Workforce Transformation Guidebook

Holistic job redesign for the VO role covers interventions across People, Process and Technology

Vessel Operations*

People
Interventions to future-proof job role, enhance career opportunities and increase relevance of skillsets of incumbents with the aim of improving talent attraction and retention factors for the VO role

Redesign **skills map** for VO

Develop **career pathways** for VO

Process
Interventions aimed at improving the acceleration of knowledge transfer process, enhance the onboarding process and accelerate learning for newcomers

Create **knowledge bank** for VO

Standardise **knowledge management process** for VO

Technology
Interventions aimed at enhancing the search experience, augmenting digital tools into core work processes to enhance quality of output

Implement **cognitive search plug-ins** for knowledge bank

*These JR interventions are exercised within the context of the PCL, and are based on their specific business needs, scope of operations and stage of maturity; please note that these recommendations only serve to illustrate the JR journey of the pilot companies, and are not prescriptive across the whole Maritime industry.

Maritime Workforce Transformation Guidebook

People: Interventions aimed at improving talent attraction and engagement for VO role within pilot companies

People Interventions

Interventions are aimed at enhancing talent attraction & retention by **boosting career opportunities**, **future-proofing incumbents' skillsets** and **diversifying talent pool of candidates** to hire from

Time frame	Intervention	Pain-points addressed	Benefits	Relevant Trend addressed
Short term	Map out **vertical** and **lateral career pathways** for the role	‣ Lack of career progression opportunities and lack of visibility on viable career pathways	‣ Enhanced career prospects with possibilities of both vertical and lateral movements	‣ Changing career aspirations of the youth ‣ Limited talent pool
	Redesign **future accountabilities** for the job role	‣ Current accountabilities are operational and administrative in nature	‣ Positioning of job role higher upstream in the value chain for better career prospects to target talent pool	
Medium term	Review **training needs** and **identify appropriate interventions** to close **skills gap**	‣ As the job evolves, there are various skills gap that have been identified which needs to be addressed	‣ Highly skilled and competent VOs equipped with required skills to future proof their jobs	
Long term	Refresh **Employee and Career Value Proposition** of job role	‣ Shortage of candidates for Operations Track ‣ Ease ship to shore transition	‣ Improve attractiveness of the Operations track by promoting new career pathways, skills, digitalisation and sustainability	

Maritime Workforce Transformation Guidebook

Career pathways were developed to show potential movements within and across divisions within the organisation

Within the Fleet Division

Commercial	Operations

General Manager

Senior Manager

| Manager, Commercial | ⟷ | Manager, Operations |

| Senior Analyst, Commercial | ⟷ | Senior Executive, Operations |

| Analyst, Commercial | ⟷ | Executive, Operations |

Seafaring roles

Across other Divisions

Technical	Training	HSEQA	Crewing

| General Manager, Technical | General Manager, Training | General Manager, HSEQA | General Manager, Crewing |

Senior Manager, Technical

| Senior Technical Superintendent | Manager, Training | Manager, HSEQA | Manager, Crewing |

| Assistant Technical Superintendent | Senior Executive, Training | Senior Executive, HSEQA | Senior Executive, Crewing |

| | Executive, Training | Executive, HSEQA | Executive, Crewing |

Notes

- Career pathways are adapted from company-specific career maps developed for PCL and PIL.
- The possible movements within and across divisions was based on skills required for each job role based on the Skills Framework for Sea Transport and validated further with the pilot companies.
- Illustrated career pathways are curated by job functions. Companies referencing this mapping for their own use should further take into account skillsets of their incumbent employees and whether they have additional relevant experience, when designing career mobility opportunities.

Legend

↑	Denotes vertical movement up the career pathway
→	Denotes lateral movement between job roles in a single direction
⟷	Denotes bi-directional lateral movements between job roles

Maritime Workforce Transformation Guidebook

Process: Interventions aimed at improving knowledge retention and VO productivity, with time savings
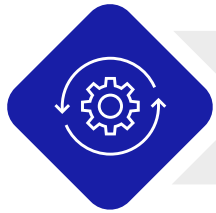
Process Interventions

Interventions are aimed at **improving process efficiency** and **reducing manual effort** to **improve the quality of life** of the VO role, which in turn increases the role's attractiveness

Time frame	Intervention	Pain-points addressed	Benefits	Relevant Trend addressed
Short term	Creation of **knowledge bank** and **standardised knowledge sharing process** to **drive culture of self-directed learning**	‣ Reliance on experienced VOs for problem solving ‣ No repository for VOs to refer to when they encounter vessel issues	‣ Instills a culture of proactivity and promotes critical thinking within team ‣ Greater knowledge sharing and transfer across team and divisions	‣ Transition towards a more P&L mindset ‣ Digitalisation of processes ‣ Emerging technologies
	Redesign and **digitalise ship monitoring process** to **ensure accurate and real-time information**	‣ Ship monitoring can be done in real-time, and VOs can act on issues immediately	‣ Streamlined process for ship monitoring, resulting in time savings and shorter response time to rectify potential issues	
Medium term	Accelerate **training process by utilising VR/AR technology** to onboard operations team for areas such as **understanding the ship's cargo hold**	‣ Given the wide range of vessels, VOs might not have the relevant understanding of every vessel. There may also be safety risks for Vos to board vessels to have training conducted	‣ Knowledge gap will be closed in a safe environment, especially for VOs without seafaring experience	

Maritime Workforce Transformation Guidebook

Technology: Interventions aimed at leveraging technology and data insights to optimise decision making
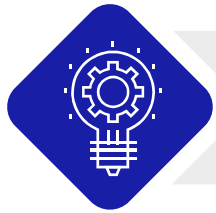
Technology Interventions

Interventions are aimed at augmenting digital tools into core work processes to **enhance efficiency, quality of output, future-proofing** and bringing **more relevance of the VO's skillsets** with the trends of the Future of Work

Time frame	Intervention	Pain-points addressed	Benefits	Relevant Trend addressed
Medium term	Enhance existing information search experience by **leveraging machine learning** technology	‣ Search results are not as accurate as the users would like it to be, and users would require more time to review the filtered information with the current search function	‣ Greater search experience with more accurate information provided	
Long term	**Implement Internet of Things** (IoT) to ensure that **vessel sails smoothly** throughout the voyage and **performing as per charter party**	‣ Technical/ operational issues are not able to be reported in real-time, which causes downstream issues to the voyage	‣ Issues can be flagged out in real-time and data-driven decisions can be made	‣ Digitalisation of process ‣ Increased connectivity ‣ Emerging technologies
	Drive **Artificial Intelligence** (AI) initiatives to ensure **optimisation of total fuel oil consumption** for every voyage with heading and speed guidance	‣ Challenges in complying with upcoming sustainability regulations, especially for those relating to fuel consumption	‣ By leveraging both IoT sensors and AI, the optimal fuel consumption can be determined to drive the sustainability agenda	

Maritime Workforce Transformation Guidebook

VO job role will continue to evolve over the next 2 years with interventions being progressively implemented, and job holders leveling up in emerging skills and competencies

Legend — Existing Work Tasks
— Emerging Work Tasks

Current Job Role*	Evolution of the Job Role* possible within the next 6 months	Evolution of the Job Role* possible within the next 6-24 months
VOs today are mostly focused on downstream operational activities to support client's request	**Play an active role upstream in contractual discussions with both client and Commercial team by leveraging their operational expertise and experience**	**Build and maintain relationships with client throughout their entire voyage management journey and identify opportunities for further business developments**
Participate in assigned projects as needed and contribute to continuous improvement initiatives within the department	**Lead continuous improvement initiatives within the department**	**Lead and work with relevant stakeholders to identify potential opportunities to implement sustainability and technology projects by assessing technical, commercial, regulatory, operations and financial feasibility**
Minimise operational cost and ensure overall performance are in line with expectations	**Plan voyages to optimise speed**, cost reduction and ensure overall performance are in line with expectations	**Leverage digital solutions, such as AI, to oversee** voyages to optimise speed, cost reduction and ensure overall performance are in line with expectations, **from a business and sustainability perspective**
Work closely with all members of the Oil/Gas Fleet, Ship and Shore, to enhance operation performance	**Collaborate** with all members of the Oil/Gas Fleet, Ship and Shore, to enhance operation performance	**Leverage digital solutions to collaborate** with all members of the Oil/Gas Fleet, Ship and Shore to enhance operational performance
Heavy reliance on vessels' reports and communications with crew for monitoring vessel performance and ensuring compliance	**Leverage digital solutions, such as IOT sensors, data visualization dashboards, to** monitor vessel performance **in real time and ensure adherence to Charter Party conditions**	

List of work tasks highlighted is not exhaustive, additional tasks are within actual job description

Maritime Workforce Transformation Guidebook

Key to success of job redesign is in ensuring an optimal change experience for VOs through a holistic suite of change interventions

Change Story

► The **future Vessel Operations is part of the business,** and they will play a critical role in the business growth with their operational expertise, which is valued by clients

Role Model

► To select individuals who **exemplify the qualities highlighted** within the change story and have experience in both operations and commercial who inspire the team to further improve their capabilities

Purpose

Personnel
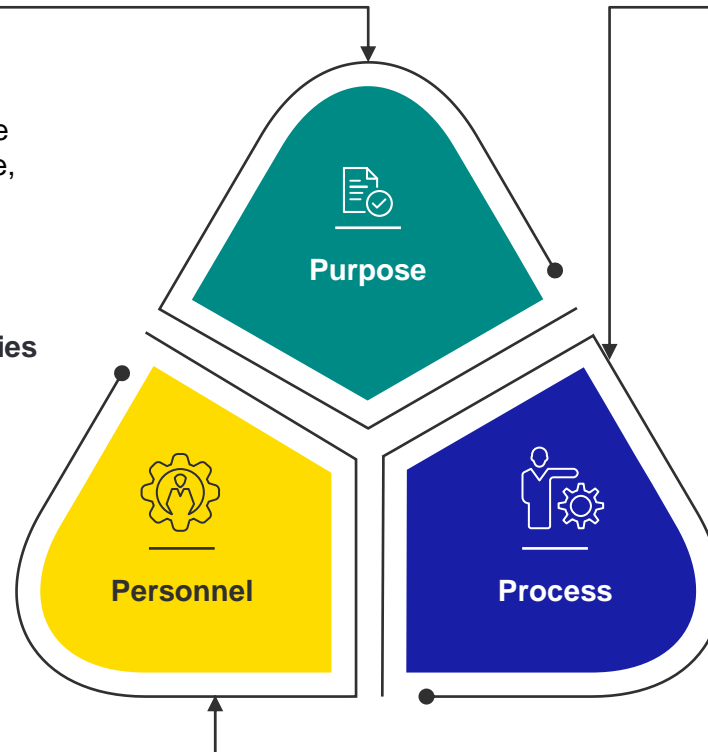
Process

Systems and Processes

► Leverage and **scale current knowledge management process** to **accelerate onboarding and training of new VOs** across both commercial and operations

► Organise monthly sharings on **emerging trends and topics, such as sustainability and digitalization**

Update KPIS

► Review and refine KPIs to enable commercial mindset, starting with **measuring the P&L components for individual voyages**

Developing skills and capabilities

► Conduct **learning needs analysis** regularly to **identify skills gaps** for VOs and follow up with **appropriate recommendations to up-skill and re-skill incumbents**. The following will be critical in preparing themselves for the redesigned role:

  ► **Commercial knowledge:** Foundational chartering-related knowledge can allow VOs to better contextualise meetings and discussions with the commercial team

  ► **Accounting and finance:** For VOs to have a better understanding of the business language, which includes having deeper understanding of finance and accounting, including but not limited to, cost related components and how profits are derived

  ► **Negotiations and communication skills:** Beyond operational competencies, VO will need to communicate and present better. This would value add in client discussions, especially in providing operational solutions, which can help to instill confidence for clients

Maritime Workforce Transformation Guidebook

Hear from our pilot companies…

Challenges faced… contract details are typically agreed between the Commercial team and charterers, which is challenging for certain voyages when there are **deviations that are not pre-agreed**. I end up **regularly having to contact many parties to mitigate the situation**.

I will benefit from… the redesigned job role which places **more emphasis on playing an active role upstream in contractual discussions**. I'm able **to value add through my operational expertise** in commercial negotiations between PCL and charterers. I believe this will help me further hone my **business acumen from a P&L perspective**.

I am looking forward to… the **possibility of rotations across the different divisions** for those in my team, such as with the Technical Department, on top of the common options like moving to the Commercial team or staying within the operational track. These rotations **will be good exposure for us to learn new skills** while **contributing our experience to value-add to other teams.**

Johnson,
Manager (Operations)
Pacific Carriers Limited

Challenges faced… as one of the more experienced members of the team, **I spend quite a lot of time explaining to less experienced teammates how to resolve vessel issues**. I found myself **teaching the same thing repeatedly to different teammates** because they don't have a common reference to self-help.

I will benefit from … the **creation of the centralized knowledge management bank.** My team worked with EY to **develop and consolidate our resources in the knowledge bank**. It has **helped me save a substantial amount of time**. More importantly, my team now has a **more proactive mindset**, where they are able to tap on the knowledge bank to self-help and **come up with appropriate solutions on their own**!

I am looking forward to… collaborating with other team members across my company **on establishing knowledge management resources for their own teams**, especially for **cross-functional issues such as sustainability.**

Neo,
Assistant Manager (Operations)
Pacific Carriers Limited

Maritime Workforce Transformation Guidebook

The way ahead for both job roles

To scale up the project post-pilot, an implementation roadmap was co-created together with the companies

Key Deliverable – Implementation Roadmap

Short-term (0 – 6 months)	Medium-term (6 – 12 months)	Long-term (12 – 24 months)

Technical Superintendent

Short-term (0 – 6 months)
- Map out **vertical** and **lateral career pathways** for the role
- Redesign **future accountabilities** for the job role
- Creation of a new **Assistant TS role** to enhance accessibility for local and diverse talents
- Leveraged data analytics and visualisation platform to **streamline daily ship monitoring process**
- Adoption of **E-Record books** to **digitalise the daily ship data reporting process**

Medium-term (6 – 12 months)
- Review **training needs** and **identify appropriate interventions** to close **skills gap**
- Leverage **Internet of Things** (IoT) and **Artificial Intelligence** (AI) to **manage and monitor ship performance in real time**
- Review potential of emerging technologies, such as AR/VR to augment training processes and reduce health and safety risks from going on board ships

Long-term (12 – 24 months)
- Review and **redesign organisation structure** to reinforce **vessel management model**
- Explore use of **video analytics** solutions to **augment ship monitoring and surveillance**
- Drive initiatives to assess and implement **potential sustainable solutions** such as **carbon capture technology**

Vessel Operations

Short-term (0 – 6 months)
- Map out **vertical** and **lateral career pathways** for role
- Redesign **future accountabilities** for the job role
- Creation of **knowledge bank** and standardised process to **drive culture of self-directed learning**
- Redesign and **digitalise ship monitoring process** to **ensure accurate and real-time information** is fed onto the existing dashboard

Medium-term (6 – 12 months)
- Review **training needs** and **identify appropriate interventions** to close **skills gap**
- Accelerate **training process by utilising Virtual/Augmented reality technology** to onboard operations team for areas such as **understanding the ship's cargo hold**
- Utilise **data analytics and visualisation** tools to aid in the **ship monitoring process**
- Review and enhance existing information search experience by **leveraging on machine learning** to enhance search experience

Long-term (12 – 24 months)
- Refresh **Employee and Career Value Proposition** of job role
- **Implement Internet of Things** (IoT) to ensure that **vessel sails smoothly** throughout the voyage and **performing as per charter party**
- Drive **Artificial Intelligence** (AI) initiatives to ensure **optimisation of total fuel oil consumption** for every voyage with heading and speed guidance

Maritime Workforce Transformation Guidebook

Hear from our pilot companies themselves …

A key aim was to redesign the Vessel Operations role in a way that **emphasised and inculcated the importance of having a business mindset within my team**, beyond ensuring efficient operations. On top of this, I'm heartened that this job redesign project has helped to **broaden my team's skillsets** and **widen their career opportunities** in future.

