



MPA  
SINGAPORE



# SINGAPORE QUALITY AWARD

APPLICATION REPORT 2016

# CONTENTS

<b>FOREWORD</b>		<b>PEOPLE</b>	<b>23</b>
<b>FUTURE-READY FRAMEWORK</b>		<b>PROCESSES</b>	<b>31</b>
<b>ORGANISATIONAL PROFILE</b>		<b>KNOWLEDGE</b>	<b>40</b>
<b>LEADERSHIP</b>	<b>02</b>	<b>RESULTS</b>	<b>44</b>
<b>CUSTOMERS</b>	<b>11</b>	<b>GLOSSARY</b>	
<b>STRATEGY</b>	<b>19</b>		

## FOREWORD

“MPA is honoured to receive the prestigious Singapore Quality Award (SQA) on the occasion of its 20<sup>th</sup> Anniversary. The Award is testament to the hard work, commitment, and passion of all our partners, stakeholders and staff in charting the future directions of the Singapore maritime industry.

The SQA journey has galvanised the organisation to work even more closely with our stakeholders and customers amidst one of the most protracted economic downturns facing the maritime industry. Guided by the Business Excellence (BE) Framework, MPA put in place a Future Ready Framework and invested in building a corporate culture that strives towards continuous innovation, service and people excellence.

We recognise that for Singapore to maintain her position as a premier Global Hub Port and International Maritime Centre, Maritime Singapore needs to continually stay ahead of the rest of the world in terms of safety, efficiency, innovation and sustainability. This means continuously anticipating and identifying future challenges and addressing them systematically.

The SQA is just the start of an excellence journey that will continue for many years. As we celebrate our award, we are mindful that our past success is no guarantee of future successes. We cannot afford to be complacent and must find new ways to be relevant, responsive, resourceful and resilient, as we work with the maritime community to achieve greater heights.”

**Mr Andrew Tan**  
Chief Executive





## OUR MISSION

To develop and promote Singapore as a premier global hub port and an international maritime centre, and to advance and safeguard Singapore's strategic maritime interests

## OUR VISION

A leading maritime agency driving Singapore's global maritime aspirations

## OUR VALUES

Forward Thinking, Integrity, Respect, Service Excellence, Teamwork

# OUR FUTURE READY FRAMEWORK

To build a Future Ready Maritime Singapore, embodied in the six key thrusts below, MPA must reposition itself to be:

### Relevant

Well-equipped to fulfil our roles as Port Authority, Port Regulator, Port Planner, IMC Champion and National Maritime Representative

### Responsive

Receptive to feedback, with prompt and consistent service delivery to stakeholders, and a high level of operational readiness

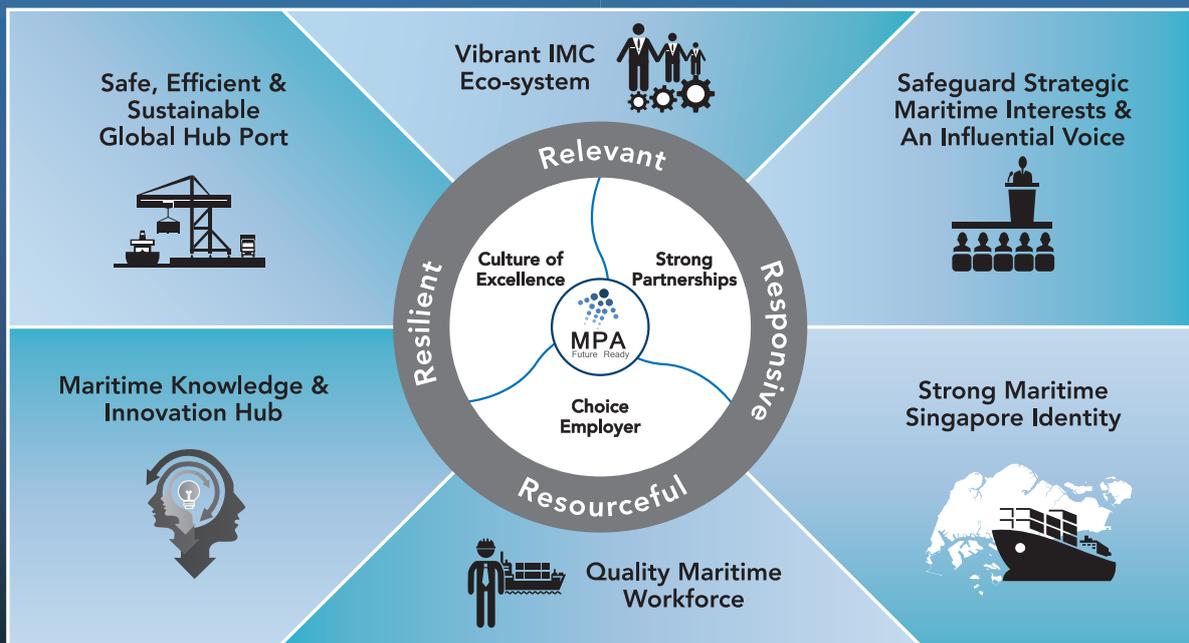
### Resourceful

Innovative and efficient to carry out the functions of the organisation sustainably

### Resilient

Adaptable to challenges and able to recover quickly from potential setbacks

Organisationally, MPA must forge Strong Partnerships with our stakeholders, ensure we remain a Choice Employer, and embody a Culture of Excellence in all we do.



# ORGANISATIONAL PROFILE

## Organisational Description

### 1. Organisational Environment

#### Mission, Vision and Values

MPA was established as a statutory board under the Ministry of Transport (MOT) in 1996. The formation of MPA brought together functions that were previously performed by the National Maritime Board, Marine Department and regulatory departments of the former Port of Singapore Authority. In 2004, the promotion of commercial shipping was moved from IE Singapore to MPA. With this, MPA became a one stop agency for matters pertaining to port and maritime matters.

As such, MPA takes on the roles of Port Authority, Port Regulator, Port Planner, IMC Champion, and National Maritime Representative. Our multi-faceted function makes us an effective one-stop centre for the promotion and development of Singapore's port and maritime industry, establishing greater synergy and cohesiveness in policy formulation and implementation. We also work closely with industry partners and other agencies to enhance safety, security and environmental protection in our port waters, facilitate port operations and growth, expand the cluster of maritime ancillary services, and promote maritime R&D and manpower development.

#### Our Mission

To develop and promote Singapore as a premier global hub port and an international maritime centre and to advance and safeguard Singapore's strategic maritime interests.

#### Our Vision

A leading maritime agency driving Singapore's global maritime aspirations.

#### Our Values

Forward Thinking, Integrity, Respect, Service Excellence, Teamwork (FIRST)

#### Business Model - Future Ready Framework

As the maritime industry expanded in breadth and depth of service demands, MPA evolved to meet increasingly complex challenges.

In 2014, MPA embarked on a corporate-wide review of our strategic framework. The result was the development of the Maritime Singapore Future Ready Framework. It guides our transformation efforts through 6 external and 3 internal strategic thrusts that were identified through extensive brainstorming sessions with over 350 MPA staff.

#### Main Products and Services

The maritime sector is a sizable contributor to the Singapore economy, providing 170,000 jobs and accounting for 7% of Singapore's total gross domestic product. Situated along a vital shipping lane, Singapore is one of the world's busiest waterways with about 1,000 ships in its waters at any one time. Known for providing

high quality and reliable services at competitive prices, our port attracts an average of 140,000 vessel calls annually. In 2015, we maintained our position as one of the world's busiest ports with vessel arrival tonnage growing 5.6% to reach 2.5 billion gross tons. Singapore remained the world's top bunkering port with 45.2 million metric tonnes in total bunker sales.

The Singapore Registry of Ships (SRS) administered by MPA is amongst the top five ship registries in the world. It is the preferred choice of quality flag for a growing base of international ship owners who recognise SRS' efficient services, high operational and pollution control standards and a good safety record.

#### Key Roles and Core Competencies

##### Port Authority

MPA manages vessel traffic through our two Port Operations Control Centres (POCCs) at PSA Vista and Changi. We also conduct maintenance dredging of fairways and anchorages, provide and maintain adequate and efficient lighthouses and aids to navigation. We work with various enforcement agencies such as Police Coast Guard and the Republic of Singapore Navy on maritime security measures to protect the port. MPA also performs port state control and flag state inspections respectively to ensure visiting foreign ships are in compliance with international regulations and Singapore-registered ships are well maintained.

##### Port Regulator

MPA regulates and licenses port and marine services and facilities, such as the container terminals, ferry and cruise terminals, pilotage, towage and bunkering services.

##### Port Planner

MPA works to optimise the use of sea space and waterfront facilities to provide capacity for growth. We also ensure that our port infrastructure and facilities are adequate and able to meet increasing demand.

##### IMC Champion

MPA works closely with other government agencies and maritime industry partners to attract shipowners and operators to set up operations in Singapore and broaden the maritime ancillary services such as ship broking/management, marine insurance/shipping finance, legal/arbitration services offered here. We also create a pro-business environment for the maritime industry through tax incentives and the Maritime Cluster Fund scheme.

MPA also manages and promotes the SRS. We maintain high safety and security standards of the vessels registered under the SRS, and keep a low detention record with the Tokyo and Paris MOU Port State Control (PSC) regimes.

We also spearhead manpower development and expertise for the maritime industry through various incentive schemes such as the Maritime Cluster Fund and collaboration with educational institutions and industry partners on maritime education and training through the MaritimeONE initiative. We work with industry partners to nurture the growth of a strong maritime R&D and innovation cluster in Singapore through the Maritime Innovation and Technology (MINT)

# ORGANISATIONAL PROFILE

Fund and other collaborative MOUs. We also profile the maritime sector and the career opportunities it offers through various outreach initiatives.

## National Sea Transport Representative

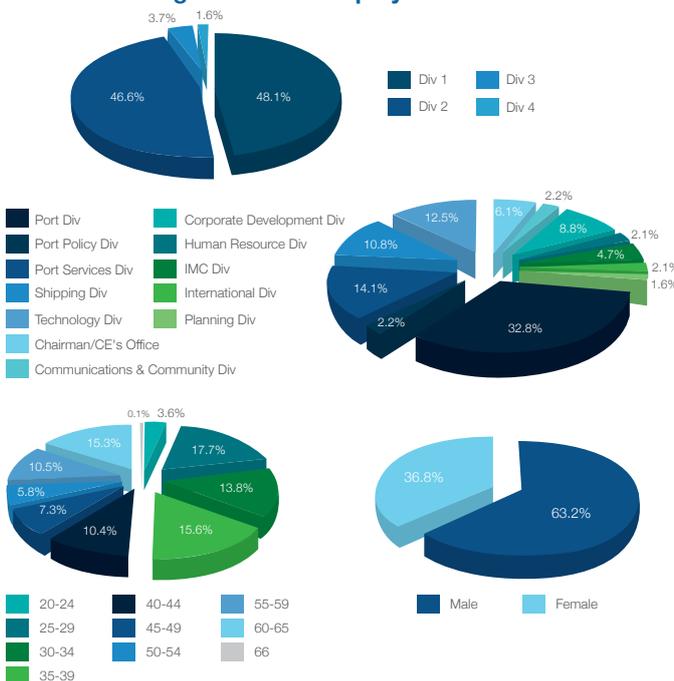
MPA advises the Government on matters relating to sea transport. We represent Singapore internationally on sea transport, marine and port matters and safeguard and advance Singapore's maritime interests. We ensure that our sea lines of communication or shipping routes between ports are open, safe and secure, in particular in the Straits of Malacca and Singapore. To this end, we advance international cooperation and work closely with our Littoral neighbours (Indonesia and Malaysia) in the SOMS. We also actively foster regional cooperation to combat piracy and sea robbery in our waters through the Regional Co-operation Agreement on Combating Piracy and Armed Robbery against Ships in Asia (ReCAAP), the first regional intergovernmental initiative to promote cooperation against piracy and sea robbery in Asia.

Towards marine environment protection, we adhere to international laws such as UNCLOS. We also seek to promote environmentally-friendly and sustainable shipping practices through the Maritime Singapore Green Initiative. MPA ensures an effective Singapore voice on key maritime issues on the international stage through our active participation and contribution at the International Maritime Organization (IMO), International Hydrographic Organization (IHO) and ASEAN Maritime Transport Working Group among others. We also cultivate good relations with the international maritime community and ensure Singapore's accession to various international regulations and conventions. As a responsible member state, Singapore has acceded to all the major IMO conventions.

## Employee Profile

MPA has a staff strength of about 674 (as at end 2015). Division 1 and 2 staff make up more than 90% of the staff population, as illustrated at Figure 1.

Figure 1: MPA Employee Profile



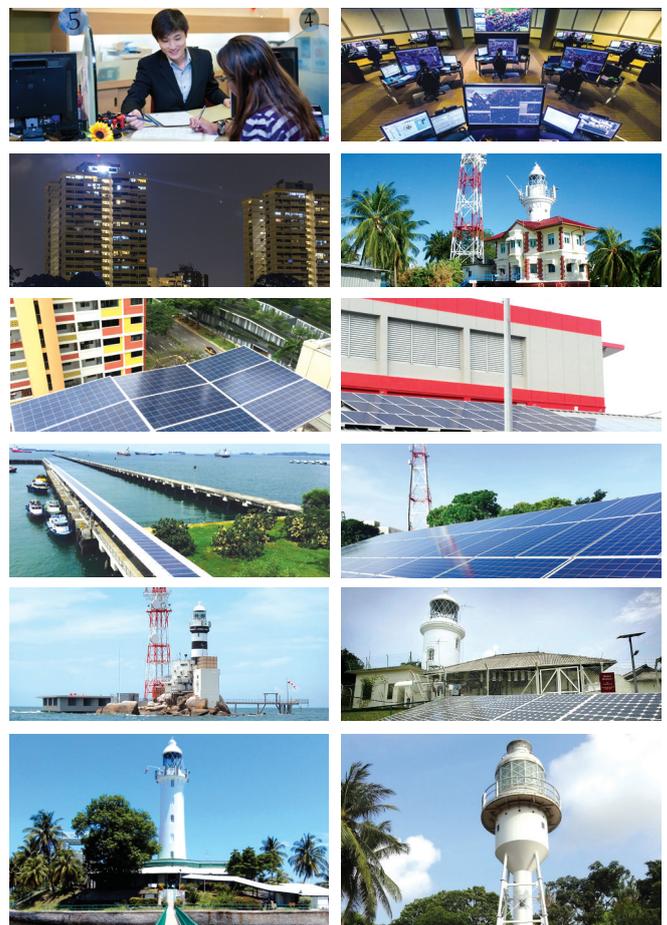
Our staff are clustered around the following work scopes:

Operations	Technical	Management
Vessel Traffic Management	Hydrography	Industry Promotion
Marine Safety & Port Security	Port Planning	Policy Development
Port Chemist	Reclamation Project	International Affairs
Port Inspector	Radar Communications	Planning
Ship Registry	Marine Surveying	Corporate Support

## Major Equipment, Facilities and Technologies

To support the execution of our strategic thrusts, we have invested substantially in critical set-up, facilities and technologies, as shown at Figure 2.

Figure 2: Major Equipment, Facilities and Technologies Used



## Regulatory Environment

As a statutory board, MPA is governed by the MPA Act, Merchant Shipping Act and Maritime Labour Convention, under the following directives:

- IMO Regulations and Conventions
- Ministry of Transport Directives
- Ministry of Finance Directives
- Government Instruction Manuals – PSD, AGO, AGD, etc.

## ORGANISATIONAL PROFILE

Growing international interest on maritime issues, from the blue economy, good ocean governance and maritime disputes in the South China Sea, has impacted the regulatory maritime space.

Over the years, MPA has increased our engagement of the IMO which Singapore has been a member of since 1993 and our efforts resulted in Singapore once again being re-elected to the IMO Council for the 2016-17 biennium, garnering the most number of votes, exceeding the number in 2013. Singapore also had the honour of being nominated as one of Vice Chairs of Committee 1 of the IMO Assembly for the biennium 2016-17.

### Organisational Challenges

#### 1. Competitive Environment

Identify the competitors, if any

- Describe the competitive position (e.g. relative size and growth) in the industries or markets served
- Outline the key success factors (e.g. productivity growth and innovation)
- Describe the key changes in the competitive environment and growth opportunities

#### Overview of key maritime clusters

Singapore is well-regarded as one of the most complete IMCs with one of the largest concentration of international maritime companies, and will continue to be important as Asia presents growth opportunities for the shipping sector.

Singapore topped two latest benchmarking reports that serve to assess maritime clusters in terms of their strengths and competitiveness.

A study by Norwegian consultancy firm Menon benchmarked maritime cities against four maritime sub-sectors, together with a fifth perception element of Attractiveness & Competitiveness. Singapore retained overall leading position as we continue to play a key role in all aspects of maritime industry, (although categories differed from the first survey done in 2012). Traditional European leaders like Hamburg, Oslo, London are fighting to be leading in Europe. In Asia, the increasing importance of China in the maritime industry is evident with Shanghai joining HK on the list of top five cities.

Similarly Singapore retained the leading position on the benchmark report by the Baltic Exchange and China's Xinhua news agency. The Index is based on evaluations under three categories: Ports Facilities & Activities, Maritime Services, and Business Environment. In 2015, Singapore scored overall 85.7.

Countries are increasingly investing significant resources to revitalise and build their maritime clusters, especially with the aim of closing the global competitiveness gap with Singapore. Singapore has consistently retained a Top 2 position in the WEF Global Competitiveness Report.

#### 2. Strategic Challenges

- Describe the key business, operational and human resource strategic challenges

#### Strong Headwinds from Global Economy & Shipping Overcapacity

The maritime industry is facing strong headwinds. Almost every segment is suffering from excess capacity and depressed rates, amidst a slowing global economy. The global merchant fleet has grown at an average of 6.3% in the past 5 years, almost double the average fleet growth in the 1990s.

This overcapacity has been worsened by weaker global trade demand growth. For the two decades prior to the global financial crisis in 2008, average world trade growth was about 7%. Post-crisis, growth in trade volumes has been falling, from 6.5% in 2011 to about 3-4% in recent years.

#### Consolidation and Increasing Vessel Size in Container Segment

Given the Port of Singapore's role as a global container transshipment hub, we are closely monitoring the impact of these global and industry forces on the container sector. The sector has undergone many changes since 2011, as major container lines have formed and reshuffled alliances. Following a series of consolidation moves in 2015, such as the acquisition of NOL by CMA CGM and the merger of China's national shipping lines COSCO and CSCL, we can expect to see more changes in the alliance landscape.

The trend towards mega vessels will place pressure on port efficiency as shipping lines attempt to extract as much efficiency as they can from the entire supply chain. Growing vessel sizes are prompting the expansion of major trade conduits, such as the Suez and Panama Canals. We may see further trade route shifts as carriers seek more economical sailing options to serve their markets in Asia, Europe and the USA. Longer-term initiatives such as the opening of the Arctic sea routes and recurring efforts to revive the Isthmus of Kra project are also areas we are watching closely, given the potential alternatives they present to the Straits of Malacca and Singapore.

#### Regulatory and Territorial Challenges

The maritime industry faces increasing compliance demands from new international regulations such as ballast water management and lower sulphur limits. These could result in higher costs for the industry at a time when bottom lines are being strained. In addition, rising piracy, sea robberies and fuel siphoning incidents in the region warrant our close attention, both from a safety and security lens but also because such incidents have fuelled concerns of higher insurance premiums. We are also monitoring the dispute over the South China Sea between China and the claimant states in Southeast Asia, which has drawn sharp responses from the USA and Australia. The dispute threatens to destabilise the region, even as China advocates its 21st Century Maritime Silk Road concept for peaceful cooperation.

### Increasing Competition for Maritime Singapore

Maritime Singapore also faces rising competition on both our port and International Maritime Centre (IMC) fronts. Regional ports are ramping up infrastructural development, with ports in Malaysia, Thailand and Indonesia expressing a desire to compete with Singapore for a share of the transshipment pie. Countries in Europe, Asia and the Middle East are also investing significant resources to revitalise and/or build their maritime clusters, challenging our own cluster to relook at our value proposition and how to strengthen it going forward.

### 3. Organisational Directions

- Outline new thrusts (e.g. entry into new markets, formation of new alliances, introduction of new technologies, services or products and changes in strategy)

### Re-thinking our Strategic Focus

As an organisation, MPA faces increasingly complex challenges in an era of rapid and unprecedented change. We need to re-think our strategic focus and efforts, hence the Maritime Singapore Future Ready 2030 initiative. Below are some of the new areas MPA is developing as part of our Future Ready initiative.

### Safe, Efficient & Sustainable Global Hub Port

We aspire for the Port of Singapore to be a world class hub port which is highly competitive, safe & environmentally sustainable. On this front, MPA is working closely with our port operators to enhance Singapore's longer-term competitiveness. We recently formed a Hub Port Competitiveness Committee with the Ministry of Transport and PSA to identify measures to strengthen our position as a hub port. We are also working with Jurong Port on their transformation efforts to achieve higher land and labour productivity.

MPA is progressing on efforts to consolidate future container operations at our Next Generation Port in Tuas. The vision is to build a smarter port, leveraging on new technologies, and embarking on simulation studies to optimise operations. The new port along with the Tuas Maritime Gateway complex will be nested in the Tuas Maritime Hub which could form a new hub for maritime and logistics-related activities. We will also look at optimising the space in the Tuas Maritime Hub with aboveground and underground use.

As a leading bunkering port, Singapore will be the first port in the world to fully adopt Mass Flow Meters when mandatory adoption kicks in on 1 January 2017. This will ensure we remain the choice bunkering hub, with quantity and quality assurance. We aim to be LNG bunker-ready by 2020. In developing the technical reference for LNG bunkering, we are working with the first movers in this area, such as Rotterdam, Zeebrugge and Antwerp, to ensure we harmonise with global standards.

Even as we develop our port, it is imperative we maintain the highest standards of safety in our port waters. We formed the National Maritime Safety at Sea Council (NMSSC) to spearhead the drive for maritime safety on a national level and ensure our safety efforts are sustainable. We will elevate our safety efforts to the international level through the inaugural International Safety@Sea Conference on 30 August 2016. In addition, we will leverage on technology to enhance situational awareness. Some of the new technology include using AIS/4G technology to enhance shore-ship-shore communications. We will test-bed e-Racon Positioning System to improve accuracy of navigation, and develop real time dashboard for monitoring emergency response resources.

To enhance the emergency response capabilities of our first responders, we will develop our next generation multi-capability patrol craft to provide immediate response to combat and contain oil spills, detect and monitor hazardous gases, evacuate passengers and provide immediate fire fighting response.

### A Vibrant IMC Eco-System

We envision Singapore to have a vibrant and competitive IMC eco-system with a significant concentration of international ship and offshore owners/operators, and maritime service providers. Today, Singapore is home to more than 130 international shipping groups, a significant growth from about 20 groups in 2000. These comprise both shipping as well as offshore companies. Singapore's maritime ecosystem is also a vibrant one consisting of leading players in diverse maritime fields including ship management, finance, broking, insurance, law and arbitration. The latest Menon Study and Xinhua-Baltic Exchange International Shipping Centre Development Index both recognise Singapore as a leading international maritime centre, ahead of other centres like London and Shanghai.

Despite our current leading position as an IMC, global competition has continued to grow. For Singapore to ensure that our value propositions to the maritime industry stay relevant and competitive, we need to undertake a strategic review and chart the way to propel Singapore's development as a leading and competitive IMC in the next 15 years. To embark on Maritime Singapore's next stage of development as an IMC, a new high-level IMC 2030 Advisory Panel comprising business leaders and industry experts is being established. The Advisory Panel will discuss the challenges and opportunities facing Singapore's development as a leading and competitive IMC and new capabilities to be developed.

We seek to deepen and broaden our IMC by reaching out to various sectors. Together with IE Singapore, MPA is promoting Singapore as a location for trading and shipping activities. The presence of a strong cluster of trading and shipping companies allows cross-linkages that will contribute to the density of networks and interdependencies of our maritime eco-system.

## ORGANISATIONAL PROFILE

We will strengthen Singapore's suite of maritime services in several areas. For example, we have started seeding the potential of Singapore's capital markets. During SMW 2016, we will be holding the inaugural SGX-MPA Capital Markets Roundtable for the senior management of shipping and offshore companies. We will also continue to strengthen growing sectors such as insurance. Seven of the 13 members of the International Group of Protection & Indemnity Clubs which write 90 per cent of third-party liability insurance for ocean-going tonnage have established offices in Singapore. The Lloyd's Asia platform has grown to 19 service companies underwriting marine/offshore energy insurance and Singapore is the largest Lloyd's hub outside of London. We will continue helping players based in Singapore to grow their business.