We also took the opportunity to thoroughly revisit our current processes to be more efficient, and I am confident that we will continue to **build on our knowledge bank** and strengthen our capabilities.

Rohit Radhakrishnan
General Manager,
Tanker and Gas
Pacific Carriers Limited

I was passionate about being part of this project. With the global trends buffeting our maritime sector, it is a **great opportunity to redesign the future of work for Technical Superintendents**.

In particular, the **Assistant Technical Superintendent role** will be instrumental to PCL's ability to **build up its talent pipeline for Technical Superintendents from a wider talent pool**. We look forward to more talent taking up the challenge to join us in the maritime sector.

Captain Lee Chee Seong
Divisional Director, Fleet Management
Pacific Carriers Limited

The Vessel Manager (Technical Superintendent) role is very important to us, and it is **critical that quality talent are attracted and retained in this role**. With the job redesign efforts, I can see my Vessel Managers **benefiting from concrete enhancements to their daily tasks**.

I'm also glad we are **future-proofing the role now**, by emphasising **emerging skills and competencies**. I'm confident that this will also make the role more attractive to talents looking to make their mark in the maritime sector.

Goh Chung Hun
General Manager, Fleet
Pacific International Lines

Maritime Workforce Transformation Guidebook

3 key takeaways from the pilot, for companies to accelerate their transformation and growth

	Start with a **business case**	Scope cases to **pilot** with scale & agility	Adopt a **human-centric** approach
Why	‣ Sponsorship of business leader is critical for any transformation that involves change, such as Job Redesign, to **build momentum** and **get buy-in** ‣ Critical to speak the **business language** and **quantify problems** to get leaders' attention	‣ Many companies are **overwhelmed by the number of changes** required for a successful transformation ‣ This causes **inertia** as employees are typically **unreceptive to major changes** and tend to stick to the status quo	‣ Transformation with human-centric approach are **2.6x** times more likely to report successful outcomes ‣ **79%** of employees reported positive emotions after a successful transformation, which was 50% higher than before, *according to an Oxford – EY study*
What	‣ Understand the **business direction and strategy** ‣ Identify operational challenges **and link to quantifiable metrics** before exploring digital solutions (not 'digital for the sake of digital') ‣ Ensure there is a **business purpose** – either as **source of revenue** or an **element in a business strategy**	‣ Think big, but start small and act fast ‣ Leverage small wins from **piloting projects to build momentum** ‣ Maintain momentum by scaling across the organisation and different job roles ‣ Don't be afraid to stop underperforming projects	‣ Design interventions with employees in mind. This means **understanding their challenges** and **knowing what they care about** ‣ Facilitate **personable** and **authentic** interactions ‣ Listen **proactively** to feedback and suggestions ‣ Actively manage workloads and stress levels
How	‣ Start with understanding where the business is moving towards (strategy and customer base etc) ‣ Using the People - Process - Technology (PPT) framework, identify the **pain points and challenges** that incumbents are currently facing ‣ Quantify these pain points and **link them to the business outcomes** the company hopes to achieve ‣ This need not be limited to financial outcomes but putting the **revenue or cost impact** will be highly effective in **gaining business attention**	‣ Understand the **big picture and the vision** of how the job role will evolve, in line with current trends and expected opportunities in the market ‣ **Scope use cases** through identifying business problems and challenges ‣ **Prioritise use cases** based on identified metrics (such as time required and/or complexity) ‣ **Gather stakeholders together** to embark on change by forming **agile teams** ‣ Iterate and refine continuously based on feedback	‣ **Lead**: Emphasise on a common "We" approach ‣ **Inspire**: Create a vision that everyone can believe in and communicate concrete benefits from changes ‣ **Collaborate**: Co-create new workplace behaviours ‣ **Care**: Understand and address employee's concerns in an emotionally supportive and constructive way ‣ **Empower**: Foster a culture of experimentation and create a mindset of fail fast to prepare for change ‣ **Build**: Recognise the impact of digitalisation and provide the right support to foster a digital mindset

Maritime Workforce Transformation Guidebook

Beyond the pilot's learnings, companies can also curate a clear career proposition with hybrid sea-to-shore career pathways customised to employee's lifecycle needs

Illustrative

Early career – First 5 years

Young, energetic, ambitious

Open to opportunities and willing to take risks

- Tap on **youthful enthusiasm** and **sense of adventurous spirit** by providing seafaring contracts to build their foundation of a fulfilling Maritime career
- Space out seafaring contracts and **curate cross-functional projects**, such as those relating to sustainability, to **socialize seafarers to on-shore roles**
- Start to **identify suitable on-shore job opportunities** for seafarers as they transition into their mid-career stage
- Provide **access to mentorship** and **sponsorship for higher education opportunities**

Mid career – Next 15 years

Focus on building a family

Prefers stability and work-life balance

- As employees start to have family commitments, **transition them to suitable on-shore job opportunities** based on 1) their seafaring experience and 2) past on-shore projects. This helps strengthen talent retention within your company
- Create **flexible shorter-term contracts** that will enable them to **embark on voyages regularly to maintain skills currency**
- Continue to hone their **people management** and **communications skills** to prepare them for leadership roles
- Re-imagine **HR policies and processes** such as rewards and performance management, to ensure that employees are able to thrive

Late career – Following 20 years

Wealth of experience and technical know-how

Enjoys mentoring and paying it forward

- Depending on individual career aspirations and business needs, employees can either **continue their on-shore roles** or **return to a seafaring career** in their late career stage
- This can be in either **specialist roles (individual contributor)** or via a **management track**
- They can also stay on this **hybrid career pathway**, alternating between on-shore projects and seafaring voyages as required by the business
- Leverage their hybrid career experience to **guide and mentor the new batch of employees**

03

Self-help guides

Suggested organisation use of the self-help guide and an introduction to the frameworks used

Framework used for the self-help guides

Discover
- ‣ Serves as an **introduction to the guides** and its **intended outcomes**

Diagnose
- ‣ Understand and analyse the **root cause of existing problems**

Design
- ‣ Design interventions to **address existing problems**
- ‣ Build an **action plan** to roll out interventions

Implement
- ‣ **Execute** suggested recommendations and interventions
- ‣ **Evaluate** the success of the recommendations and interventions

What should I use these guides for?

Job Redesign
Get a better understanding of Job Redesign and how it can be carried out successfully

Learning and Development
Get an in-depth understanding of the processes to identify skills gaps, develop interventions and communicate these changes successfully

Change Experience
Get a thorough understanding of the importance and benefits of change experience while carrying it out successfully

Maritime Workforce Transformation Guidebook

Self-Help Guide 1
Job Redesign

Job Redesign - Discover

Key takeaways
- ▸ Job Redesign involves modifying the way work is performed in an existing job to include more value-adding tasks or increase productivity.
- ▸ It enables your company to align available resources to internal and external pressures to maximise results, remain competitive and sustainable.
- ▸ Companies that have implemented Job Redesign have experienced tangible benefits including improved efficiency, performance and productivity.

Diagnose

Design

Implement

What is Job Redesign?

Job Redesign refers to altering the tasks or the way work is performed in an existing job. Businesses need to ensure that their workforce is enabled with the right skills, competencies and resources to reap the benefits of digital transformation, and to maximise the insights and productivity gained from technological advancements.

Job Redesign enables employees to keep pace with the capability demands of evolving business needs and stay future-ready.

Benefits of Job Redesign

Empowers employees
Improves productivity, efficiency and employee satisfaction with decreased turnover, errors and absenteeism

Improves performance
Increases efficiency in work schedules through integrated technological usage and leaner work processes

When can it be applied?

Example of scenarios where job redesign can add value include:

New technology has been introduced and this changes the work processes and skills required

Increased mobility for employees is desired to enable flexibility and rotation of roles

There are overlapping job tasks with other roles, or a role has become redundant - there is scope to combine the roles to increase the value-add of employees. Employees can be redeployed to undertake other higher value-added activities

Case studies

Improved productivity
by 30% in a Food Services company from targeted Job Redesign for elderly workers

Case Study 1A:
Redesigning Jobs for Elderly Workforce

Reduced waiting time
of calls by 50% in a bank after implementing Job Redesign solutions to streamline processes

Case Study 1B:
Redesigning Jobs for Customer Service Roles

Enhanced value add
of roles by transforming the nature of jobs from administrative to strategic in the Hotel & Accommodation Services sector

Case Study 1C:
Transforming Purchasing Roles from Transactional to Strategic Procurement

Maritime Workforce Transformation Guidebook

Start with understanding current state and existing business problems to be solved

Key takeaways

- Assess your company's existing processes and jobs to identify key gaps and pain points.
- Select the job roles suitable for redesign and identify potential Job Redesign interventions using the Operational Diagnostics toolkit.
- Prioritise the key areas of improvement by evaluating the potential impact of Job Redesign interventions.

Needs Analysis	**Job Analysis & Redesign**	
Assess existing processes & jobs	**Select Job Redesign intervention**	**Identify priority and impact**

Discover / **Diagnose** / **Design** / **Implement**

Objective

Assess existing processes & jobs
- Understand the strategic goals for your business
- Understand the key challenges and pain points of daily tasks and job responsibilities from the job holders' perspectives
- Understand the key opportunities for Job Redesign

Select Job Redesign intervention
- Select the job role(s) to undergo Job Redesign and understand challenges and opportunities
- Identify the potential Job Redesign interventions for implementation

Identify priority and impact
- Understand the impact of your identified Job Redesign interventions on your company's business outcomes
- Understand and prioritise key areas of improvement

Activities

Assess existing processes & jobs
- Conduct interviews with senior management to understand the business direction
- Determine the job roles most impacted by your company's changing business needs
- Map the daily tasks and job responsibilities of the impacted job roles and identify the biggest gaps and pain points (refer to the Operational Diagnostics Toolkit below)
- Develop a business case for the Job Redesign effort (refer to the Guide to Analysing the Business Case for Job Redesign below)

Select Job Redesign intervention
- Analyse and prioritise the job role(s) with the largest opportunity for Job Redesign
- Conduct focus group discussions with employees of the selected job roles to identify operational challenges
- Conduct job shadowing of selected job roles to identify inefficiencies in their workflow
- Identify possible Job Redesign interventions, e.g. altering of job tasks, work processes, physical work environment, technology)

Identify priority and impact
- Analyse the investment required and the impact of your identified Job Redesign changes
- Perform prioritisation of the proposed changes for initial stakeholder buy-in based on benefits and company goals
- Confirm the Job Redesign interventions for implementation (refer to the Template for Process Change and Recommendation Report below)

Guide and resources

Assess existing processes & jobs
- Operational Diagnostics Toolkit
- Guide to Analysing the Business Case for Job Redesign

Self help template: Attachment 1D
(Operational Diagnostic Toolkit)

Self help Guide: Attachment 1E
(Guide to Analysing business case for JR)

Select Job Redesign intervention
- Template for Job Shadowing Observations
- Guide to Job Redesign Interventions

Self help template: Attachment 1F
(Template for Job Shadowing Observations)

Self help guide: Attachment 1G
(Guide to JR Interventions)

Identify priority and impact
- Template for Process Change and Recommendation Report

Self help template: Attachment 1H
(Template for Process Change and Recommendation Report)

Maritime Workforce Transformation Guidebook

Design necessary redesign interventions before rolling-out the implementation

Discover

Key takeaways
- ‣ Identify your full workplan with the key activities to roll-out for your chosen Job Redesign interventions.
- ‣ Plan change interventions for all stakeholders to transition into new ways of working and identify the right change agents to lead the identified Job Redesign efforts.

Transition Planning & Implementation

Develop change blueprint and action plan

Diagnose

Objective
- ‣ Plan the key activities to implement your chosen Job Redesign interventions.
- ‣ Plan change interventions for all employees and other impacted stakeholders to transition into the new ways of working

Design

Activities
- ‣ Create detailed plans for the selected Job Redesign interventions.
- ‣ Map out a list of key activities to successfully roll out the Job Redesign effort, considering the downstream impacts on other Human Resources processes.
- ‣ Define the change agenda and chart out the transition planning required for the Job Redesign effort.
- ‣ Identify the right change agents to lead the Job Redesign efforts

Implement

Guide and resources
- ‣ Guide to Change Management Plan and Approach
- ‣ Guide to Implications of Job Redesign on HR Processes

Self help guide: Attachment 1I
(Guide to CM Plan and Approach)

Self help guide: Attachment 1J
(Guide to Implications of JR on HR Processes)

Maritime Workforce Transformation Guidebook

Keep track and measure the effectiveness of Job Redesign before scaling up

Discover

Key takeaways
- ▸ Roll out your Job Redesign interventions and ensure a smooth transition for employees to take on their redesigned job roles.
- ▸ Evaluate the effectiveness of your Job Redesign efforts against pre-defined metrics and Key Performance Indicators, maintaining flexibility to continually improve and adjust into new ways of working.

Transition Planning & Implementation

Implement	Evaluate

Diagnose

Objective
- ▸ Implement your Job Redesign activities based on your identified action plan.
- ▸ Ensure a smooth transition for your employees to take on their redesigned job roles.

- ▸ Evaluate effectiveness of interventions post-Job Redesign.
- ▸ Monitor and identify continuous improvement requirements

Design

Activities
- ▸ Roll out your identified Job Redesign activities as identified in the Design step.
- ▸ Conduct job shadowing to monitor the workflow of the redesigned job roles.
- ▸ Develop solutions to address the identified implementation problems, if any.

- ▸ Perform post-Job Redesign implementation analysis to assess the effectiveness of interventions through key metrics and Key Performance Indicators such as increase in productivity (e.g. decrease in manning ratio, sales per employee, value-add per worker).

Implement

Guide and resources

- ▸ Template for Post-Job Redesign Analysis

Self help toolkit: Attachment 1K
(Toolkit for Post – JR Analysis)

Maritime Workforce Transformation Guidebook

Self-Help Guide 2 Learning and Development

Learning & Development - Discover

Key takeaways

▸ Learning & Development equips your employees with the skills and competencies needed for their current and future roles, thereby supporting their career growth and maximising their potential.

▸ Career Planning is the practice of developing your employees' careers by considering their capabilities and career preferences.

What is Learning & Development and Career Planning?

Learning & Development equips your employees with the skills and competencies needed for their current and future roles, thereby supporting their performance, engagement and career growth. Learning refers to immediate on-the-job or formal training, while Development refers to the long-term development of your employees' potential and capabilities.

Career Planning is the strategic charting and development of your employees' careers based on their preferences and skills. Good career planning should be supported by a career development framework that outlines the roles within your company, the possible career pathways between those roles and competencies needed to make career movements.

Strategic Career Planning coupled with Learning & Development opportunities enables your company to have a more effective and agile workforce that can help your company respond faster to opportunities.

When can it be applied?

The Learning & Development activities in your company are planned on an ad-hoc basis and are not intended to support gaps in other Human Resource processes such as Career Planning.

Your company needs your employees to be more flexible and rotate roles.

Your company is unclear on how to fill its skill gaps and/or your employees are not clear on their career paths.

Benefits of Learning & Development and Career Planning

Sustainable and effective workforce

Makes your company's business more sustainable through better trained and more committed employees with professional development opportunities and long-term career plans.

Maximise employee potential

Increases flexibility and agility in your workforce so that your company can respond faster to opportunities. At the same time, enables your company to put the right people in the right place.

Case studies

High-performance culture in a healthcare company with comprehensive and effective career development and learning opportunities.

Case studies: Attachment 2A
(Learning & Development)

Maritime Workforce Transformation Guidebook

Understand company's existing jobs and identify suitable career pathways

Discover

Key takeaways

- ▸ Build your company's career development framework by assessing the existing jobs and classifying them into job families.
- ▸ Identify the skills and competencies required for each job role.
- ▸ Map out the vertical and lateral career pathways between job families and identify the skills gaps needed to be bridged for employees to move along the mapped career pathways.

Identify the current state of jobs	Identify key skills required	Create career pathways

Diagnose

Objective

▸ Understand the existing jobs in your company. ▸ Categorise jobs into job families and develop a job levelling system applicable across job families.	▸ Understand the key skills required for each job family in your company.	▸ Develop vertical and lateral career pathways to assist employees' career decisions. ▸ Understand the gap in competencies between jobs in charted career pathways and plan necessary trainings for employees to bridge the skills gaps.

Design

Activities

▸ Define jobs using job descriptions and summaries. ▸ Classify jobs into job families based on the knowledge and skills required. ▸ Classify jobs by grades or bands based on their roles and responsibilities.	▸ Identify the skills and experience required for each job family using your company's existing job descriptions or conducting interviews with incumbents. ▸ You may also reference the Skills Framework for your sector as a guide to identifying the competencies and skills required for each job.	▸ Identify possible career movements for employees across different jobs roles. ▸ Chart out vertical and lateral career pathways. ▸ Using your list of skills required for each job role, identify the required competencies for movement along your charted career pathways. ▸ Identify training and development needed for employees to bridge competency gaps, should they wish to make a career movement.

Implement

Guide and resources

	▸ Visit the SkillsFuture Singapore website here to view the Skills Framework for the sea transport sector.	▸ Guide to Creating Career Pathways **Self help guide: Attachment 2B** (Guide to Creating Career Pathways)

Maritime Workforce Transformation Guidebook

EY Building a better working world   SMF Singapore Maritime Foundation   MPA Singapore   MARITIME SINGAPORE

Design the right Learning & Development opportunities to support progression and growth

Key takeaways
- ▸ Plan Learning & Development interventions to bridge competency gaps so that your employees can move along their possible career pathways.
- ▸ Design, conduct and evaluate training programmes holistically to ensure that the identified learning objectives are met.

	Conduct training needs analysis	**Develop training programmes**	**Review training effectiveness**
Objective	▸ Understand the different formal, in-formal and on-the-job training requirements for employee progression. ▸ Understand the training objectives and success metrics for required trainings.	▸ Understand the key skills required for each job family in your company.	▸ Evaluate the success of the training programme in achieving its objectives through employee feedbacks, employee assessments and post-programme job evaluations.
Activities	▸ List different trainings or on-the-job learning opportunities to support employee mobility along career pathways. ▸ Define the objectives that each training programme aims to achieve in order to bridge competency gaps. ▸ Set measurable metrics to assess the success of trainings.	▸ Design a training programme plan, including content subject matter, content flow, learning and instructional methods. ▸ Develop your design plan using an appropriate learning medium which can best achieve the training objective. Include training manuals and instructor notes. ▸ Schedule training activities well in advance and make relevant logistical arrangements.	▸ Obtain qualitative employee feedback on the training, including the content, delivery, and any other suggestions for improvement. ▸ Conduct quantitative employee assessments (e.g. quizzes, practical exercises) to evaluate how effectively employees understand and retain the training content. ▸ Perform a post-programme assessment through job evaluation of trained employees to measure the effectiveness of the training in achieving its objectives.
Guide and resources		▸ Guide to Developing an Effective Training Programme **Self help guide: Attachment 2C** (Guide to Developing an Effective Training Programme)	▸ Guide to Evaluating the Effectiveness of Training Programme **Self help guide: Attachment 2D** (Guide to Evaluating the Effectiveness of Training Programme)

Discover / Diagnose / Design / Implement

Maritime Workforce Transformation Guidebook

Facilitate feedback and guidance on professional development

Discover

Key takeaways
- ▸ Communicate the career development framework to the employees across your company through various avenues, to facilitate awareness.
- ▸ Drive company-wide adoption of career planning practices by integrating your company's career development framework with other Human Resource processes.

Communicate the career development framework

Diagnose

Objective
- ▸ Ensure awareness of career planning through holistic communication efforts.

Design

Activities
- ▸ Disseminate the information about your career development framework (including career pathways, mobility options and available trainings) through channels such as the employee handbook.
- ▸ Schedule career conversations between employees and their supervisors to enable employees to discuss their competency gaps following performance appraisals to plan career development opportunities.
- ▸ Foster a practice where employees and supervisors jointly identify and discuss competency gaps following the performance appraisal process to plan career development opportunities.
- ▸ Support company-wide adoption of career planning practices by integrating your company's career development framework with other Human Resource processes.

Implement

Guide and resources
- ▸ Guide to Communicating the Career Development Framework

SMF – Self help guide: Attachment 2E
(Guide to Communicating the Career Development Framework)

Maritime Workforce Transformation Guidebook

Self-Help Guide 3
Change Experience

Change Management - Discover

What is Change Management ?

Change Experience is an agile, user-centric and insights-led approach designed to help organisations adapt to unique environments, deliver sustainable business value and navigate through complex and continuous transformations.

Change Experience is vital for any successful transformation. More than 70% of transformation fail because the required changes are not supported due to 1) Employees' resistance towards change and 2) Managements' poor behaviour and receptiveness against change

Benefits of Change Management

Increase adoption of new processes and digital tools

Exploring unique approaches through the adoption of new digital tools aid employees in simplifying manual tasks and improving process efficiencies.

Increased Skills and Knowledge

Developing necessary capabilities and proficiencies raises the competitive advantage of the firm, simultaneously unleashing employees creativity to discover new ways of doing things.

Enhance Productivity

Creating a clear plan for how changes will be implemented allows employees to concentrate on their work instead of worrying about the ongoing impacts.

Improved Decision-making

Establishing clear communication and processes for decision-making ensures all employees are on the same wavelength when it comes to making changes.

Discover
Diagnose
Design
Implement

---

1 Why
Get clarity on Purpose, outcomes and Case for Change

2 Understand needs
Build a rich understanding of preferences, needs and reactions

5 Align the Organisation
Design the future organisation and ways of working

6 Prepare the organisation
Get business ready for the Change

EY Change Experience Model

3 Understand the change
Develop a deep implications of the implication of change

4 Co-Create the future
Co-design the future state, vision and experience

7 Build the capability
Training and Knowledge, Transfer to lift capability and Drive Self Sufficiency

8 Execute and sustain change
Implement new ways of working, measure success and track benefit realisation

Start with understanding the current state and existing business problems to be solved

Discover

Diagnose

Design

Implement

Define target behaviours and scenarios

Gather insights	Align leaders	Prioritise target behaviours	Quantify impact

Objective

- ▸ Gather insight through diagnostics identifying current and target behaviours
- ▸ Align leaders on priority to and from behaviours underpinning transformation
- ▸ Prioritise target behaviours and confirm pilot scenarios
- ▸ Identify metrics to quantify impact on business

Activities

- ▸ Gather and analyse data on current and target behaviours, both from Leadership and Employees.
- ▸ Conduct comprehensive stakeholder analysis to identify key interests and potential obstacles to change.
- ▸ Craft change communications plan for stakeholders involved

- ▸ A collaborative, workshop-style session to bring leaders together to co-create interventions and identify priority areas for change by leveraging Purpose, Process, Personnel template
- ▸ Create alignment to Business Strategy and Transformation objectives.

- ▸ Team can start to prepare Workshop/Focus Group with a group of nominated change advocates (representatives from the pilot business area) to identify scenarios where these interventions often fail, including stop-start continue matrix.
- ▸ Scenarios are further prioritized by impact, frequency, ease of implementation and other agreed criteria.

- ▸ For each of the prioritised scenarios, identify KPIs and measurement mechanism
- ▸ KPIs should be signed off by the business.
- ▸ Measurements should be quantitative and objective wherever possible. However, subjective qualitative feedback should also be gathered.

Guide and resources

Self help templates

Attachment 3A (Stakeholder Analysis)

Attachment 3B (Change Communications Plan Template)

Attachment 3C (Purpose, Process, Personnel Template)

Attachment 3D (Prioritisation Matrix Template)

Attachment 3E (Stop-start-continue matrix Template)

Maritime Workforce Transformation Guidebook

Design necessary Change Interventions before rolling-out the implementation

Design and pilot interventions

Prioritise behavioural interventions	Pilot interventions	Monitor and Track

Objective

- ▸ Identify and prioritise a set of behavioural interventions
- ▸ Pilot behavioural interventions
- ▸ Continuously monitor and track impact

Activities

- ▸ Design change interventions, nudges and motivators to improve each of the prioritised scenarios to achieve target state.
- ▸ Core interventions include, but are not limited to, the following:
    - ▸ Change Narrative
    - ▸ Training & Development
    - ▸ Performance Management
- ▸ Process-centric interventions will be specific to each area of change required by the organisaiton

- ▸ Change interventions are deployed within the agreed area of business team.
- ▸ The change advocates and leaders test the people-driven interventions and report impact.
- ▸ The pilot is closely monitored to assess effectiveness.

- ▸ Results captured quantitatively using digital and incidental measurements (a daily log) and reported back during regular catch ups (qualitative data) to determine impact, effectiveness and statistical significance of the behavioural interventions.

Guide and resources

Self help templates

Attachment 3F (Behavioural Economics Toolkit)	**Attachment 3H** (Training Plan Template)
Attachment 3G (Change Story Template)	**Attachment 3I** (Guide to Setting KPIs)

Discover · Diagnose · Design · Implement

Maritime Workforce Transformation Guidebook

Implement Changes, Monitor Progress and Measure Effectiveness before Scaling up

Scale and iterate

Evaluate	Iterate approaches	Scale
▸ Scale successful behavioural interventions	▸ Iterate the approach across the organisation	▸ Evaluate pilot interventions

Objective

Evaluate	Iterate approaches	Scale
▸ Gathered data is compiled in a report evaluating all the interventions tested in the pilot. ▸ Recommendations on further roll-out are based on the results of the evaluation and projected business benefits.	▸ Iterate successful interventions in additional business units and locations. ▸ Adjust or identify and include additional interventions, if required.	▸ The most effective change interventions, delivering the most significant business benefits, are scaled across the entire organisation.

Activities

Discover · Diagnose · Design · Implement

Maritime Workforce Transformation Guidebook

04

Supporting resources

Maritime industry programmes* available to uplift employees' skills and competencies

1 Students

Skills Acquisition

Maritime Pre-Employment (PET) Programmes	MPA Global Internship Award (GIA)
MCF Industrial Attachment	Work with Institute of Higher Learning (IHL) and industry partners to improve internship experience and effectiveness

Career Development

Improve retention of local seafaring cadets and junior officers

- ▸ Roll out Sail Milestone Achievement Programme (SailMAP) to recognise seafaring milestones and achievements
- ▸ Shorten cadet Sea Time requirements where possible
- ▸ Explore having Polytechnic seafaring graduates serve National Service with the Navy

MaritimeONE Scholarship

2 Entry-level Professionals

Skills Acquisition

Maritime Graduate Programmes / Professional Certificates

Maritime Cluster Fund (MCF) supported Short Courses, Certifiable Courses, In-House Training

MCF Overseas Attachment

Work-Study Diplomas and Post-Diplomas

Career Development

Global Talent Programme
- ▸ Groom local pipeline for management through structured local and overseas rotations

MCF Management Associates

3 Experienced Professionals

Career Conversion Programme (CCP) for Sea Transport and Sustainability Professionals
- ▸ Renewal of CCP to support up to 250 pax
- ▸ Job Redesign/ Reskilling track
- ▸ Usage of CCP to support mid-career inflow into Assistant Superintendent roles

Maritime Leadership Programme
- ▸ Leadership programme for local managers to hone leadership skills, build global perspectives, and strengthen business networks

Tripartite Maritime Scholarship (TMSS)

*For more information on MPA manpower programmes:
https://www.mpa.gov.sg/maritime-singapore/what-maritime-singapore-offers/developing-manpower/training@maritimesingapore
https://www.mpa.gov.sg/maritime-singapore/what-maritime-singapore-offers/developing-manpower/talent@maritimesingapore

Maritime Workforce Transformation Guidebook

Productivity Solutions Grant-Job Redesign (PSG-JR) – To embark on Job Redesign initiatives

Overview of PSG-JR

The **Support for Job Redesign under Productivity Solutions Grant (PSG-JR)**, is an enhancement to MTI's existing Productivity Solutions Grant (PSG) and will run from **1 Dec 2020 to 30 Nov 2024**.

The PSG-JR aims to:

▸ Encourage enterprises to enhance the quality of jobs by making redesigning jobs easier with JR consultancy support

▸ Increase employee's productivity and value of jobs in support of business growth and transformation

The PSG-JR is **industry agnostic** and **can be utilised on any job function**.

Funding Support

Up to 70% of JR consultancy cost (excl. GST), capped at $30,000 per enterprise, reimbursed upon completion of project Participating enterprises will have up to one year from the date of Letter of Offer to complete their PSG-JR project	Enterprises can also tap on the SkillsFuture Enterprise Credit (SFEC) to defray out-of-pocket (OOP) expenses. Eligible enterprises will receive a **one-off $10,000 credit per firm to cover up to 90% of OOP expenses**.

How does this work

▸ Tap on a pre-approved list of job redesign consultants to embark on JR projects that will guide enterprises to redesign work processes, tasks, duties and responsibilities to drive jobs transformation

▸ Tap on Business Grants Portal (BGP) as a one-stop business grant application portal to identify JR consultants, apply for PSG-JR and claim for PSG-JR grants

Eligibility Criteria

All participating enterprises must fulfil the following criteria in order to qualify:

▸ Registered or incorporated and operating in Singapore; and

▸ Must have at least three local employees (Singapore Citizens or Permanent Residents) at the point of application

In addition to the criteria above, at the point of application, application **must not have**:

▸ Made any payment to a pre-approved JR consultant or third party in relation to the engagement of JR-related consultancy service; and

▸ Signed or confirmed any contract or purchase order with a pre-approved JR consultant or third party in relation to the engagement of JR-related consultancy service.

All applications will be evaluated on a case-by-case basis.

Expected Outcomes

Workers' job size enlarged and/or job value increased *

Improved job attractiveness to the local workforce *

At least one of two outcomes with the (*) should be achieved

Improvement in productivity and reduced operating or manpower costs

Increased job satisfaction with facilitation of talent attraction and retention

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Career Conversion Programme (CCP) – To support reskilling of workforce to develop new capabilities and transitionary skills to enter the maritime sector

Overview of the CCP Programme

‣ To employ mid-career conversion job seekers looking to transit into new job roles and receive substantial Government support to off-set manpower cost during the training period and re-train & up-skill of workers affected by companies' transformation through customised on-the-job training and receive substantial Government support to off-set manpower cost during the training period
‣ CCP for PMETs to undergo conversion and move into roles with good prospects and opportunities for progression
‣ WSG offers about 100 CCPs across to 30 sectors, ranging from sea transport to manufacturing
‣ Provision of salary support of up to 90% for the training duration and course fee subsidy* provided by government to employees

Funding Support

Funding to Employment by WSG	Standard Rate	Enhanced Role
Salary Support	Up to **70% of monthly salary** (Capped at $4,000 per month)	Up to **90% of monthly salary** (Capped at $6,000 per month) For long term unemployment or mature SC trainees ≥ 40 years old)

Eligibility Criteria for Sea Transport CCP

‣ Must be Singapore Citizens or Permanent Residents
‣ Be at least 21 years old
‣ Have fulfilled National Service obligations or graduated for at least 2 years
‣ Be newly hired and nominated by an eligible participating company for CCP
‣ Not be in a similar job role before Joining CCP
‣ Engineering or related background would be preferred

*This includes a 20% course fee subsidy top-up from SSG's SkillsFuture Mid-Career Enhanced Subsidy for mature SCs, or a 20% course fee subsidy top-up from SSG's Enhanced Training Support for SMEs for SME sponsored SC/PR employees, if applicable

Details of Sea Transport CCP

Duration of Programme	6 months
Frequency of Programme	Rolling admission
Training Schedule	Varies with hiring companies Would need to be verified with Programme Manager
Class Size	No minimum or maximum number of participants required
Type of Training	1. Structured on the job training (OJT) 2. In-house classroom training 3. External classroom training

CCP for Sustainability Professionals

Given the **increasing emphasis on sustainability** and its **impact on job roles and incumbents**, a sustainability-focused CCP was launched in 2022:

Generic Business Functions	‣ Carbon Management ‣ Regulatory Compliance and Emissions Reporting / Verification ‣ Sustainability/Carbon Project Development and Implementation ‣ Stakeholder Management
Initial List of mentorship partners	‣ Singapore Business Federation ‣ Singapore Environment Council ‣ Republic Polytechnic ‣ NTUC Learning Hub

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Appendix

Case Study A:

Redesigning Jobs for Elderly Workforce

Job Redesign brought about 30% improvement for a food services client by optimising roles and processes for its elderly workforce.