### Safeguard Strategic Maritime Interests and an Influential Voice

Singapore aspires to have a strong presence and an influential voice in international maritime affairs, to safeguard our maritime interests. Singapore was successfully re-elected to the International Maritime Organisation (IMO) Council for the 2016-2017 biennium, with the highest number of votes in Category "C". We will maintain active involvement at the IMO through leadership positions in various committees and working groups, and contribute to IMO discussions on key issues such as ballast water management, availability of compliant fuel oil to meet IMO's global sulphur cap, and the polar code.

MPA seeks to ensure the sustainability of key pillars of the Co-operative Mechanism, which provides a platform for the littoral States, user states, stakeholders and the industry to share information and perspectives on important Straits issues. One of our efforts under the Co-operative Mechanism will be a review of the Aids to Navigation Fund as a platform through which Singapore can advance its maritime interests.

On the piracy front, we will assess and formulate the approach to entrenching ReCAAP's relevance in the next 10 years. On Port State Control matters within the Asia-Pacific region, we aim to assume responsibility of Regional Coordinator for one of the future Concentrated Inspection Campaigns.

MPA will partner with like-minded countries and organisations to play an active role on key issues, influence the international maritime agenda and establish Singapore as an influential voice. An example is co-authoring IMO's Ballast Water Management (BWM) manual and assisting industry applications and tests for approval of their Ballast Water Treatment Systems by the IMO.

### Maritime Knowledge & Innovation Hub

We aim to establish Singapore as one of the top centres of excellence for maritime knowledge and innovation. On this front, we entrench technical capabilities of class societies in Singapore, through increasing engagement efforts with them and encouraging the set-up of R&D labs, or researchers to be based here. We will also jointly set

up a Maritime Autonomous Systems Laboratory at NUS/NTU to develop long-term capabilities in autonomous technologies.

To establish the MPA Academy as a global centre of learning, we will set up the International Advisory Panel consisting of possible representatives from IMO, MFA, IHLs and the shipping community, to provide strategic directions for MPA. We will further engage training partners including IHLs to enhance the curriculum of our programmes.

### Quality Maritime Workforce

We will focus on developing Singapore to be internationally recognised as a key hub for maritime talent with a strong core of Singaporeans. Towards this, MPA has formed the Sectoral Tripartite Committee to recommend new initiatives to strengthen manpower development efforts for seafaring and shore-based sectors. The Sectoral Tripartite Committee will develop a Sectoral Manpower Plan and Skills Framework for the Transport (Sea) Sector. We also seek to elevate the profile of maritime careers through launching the Maritime Singapore Connect (MSC) Office in partnership with Singapore Maritime Foundation.

To enhance Singapore's maritime education and training landscape, we will work with key IHLs to improve the quality of maritime teaching expertise and relevance to the industry. We will engage reputable Training Service Providers and encourage quality and iconic courses to be offered in Singapore.

### Strong Maritime Singapore Identity

We envisage for Maritime Singapore to have a strong community outreach and be widely recognised and highly regarded locally and internationally. To achieve this, we will build a strong Maritime Singapore identity by developing a coherent narrative and a distinctive logo. We will showcase the diverse facets of Maritime Singapore by branding and showcasing key messages catered to various target groups. We will also step up on our efforts to promote maritime heritage by setting up a new Maritime Corner at Fullerton.

We are stepping up our efforts to reach out to our stakeholders via a suite of programmes such as the Singapore Maritime Trails and the Maritime Environmentalist Partnership Programme. To further entrench our reach to the young, we are organising the inaugural Maritime Youth Festival with a line-up of youth-centered activities and events, in addition to the existing Maritime Youth Club.

### Conclusion

The Maritime Singapore Future Ready 2030 initiative seeks to build upon the fundamentals of our maritime cluster, while identifying new areas of strategic opportunity. Going forward, we will work closely with the industry to develop our long-term vision and strategies, which we will flesh out in the Maritime Singapore Future Ready Roadmap to 2030.

INTRODUCING  
**MARITIME SINGAPORE**



MARITIME SINGAPORE CONTRIBUTES **7%** TO OUR NATION'S GROSS DOMESTIC PRODUCT



OVER **170,000** EMPLOYEES IN MARITIME SINGAPORE



MORE THAN **5,000** MARITIME ESTABLISHMENTS



THE SINGAPORE REGISTRY OF SHIPS (SRS) IS AMONGST THE WORLD'S **TOP 5 LARGEST** SHIP REGISTRIES



MORE THAN **130** INTERNATIONAL SHIPPING GROUPS



MORE THAN **20 MAJOR** INTERNATIONAL SHIP BROKING FIRMS



MORE THAN **30** LOCAL AND INTERNATIONAL LAW FIRMS WITH MARITIME PRACTICE



MORE THAN **20** BANKS OFFERING SHIP FINANCING



WORLD'S BUSIEST **CONTAINER TRANSshipment** HUB



IN 2015, VESSEL ARRIVAL TONNAGE REACHED **2.5 BILLION GT**



APPROXIMATELY **1,000 SHIPS** IN THE PORT OF SINGAPORE AT ANY ONE TIME



EVERY **2-3 MINS** A SHIP ARRIVES OR LEAVES THE PORT OF SINGAPORE



MORE THAN **30.9 MILLION** TEUS OF CONTAINER THROUGHPUT IN 2015  
\*TWENTY-FOOT EQUIVALENT CONTAINER UNIT



SUPPLIED **45.2 MILLION TONNES** OF BUNKER IN 2015



AWARDED BEST SEAPORT IN ASIA **27 TIMES**  
ASIAN FREIGHT, LOGISTICS AND SUPPLY CHAIN AWARDS



SINGAPORE IS CONNECTED TO **600 PORTS** IN OVER 120 COUNTRIES



Brought to you by the Maritime and Port Authority of Singapore



MARITIME\_SG



MPA\_SINGAPORE



MPA.SG

# 01 / LEADERSHIP

## 1.1 SENIOR LEADERSHIP

1.1a Describe how senior leaders develop the organisation's mission, vision and values, and communicates them to key stakeholders

### Senior Management

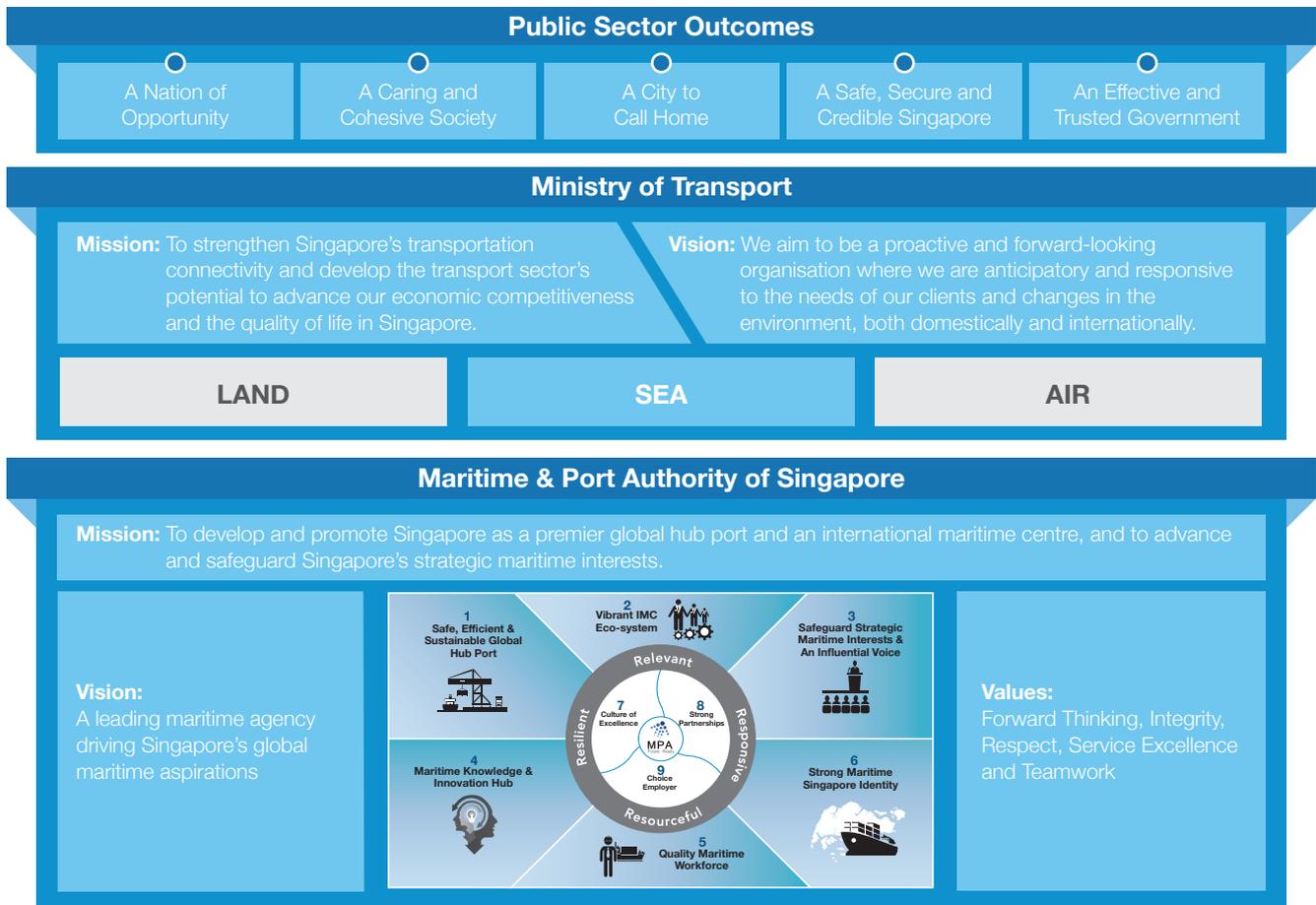
MPA's Senior Management (SM) comprises our Chief Executive (CE) and his direct reports of Assistant Chief Executives (ACEs) and Directors. The SM is accountable to the Chairman of the MPA Board and also to the Permanent Secretary (PS) of the Ministry of Transport (MOT).

Our SM has led MPA through many major and successful changes over the years - from achieving many innovative firsts in port operations to cementing Maritime Singapore as a preferred one-stop destination and global hub for port and marine activities.

### MPA's Mission, Vision and Values

The SM together with the Board and Ministry of Transport work together to deploy the Mission, Vision and Values. (See Figure 1.1.1)

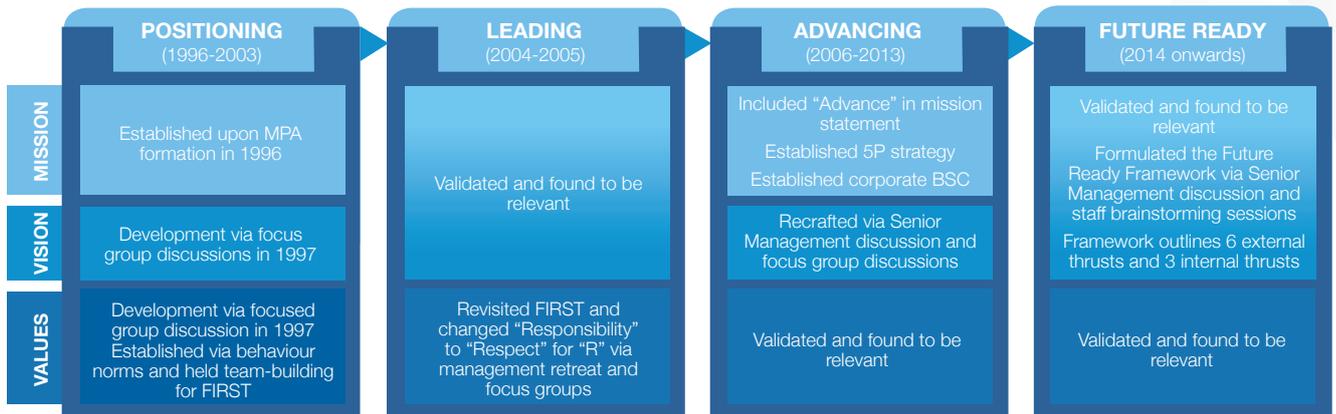
Figure 1.1.1: Aligning MPA's Vision to Whole-of Government Strategic Outcomes



### Development Of Our Mission, Vision and Values

Our Chairman, CE and Senior Leaders have over the years refined MPA's Mission, Vision and Values (see Figure 1.1.2). All reviews involved extensive focus group discussions with internal and external stakeholders.

**Figure 1.1.2: Evolution of Mission, Vision and Values**



In the initial years from formation to 2003, MPA focused establishing and positioning MPA at a national level as a regulatory authority and building up its systems and processes via focus groups that were led by the CE then.

From 2004 to 2005, MPA took on a more active role in leading IMC matters. While our Mission and Vision were reviewed and found to be relevant still, we enhanced our FIRST Values, replacing Responsibility with Respect as it was found to be more encompassing.

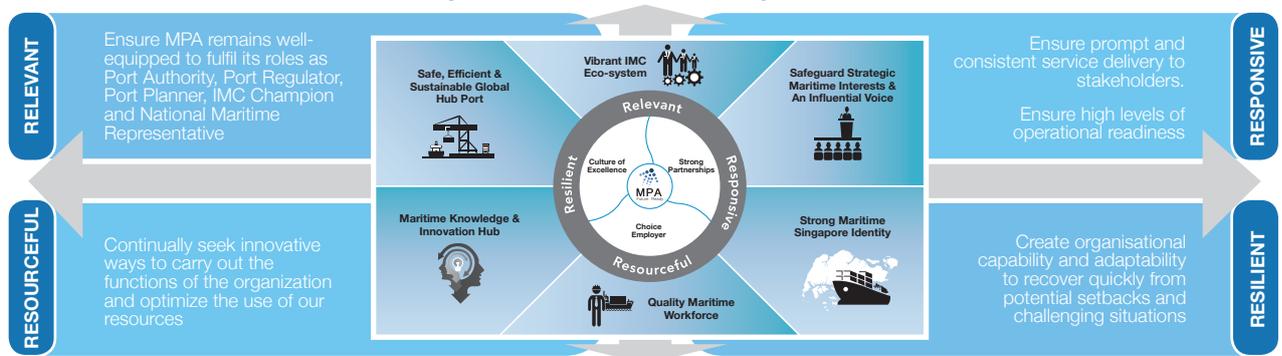
In 2006, at our 10-year mark since establishment, a point of arrival of sorts, we formulated the 5P strategy to help push our Mission forward, and established a corporate Balanced Scorecard to better frame our strategies and efforts.

**The Future Ready Framework: Helping Maritime Singapore Navigate The Future**

MPA's latest review took place in 2014. MPA's current Chief Executive led over 350 MPA staff in multiple brainstorming sessions to identify a new way forward for MPA in light of an increasingly challenging environment. This resulted in the development of the Future Ready Framework.

To achieve the goals as set out in the Future Ready Framework, MPA must adopt a Future Ready mindset (see Figure 1.1.3).

**Figure 1.1.3: The Future Ready Mindset**



1.1b Describe how senior leaders engage key stakeholders to drive the organisation's performance

MPA's SM provides three forms of leadership. The three forms are: **Organisational Leadership, Industry Leadership and International Leadership.**

**Figure 1.1.4: MPA Engages Stakeholders On Three Levels to Realise Its Mission**



## Organisational Leadership

SM deploys a wide range of communication platforms to lead the organisation, as shown in Table 1.1.1.

**Table 1.1.1: Cascading of MVV to Staff**

MODE	PLATFORM	OBJECTIVES	FREQUENCY
Electronic and Print	e-Connect Portal	Communication of Mission, Vision and Values	Ongoing
	Employee Engagement Survey/Pulse Survey	Captures the current engagement level of staff and provide opportunities to improve work environment	Annual
	Workplan Seminar/ Management Advance	Communication of Mission, Vision and Values and corporate work plans; development of corporate work plans and discussion of key projects	Annual
	Town Hall Sessions	Showcases staff initiatives and provides opportunity for open dialogue	Annual
	Values Week	Communication and role modelling of FIRST Values	Annual
Face-to-Face	Staff Events (such as Family Day, Staff Night, Dinner & Dance)	Provide opportunities for staff bonding	Annual
	CE's Tea/Lunch Sessions with Staff and Foundation Programme for New Employees	Communication and solicitation of feedback on Mission, Vision and Values and strategic focus areas, and welcoming of new staff	Quarterly
	Divisional Activity Days and Divisional Dialogue Sessions	Communication and solicitation of feedback on Mission, Vision and Values and strategic focus areas	Quarterly
	CE's Field Trips	Communication of strategic focus areas and to understand field operations	Ongoing
	Appreciation Hour	Recognition of staff who have shown service excellence and excellence in corporate projects	Quarterly
	Festive Celebrations	Communication of Mission, Vision and Values and opportunities for staff bonding	Held four times a year to coincide with Chinese New Year, Hari Raya, Deepavali and Christmas
	Future Ready Brainstorming Sessions	Solicitation of ideas from staff for strategic focus areas	Ad hoc

## Industry Leadership

SM employs innovative communication methods and a proactive media strategy (see Table 1.1.2) to engage with MPA's national stakeholders in order to create an awareness about industry and to promote Maritime Singapore.

**Table 1.1.2: Cascading of MPA's Mission, Vision and Values to National Stakeholders**

MODE	PLATFORM	OBJECTIVES	FREQUENCY
Electronic and Print	Corporate website, Singapore Registry of Ships (SRS) microsite and e-Bulletin, presentation, videos and social media	Communication of MPA's Mission, Vision and Values and major initiatives to the public, to the shipping community and facilitating a platform for electronic transactions	Ongoing
	Corporate brochures, Singapore Nautilus (quarterly magazine) and annual report/integrated report	Communication of MPA's Mission, Vision and Values and major initiatives to the public and report organisational performance	Ongoing
	MOT: Ministerial Staff Meetings and Maritime Policy Forum	Obtaining buy-in of MPA's Mission, Vision and Values and corporate work plans, and providing updates on the progress of key initiatives to the Minister of Transport, and MOT HQ	Monthly
	Board Meetings	Obtaining buy-in of MPA's Mission, Vision and Values and corporate work plans, and providing updates on the progress of key initiatives to Board Members	Bimonthly
	Singapore Maritime Week	Cascading of MPA's Mission, Vision and Values and profiling Singapore's maritime industry	Annual
Face-to-Face	MaritimeONE	Communicating of MPA's Mission, Vision and Values and to gain an understanding of the industry's manpower needs	Annual
	Industry engagements (such as the Singapore International Bunkering Conference), dialogue sessions and industry consultations with the maritime community	Sharing MPA's Mission, Vision and Values and soliciting feedback on strategic focus areas	Ongoing
	Safety Briefings	Communicating MPA's Mission, Vision and Values and imparting safety messages	Ad-hoc
	Networking events such as lunch meetings and tea sessions	Sharing MPA's Mission, Vision and Values and soliciting feedback	Quarterly
	Singapore Maritime Gallery and documentary shows such as the National Geographic documentary <b>Inside Maritime Singapore</b>	Cascading MPA's Mission, Vision and Values and profiling Singapore's maritime industry	Ad hoc

To promote Maritime Singapore, MPA also engages national stakeholders through the following industry engagement channels:

- Industry initiatives, such as the Smart Port initiatives centred on building a more interconnected port. One such initiative featured MPA and M1 partnering to make available 4G broadband access in Singapore port waters.
- Funds and schemes for development of manpower through the \$115 million Maritime Cluster Fund, promotion of R&D through the \$150 million Maritime Innovation and Technology (MINT) Fund and the \$25 million Productivity Programme.
- Joint R&D partnerships such as collaborations with the National University of Singapore, Nanyang Technological University and the Institute of High Performance Computing.
- Community engagement events which includes the annual Amazing Maritime Race.
- Forums and conferences.

### International Leadership

To influence the international maritime agenda, MPA engages international stakeholders through the following international engagement channels:

- Inking of bilateral agreements with research institutions and port authorities for collaborative efforts.
- Organising of events that bring together the international maritime community, such as forums, seminars, conferences and dialogues.
- Presenting papers and participating at international maritime meetings and working groups in order to learn from others and share with them Singapore's position on maritime issues.
- Serving as council member on international maritime organisations.

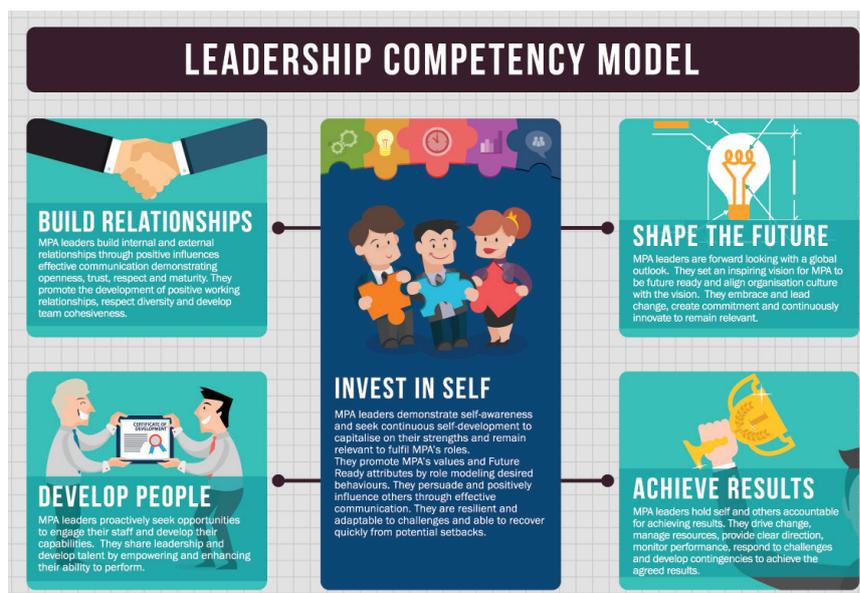
#### 1.1c Describe how senior leaders act as role models and groom future leaders

### Leadership Competency Model

The leadership competency model guides MPA in the development of leaders who are forward looking with a

global outlook and are able to develop MPA's staff while delivering results. MPA leaders must demonstrate five leadership capabilities: Invest in Self, Shape the Future, Achieve Results, Develop People and Build Relationships. These interdependent competency areas reinforce each other to help MPA leaders excel in their role and enhance individual and organisational performance.

Figure 1.1.5: Leadership Competency Model



It is critical for our SM to be good role models who not only pay attention to their individual achievements but also encourage teamwork and co-operation, support others in their growth and development, and recognise

the positive behaviours and attitudes they display. Leaders are encouraged to nurture a learning culture where people are not afraid to speak up and change is highly encouraged.

**1.2 Organisational Culture**

**1.2a** Describe how the organisation aligns the organisation’s mission, vision and values

At MPA, our Mission, Vision and Values are aligned so that

1. The Vision drives our Mission, and
2. Our Values wholly support the Mission.

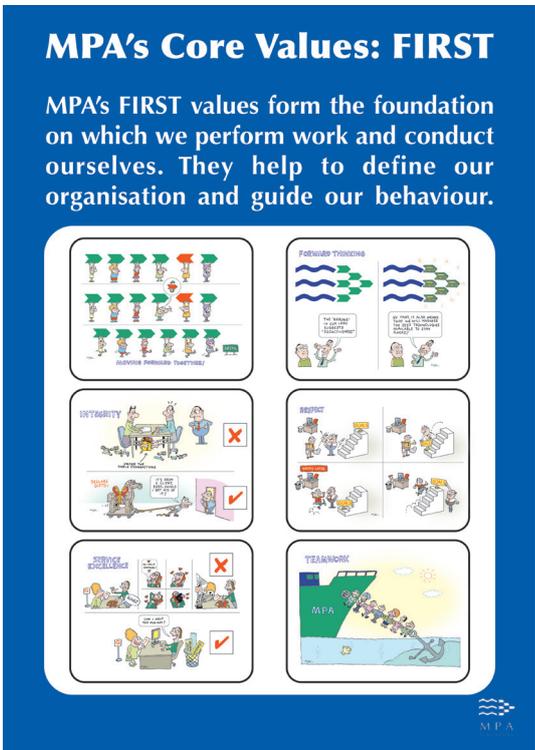
Through the years, these have worked together to propel Maritime Singapore to greater growth.

To enhance staff awareness of and alignment Values with Mission and Vision, a FIRST milestone programme for all staff was introduced in Feb 2015. 22 runs have been conducted thus far reaching out to more than 550 staff. As part of their Foundation Programme, all new staff also attend this workshop to integrate them into MPA’s FIRST culture.

**1.2b** Describe how the organisation enables learning, innovation and the achievement of strategic goals

MPA shapes and permeates its organisation culture through the FIRST Values. (See Figure 1.2.2).

**Figure 1.2.2: FIRST Values Poster**



To achieve strategic goals, MPA deploys internal (to engage our employees) and external (to engage our national level stakeholders) platforms to reinforce targets (see Table 1.2.1).