Situation

SECTOR:
Food Services

TARGET EMPLOYEES:
Elderly Service Crew

In this Food Services company, 20% of the workforce was comprised of elderly workers. To support the needs of this workforce segment, the company redesigned job roles and processes to:

▸ Ease **labour-intensive and manual** processes

▸ Reduce inconvenient or **long hours** of physically taxing work

▸ Improve **safety** and minimise risks of injury

▸ Reduce any **controllable variability** between shifts and employees to maintain quality of service

Approach

Flexible work hours were implemented to accommodate staffs' personal schedules while ensuring work requirements were met.

E-menu ordering system used to remove manual and time-consuming tasks, freeing up time for staff to perform value-adding tasks and food preparation.

Cross-functional, **shared task allocation** with younger employees practiced through a staff pairing initiative, allowing staff to leverage strengths and share workload during peak hours.

Improved workplace environment through introduction of supportive tools such as trolleys and rest areas.

Impact

Several key near-term wins identified include **speed improvement, enhanced employee safety and customer satisfaction.**

Within weeks, the company noted:

▸ Productivity improvement of 30% with new workflow

▸ Safer work practices and more productive workforce

▸ Faster customer service

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Case Study B:

Redesigning Jobs for Customer Service Roles

A bank used Job Redesign to streamline customer service processes, reducing call waiting times by 50% and call volumes by 12%.

Situation

SECTOR:
Financial Services

TARGET EMPLOYEES:
Customer Service

In 2019, a Financial Services company announced that it redesigned its traditional customer center jobs into 13 new job roles to create the customer center of the future and serve customers better.

Approach

Used **live chat bots** to support high demand customer inquiries.

Adopted **Robotic Process Automation** to streamline process of customer data collection.

Implemented **Artificial Intelligence (AI)** to analyse client profiles for cross-selling and up-selling of products or services.

Upskilled and retrained employees to be future-ready (i.e., automation, Internet of Things, AI and Machine Learning).

Impact

Reduced call volumes by **12%** over the last year.

Expanded its service channels online to serve tech-savvy customers.

Reduced call waiting times by **50%** with voice biometrics.

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Case Study C:

Transforming Purchasing Roles from Transactional to Strategic Procurement

Job Redesign enabled a Hotel and Accommodation Services company to transform administrative purchasing roles into more strategic, value-adding roles.

Situation

SECTOR:
Hotel and Accommodation Services

TARGET EMPLOYEES:
Purchasing Executives

A Hotel and Accommodation Services company realised a need for Job Redesign after observing major constraints, including:

▸ Tight labour market and high employee turnover

▸ Employees spending the majority of their time on processing purchase orders and administration

Approach

Streamlined internal approval processes and eliminated non-value adding administrative tasks.

Optimised processes and workflow for purchasing activities to save time spent by employees.

Design key activities within job roles to **be more strategic in nature** (i.e., shift towards procurement rather than purchasing).

Introduce a long-term plan to deploy an **e-procurement system** to automate tasks.

Impact

Increased capacity to perform strategic business partnering roles.

Time savings in internal approval processes.

Eliminated administrative tasks (i.e. printing and filling of forms).

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Case Study A:

Effective Learning & Development and Career Planning System in a Healthcare Company

A US-based healthcare insurer was ranked one of the Best Places to Work on Glassdoor due to its competitive learning and career development opportunities.

Situation

SECTOR:
Healthcare Services

Over a decade ago, a healthcare services company based in the United States of America invested in a performance improvement system to drive a high-performance culture. However, they recently expanded their focus to employee career pathing and development as a more effective driver for high performance.

Approach

The company now offers a career planning toolkit for employee self-assessment and counselling services.

They provide roadmaps of established career paths for employees to make well-informed career decisions.

Training courses are listed on their career development website for staff to learn critical skills and competencies.

They offer cross-functional training opportunities such as targetted professional development programme.

Tuition reimbursement opportunities for external education are also offered to encourage continuous learning.

Impact

Consistent improvement of year-on-year performance.

High employee satisfaction and loyalty due to "ability to move up the ladder in their career".

Ranked amongst the top 100 companies in the "2019 Best Places to Work" list on Glassdoor.

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Toolkit

Assessing Job Redesign Opportunities

Description

This toolkit will help Human Resource practitioners and Business Unit managers to identify preliminary opportunities for Job Redesign within specific functions of your company, as well as potential solutions for the jobs that have been selected for redesign.

Key Stakeholders Involved

‣ Human Resources practitioners

‣ Business Unit managers

‣ Incumbents

Instructions

‣ Evaluate the job role you wish to redesign to understand the tasks involved and the operating environment.

‣ Identify Key Tasks performed by this job and complete the *Identification of Key Activities* template based on the characteristics listed.

‣ Complete the *Operational Diagnostics* template for this job role by evaluating how this role interacts with other functions/roles.

Outcome

‣ Completed Operational Diagnostic Template and derived understanding of the job role to be redesigned.

Templates Provided in this Toolkit

Key Tasks				
Characteristics of Tasks				

	Job Roles			
Key Activity 1: _____				
Tasks				
Key Activity 1: _____				
Tasks				

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Assessing Job Redesign Opportunities: Identification of Key Tasks – Instructions

Instructions

In the Identification of Key Tasks template (available on the next page), list down the 'Characteristics of Tasks' that are suitable for Job Redesign. These include tasks that have:

‣ High labour intensiveness

‣ Low technology usage

‣ Heavy-reliance on manual processes

‣ Large gap between existing practices and market leading practices

‣ Require the most skill upgrade

‣ Preferably profit-driven and client-facing functions

‣ Repetitive/redundant tasks

‣ Significant lull time

‣ List the 'Key Tasks' of the selected job role which satisfy these characteristics. Check-mark (√) the boxes to indicate which tasks have opportunities for Job Redesign.

Key Tasks

Characteristics of Tasks

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Assessing Job Redesign Opportunities: Identification of Key Tasks – Template

Characteristics of Tasks	📋 Key Tasks				

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Assessing Job Redesign Opportunities: Identification of Key Tasks – Sample

Characteristics of Tasks	📋 Key Tasks			
	Sample job: Technician Task: Assembly of components	...	...	
Labour-intensive, physically demanding tasks	√			
Low technology usage	√			
Heavy reliance on outdated manual processes	√			
Gaps between current practices and market best practices				
Require the most skills upgrade in terms of frequency and scale				
Others: _____				

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Assessing Job Redesign Opportunities: Identification of Key Tasks – Instructions

Instructions

▸ Complete the Operational Diagnostics template as seen below (template available on the next page).

▸ Export the Key Tasks from the previous table (*Identification of Key Tasks* template).

▸ Identify adjacent roles to the identified job role.

▸ Shade the boxes under each role that share/perform similar tasks.

▸ Identify Job Redesign opportunities based on insights from the *Identification of Key Tasks* template, and by evaluating job tasks against following key measures:

  ▸ Labour intensive

  ▸ Low technology usage

  ▸ Heavy-reliance on manual processes

  ▸ Large gap between existing practices and market leading practices

  ▸ Require the most skill upgrade

  ▸ Preferably profit-driven and client-facing functions

  ▸ Repetitive/redundant tasks

  ▸ Significant lull time

  ▸ Others

Job Roles

Key Activity 1: _____				
Tasks _____ _____ _____ _____				
Key Activity 1: _____				
Tasks _____ _____ _____ _____				

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Assessing Job Redesign Opportunities: Operational Diagnostics - Template

	Job Roles			
Key Activity 1: _____				
Tasks				
Key Activity 1: _____				
Tasks				

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Assessing Job Redesign Opportunities: Operational Diagnostics - Sample

SAMPLE

Flow of Activities	Job Roles			
	Process Technician	Assistant Manufacturing / Production Engineer	Manufacturing / Production Engineer	Manufacturing / Production Manager
Key Activity 1: Manufacture components and end products				
Interpret technical drawings and blueprints				
Operate workshop equipment, tools and machines for component assembly		**Job Redesign Opportunity #1:** Tasks being performed by multiple job roles; opportunity to segregate roles/responsibilities		
Perform assembly of parts and components in accordance with technical manuals				
Perform routine maintenance of equipment				
Key Activity 2: Plan and manage manufacturing activities				
File documentation for all completed tasks				
Plan for manpower, resources and materials to meet production targets		**Job Redesign Opportunity #2:** Significant lull time; opportunity for role enlargement		
Identify process enhancements to improve cost efficiency, yield and quality				
Implement shop floor monitoring and process control plans				
…			**Job Redesign Opportunity #4:** Discontinuity of tasks; opportunities to streamline work processes	

Tasks (Key Activity 1)

Tasks (Key Activity 2)

Job Redesign Opportunity #3:
Repetitive/redundant tasks that may be automated

Note: Key activity completed by job role.

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Template

Analysing the Business Case for Job Redesign

Description

This template will help Human Resource practitioners summarise the key details of a Job Redesign exercise and assess its business viability, to assist in obtaining stakeholder buy-in.

In addition to the provided template, an effective business case would identify viable alternatives for the Job Redesign effort and assess the risks and mitigation options for each alternative.

Instructions

To build the business case for Job Redesign, gather and summarise the following insights in the provided template:

‣ The current and desired state of the business and its direction

‣ Key gaps and challenges to be addressed

‣ Broad Job Redesign interventions to address these gaps

‣ Broad estimates of the necessary costs and resulting benefits

‣ Planning of the stakeholders involved (including target functional areas and project team members)

‣ A brief estimate of the execution timeline

Outcome

‣ Alignment of Job Redesign effort with business goals

‣ Initial but comprehensive summary of the Job Redesign value proposition

‣ Stakeholder buy-in for the Job Redesign effort

Templates Provided in This Toolkit

Business Case Template

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Template

Analysing the Business Case for Job Redesign – Instructions

Instructions

Gather and summarise the following insights, as shown in the template below (template available on the next page):

‣ The current and desired state of the business direction

‣ Key gaps and challenges to be addressed

‣ Broad Job Redesign interventions to address these gaps

‣ Approximate estimates of the necessary costs and resulting benefits

‣ Planning of the stakeholders involved (including target functional areas and project team members)

‣ A brief estimate of the execution timeline

Executive Summary		
Business Direction Current State Desired State	**Gap / Challenge**	**Job Redesign Solution**
	Cost	**Execution Timeline**
Target Areas / Audience	**Benefits**	
Project Team		

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Analysing the Business Case for Job Redesign – Template

Executive Summary

Business Direction

Current State

Desired State

Gap / Challenge

Job Redesign Solution

Cost

Execution Timeline

Target Areas / Audience

Benefits

Project Team

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Analysing the Business Case for Job Redesign – Sample

S A M P L E

Executive Summary

- Identify opportunities to cross-train employees across functions for a more flexible and agile staffing pool
- Identify opportunities to leverage technology and digitalise operations for increased productivity and efficiency

Illustrative only

Business Direction

Current State

- **Revenue centric** operating model
- **Limited technology** usage in labour-intensive production processes

Desired State

- **Customer centric** operating model
- **Lean and agile** workforce
- **Optimised processes** through technology implementation

Target Areas / Audience

- Manufacturing and assembly technicians and engineers

Project Team

- Human Resources Specialist
- Manufacturing Manager
- Head of Operations

Gap / Challenge

- **Teams working in silos** on the shopfloor and limited talent in the market have resulted in a large number of employees with focused competencies
- **Lack of technology** implementation in manual, labour-intensive processes such as cutting, polishing and assembling parts has led to low efficiency and quality for end customers

Cost

Item	Current	After Job Redesign
Headcount	100 technicians	80 technicians
Labour hours	8 hrs / day / staff	8 hrs / day / staff
Technology implementation costs	Nil	$300,000
Training and development costs	$200 / staff	$600 / staff

Benefits

Item	Current	After Job Redesign
Yield (no. of products / day)	4 products	12 products
Manpower required per product	15 pax	10 pax
Quality of products	…	…
Process improvements	...	…

Job Redesign Solution

Restructuring and capability development

- Cross-train employees across functions to collapse redundant roles and create a more flexible and agile staffing pool

Technology integration and digitalisation

- Implement new technologies to enhance productivity, efficiency and quality of output

Execution Timeline

Milestone	Jan	Feb	Mar	Apr	May	Jun	Jul
Kickoff and stakeholder buy-in							
Diagnosis (Stakeholder interviews, Job shadowing)							
Diagnosis (Operational diagnostics, prioritisation and recommendation)							
Design (action plan, change agenda, performance metrics)							
Implementation (project roll out and change management interventions)							
Post Job Redesign monitoring and iterations							
Analysis and final report							

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Template

Recording Job Shadowing Observations

Description

This template will help Human Resource (HR) practitioners record and summarise observations obtained from job shadowing as part of a "Diagnose" activity within a Job Redesign exercise.

Job shadowing offers an opportunity for HR practitioners to identify parts of a job role that can be changed and/or supplemented by technology to improve workflow. Job shadowing can also be conducted after a new technology has been implemented, to guide required Job Redesign efforts.

Instructions

To identify opportunities for improvement in an existing workflow, the day-to-day work of a job incumbent can be observed by conducting job shadowing. To do so, an HR practitioner (or equivalent) should shadow a job incumbent and take note of:

‣ Job roles that appear to be most impacted (or can be impacted) by implementation of technology

‣ Key tasks being carried out by the job incumbent within the job role

‣ The changes in processes based on the implementation of technology, or ways in which work processes can be further improved

‣ Other tasks that can be conducted by the job incumbent in the event of time being freed up due to the impact of technology and process changes

Outcome

‣ Identify which job roles are most impacted by the implementation of technology, and how they are impacted.

‣ Identify ways in which work processes can be made more efficient.

‣ Identify what else the job incumbent can work on if their time is freed up through process changes.

Templates Provided in This Toolkit

Job Roles	Processes	New Tasks	Remarks

Observations

Job Shadowing Reporting Template

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Template

Recording Job Shadowing Observations - Instructions

Instructions

To identify opportunities for improvement in an existing workflow, the day-to-day work of a job incumbent can be observed by conducting job shadowing. To do so, a Human Resource practitioner (or equivalent) should shadow a job incumbent and take note of:

▸ Job roles that appear to be most impacted (or can be impacted) by implementation of technology.

▸ Key tasks being carried out by the job incumbent within the job role.

▸ The changes in processes based on the implementation of technology, or ways in which work processes can be further improved.

▸ Other tasks that can be conducted by the job incumbent in the event of time being freed up due to the impact of technology and process changes.

Job Roles	Processes	New Tasks	Remarks

Observations

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Recording Job Shadowing Observations - Template

Job Roles	Processes	New Tasks	Remarks

Observations

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Template

Recording Job Shadowing Observations - Sample

SAMPLE

Observations

Job Roles	Processes	New Tasks	Remarks
Machine Operator	Manually records estimated working/non-working time and issues **at the end of each shift.**	**Actively** uses tablet to record time and issues as soon as they happen.	Reduction in time spent conducting manual recording. Time can be diverted to value-add tasks such as troubleshooting.