**Table 1.2.1: Learning and Innovation Platforms for Internal and External Stakeholders**

VALUE	POLICY	PRACTICES
Forward Thinking	We aim to be proactive and innovative. We will harness the best technologies and practices so as to stay relevant, efficient and competitive	<b>R&amp;D funding</b> <ul style="list-style-type: none"> <li>• MINT Fund &amp; Maritime Cluster Fund</li> </ul>
		<b>Internal innovation programmes</b> <ul style="list-style-type: none"> <li>• MPA Innovation Fund</li> <li>• Innovation Xchange</li> <li>• Innovation Learning Journeys</li> <li>• Ideathons</li> <li>• Port ExCEL Convention</li> <li>• Work Improvement Team Schemes (WITS)</li> <li>• Staff Suggestion Scheme (SSS)</li> </ul> <b>Joint innovation programmes</b> <ul style="list-style-type: none"> <li>• Smart Port Initiatives</li> <li>• Joint R&amp;D partnerships with tertiary institutions and industry</li> </ul> <b>Competitions</b> <ul style="list-style-type: none"> <li>• Smart Port Hackaton</li> </ul>
Integrity	We shall act responsibly, be honest and morally courageous in carrying out our duties. We will be fair and above board in all our business dealings and relationships.	<b>Training programmes</b> <ul style="list-style-type: none"> <li>• Foundation Programme (staff induction programme)</li> <li>• MPA instruction manuals</li> </ul>
		<b>Policies and frameworks</b> <ul style="list-style-type: none"> <li>• Ethics Policy</li> <li>• Annual Declaration of Indebtedness</li> <li>• Internal Audit</li> <li>• Conflict of Interest Framework</li> <li>• Corporate Governance Framework</li> </ul>
Respect	We shall respect the feelings of the individual, his dignity and self-worth, his time and effort, and his need to balance work and family life.	<b>Policies and workplace schemes</b> <ul style="list-style-type: none"> <li>• Work-life policies</li> <li>• WOW Week</li> <li>• Wednesdays Are Very Special (WAVeS)</li> <li>• Parent Care Leave</li> <li>• Back to School Leave</li> <li>• Quarterly Eat With Your Family Days</li> </ul>
		<b>Standards and guidelines</b> <ul style="list-style-type: none"> <li>• Service Compass</li> <li>• Strategic Service Intent</li> <li>• Minimum Service Standards Audit</li> <li>• Pro-Enterprise Ranking Survey</li> </ul>
Service Excellence	We shall strive to serve our customers competently, courteously and efficiently. We shall persevere so as to excel in all areas of our work through continual learning and a positive work attitude.	<b>Training channels</b> <ul style="list-style-type: none"> <li>• 'At Your Service' email blast</li> <li>• Service Learning Journeys</li> <li>• Quarterly staff newsletter</li> <li>• e-Connect Portal</li> <li>• Quarterly magazine Singapore Nautilus</li> </ul>
		<b>Training schemes</b> <ul style="list-style-type: none"> <li>• Mentorship and buddy schemes</li> <li>• Teamwork training courses in training road map</li> </ul>
Teamwork	We value teamwork, harmony and unity in our working relationships. We shall do our work with steadfastness and consideration for our colleagues and customers.	<b>Activities</b> <ul style="list-style-type: none"> <li>• Divisional Activity Days</li> </ul>

**Communication, Demonstration And Celebration Platforms**

MPA uses many platforms to communicate, demonstrate and celebrate core values in order to reinforce these values among its employees. These platforms include:

- Key corporate events
- Exhibition showcases
- Rewards and recognition schemes
- On-boarding for new staff
- Collaterals such as videos, posters and stationery items

By continually communicating, demonstrating, celebrating and honouring its Mission, Vision and Values, MPA ensures these core concepts are kept alive and vibrant, and actively guides the conduct of every employee.

Our employees have consistently demonstrated the FIRST Values in action:



**Embodying the FIRST Values : Making us Proud**

**Port Inspector Sayri Bin Mohamed Salleh**

At the 2014 Public Service Values Conference, our Senior Port Inspector, Mr Sayri Bin Mohamed Salleh was asked by DPM Teo Chee Hean to share his story where he had boarded a ship that was illegally degassing its storage tanks within port limits. The ship master tried to persuade Mr Sayri that it was the norm to settle issues via non-official means. However, Mr Sayri stayed firm and said that while this may be the practice in other countries, it was not the practice here.



**Search Team for Air Asia Flight QZ8501**

In 2014, our team of 6 hydrographers, led by Jamie Chen, left for Indonesia over New Year's Eve at short notice to assist in the search and locate efforts to recover the two black boxes of the ill-fated AirAsia flight. They had to endure rough seas for 12 straight days.



**1.2c Describe how the organisation embraces organisational change for sustainability**

MPA has established a change management process (see Figure 1.2.3) to ensure adherence to sustainability. The process involves:

- Sensing an upcoming risk or challenge
- Analysing and identifying any organisational gaps in addressing the risks and challenges
- Developing and executing an action plan
- Monitoring the effectiveness of the plan
- Reviewing the outcome

**Figure 1.2.3: Change Management Process**



MPA's response to the tragic explosions at the Port of Tianjin illustrates this process. (See *How MPA Learns from Catastrophic Events*).



**Port of Tianjin Explosion: How MPA Learns from Catastrophic Events**

In August 2015, the Port of Tianjin experienced explosions at a container storage station handling hazardous chemicals that killed over 150 people. The incident prompted MPA to review processes at the Singapore Port. External parties such as PSA and the Singapore Civil Defence Force were consulted as part of the review. Following the review, MPA developed an action plan to improve procedures at the Singapore Port. In addition, MPA plans to roll out programmes to prevent or mitigate such an event, including hosting a Safety Forum on Dangerous Goods and conducting a joint emergency response exercise with PSA.

# LEADERSHIP

## 1.3 Corporate Governance and Social Responsibility

1.3a Describe how the organisation establishes a governance system to ensure accountability and transparency

MPA's comprehensive corporate governance framework (See Figure 1.3.1) ensures good governance throughout the enterprise.

1.3b Describe how the organisation implements policies and involves stakeholders to contribute to the community and the environment

Figure 1.3.1: Corporate Governance Framework



Figure 1.3.2: Sustainability Framework



As part of its commitment, MPA promotes responsible environmental stewardship, supports the community and is an accountable and transparent organisation. It is also a caring employer.

To elevate commitment to environment and social issues by Board and Management, the MPA Sustainability Office was formed in 2014 to drive both internal and external sustainability efforts. The Committee reports directly to CE and accounts to the Board at regular intervals on progress of initiatives and KPIs. Its key objectives are to foster a culture of good governance, prudent resource management and conscientious environmental and social practices.

Under the Sustainability Office, a number of internal initiatives were rolled out to heighten environmental and use of alternative energy sources awareness amongst MPA staff.

On the external front, the Sustainability Office engages with industry partners and agencies to promote and ensure environmentally-friendly shipping and port activities. MPA enforces the application of consistent environmental standards amongst ship owners and port users, and is committed to investments in green initiatives and technologies.

MPA is fully committed to sustainable practices in the environment, economic, social and financial spheres (see Figure 1.3.2).

A recognised leader in environmental stewardship, MPA takes its commitment to sustainability very seriously. This commitment is demonstrated in its compliance with environmental regulations set by national and global bodies, as well as its \$100 Maritime Singapore Green Initiative. (See *Maritime Singapore Green Initiative*)



### Maritime Singapore Green Initiative: A \$100 Million Commitment to Green Shipping

MPA is committing up to \$100 million over a five-year period to support its Maritime Singapore Green Initiative. The Initiative comprises the Green Ship, Green Port and Green Technology programmes. Under these programmes, maritime companies enjoy incentives when they adopt clean and green shipping practices that exceed IMO conventions. Maritime companies also take the Maritime Singapore Green Pledge to indicate their commitment in promoting clean and sustainable shipping in Singapore.

Since its launch in 2011

- Over 100 companies have signed the Maritime Singapore Green Pledge
- 267 Singapore-flagged ships have qualified for the Green Ship programme
- More than 3,000 vessels have enjoyed port dues concessions under the Green Port programme
- 17 companies and 61 Singapore-flagged ships have participated in the Green Technology programme

MPA is also proactive in involving the community in charity work and in environmental protection. An example of this is its highly successful effort to involve the community in saving corals (see *Coral Conservation*).



### Coral Conservation: Rallying an Entire Community

An environmental impact assessment study commissioned by MPA in 2012 had revealed that development of Tuas Terminal for Singapore's new mega port would likely affect corals in that area. This would have been a grave loss for marine biodiversity as Singapore's coral reefs are home to 255 species of corals and sustain a great number of marine organisms.

MPA commissioned a study to determine the most optimal relocation sites for the affected corals. Based on the study recommendations, MPA created a programme to relocate 2,300 hard coral colonies from Sultan Shoal to the new Sisters' Island Marine Park. To save coral fragments that broke off during relocation efforts, MPA further devised a programme with the National University of Singapore to rear 1,250 of these fragments in coral nurseries.

At every stage of the three-year campaign, MPA received help from the community. For instance, MPA leaned on the expertise and help of non-governmental organisations including the Nature Society (Singapore), Singapore Environment Council, WildSingapore and the Singapore Reef and Marine Conservation Committee to develop and run its Coral Relocation Volunteer Programme.

Today, all transplanted corals are flourishing at their new homes - a heart-warming close to a tale of a community coming together to save the planet.



### Caring for The Community

It is important to MPA that it supports society by giving back to the community. In 2011, a group of MPA employees decided to take ownership of MPA's community involvement efforts by forming the MPA CARE Team.

## LEADERSHIP

Over the years, the team has garnered stronger awareness and support for its active volunteerism and community efforts.

In 2014, MPA adopted The Salvation Army – Kids In Play (KIP) and Lighthouse School – for the visually

handicapped to focus our charity efforts. By contributing to the programmes and services for these children, we intend to lead the maritime community in playing a larger part in reaching out and assisting those in need. (See [MPA Charity Golf 2015](#)).



### MPA Charity Golf 2015: Partnering the Maritime Community to Raise \$400,000

To mark Singapore's 50th birthday, MPA partnered the maritime community to organise the inaugural MPA Charity Golf. Held in Sentosa in November 2014, the event successfully raised \$412,488 for Kids in Play, Lighthouse School and Community Chest. Our two adopted charities will receive \$100,000 each, while the remaining \$200,000 will go towards other social service programmes supported by Community Chest.

For the event, MPA was bestowed the ComChest Special Events Platinum Award 2015. This prestigious ComChest award, recognises organisations that raised over \$300,000 for their fundraising event.



Also among the statutory boards in Singapore, MPA was the first to introduce a combined Integrated Reporting and Sustainability Reporting for our annual report in 2014. The report was compliant with both the Global Reporting Initiatives G4 Comprehensive Guideline and International Integrated Reporting Council's Framework.

We subsequently garnered the following awards in 2015 for our sustainability efforts:

- Singapore Apex CSR Award: Top in Small and Medium Organisations Category
- Singapore Environmental Achievement Award: SEC-Lee Foundation Singapore Environmental Achievement Award (Public Sector) and the SEC-CDL Outstanding Award
- Singapore Sustainability Awards 2015 – Top in Large Enterprise Category

## 02 / CUSTOMERS

### MPA's Service Excellence Framework

Service excellence is firmly embedded in MPA's culture. To attest to this attribute, our customers have rated MPA first in the MTI Pro-Enterprise Ranking Survey since 2011 across 26 public sector organisations.

MPA is committed to service excellence. We understand the importance of serving our customers well, and excellent service is valued, recognised and rewarded in MPA. To guide us in our service excellence journey, MPA developed a Service Excellence Framework and anchored our service delivery around that framework (See Figure 2.1.1).

Figure 2.1.1: Service Excellence Framework



The framework revolves around three customer management tenets. They are:

- Stay close to our customers' needs
- Go the extra mile
- No challenge too difficult; no task too small

The framework incorporates four strategic thrusts that serve as drivers propelling MPA towards realising these tenets. They are:

#### Strategy

MPA's leadership team developing and driving customer-focused values, goals and principles.

#### Satisfaction

Understanding its customer segment and requirements, and the future trends to create customer experiences that are aligned with its service values and positioning.

#### Skills

Equipping staff with the necessary service skills and competencies to undertake the role of providing good customer service.

### Systems

Putting in place a structured system to coordinate people, processes and technology to deliver the customer experiences it intends to create.

At the heart of the framework lies MPA's Strategic Service Intent of "We Care, We Listen, We Serve, We are MPA!" which focuses and directs our employees' behaviours towards striving for service excellence.

In 2016, MPA launched a Service Charter which is aligned with PSD's goal to ensure a safe and secure work environment that deters abusive behaviour, and serves as a pledge for MPA staff to perform their duties admirably.



## 2.1 Customer Requirements

2.1a Describe how the organisation segments markets and customers and understands their current and future requirements

MPA seeks to understand the requirements of its customers through:

- Market surveys such as the Pro-Enterprise Ranking Survey, Annual Marine Services Survey and comparative reports on the maritime industry
- Customers' touchpoints, such as the MPA One Stop Document Centre, e-service channels and MPA's website
- Feedback on MPA's website
- Engagement with customers at regular customer events, maritime conferences and industry events such as Singapore Maritime Week, Safety@Sea Week and safety briefings
- One-on-one interviews with its customers

We segment our customers as seen in Table 2.1.1.

# CUSTOMERS

**Table 2.1.1: Current and Future Requirements by Customer Segments**

Customer Segment	Current Requirements of Customers	Future Requirements of Customers
Shipping Lines, Ship Agencies and Ship Management Companies	<ul style="list-style-type: none"> <li>24/7 service for the issuance of port clearance</li> <li>Easy access to officers for information and consultation</li> <li>User-friendly submission and booking process</li> <li>Timely approval of applications</li> </ul>	<ul style="list-style-type: none"> <li>Expansion of e-system, for example, by launching more intuitive, user-friendly applications</li> <li>Greater access to officers</li> <li>Faster processing of applications</li> <li>More mobile applications for greater convenience</li> </ul>
Maritime Service Providers: <ul style="list-style-type: none"> <li>Admiralty and Shipping Law Firms</li> <li>Marine Insurance/P&amp;I Clubs</li> <li>Ship Financing Companies</li> <li>Shipbrokers</li> </ul>	<ul style="list-style-type: none"> <li>Easier access to officers for consultation on MCF–Manpower Development funding schemes (via hotline and email)</li> <li>Timely processing of applications</li> </ul>	<ul style="list-style-type: none"> <li>Allow online application for MCF–Manpower Development funding schemes</li> </ul>
Shipmasters	<ul style="list-style-type: none"> <li>Prompt and reliable vessel traffic information services and navigational aids</li> <li>Issuance of safety circulars, notices and navigational broadcasts to mariners</li> <li>Prompt issuance of Pilot Exemption Certificate (PEC)</li> </ul>	<ul style="list-style-type: none"> <li>Exploit technology to enhance vessel traffic information services</li> <li>Ensure hindrance-free approaches to port and easy access to maritime services</li> <li>Enable electronic applications for PEC and extend validity of PEC</li> <li>Review training requirements and standards</li> </ul>
Seafarers (locally registered seamen eligible for welfare schemes administered by MPA) Visiting Seafarers	<ul style="list-style-type: none"> <li>Easy application process for welfare services and grants</li> <li>Easy e-application process for certificates and licences issued by MPA</li> <li>Provision of welfare activities</li> <li>Fair resolution of crew complaints</li> </ul>	<ul style="list-style-type: none"> <li>Fuller suite of e-services for online application of welfare services, grants, certificates and licences issued by MPA</li> <li>Timely review of welfare schemes to ensure relevance and wider publicity on available welfare services and grants</li> <li>More schemes to attract local seafarers to join the maritime industry</li> <li>Review training requirements to prepare seafarers to be future ready</li> <li>Enhance services in new ports such as providing 4G telephone services</li> </ul>
Harbour/Pleasure Craft Owners and Licence Holders	<ul style="list-style-type: none"> <li>Over-the-counter and online applications for licences</li> <li>Clear, transparent guidelines and convenient procedures</li> <li>Timely replies from courteous, professional staff</li> </ul>	<ul style="list-style-type: none"> <li>Rollout of fuller suite of e-services to reduce the need to patronise the One Stop Document Centre</li> <li>Launch of mobile applications for processing on the go</li> </ul>

2.1b Describe how the organisation incorporates market and customer requirements into strategic plans

MPA's process for incorporating customer requirements into strategic improvement plans is outlined in Figure 2.1.2.

**Figure 2.1.2: How Customer Requirements are Incorporated into Strategic Improvement Plans**

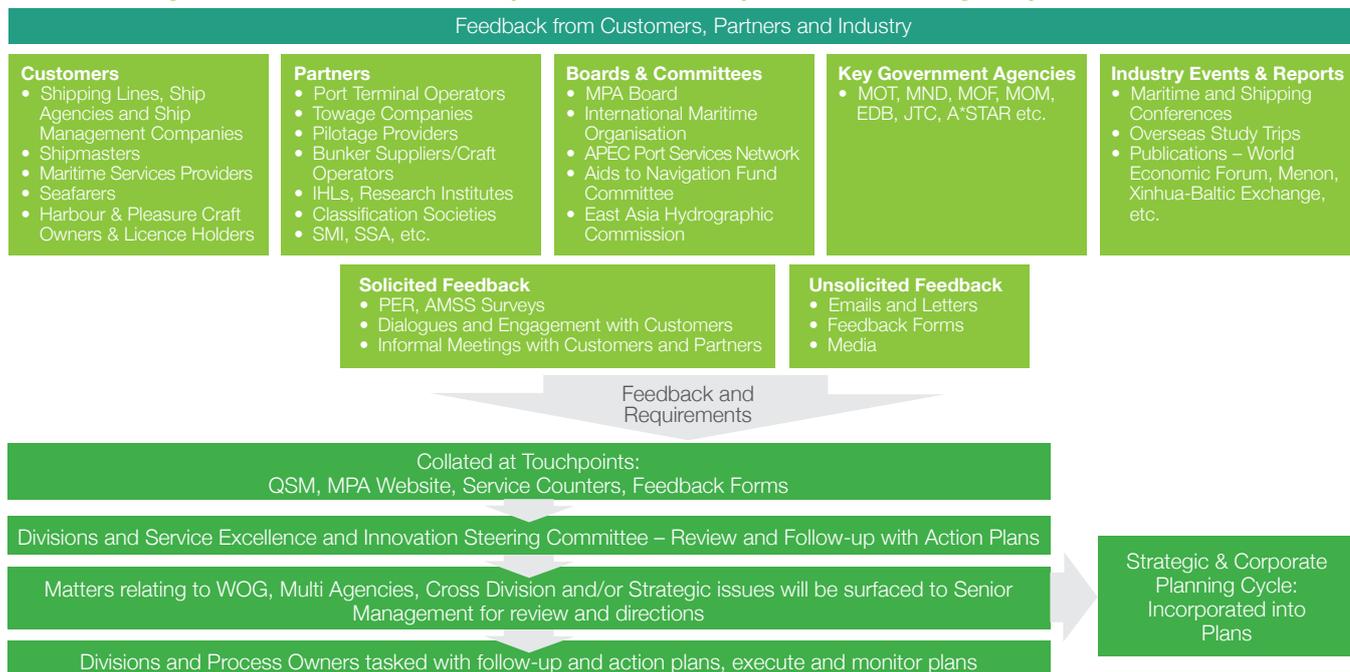


Table 2.1.2: Examples of Improvement Plans

Customer Segments	Requirements	Improvements Made
Shipping Lines, Ship Agencies and Ship Management Companies	<ul style="list-style-type: none"> <li>Seeking support in meeting compliance with MPA's regulations and international conventions</li> <li>Seeking support in realising a young, modern and environmentally-friendly fleet</li> </ul>	<ul style="list-style-type: none"> <li>MPA engaged companies and provided them with appropriate training to help them meet standards</li> <li>Launch of Green Ship Programme</li> </ul>
Maritime Service Providers: <ul style="list-style-type: none"> <li>Admiralty &amp; Shipping Law Firms</li> <li>Marine Insurance / P&amp;I Clubs</li> <li>Ship Financing Companies</li> <li>Shipbrokers</li> </ul>	<ul style="list-style-type: none"> <li>Seeking support in boosting cost competitiveness</li> <li>Broader scope of activities in Singapore</li> </ul>	<ul style="list-style-type: none"> <li>MPA amended tax policies to feature tax incentives and a Double Tax Agreement network to help Singapore maritime service providers remain cost competitive</li> <li>MPA is developing Maritime Singapore into a premium one-stop centre that offers a comprehensive, sophisticated suite of services</li> <li>MPA encouraged companies to broaden their range of shipbroking services</li> <li>MPA stepped up marketing and outreach efforts for Singapore Chamber of Maritime Arbitration in Asian and European markets</li> </ul>
Seafarers (locally registered seamen eligible for welfare schemes administered by MPA) Visiting Seafarers	<ul style="list-style-type: none"> <li>Effective implementation of regulations under the Maritime Labour Convention (MLC)</li> <li>Provide avenues and assistance for seafarers to obtain professional certificates and grow professionally within the industry</li> <li>Provision of maritime training facilities for upgrading of skills</li> <li>Provision of welfare services</li> </ul>	<ul style="list-style-type: none"> <li>MPA implemented the regulations under the MLC and made improvements in dispute resolutions.</li> <li>MPA rolled out training and certification schemes for local maritime workers in consultation with WDA and the Employment and Employability Institute.</li> <li>MPA improved training facilities to better train seafarers. An example is the upgrading of the Integrated Simulation Centre.</li> <li>Higher grant given to Mission to Seafarers for welfare services and improved activities for visiting seafarers.</li> </ul>
Harbour/Pleasure Craft Owners and Licence Holders	<ul style="list-style-type: none"> <li>Offer online submission for craft licences</li> </ul>	<ul style="list-style-type: none"> <li>MPA introduced an online system for application of manning licences and Powered Pleasure Craft Driving Licence (PPCDL) in May 2015. Online application for renewal of craft licences was implemented in November 2015.</li> <li>MPA introduced training programmes for users before rolling out new initiatives such as downsizing of the mainframe system.</li> </ul>

## 2.2 Customer Experience

2.2a Describe how the organisation co-creates products, processes, services or experiences with customers to meet their needs

MPA works closely with different customer segments to co-create products, processes, services or experiences in order to deliver solutions that meet the needs of its customers and the needs of Maritime Singapore. Co-creation takes various forms, including:

- Formation of working groups to tackle an industry need or to lead an industry-wide initiative. Working groups typically feature a diverse band of industry players. An example is the development and launch of the Mass Flow Metering System.
- Formation of steering committees to drive events. An example is the partnership with Maritime ONE associations to co-create SMW outreach events to raise the profile of Maritime Singapore.
- Pilot projects. MPA involves its customers in pilot projects to test and monitor how the project matches its customers' needs. An example is the e-Finance initiative.
- One-on-one interviews to solicit views. An example of this is the co-creation of the One Stop Document Centre. MPA's physical service centre for transactions was designed according to opinions solicited from extensive interviews with customers.
- Co-funding and joint implementation of projects. An example is the development of special limit programmes for the harbour craft industry.
- Regular engagement of Finance personnel to solicit feedback on invoices, statement of accounts and use of e-solutions and fee. Updates on their suggested solutions are also closed with replies on what have been implemented and what cannot be due to restrictions.

# CUSTOMERS

**Figure 2.2.1: Adoption of Design Thinking Concept to Enhance Customer Experience at the One Stop Document Centre**



**Table 2.2.1: Examples of Co-Creation with Customers**

Project	Description	Customers' Involvement
Implementation of Mass Flow Metering (MFM) System	Tank gauging is a way to measure the quantity of bunker in a bunker tanker or vessel's tank. To further enhance efficiency and transparency in this process, MPA decided in 2009 to develop a reliable and accurate tank gauging system for bunkering operations in Singapore that is based on mass flow meters.	In 2009, MPA and SPRING Singapore jointly initiated an MFM Working Group to explore the use of the MFM system for bunkering. This working group comprised industry stakeholders including ExxonMobil Marine Fuels and Hong Lam Marine. In addition, a collaborative focus group made up of a cross section of industry and technical experts was also formed to develop the MFM system and procedures for bunker deliveries. The new system was launched after more than two years of development and test-bedding. As of 31 December 2015, 60 bunker tankers have been installed with MPA-approved MFM system for custody transfer of Marine Fuel Oil.
Implementation of e-Finance Initiative	In 2013, MPA embarked on an e-Finance initiative to allow MPA's external customers to conveniently retrieve financial documents online. MPA also consolidated all account applications for MPA accounts and Marinet access.	Stakeholders participated in the pilot phase from September 2013 to the full launch on April 2014. They also offered feedback on the initiative at a half-yearly stakeholder engagement event organised by MPA. Additionally, MPA conducted a series of customer communication events before launching the initiative to raise awareness of the project.
Development of Special Limit Programmes for Harbour Craft Industry	MPA worked with the Singapore Shipping Association and Singapore Maritime Academy to develop a structured training programme for the local harbour craft industry. Since 2011, S\$25 million have gone towards funding two programmes under this initiative: Deck Officer and Marine Engineer Special Limit. The programmes are funded by MPA, the Employment and Employability Institute and participating companies.	Prior to implementing the programme, the proposal was shared with the industry and the Employment and Employability Institute for feedback and to secure joint funding for the programme. In addition, MPA reviewed the finalised programme with sponsoring companies and participating cadets. In response to these stakeholder reviews, MPA carried out two rounds of enhancements in 2012 and 2014.