Opportunity for the operator to identify and test possible solutions on how to improve recurring issues. This can be a new task carried out as part of the job. |
	Uses conventional tools (e.g. white-board) as support for performance discussion.	**Uses dashboards** for real-time performance discussions with supervisors and actively troubleshoots when there are issues.	

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Job Redesign Interventions

Job Redesign can be approached using technology or non-technology solutions

Technology

Non-Technology

A common technology solution is **Intelligent Automation**, which has varying levels of maturity.

Robotic Process Automation (RPA) → **Cognitive RPA** (Includes machine learning, natural language processing) → **Chatbots** → **Artificial Intelligence (AI)**
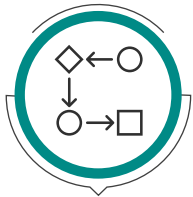
Other examples of Technology Solutions that can be applied:

- Internet of Things (IoT)
- Data Mining and Analytics
- Sensors
- Ergonomics
- Any Other Technology Application

Non-technology solutions involve **changing the task requirements** of a job role, including adding or removing tasks.

Uncoupling
Separating tasks into two jobs at the same level.
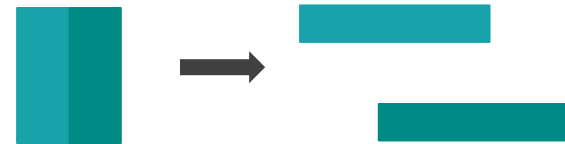
Unstacking
Separating tasks into two jobs at different levels.
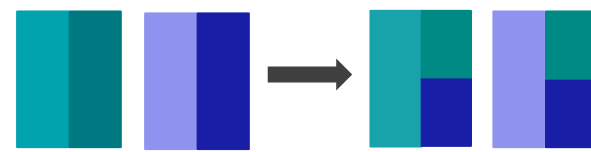
Segmenting
Combining portions of other jobs into new jobs.

Emergent
Merging of tasks that had not been previously performed or that had been outsourced into new job roles, such as introducing a new role.

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Job Redesign Interventions

The various technology and non-technology solutions can be used in combination to enable...

Job enlargement involves introducing additional tasks to an employee's original job scope, often due to reduced time required to carry out the original job scope because of improved processes and/or technology use.

Outcomes:

- Increased task variety and learning opportunities
- Improved job satisfaction and expansion of skillsets
- Enhanced employee engagement

Job reconfiguration involves making an adjustment to an employee's existing job scope by reshaping tasks to achieve new outcomes, often to refocus the job role to meet changing ways of working and/or company strategy.

Outcomes:

- Increased task variety
- Increased task specialisation
- Reduction in non-value add work and increased productivity

Job Enlargement

Job Enrichment

Job Reconfiguration

Job Simplification

Job enrichment involves introducing a value-added component at a higher job level on top of the employee's original job scope, elevating the employee's scope of responsibility and allowing for upskilling.

Outcomes:

- Development of knowledge and skills (upskilling)
- Enabling of employee succession planning
- Improved job satisfaction from developmental challenges

Job simplification involves removing redundant or duplicated tasks conducted by an employee to streamline the job role and reduce unproductive activities, allowing for greater focus in achieving objectives.

Outcomes:

- Reduced work fatigue
- Reduced job monotony
- Reduced task duplication

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Creating a Process Change and Recommendation Report for Job Redesign

Description

After identifying possible Job Redesign opportunities using the Operational Diagnostics Toolkit, the next step is to prioritise these opportunities using a *Process Change Report.*

After prioritisation, this toolkit will help Human Resource practitioners create a Job Redesign Recommendation Report for the impacted role(s).

Templates Provided in this Toolkit

Process Change Report Template

Recommendation Report Template

Instructions

‣ Review your task list from the Operational Diagnostics Toolkit and prioritise the list of tasks using the *Process Change Report template.*

‣ Identify potential solutions for all impacted job roles in the *Recommendation Report template*. This would include:

  ‣ Establishing a realistic timeline for implementation of recommended solutions.

  ‣ Establishing metrics or proxy measures for measuring success of Job Redesign efforts.

Outcome

‣ Prioritised list of tasks

‣ List of potential Job Redesign solutions

‣ List of success metrics

‣ Implementation timeline

Considerations

‣ Are the solutions realistic?

‣ Have all adjacent roles been identified?

‣ Is the implementation timeline reasonable?

‣ Have you considered the change management plan for your solutions?

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Creating a Process Change and Recommendation Report for Job Redesign

Instructions

- ‣ Complete the *Process Change Report* template as seen below (template available on next page), to prioritise process changes required.

- ‣ Group the list of Key Activities and Tasks from the *Operational Diagnostics Toolkit* into each quadrant below based on whether they are value-added or non-value added, and if they are necessary or unnecessary to the company/role objectives.

- ‣ Identify possible Job Redesign interventions for each quadrant (you may refer to the *Guide to Job Redesign* Interventions for more information).

	Value-Added	**Non Value-Added**
Necessary	Keep	Reduce
Unnecessary	Not Applicable	Eliminate

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Creating a Process Change Report for Job Redesign – Template

	Value-Added	**Non Value-Added**
Necessary	Keep	Reduce
Unnecessary	Not Applicable	Eliminate

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Creating a Process Change Report for Job Redesign (JR) – Sample

Job Role : **Process Technician (Assembly)**

Value-Added	Non Value-Added
Keep	**Reduce**

Necessary

Keep

‣ Interpret technical drawings and blueprints

‣ Operate workshop equipment, tools and machines for assembly

‣ Perform assembly of parts and components in accordance with technical manuals

*JR Solution: Streamline processes,
Collaborative robots to assist with assembly*

Reduce

‣ File documentation for all completed tasks

‣ Perform routine maintenance of equipment

*JR Solution: Digitalise documentation processes,
Implement predictive maintenance plans*

Unnecessary

Not Applicable

Eliminate

‣ Conduct routine counts of raw materials and parts

JR Solution: Automate inventory management system

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Creating a Recommendation Report for Job Redesign – Instructions

Instructions

▸ Complete the *Recommendation Report* (template available on the next page).

▸ Review your insights from the *Operational Diagnostics Toolkit and Process Change Report* to list the key areas identified for improvement. Prepare potential job redesign solutions for all identified job roles (you may take reference from the *Guide to Job Redesign Interventions*).

▸ Establish a realistic timeline for implementation of recommended solutions.

▸ Establish metrics or proxy measures for measuring success of Job Redesign efforts.

Insights from Interviews/ Focus Group Discussions (FGD)/ Shadowing	Potential JR Solutions (Tech/ Non-Tech)	Anticipated Impact	Implementation Timeline	Metrics	Jobs Impacted

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Creating a Recommendation Report for Job Redesign – Template

Insights from Interviews/ Focus Group Discussions (FGD)/ Shadowing	Potential JR Solutions (Tech/ Non-Tech)	Anticipated Impact	Implementation Timeline	Metrics	Jobs Impacted

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Creating a Recommendation Report for Job Redesign – Sample

SAMPLE

Insights from Interviews/ Focus Group Discussions (FGD)/ Shadowing	Potential JR Solutions (Tech/ Non-Tech)	Anticipated Impact	Implementation Timeline	Metrics	Jobs Impacted
Assembly of parts for the Process Technician role is a laborious and time consuming process with low technology usage.	‣ **Tech:** Use collaborative robots for assembly of large parts ‣ **Non-Tech:** Upskill employees to use the new technology ‣ **Non-Tech:** Combine roles with Assistant Engineer to reduce redundancy	‣ Time saving ‣ Cost saving ‣ Less headcount ‣ Enhanced quality of final product ‣ Spare time to focus on continuous improvement / value-adding tasks	‣ 2-3 months	‣ FTE cost saving ‣ Improvement in overall assembly time ‣ Extended life of product from increased quality	‣ Assembly Technicians

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Overview of Change Management

It is important to design an effective Change Management plan to combat potential pitfalls in Job Redesign.

Apply the 8 steps in your planning process for implementing change.

1. Why
Define the purpose, outcomes and case for the proposed change

2. Understand needs
Build a rich understanding of all stakeholder preferences, needs and reactions

3. Understand the change
Develop a deep understanding of the implications of the Job Redesign or change

4. Co-create the future
Co-design the future ways of working and experience

5. Align the company
Design the future company and ways of working

6. Prepare the company
Get the business ready for the change

7. Build the capability
Training and knowledge transfer to lift capability and drive self-sufficiency

8. Execute and sustain the change
Implement new ways of working, measure success and track benefit realisation

Purposeful / Personalized / Interactive / Insightful

Understand — Co-ordinate, Communicate, Engage — Data, Analytics, Insight

Execute — Co-ordinate, Communicate, Engage — Data, Analytics, Insight

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Key Stakeholders to engage in the Change Management process

Who are the key stakeholders

Legend:
- ❌ Internal Stakeholders
- ❎ External Stakeholders

Degree of Influence (Powerful → Persuasive → Limited) vs Degree of Support for Change (Negative → Neutral → Champion)

- Senior Management, Project Sponsors
- Impacted Business Units / Departments
- Internal HR Team
- Customers/ Other Companies
- Other Vendors
- Rest of Company

Degree of Support for Change (Negative – Neutral – Champion)
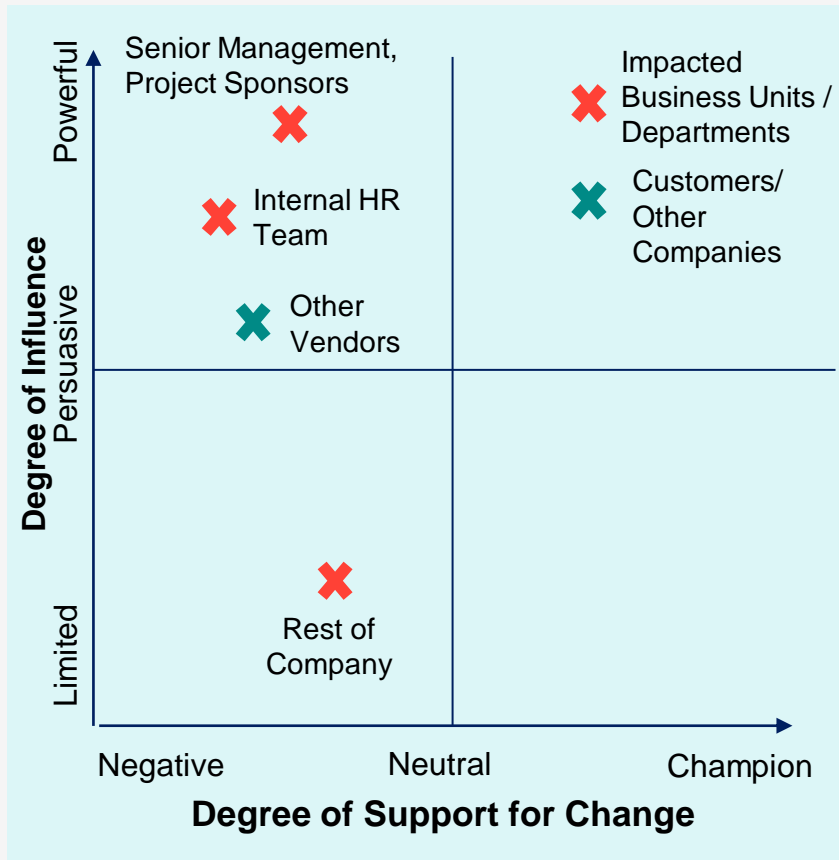
What do they need

Internal Stakeholders

- ‣ How does it impact the role of the current job incumbents?
- ‣ How do we articulate the support for change?
- ‣ What training is required to support the impacted job incumbents to take on the redesigned role?
- ‣ How does the redesigned job impact other business units/departments?

External Stakeholders

- ‣ How does the redesigned job role impact the end customers/ other stakeholders?
- ‣ How does the redesigned job role impact interaction with vendors?

How to mitigate their concerns

- **Early stakeholder engagement**
- **Align needs/ expectations & customise change plans**
- **Continued emphasis on relaying benefits of adoption**
- **Real-time messaging** (i.e., mixed media; social media platforms, digital banners etc.)
- **Hands-on training/ self-help resources**
- **Direct access to address queries** (i.e. helpdesks, mailbox)
- **Clear guidance on new working ways**

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Successful Job Redesign requires collaboration between a diverse set of stakeholders

Key roles in a Job Redesign team include…

Leaders

- Advocate the importance of change agenda of Job Redesign across the company
- Partner with HR to obtain buy-in from stakeholders across the company
- Chart out transition planning of change implementation
- Cascade value proposition of Job Redesign for each division and how the initiative contributes to company goals
- Coach direct reports through the changes that impact their day-to-day work

Examples of Job Roles
- Senior Management
- Head of Department
- Business Unit Managers

Change Champions

- Support change initiatives and relationships
- Initiate dialogue to build trust and communication between stakeholders and change agents
- Foster sponsorship and ownership of coming changes
- Promote visibility and build support ahead of the coming changes
- Pilot Job Redesign implementation
- Assess effectiveness of post Job Redesign implementation

Examples of Job Roles
- Business Unit Managers
- Employees

Impacted Employees

- Receive instructions from change agents and leaders
- Find out what change means to employees by attending town halls, keep track of communications and actively seeking advice from change agents within teams
- Provide feedback on change initiatives
- Attend training and learning sessions to learn about how to adopt the changes in your day-to-day job

Examples of Job Roles
- Employees

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Job Redesign is only one component in the overall workforce transformation process and should not be considered in isolation

Business Strategy → *Informs* → **People Strategy** → *Informs* → **Strategic Workforce Plans**

Upstream efforts

Job Redesign
(i.e. Restructuring Job Tasks / Responsibilities)

Business Transformation
(i.e. Business Process Review)

Technology Transformation
(i.e. Robotics Process Automation, Systems Implementation)

Downstream efforts

- Recruitment & Selection
- Learning & Development
- Career Planning
- Leadership Development & Succession Planning
- Performance Management
- Compensation & Benefits
- Job Evaluation
- KPIs
- Job Grading
- Employee Engagement

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Job Redesign is part of the larger Workforce Transformation agenda, which must consider the Business Transformation angle

Business Process Review Methodology

IT Landscape

Operations and Practices

Management Imperative

Business Environment

Stakeholders

Situation Analysis

Guiding Principles

Future State Operating Model

Measures of Success

Envisage

Baseline Process ← Gap → Future State Process

Design

Process and System Improvements

Implementation Plan

Prioritisation

Execution and Realisation

Implementation

1 Situational Analysis:
Involves consideration of five key aspects (Management Imperatives, Operations and Practices, Business Environment, Stakeholders, and IT Landscape) to be taken into consideration when building a desired future state.

2 Envisage:
Involves creating the vision of the future state, the guiding principles as well as the measurable indicators for the future design.

3 Design:
Define the baseline processes, identifying gaps between the current state and the desired state. From the view of the desired future state, transformation principles are then developed to guide Job Redesign/business transformation efforts.

4 Prioritisation:
Recommend the process and system improvements and prioritise initiatives.

5 Implementation:
The Execution and Realisation where detailed 'desired state' process designs and system requirements can commence. This is followed by validation with stakeholders and subject matter advisors for feasibility and risks before deployment.