**2.2b Describe how the organisation ensures customer feedback is resolved and analysed to drive improvements**

MPA has established a feedback management process (see Figure 2.2.2) to ensure that customer feedback

and complaints are resolved, analysed and distilled into learning points for improvement. (See Figure 2.2.3)

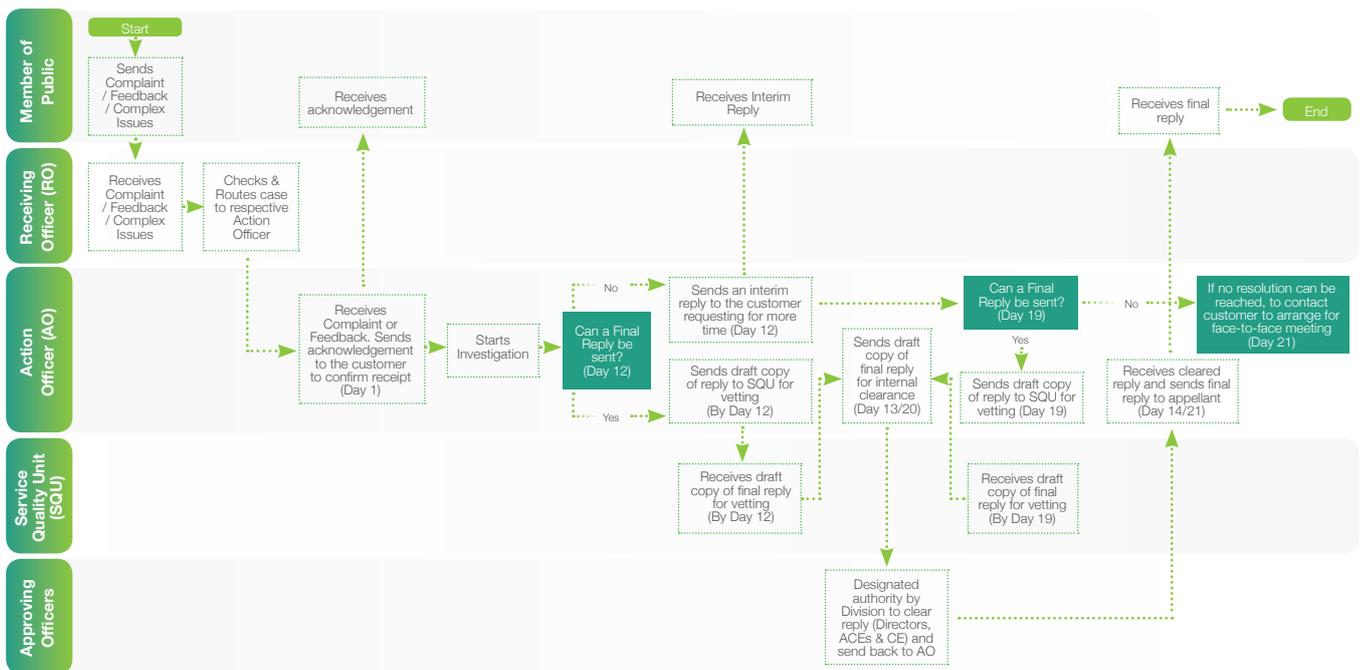
Customer feedback that is collated from the various contact channels is analysed for improvement opportunities. Action plans are then developed and communicated to customers.

**Figure 2.2.2: Feedback Management Process**



**Figure 2.2.3: Complaint Management Process**

Procedure for Handling Public Complaints / Feedback / Complex Issues



The feedback received is also reported and trends analysed at the quarterly Service Excellence and Innovation Steering Committee Meetings. The findings are then presented to SM.

# CUSTOMERS

2.2c Describe how the organisation provides access for customers to seek assistance and information to enhance the customer experience

MPA strives to ensure that it is easy for customers to access information and seek assistance from MPA. One way that it does this is by offering its customers various channels from which to obtain information and assistance. These channels are illustrated in Figure 2.2.4.

Figure 2.2.4: Customer Feedback Channels

Access Channel	Points of Contact
<b>Telephone</b>	<ul style="list-style-type: none"> <li>MPA Mainline</li> <li>QSM Hotline</li> <li>Hotline of key service touch points</li> </ul>
<b>Face-To-Face</b>	<ul style="list-style-type: none"> <li>One Stop Document Centre @ Tanjong Pagar Complex</li> <li>Shipping Counter at PSA Building</li> <li>Customer Feedback Forms</li> <li>Account Managers / Subject Matter Experts                             <ul style="list-style-type: none"> <li>» Development Cluster - IMC Officers</li> <li>» Operations Cluster-Ship Registry, VTIS Officers, Port Inspectors, Surveyors, Port Chemists, Hydrographers</li> <li>» Corporate &amp; Stakeholder Engagement - Finance, MPAA &amp; Corp Comms Officers</li> </ul> </li> <li>Singapore Maritime Gallery</li> </ul>
<b>Electronic Channels</b>	<ul style="list-style-type: none"> <li>MPA Website</li> <li>Marinet &amp; MyMarinet Mobile Apps Systems</li> <li>Singapore Registry of Ships Microsite</li> <li>Singapore Maritime Week website and Facebook</li> <li>Emails (e.g. QSM, e-Feedback, email accounts of key service touch points)</li> <li>Central Feedback Channels (e.g. Pro-Enterprise Panel, REACH)</li> </ul>

In addition, MPA continually seeks to enhance its customers' access to the information that it offers. myMaritime@SG mobile application is an example. Launched in March 2015, myMaritime@SG allows MPA's customers to access information on the go using mobile technology and wireless connectivity.

2.2d Describe how the organisation ensures overall ease of customer contact and service standards are set at customer touch points

MPA sets two types of service standards to ensure that it is serving its customers well and that its customers can contact MPA with ease, namely:

- Corporate Service Standards
- Customer Service Standards

## Corporate Service Standards

MPA established a set of corporate service standards to ensure that its employees are responsive to customer enquiries as tabled in Figure 2.2.5.

Figure 2.2.5: Corporate Service Standards



\* For complex enquiries which require a longer response time, we will give an interim reply within 3 working days and a full reply within 14 working days.

## Key Customer Service Standards

MPA also sets customer service standards for each of the customer groups that it serves. The key customer service standards are listed in Table 2.2.2.

These service-related targets are regularly reviewed to ensure that they meet the evolving expectations of its various customer groups.

Table 2.2.2: Key Customer Service Standards

Customer Segment	Type of Service	Service Standards Target
Shipping Lines, Ship Agencies and Ship Management Companies	Issuing of Certificate of Registry (for Registration of Ships)	100% within 5 working days
	Issuing of Bunker Convention Certificate (BCC) and Civil Liability for Oil Pollution Damage (CLC)	100% within 5 working days
	Issuing of Certificate of Endorsement (COE)	100% within 2 working days
	Issuing of Safe Manning Document	100% within 3 working days
Maritime Service Providers:	Processing of Maritime Sector Incentive (MSI) and Maritime Cluster Fund (MCF) Applications by Maritime Service Providers	100% processed within 10 weeks (MSI)
<ul style="list-style-type: none"> <li>Admiralty and Shipping Law Firms</li> <li>Marine Insurance/P&amp;I Clubs</li> <li>Ship Financing Companies</li> <li>Shipbrokers</li> </ul>		100% processed within 4 weeks (MCF)
Seafarers (Locally Registered Seamen Eligible for Welfare Schemes Administered by MPA)		Issuing of Certificates of Competency (COC) and Licences to Seafarers
Harbour Craft and Pleasure Craft Owners and Licence Holders	Attend to Walk-in Enquiries at One Stop Document Centre	90% within 15 minutes
All Customer Segments	Processing of MPA Account Applications	90% within 3 working days

## 2.3 Customer Satisfaction

2.3a Describe how the organisation determines and improves customer satisfaction for various customer segments

MPA's key mechanisms for determining customer satisfaction are indicated in Table 2.3.1:

**Table 2.3.1: Key Mechanisms Determining Customer Satisfaction**

Customer Segment	Mechanisms Determining Customer Satisfaction
Shipping Lines, Ship Agencies and Ship Management Companies	<ul style="list-style-type: none"> <li>Pro-Enterprise Ranking Survey</li> <li>Annual Marinet Survey</li> <li>Annual Marine Services Survey</li> </ul>
Maritime Service Providers: <ul style="list-style-type: none"> <li>Admiralty and Shipping Law Firms</li> <li>Marine Insurance/P&amp;I Clubs</li> <li>Ship Financing Companies</li> <li>Shipbrokers</li> </ul>	<ul style="list-style-type: none"> <li>Focus Group Discussions</li> <li>Pro-Enterprise Ranking Survey</li> </ul>
Shipmasters	<ul style="list-style-type: none"> <li>Annual Marine Services Survey</li> </ul>
Seafarers (Locally registered seamen attending training programs administered by training service providers recognised by MPA)	<ul style="list-style-type: none"> <li>Course Evaluations</li> </ul>
Harbour and Pleasure Craft Owners and Licence Holders	<ul style="list-style-type: none"> <li>Pro-Enterprise Ranking Survey</li> <li>Feedback forms placed on counters at the One Stop Document Centre</li> <li>Annual Marinet Survey</li> </ul>

2.3b Describe how the organisation determines current and future drivers of customer satisfaction

MPA takes reference from the Pro-Enterprise Ranking survey components to determine the current drivers of customer satisfaction. The current drivers are as follows:

- Customer Responsiveness.**  
MPA's awareness of customers' issues and responsiveness in addressing these issues.
- Transparency.**  
How clearly MPA communicates its regulations and decisions.
- Review of Rules and Regulations.**  
How often MPA reviews its regulations and whether it consults the public in these reviews.
- Pro-Enterprise Orientation.**  
How business-friendly MPA's policies are.
- Compliance Cost.**  
How costly it is to comply with MPA's regulations.

To forecast the future requirements and expectations of its customers, MPA relies on:

- Intelligence** shared by industry partners, its parent ministry (the Ministry of Transport), other governmental institutions and international partners and institutions in the maritime sector, and gathered through comparative reports on the maritime industry.

- Papers** presented at maritime conferences and industry events.
- Collaborations** with institutes of higher learning, research institutes and the industry.
- Benchmarking studies and learning journeys.**
- Surveys** of customers about their future expectations.



### Pro-Enterprise Ranking (PER) 2015: MPA is Top Again

The Pro-Enterprise Ranking Survey (PER) serves as an important tool to monitor how well government agencies have been performing in delivering regulatory functions. The annual survey, conducted since 2004, comprises quantitative and qualitative components within 5 categories which measure pro-enterprise orientation and customer experience of businesses in interacting with regulatory agencies. Customers assess public agencies on 5 survey components: Compliance Cost, Customer Responsiveness, Pro-Enterprise Orientation, Review of Rules and Regulations and Transparency.

MPA has maintained the top position in the PER 2015 for the 4<sup>th</sup> consecutive year with a new record score of 94.9%.