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Job Redesign should also consider how Technology Transformations can change roles, or support the changing of roles

Processes Which Can be Automated will Change How The Workforce is Involved

- ✓ Data intensive
- ✓ Repetitive in nature
- ✓ Rule-driven
- ✓ Electronic trigger to the process
- ✓ Have electronic start-points and endpoints

- ✓ Involve manual calculation
- ✓ High error rates
- ✓ Sensitive content
- ✓ Can be performed out of office hours
- ✓ Complex IT landscape

Example of technology transformations that can occur alongside workforce transformations

IT Services	HR Services	Supply Chain	Finance and Accounting
▸ Installation	▸ Payroll	▸ Work order management	▸ Sales order
▸ FTP download, upload and backup	▸ Benefits admin	▸ Demand and supply planning	▸ Order to cash
▸ Server application and monitoring	▸ Pay slip management	▸ Quote, invoice and contract management	▸ Collection
▸ Synchronising, deleting and emptying folders	▸ Time and attendance management	▸ Returns processing	▸ Procure to pay
▸ File management	▸ Recruiting process	▸ Freight management	▸ Incentive claim
▸ Email processing	▸ Onboarding		▸ Record to report
▸ Batch processing	▸ Education and training		▸ Supply chain vendor setup
			▸ Trend tracking
			▸ Closing procedures

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Together with other upstream efforts, Job Redesign initiatives can have certain downstream implications on Human Resource Processes

Job Redesign has downstream impacts on the following HR functions…

It becomes pertinent for organisations to consider these when planning Job Redesign interventions:

Recruitment & Selection	Learning & Development	Performance Management	Career Planning	Compensation & Benefits
Refine/develop existing job description by taking into consideration new tasks and skills	**Identify skill gap** between existing and redesigned job role and **develop training roadmap** to equip employees in the future job role	**Set or revise performance goals** of employees in the new redesigned job	**Identify career pathways** (i.e. lateral, vertical, diagonal) for the redesigned job	**Review wages** in newly redesigned job based on the breakdown of new tasks and skills required to perform the job

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Recruitment and selection

1 **Understand the job description of the existing job role in the current state**

- ‣ Observe or conduct engagements with job incumbents to understand the existing job role
- ‣ Understand the skills and responsibilities to perform job role using job description

2 **Know the skills required to perform successfully in the redesigned job**

- ‣ Define the end state of how the new redesigned job will look like
- ‣ Identify new, modified and/or eliminated tasks in the newly redesigned job
- ‣ Develop skills required to successfully perform the tasks
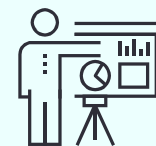
3 **Develop job descriptions for redesigned jobs to reflect the new tasks and responsibilities**

- ‣ Conduct discussion with HR and job incumbents to validate the observed changes in the redesigned job
- ‣ Document the role requirements on job description for advertisement and performance appraisal purpose

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Training & Development

1 | Identify training needs and develop training plans based on skills required

‣ Understand company's current and near future goals

‣ Identify whether the current workforce has the right skills to support the business goals and process

2 | Curate training programmes by developing in-house content or outsourcing to external providers

‣ Identify appropriate and relevant training programmes

‣ Budget for your employees to attend required training

3 | Evaluate training effectiveness

‣ Use training evaluation forms

‣ Conduct discussions between HR and trainees' line managers about any observed improvement

‣ Calculate the Return on Investment of the training

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Downstream Efforts Impacted by Job Redesign initiatives (3/5)

Performance Management

1 Identify and set performance goals of the redesigned job

‣ Identify both hard and soft performance goals aligned with business strategies to drive desired behaviours

‣ Ensure that performance goals are reasonable and realistic

2 Assess ongoing performance of the employees in the impacted job role

‣ Set interim performance goals for employees

‣ Conduct regular check-ins, mid-year and monthly reviews with employees to provide feedback on employee's performance

‣ Document reviews in the performance appraisal form

3 Build a career development plan to support employees

‣ Provide feedback and coaching on employee results and behaviour

‣ Address employee's performance concerns and work out an action plan to achieve desired performance

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Career Management

1 **Classify jobs into job families**

- Define the job profile/ job description
- Assign jobs of similar nature which require similar knowledge and skills into the same job family

2 **Develop a job levelling system applicable across job families**

- Identify jobs which requires similar level of roles and responsibilities, as well as years of experience, and link them to certain job grades across different job families
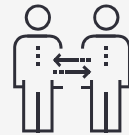
3 **Define key skills required**

- Ensure the required skills and years of experience are listed for each job family

4 **Create possible vertical and lateral pathways**

- Identify the possible career movements for employees across different job roles

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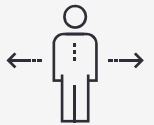
Compensation & Benefits

1 **Evaluate the job role and criticality of skills**

▸ Determine the relative worth of a job in relation to other jobs through job evaluation on the basis of its content and the complexity

2 **Benchmark similar job role to industry standards**

▸ Refer to industry specific wage data and procure salary survey information

▸ Compare similar job roles within the same industry specific reports

3 **Examine the changes in the new skills in redesigned job**

▸ Understand the current wage structure within the organisation

▸ Examine additional skillsets and corresponding increase in responsibilities

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Performing Post-Job Redesign Impact Analysis

Description

Following the implementation of your Job Redesign interventions, it is crucial to monitor and assess their effectiveness through key metrics and Key Performance Indicators, such as:

‣ Increase in productivity:

  ‣ Decrease in manning ratio

  ‣ Increase in sales per employee

  ‣ Increase in value-add per worker

‣ Improved customer experience

‣ Improved employee satisfaction

This template will help Human Resources practitioners evaluate the impact of your Job Redesign interventions and identify next steps for continuous improvement.

Instructions

‣ Following the roll out of Job Redesign interventions, monitor the effectiveness using the Post Job Redesign Impact Analysis template.

‣ For each Job Redesign intervention, populate the template with the key performance indicators (i.e. success metrics), as previously identified in the *Recommendation Report.*

‣ Monitor the quantitative and qualitative impact of each Job Redesign intervention using the Impact Analysis section of the template.

‣ Identify any necessary iterations under the Next Steps section of the template.

Templates Provided in this Toolkit

Job Redesign Intervention	Impact Analysis				Adjustments required/Next Steps
	Key Performance Indicators	Before Job Redesign	After Job Redesign	Other outcomes	

Post Job Redesign Impact Analysis

Outcome

‣ Tracking of success metrics and reception of Job Redesign intervention.

‣ Outlining of required adjustments or next steps.

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Performing Post-Job Redesign Impact Analysis – Instructions

Instructions

▸ Monitor the effectiveness of each Job Redesign intervention using the Post-Job Redesign Impact Analysis template shown below (available on the next page).

▸ For each Job Redesign intervention, populate the template with the key performance indicators (i.e. success metrics), as previously identified in the *Recommendation Report.*

▸ Monitor the quantitative and qualitative impact of each Job Redesign intervention using the Impact Analysis section of the template.

▸ Identify any necessary iterations under the Next Steps section of the template.

Job Redesign Intervention	Impact Analysis				Adjustments required/Next Steps
	Key Performance Indicators	Before Job Redesign	After Job Redesign	Other outcomes	

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Performing Post-Job Redesign Impact Analysis – Template

Job Redesign Intervention	Impact Analysis				Adjustments required/Next Steps
	Key Performance Indicators	Before Job Redesign	After Job Redesign	Other outcomes	

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Performing Post-Job Redesign Impact Analysis – Sample

Sample job role: Process Technician (Assembly)

Job Redesign Intervention	Impact Analysis				Adjustments required/Next Steps
	Key Performance Indicators	**Before Job Redesign**	**After Job Redesign**	**Other outcomes**	
Introduce collaborative robots ‣ To support the assembly of large parts and components	Time taken for assembly per product	1 day	2 hours	‣ Positive customer feedback – higher quality products with minimal human error ‣ Positive employee feedback – safer and less labour-intensive job scope ‣ Increase in productivity by 5% with fewer cases of assembly-related injury at the workplace	‣ Consider enlarging existing job scope to fill waiting gaps
	Rate of fault detection during Quality Assurance	20%	5%		
	Number of staff required per product	4 technicians	2 technicians		

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Structure of a career development framework

A career development framework consists of:

Job Families	Competencies	Career Progression

Classify jobs into job families → **Develop a job levelling system applicable across job families**

Define key skills required

Create possible vertical and lateral career pathways

Job Families
- Job families are **groupings of jobs** related by common responsibilities, knowledge, skills and competencies.
- Examples include: Finance, Human Resources, IT, etc.

Competencies
- Competencies **describe the performance and development requirements** for a given position.
- Examples include: Communications, Marketing, etc.
- Competencies are key when planning for personal development, preparing for career progression or career planning in general.
- For roles that require similar competencies, there is the opportunity to transfer the learning from one position to the other.

Career Progression
- Career progression allows for formal recognition while pursuing a career path within a specific position. Career progression is based on growing one's knowledge, skills and abilities over time.
- Career progression within the framework is competency based, with an emphasis on being able to demonstrate the required performance standards through learning, formal training and on-the-job experience.
- Progression refers to **advancing between the different levels of a position**. The levels outline the criteria that needs to be demonstrated before formal progression takes place.

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Career Path Opportunities

There are different types of movements along career pathways …

Vertical moves are upward promotion/progression within the same function or job family.

- These moves are *intuitive*, and career path criteria are easily met.
- The nature of these moves is typically determined by a company's Promotion Policy.
- These involve an increase in skill and competency proficiency level.

Horizontal moves are made across functions/job families. Conditional moves are those which are made *across* job families.
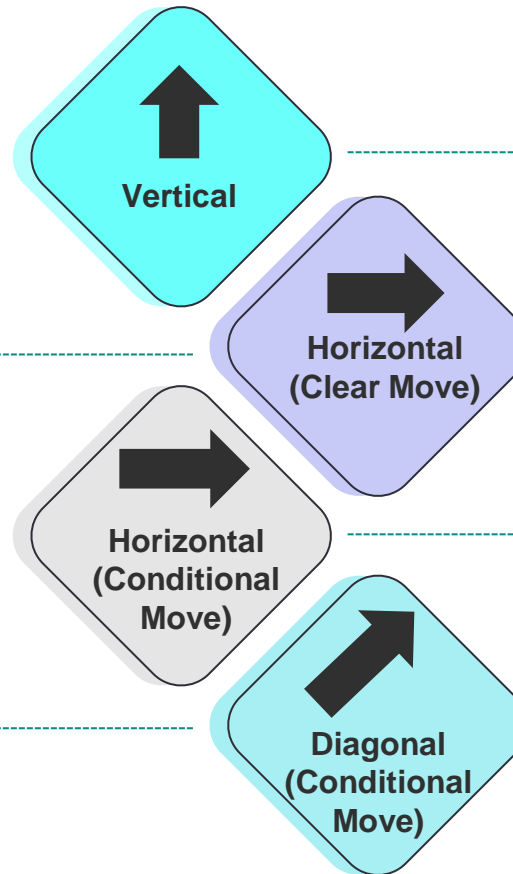
- These moves are relatively more difficult to make and have stringent movement criteria.
- They require higher investment from aspiring employees and the company.

Vertical

Horizontal (Clear Move)

Horizontal (Conditional Move)

Diagonal (Conditional Move)

Horizontal moves are made across functions/job families. Clear moves are those which are within the *same* job family.

- These moves signify a similarity in skill sets; and do not require very stringent movement criteria.

Diagonal moves are made across verticals, and involve an upward grade movement.

- These moves are typically made only within the same job family.
- These moves entail more stringent movement criteria on behavioral competencies.
- Some vertical moves to critical leadership roles are conditional and require experience across units.

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Charting a career pathway

Step 1: Consider one role in your company, and chart out potential vertical and lateral pathways.

Job Family A

Future Position

Vertical Movement
(career progression)

Current Position

Lateral Movement
(mobility)

Job Family B

Future Position

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Charting a career pathway (cont'd)

Step 2: List the competencies that can be transferred between roles, and those that would need to be developed to move between roles.
Step 3: List the types of Learning & Development that would enable employees to build these competencies.

Job Family A

Future Position

Competencies that can be transferred:
1) …
Competencies that need to be developed:
1) …
Development required for selected competency:
1) …

Vertical Movement
(career progression)

Current Position

Lateral Movement
(mobility)

Competencies that can be transferred:
1) …
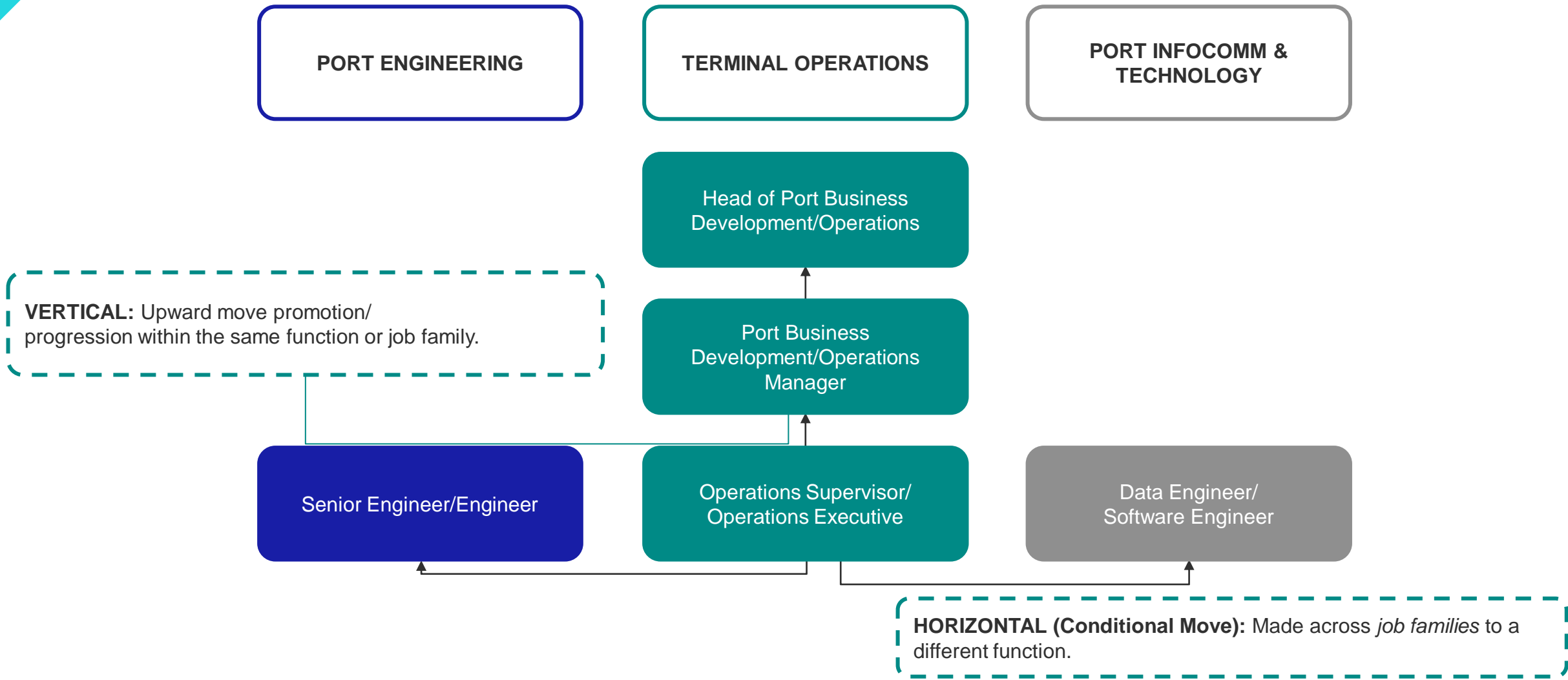Competencies that need to be developed:
1) …
Development required
for selected competency:
1) …

Job Family B

Future Position

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Illustration from Skills Framework for Sea Transport – Career Map

PORT ENGINEERING	TERMINAL OPERATIONS	PORT INFOCOMM & TECHNOLOGY

Head of Port Business Development/Operations

Port Business Development/Operations Manager

VERTICAL: Upward move promotion/ progression within the same function or job family.

Senior Engineer/Engineer

Operations Supervisor/ Operations Executive

Data Engineer/ Software Engineer

HORIZONTAL (Conditional Move): Made across *job families* to a different function.

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Types of Training Mediums

10% Formal Learning

- **Classroom instructor-led training sessions** designed to build 'know-how' on core and basic items, facilitated by an experienced instructor.
- Ways to implement include:
  - Classroom training *(e.g. demos, theories and concepts)*
  - Facilitated workshops *(e.g. simulations, hands-on exercises)*

20% Informal Learning

- **Continued learning outside trainings/ workshops**, ongoing coaching in a very scalable way that focuses on real-life challenges and facilitated sharing.
- Ways to implement include:
  - Training manuals or handouts
  - Small group sessions
  - Mentoring/coaching

70% On-The-Job Experience

- **Materials that are accessible via existing web-based learning platform or intranet**; allowing employees to directly apply their learning to practice.
- Ways to implement include:
  - Help desk for Frequently Asked Questions (FAQs)
  - Change support network
  - Special tasks/assignments
  - Stretch projects

For smaller companies where career movements might be less feasible, developmental opportunities can include examples such as job rotation programmes or upskilling employees.

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Tips for Success

Design with employees needs in mind, and not the needs of the trainer.

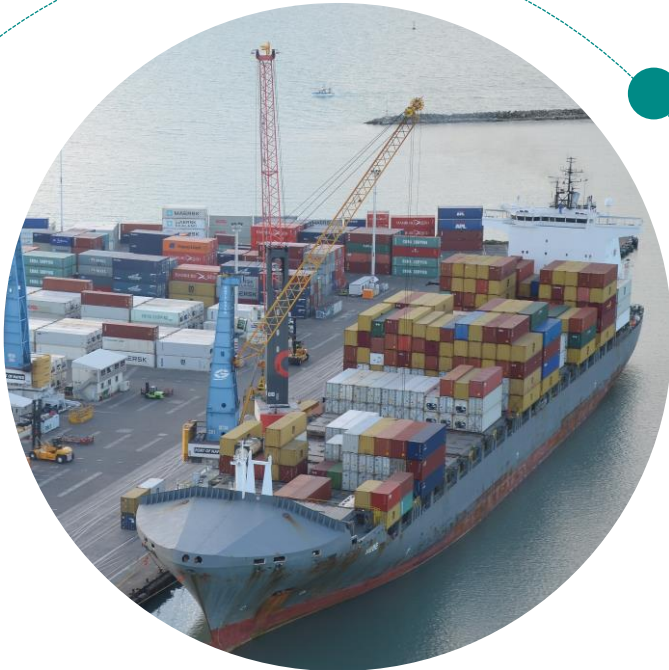Always create content around your training objective.

Design using the training principles for adults (see below).

Introduce as many practical sessions as possible in the programme.

Design an interactive programme with question and answer (Q&A) sessions.

Break the sessions into short segments.

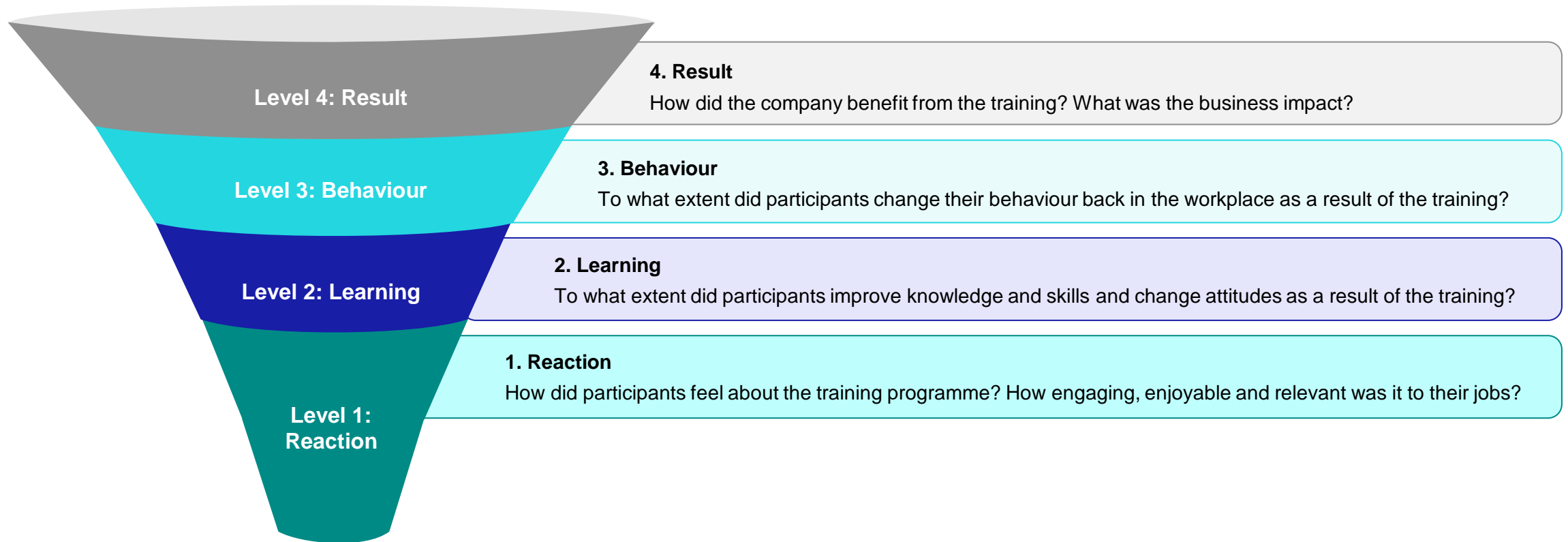Ensure proper flow and connection between segments.

When designing trainings, keep in mind that adult learners …

‣ Are self-directed

‣ Come to training with a lifetime of existing knowledge, experience, and opinions

‣ Are goal-oriented

‣ Want training that is relevant

‣ Want training that is task-oriented

‣ Learn when they see "what's in it for them"

‣ Want to be and feel respected

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Kirkpatrick's four levels of Training Evaluation Model

Kirkpatrick's Model outlines a way for your company to evaluate effective Learning & Development programmes holistically, at four levels …

Level 4: Result

Level 3: Behaviour

Level 2: Learning

Level 1: Reaction

4. Result
How did the company benefit from the training? What was the business impact?

3. Behaviour
To what extent did participants change their behaviour back in the workplace as a result of the training?

2. Learning
To what extent did participants improve knowledge and skills and change attitudes as a result of the training?

1. Reaction
How did participants feel about the training programme? How engaging, enjoyable and relevant was it to their jobs?

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Kirkpatrick's Model — Sample questions

Kirkpatrick's Model outlines a way to evaluate effective Learning & Development programmes holistically, at four levels …

Level 1: Reaction

Sample mediums: Employee satisfaction surveys, online evaluations, etc.

Sample questions asked to employees:

‣ Did you feel that the training was worth your time?

‣ Did you think that it was successful?

‣ What were the biggest strengths and weaknesses of the training?

‣ Did you like the venue and presentation style?

‣ Did the training session accommodate your personal learning style(s)?

‣ Were the training activities engaging?

‣ What are the three most important things that you learned from the training?

‣ From what you learned, what do you plan to apply in your job?

‣ What support might you need to apply what you learned?

Level 2: Learning

Sample mediums: Role-playing during training, case studies, tests and quizzes, focus group discussions, etc. to assess how effectively the training objectives or 'skills gaps' have been fulfilled.

Sample questions observed through employee assessment:

‣ What have you learned through this training? What part of the learning objective was not covered?

‣ How well can you retain and apply the new skills?

‣ What do you think you will be able to do differently as a result of this training? How confident are you?

‣ How motivated are you to make changes?

Level 3: Behaviour

Sample mediums: Observation of on-the-job behaviours, interviews, and other evaluation metrics in weeks-months following the training, along with drivers to encourage the development process (e.g. recognition, rewards, etc.).

Sample questions asked to employees or observed on-the-job:

‣ In the weeks or months following the training, did you put any of your learning to use?

‣ Are you able to teach your new knowledge, skills or attitudes to other people?

‣ Are you aware if you have changed your behaviour?

Level 4: Result

Sample mediums: Direct measurement of business goals through pre-defined Key Performance Indicators (KPIs).

Sample questions evaluated against KPIs:

‣ What is the long-term impact of the training on business performance?

‣ How effectively have pre-defined training goals been met?

‣ What are the biggest gaps or areas for improvement?

‣ What is the return on investment, based on the cost of the training vs any performance improvement?

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Evaluating post-training performance to calculate Return on Investment

SAMPLE

From Level 4 (Results), convert your evaluation of the business impact of the training into measurable units to find the Return on Investment (ROI). Evaluate Key Performance Indicators (KPIs) targeting the training programme and business performance together, to assess how effectively the training impacted the business and achieved its training objectives.

Example 1

Incidence Rate vs. Training Completion Rate

— Incidence Rate   — Training Completion Rate

Sample training objective: To improve safety of operations

‣ **Training's KPI:** Training Completion Rate
‣ **Company's KPI:** Incidence Rate

Evaluation: Assessing both together shows a decrease in incidence rate with increasing training completion. The training programme is visibly successful in improving the safety of operations.

Example 2

OEE vs. Training Completion Rate

— OEE   — % Workers Completed Training

Sample training objective: To improve production effectiveness

‣ **Training's KPI:** % Workers Completed Training
‣ **Company's KPI:** Overall Equipment Effectiveness (OEE)

Evaluation: Assessing both together shows an increase in OEE with increasing training completion. This indicates that the training programme was effective in improving OEE (production).

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Avenues of communication

The career development framework can be communicated in a variety of ways, from having the framework in the <u>employee handbook/intranet</u>, to having <u>career conversations</u> and performance <u>discussions</u> with managers.

A career conversation is a dialogue session between the employee and the employee's supervisor to discuss the employee's career aspirations, performance and future development plans to achieve career goals that have been set.

Career development conversations with manager

As part of the performance appraisal process

Developmental opportunities are identified through the outcomes of a performance appraisal process, where employees and supervisors can jointly assess competency gaps and determine the development actions needed to bridge those gaps.

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Scenarios for discussion

Preparing for career progression …

John has been in his current role for just over a year. He is feeling quite comfortable in his current position but wants to continue to improve and show readiness for the next progression upward.

Using his **company's career pathways framework**, John reads the progression requirements for the next role, especially the **competency standards**. John identifies that he **needs to further develop his stakeholder management skills**.

With his manager, John uses the feedback received to benchmark himself against the relevant competency standard. At a f**ollow-up review**, John's manager believes that John has now demonstrated the required standard and will endorse his upcoming application for progression.

John's manager arranges for him to **attend more client meetings**, while John also actively looks for opportunities to **present to senior management**.

During his **annual performance review discussion** with his manager, he asks for support in finding an appropriate development opportunity to develop his stakeholder management skills. As a result, this **development area is reflected in John's Individual Development Plan (IDP) for the year**.

1. *Which elements of the career development framework did John utilise?*

2. *Which other Human Resource processes were leveraged to bridge the gap between John's current and required skills?*

3. *What role did John's manager play?*

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Linkage with other Human Resource processes

A career development framework can provide many benefits to your company across various **talent and development processes**, i.e.:

Career Planning

‣ **Provides visibility to potential career paths**
‣ Employees have tools to better manage their careers and view jobs across the framework
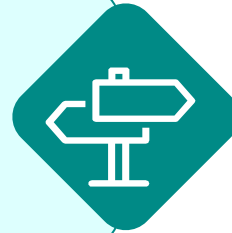
Total Rewards

‣ Provides a **consistent basis of determining job value, job family progressions and corresponding titles**
‣ Facilitates consistent compensation administration and guidelines
‣ Promotes alignment in determining level of pay, incentives, benefits, recognition and other rewards

Performance Management

‣ Creates a fair platform for uniform grading
‣ Promotes system equity
‣ **Clarifies role and performance expectations**
‣ Managers are able to better communicate job level and career opportunities

People Development

‣ Clarifies responsibilities between one job level and another
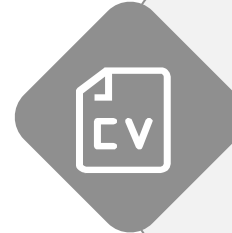‣ Provides the ability to **tailor learning and professional development needs**

Talent Planning

‣ Identifies **future talent needs and develops a strong people pipeline**
‣ Identifies and recognises high potentials
‣ Leadership development
‣ Succession planning
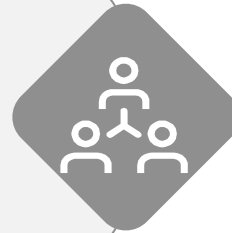
Employee Selection

‣ Aligns staffing models with business models
‣ **Right skills for right job**
‣ Identifies key roles and targets recruiting opportunities
‣ Promotes better screening

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Stakeholder Analysis

Stakeholder Type	Stakeholder Group		Stakeholder Analysis			
Type	Stakeholder Group Names	Function/ Division	Key Interests	Level of Influence	Level of Support	Potential change needs
Supervisors, individual contributors etc						

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Change Communication Plan Template

S/N	Target Audience	Communications Objective	Key Message	Delivery Channel	Timing/ Frequency	Messenger
	(Who do I want to communicate to. What are their characteristics?)	(What do I hope to achieve out of this communication plan?)	(What are the key messages that I want to bring across?)	(How will the message be delivered?)	(How frequent should the message be delivered?)	(Who should deliver the message?)

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Purpose, Process, Personnel Toolkit

Purpose

- Purpose

- Personnel
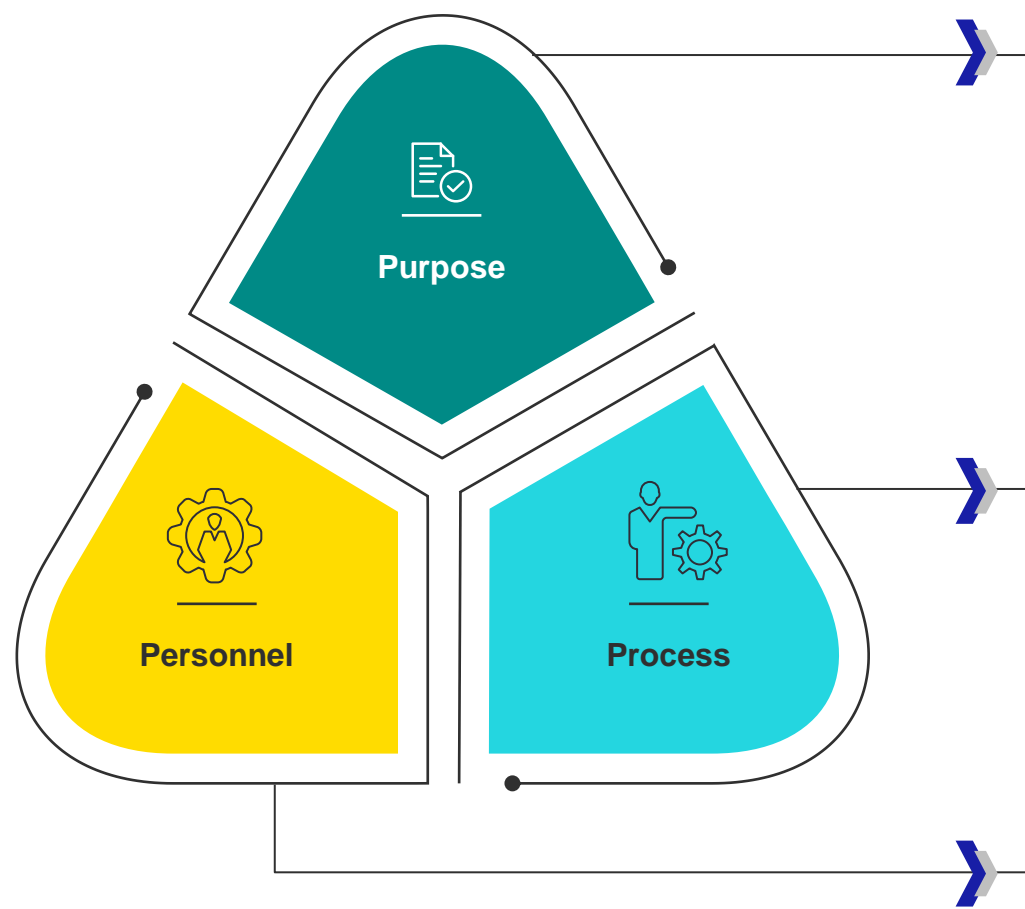
- Process

Purpose

- ‣ Purposeful alignment and execution based on compelling change story
- ‣ Build common understanding across teams
- ‣ Combines practical and inspirational elements
- ‣ It answers the question – "What's in it for me?"

Process

- ‣ Looking at end-to-end organization and business process/structures that needs to be updated with the change
- ‣ This can include HR processes such as Key Performance Indicators and alignment of incentives
- ‣ Investments in systems and technology infrastructure would be critical, especially to increase adoption of digital solutions
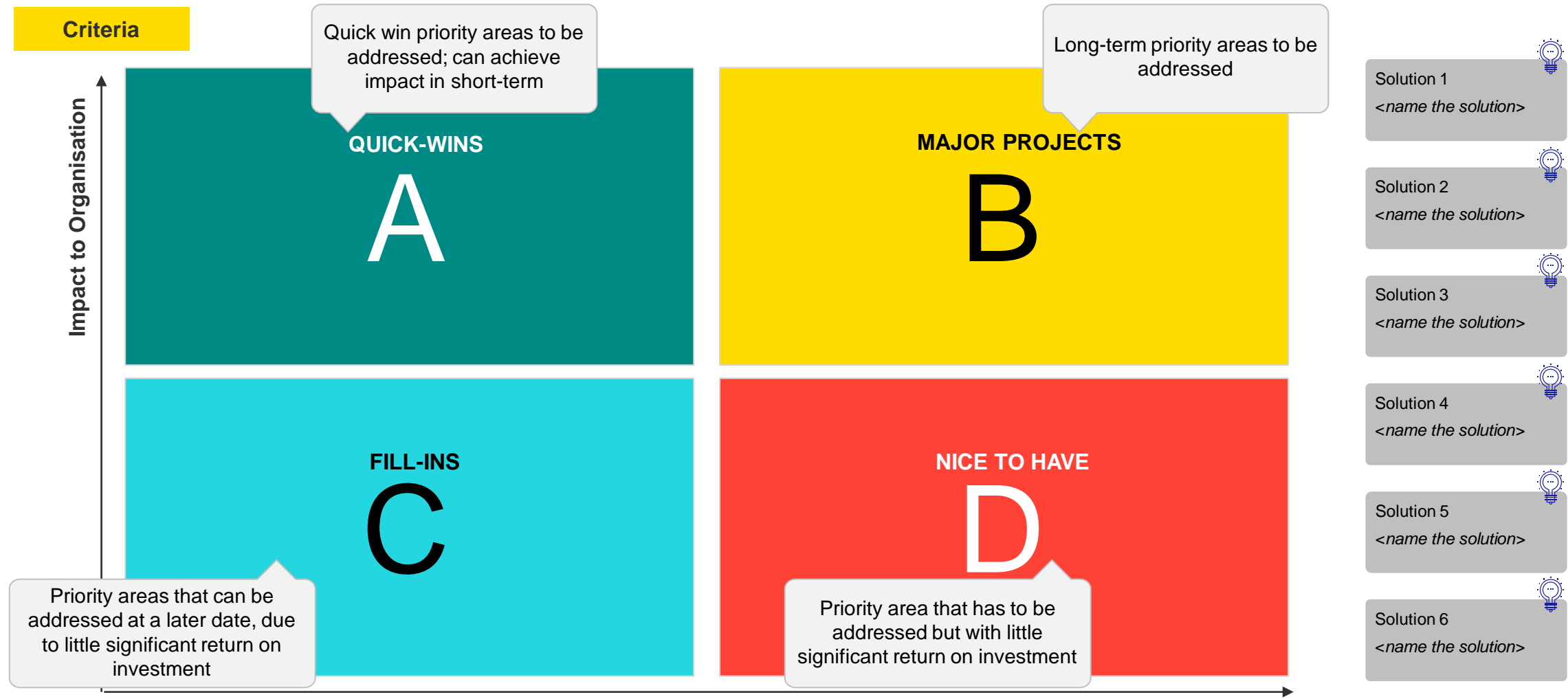
Personnel

- ‣ Focus on building individual capabilities and readiness
- ‣ Understanding and addressing individuals' needs and concerns by putting them at the center of change
- ‣ Co-creating changes together with your people who are closest to the business and the operations

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Purpose, Process, Personnel Template

Change Management Lever			Job Role
Purpose		Change Story	
		Role Modelling	
Process		Systems & Processes	
		Update KPIs	
		HR Processes	
Personnel		Continuous listening & collaboration	
		Developing skills and capabilities	

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Prioritization Matrix Template

Criteria

Impact to Organisation

Quick win priority areas to be addressed; can achieve impact in short-term

Long-term priority areas to be addressed

QUICK-WINS

A

MAJOR PROJECTS

B

FILL-INS

C

NICE TO HAVE

D

Priority areas that can be addressed at a later date, due to little significant return on investment

Priority area that has to be addressed but with little significant return on investment

Solution 1
<name the solution>

Solution 2
<name the solution>

Solution 3
<name the solution>

Solution 4
<name the solution>

Solution 5
<name the solution>

Solution 6
<name the solution>

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Start-Stop-Continue Matrix Template

Start	Stop	Continue
What should we start doing?	**What should we stop doing?**	**What should we continue doing?**

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Behavioural Economics Toolkit

What is behavioral economics?

Behavioral Economics is a branch of economic research that uses elements of psychology to identify drivers behind decision-making. It challenges the assumption that humans always make rational choices and examines other motivators as well as so-called cognitive biases – systematic patterns of deviation from norm or rationality in judgment. We use these insights to appeal not only to the logical part of the brain but also to the emotional part. Understanding cognitive biases helps us design highly impactful behavioral interventions, resulting in tangible change in behaviors.

E M O T I O N S

Details, facts, features
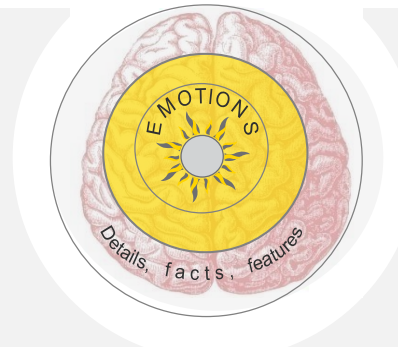
Two sides of our thinking

Limbic system: Where emotions reside
- Responsible for our feelings (i.e., trust and loyalty), behavior, decision-making and gut decisions
- Where the emotional connection is established, which drives behavior

Neocortex function: Where logic resides
- Responsible for all our rational and analytical thought and language
- Allows us to look through vast amounts of facts and figures, but it does not drive behavior

Illustrative use of behavioral economics

Situation-driven interventions

> *What looks like a people problem is often a situation problem.*

Behavioral Economics: cognitive bias	Ambiguity aversion	Frame of dependence	Cognitive overload
	Tendency to avoid options for which missing information makes the probability seem unknown	Our choices are affected by context and the relation to available comparisons	Too much information or too many tasks can lead to a refusal to cooperate
Example use	Ensuring that clear and simple guidance removes ambiguity	Deploying choice architecture to influence decisions	Limit the amount of information shared

People-driven interventions

> *Using a network of Behavioral Advocates and Leaders to test new behaviors and measuring how that impacts the behaviors of others.*

Behaviorale conomics: cognitive bias	Authority bias	Social norms	Commitment
	Tendency to attribute greater accuracy to the opinion of an authority figure	Tendency to measure our behavior in relation to others to decide what is appropriate	Tendency to achieve end-goal after initial (public) pledge
Example use	Leaders model and promote desired behaviors	Targeting a critical mass (25%) will influence others	Getting employees to publicly commit to change their habits

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Change Story Template

From …

Manual processes

Non-value added work

Error-prone data

From …

Technology is too complex

Resistance to digital solutions

Fear of being replaced by robots

Fear of additional responsibilities with redesigned job roles

Observable behaviours

Underlying mindsets

Values
Beliefs
Needs
Fears

To …

Proactively using digital tools

Increase output with less effort

Better data collection

To …

Belief in continuous improvement

Realising the value of Industry 4.0 to stay relevant and competitive and not to replace workers

A positive mindset in overcoming all the problems

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Training Plan Template

S/N	Job Function	Competency Requirements		Training Interventions		Training Courses
		Knowledge	Skills			

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Guide to Setting Effective Key Performance Indicators (KPIs)

KPIs need to be S.M.A.R.T. to serve as a good measure of how effectively a company is achieving its business objectives:

Specific

What is the specific area that you are targeting to improve through this objective?

Measurable

How will you measure your success in achieving this objective?

Attainable

Is the goal achievable? Do you have the necessary resources and skills to achieve it?

Relevant

Does this objective align with your company's goals and your role?

Time-bound

When is the deadline to achieve this objective?

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Specific

Are the goals specific enough to establish clear expectations?

- What actions must employees take?
- Do the goals include "action" verbs (e.g., increase, decrease, eliminate, develop, etc.)?
- What outcomes/results do you want to achieve?

Measurable

Are the goals measurable in cost, quantity, quality or timeliness? (How will you know when the goal has been achieved?)

- Are they quantifiable (e.g., dates, dollars, dimensions)?
- Are they qualitative (e.g., formal approvals, satisfaction of other employees or clients with the work or product)?

Attainable

Are the goals feasible in terms of time, costs, and the challenge the goal presents?

Can the goals be attained?

- What resources and support will be required?
- Will the employee have the necessary authority for required decisions and actions?
- What assumptions have been made (e.g. uncontrollable variables)?
- Will goal attainment require effort - a stretch? (It should!)

Relevant

Confirm the goals are appropriate with:

- Company and departmental goals.
- Those who benefit from the job's output.
- Others whose resources or work products are prerequisites for the employee achieving the goal.

Time-bound

Are the goals trackable through ongoing review and milestones for progress against the overall cycle?

- Identify a time frame for completion.
- Determine checkpoints and milestones.
- What are the logical checkpoints and major milestones at which progress will be reviewed?

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Guide to Setting Effective Key Performance Indicators (KPIs)

The different types of KPIs:

Understanding the different types of KPIs allows us to appreciate the deliberations needed for choosing the appropriate one.

‣ **GENERIC KPIs** measure aspects of a service or intervention that apply to the bulk of customers (e.g. number of customers awaiting service delivery and the waiting time)

‣ **SPECIFIC KPIs** measure particular aspects of a service or intervention that are related to a targeted customer population (e.g. percentage of customers for product X that have waited more than two months between raising a request and receiving a delivery)

1 — **Qualitative KPIs**
A descriptive characteristic, an opinion, property or trait. Example: customer satisfaction, employee satisfaction (obtained through survey which gives a qualitative report)

2 — **Quantitative KPIs**
A measurable characteristic that is usually collected by counting, adding or averaging numbers. Example: percentage growth in revenue, employee turnover

3 — **Input KPIs**
A measure of the assets and resources used to generate business results. Example: amount of money spent on research and development, staff training
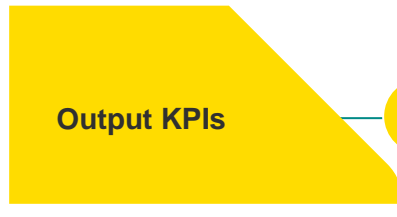
4 — **Output KPIs**
A measure of the financial and nonfinancial results of the input activities. Example: number of new customers acquired, cost savings from deploying new system of work, overall equipment effectiveness

5 — **Process KPIs**
A measure of the efficiency or productivity of an intervention or service delivery process. Example: number of goods manufactured in one month, overall equipment efficiency

6 — **Leading KPIs**
A measure of activities that have a significant effect on future performance. These act as predictors of success. Example: number of pre-orders, capacity utilisation, percentage on-time delivery

7 — **Lagging KPIs**
A measure or indicator that reflects the success or failure after an intervention or activity has been consumed. Example: number of defective goods, first pass yield, profit per employee
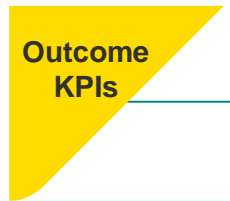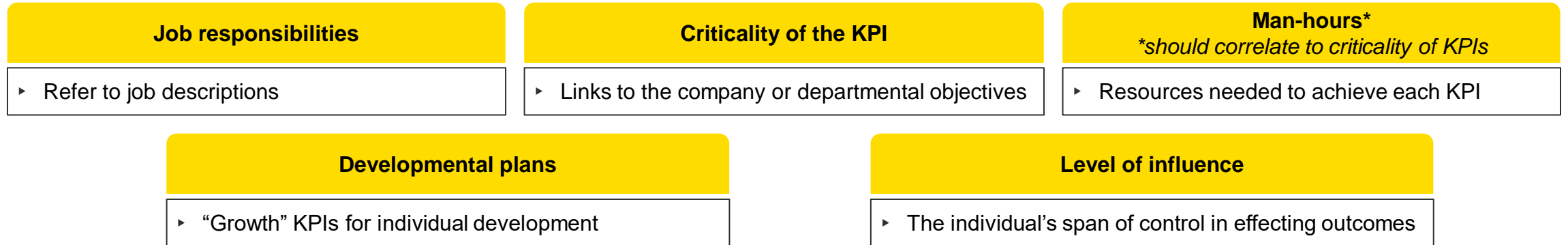
8 — **Outcome KPIs**
A measure that reflects overall results in terms of generated benefits as a quantification of performance. Example: number of returning customers

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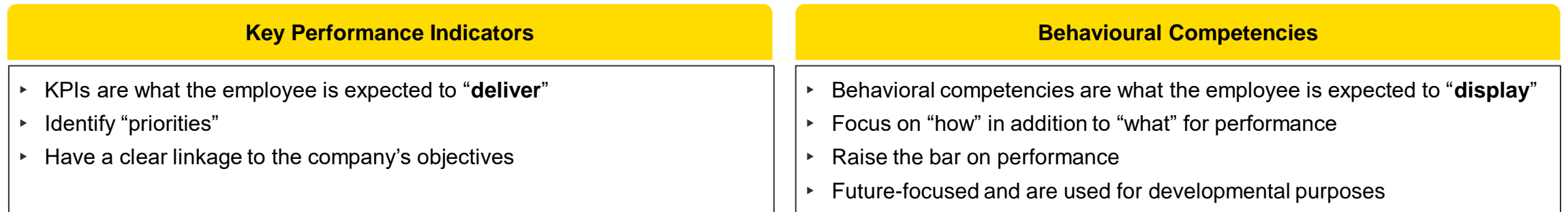# Guide to Setting Effective Key Performance Indicators (KPIs)

How would you prioritise your KPIs?

In weightage-setting, we prioritise the KPIs to reflect the key responsibility areas.
While there is no hard science to deciding weightage (%), there are a number of principles to consider:

Job responsibilities	Criticality of the KPI	Man-hours* *should correlate to criticality of KPIs*
‣ Refer to job descriptions	‣ Links to the company or departmental objectives	‣ Resources needed to achieve each KPI

Developmental plans	Level of influence
‣ "Growth" KPIs for individual development	‣ The individual's span of control in effecting outcomes

What about KPIs you are unable to measure?

The measurement of performance needs to be a balance of both KPIs and behavioral competencies.

Key Performance Indicators	Behavioural Competencies
‣ KPIs are what the employee is expected to "**deliver**" ‣ Identify "priorities" ‣ Have a clear linkage to the company's objectives	‣ Behavioral competencies are what the employee is expected to "**display**" ‣ Focus on "how" in addition to "what" for performance ‣ Raise the bar on performance ‣ Future-focused and are used for developmental purposes

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