2.3c Describe how the organisation incorporates customer satisfaction and feedback into the strategic plans

The key indicators of customer satisfaction and feedback from customers (see NGP 2030) are reviewed and evaluated for service improvement opportunities. Improvement plans are subsequently drawn up, for endorsement by SM and incorporated into strategic plans. (See Table 2.3.2 for examples)

**Table 2.3.2: Incorporating Feedback Into Strategic Plans**

Customer Segment	Improvements Made
Shipping Lines, Ship Agencies and Ship Management Companies	<p>Based on customers' feedback gathered through three annual surveys - the Pro-Enterprise Ranking Survey, Marinet Survey and Annual Marine Services Survey – MPA made the following improvement:</p> <ul style="list-style-type: none"> <li>Extended and enhanced the Maritime Sector Incentive to bolster the competitiveness of the Singapore maritime sector.</li> </ul>
<p>Maritime Service Providers:</p> <ul style="list-style-type: none"> <li>Admiralty and Shipping Law Firms</li> <li>Marine Insurance/P&amp;I Clubs</li> <li>Ship Financing Companies</li> <li>Shipbrokers</li> </ul>	<p>Based on customers' feedback gathered through the Pro-Enterprise Ranking Survey, MPA made the following improvements:</p> <ul style="list-style-type: none"> <li>In 2015, a taskforce led jointly by MPA, MAS and SGX made recommendations on ways to improve the capital markets for the local shipping and offshore sectors. These recommendations will be implemented by MPA and industry stakeholders over the next few years.</li> <li>Extended and enhanced the Maritime Sector Incentive. This will boost tax benefits for industry players and lift the competitiveness of the Singapore maritime sector.</li> </ul>
Shipmasters	<p>Based on customers' feedback gathered through the Annual Marine Services Survey, MPA made the following improvements:</p> <ul style="list-style-type: none"> <li>Published the number of Mass Flow Metering systems installed on vessels to allow customers to gauge the credibility of bunkering companies.</li> <li>Commenced monitoring the service levels of pilotage and towage service providers to ensure they are performing to market demands.</li> </ul>
Seafarers (Locally registered seamen eligible for welfare schemes administered by MPA) and Visiting Seafarers	<p>Based on customers' feedback gathered in the course evaluation process, MPA made the following improvements:</p> <ul style="list-style-type: none"> <li>MPA is currently working to better integrate maritime curriculum in schools and other educational and training institutions.</li> <li>Higher grant given to Mission to Seafarers for welfare services and improved activities for visiting seafarers.</li> </ul>
Harbour Craft and Pleasure Craft Owners and Licence Holders	<p>Based on customers' feedback gathered through the Pro-Enterprise Ranking Survey, Marinet Survey and feedback forms, MPA made the following improvements:</p> <ul style="list-style-type: none"> <li>Launched new e-services in 2015 including online application and renewal of licences.</li> <li>Simplified the application process for harbour craft licence.</li> </ul>
All Customer Segments	<p>Based on customer feedback gathered through customer surveys and feedback forms, MPA made the following improvement:</p> <ul style="list-style-type: none"> <li>Enhanced public accessibility to MPA's services by launching the myMaritime@SG application.</li> </ul>

## 3.1 Strategy Development

3.1a Describe how the organisation determines organisational challenges and anticipates external changes and risks

MPA relies on environment scans, sense making, analytics and an Enterprise Risk Management Framework to determine the challenges and external risks confronting the organisation.

### Environment Scan

Throughout the year, MPA performs regular scans of its environmental challenges using a set of driving forces and the Future Ready strategic thrusts as the barometer. Key issues identified from the scans are closely monitored, with updates on these issues regularly presented to SM and relevant officers for review. Each year, a comprehensive environment scan for the year is presented to SM and key officers at Management Advance to signpost the strategic environment for the year ahead and highlight noteworthy long-term trends that should be closely monitored.

### Sense Making

MPA also actively engages the industry to glean industry insights. It does this through:

- Collaborations on steering committees and working groups featuring industry representatives.
- Interactions with industry players on overseas mission trips and at industry conferences.
- Insights offered by guest speakers at the MPA Academy's Insight Series and MPA's Workplan Seminars.

Finally, cross-divisional project teams conduct in-depth studies of issues surfaced by SM. These project teams are made up of high-potential officers and are led by a member of the SM team. Every quarter, each team presents its findings for discussion by SM at the Strategic Issues Forum.

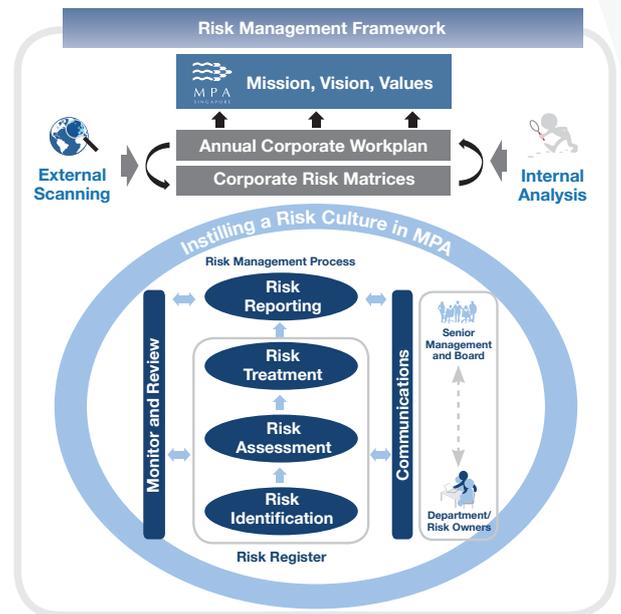
### Analytics

MPA signed an MOU with IBM to harness the data analytics for safety, security and port operational use. MPA also works closely with other national security agencies like RSN and PCG using analytics to do predictive forecast of hostile threats. Internal to MPA, corporate functions and audit have regular updates to SM on trend analysis for long term financial sustainability forecast.

### Enterprise Risk Management (ERM)

A structured Enterprise Risk Management Framework (see Figure 3.1.1) ensures that MPA stays focused on its Mission and is on track to fulfil its Mission and Vision.

Figure 3.1.1: Enterprise Risk Management Framework



3.1b Describe how the organisation develops strategic goals, and long- and short-term strategies to address the vision and mission

### Maritime Singapore Future Ready Roadmap 2030

Some of the key long-term strategies of MPA are captured in a masterplan titled the Maritime Singapore Future Ready Roadmap 2030.

This guiding document sets out the strategic environment, priorities and plans for Maritime Singapore for the next 15 years. It is intended to ready MPA and Maritime Singapore for the opportunities and challenges in an increasingly uncertain world, and allow MPA to better realise its Mission and Vision.

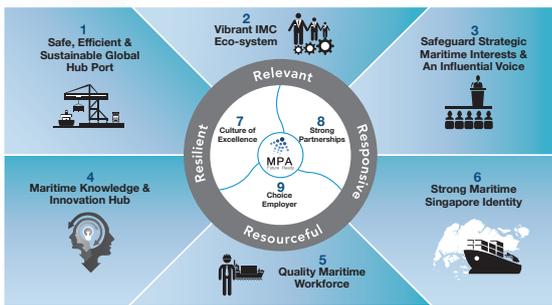
### The Development Of The Maritime Singapore Future Ready Roadmap

#### Step 1: Defining the Strategic Thrusts

MPA commenced work on developing the Roadmap in 2014 with the staging of eight Future Ready sessions involving all MPA employees. During these sessions, feedback and ideas on the challenges and opportunities facing Maritime Singapore and MPA were gathered from all employees.

SM then incorporated the inputs from the sessions to develop the Maritime Singapore Future Ready Framework. (See Figure 3.1.2). The framework featuring nine strategic thrusts was shared with the entire organisation and key stakeholders on February 2015 at MPA's Workplan Seminar.

**Figure 3.1.2: MPA Future Ready Framework**



**Step 2: Defining 2030 Strategic Goals and Strategies**

Management Advance 2015 served as a platform to brainstorm ideas for strategic goals and strategies for each thrust of the Future Ready Framework. These ideas were subsequently deliberated over by SM at the SMM, during which strategic goals and long-term strategies were selected for Maritime Singapore Future Ready Roadmap 2030. (See Figure 3.1.3)

**Step 3: Continuing Fine-tuning of the Roadmap**

**Figure 3.1.3: Maritime Singapore Future Ready Roadmap 2030**



Key elements of the Roadmap will continue to be fine-tuned in 2016, including refinements to the five-year milestone KPI targets. To ensure industry perspectives are included in the development of the Roadmap, MPA will continue to consult with the industry (see *SIBCON 2014*).

Over time, as the external environment evolves, the Roadmap will be regularly reviewed and refreshed (for example, at Corporate Workplan sessions) to ensure its relevance and Divisional workplans are aligned.

To ensure that all divisions incorporate a longer-term perspective in their planning processes, their annual work plans feature broad work items and KPI targets for the next five years that are connected to the Roadmap.

As part of the fine-tuning process, the Corporate Scorecard has been reviewed to ensure alignment with the Future Ready Framework.

3.1c Describe how the organisation engages key stakeholders in the strategy development process.

MPA regularly involves its key stakeholders in strategy development. Some examples are listed below:

- MPA is currently leading a multi-agency Steering Committee to develop Next Generation Port 2030, the strategic roadmap for the development of Singapore Port. The committee is supported by three working committees made up of government agencies and institutes of higher learning.
- In 2014, MPA formed a Sectoral Tripartite Committee and two taskforces (for Seafaring and Shore-based jobs) to develop strategies that will address the maritime sector's manpower needs. The committee and taskforces involved government agencies, industry associations, unions and selected local companies.
- In 2014, MPA led a cross-agency taskforce comprising MAS, SSA and SGX to enhance Singapore's capital market for ship financing.

## 3.2 Strategy Implementation

3.2a Describe how the organisation develops and implements long- and short-term action plans

**Figure 3.2.1: Corporate and Strategic Planning Cycle**



## Corporate and Strategic Planning Cycle

### Development of Work Plans

To achieve organisational goals, MPA's corporate planning cycle features the development and implementation of action plans by all its divisions. The plans are anchored by a strategic focus that has been earlier identified through the regular environment scans performed throughout the year as well as through industry engagement efforts, from the Strategic Issues Forum and through the Enterprise Risk Management process.

Once identified, the strategic focus is discussed at Management Advance, in tandem with inputs sourced

from across the organisation. After further deliberation by SM, the strategic direction is confirmed.

Anchored by this strategic focus, each division develops work plans and a budget for the work plans. To gain approval of their work plans, the divisions have to demonstrate how their action plans address key objectives laid out in the Future Ready Framework. Divisional action plans are then aligned to the Corporate Workplan. Following their presentation at the annual Workplan Seminar, the work plans are then implemented. Large-scale projects or key focus areas that cut across divisions are supported and guided by the committees and platforms as summarised in Table 3.2.1.

**Table 3.2.1: Platforms for Dissemination of Strategies to Stakeholders**

MODE	PLATFORM	STAKEHOLDERS	FREQUENCY
Service Excellence & Innovation Steering Committee	To drive innovation & service excellence initiatives/projects in coordinated and collaborative approach	SM & Members of Working Committees	Quarterly
Operations Technology Committee	To respond to current and future challenges in a structured approach to meet MPA's operational needs through technology application	Directors of Operations Cluster & Members of Working Group	Quarterly
Operations Excellence Committee	To foster a culture of excellence in MPA's operations by reviewing & enhancing the 4 areas of Operations Quality, Operations Safety, Professionalism & Engagement	Ops Excellence Committee Members & Members of Working Groups	Quarterly
Strategic Issues Forum	To assess impact of issues which are surfaced by SM requiring in-depth study	SM & Members of Project Teams	Quarterly
Enterprise Risk Management Steering Committee	To define, evaluate MPA's risk appetite. Evaluate & approve risk map, risk register & heat map. Establish mitigating controls	SM	Twice a year
Maritime Manpower Steering Committee	To develop strategic manpower plans, initiatives & roadmaps, and ensure these are successfully implemented	SM	Quarterly
NGP2030 Steering Committee	To guide the overall masterplanning & development of the Port of Singapore, including the conceptualisation, design & implementation of Tuas Terminal, Tuas Maritime Hub & Port Operations	CE(MPA), CEO(URA), CE(JTC), CE(DSTA), MD(EDB), MD(IDA), ED(SERC/A'STAR), CEO(NEA), CE(PSA(SEA)), Vice Provost (NUS), Dean, College of Engineering, DCE(LTA), D(Sea/MOT), Advisor(NRF), Adjunct Prof(NTU), ED(SMI)	Quarterly
Strategic Outreach & Engagement Committee	To raise awareness & instil a sense of pride in Singapore's maritime sector: showcase the diverse & exciting career opportunities in the maritime industry, project MPA's capabilities to build public confidence in our operations & safeguard Singapore's maritime interests	SM, C&C Division	1-2 months
Sustainability Office	To promote a culture of good practices in governance, resource management & environmental sustainability in MPA & the wider maritime industry in Singapore	SM & Members of Working Committee	Quarterly

### Implementation of Work Plans

The implementation of work plans is regularly monitored via a range of established instruments for performance reporting (see Table 3.2.2).

Implementation is monitored both internally and together with the Ministry of Transport to ensure alignment to whole-of-government objectives.

Following a review of its corporate planning process in 2015, MPA will be from 2016 conducting quarterly progress updates for SM to better track the progress of the organisation towards achieving the goals set out in the Future Ready Roadmap.

Table 3.2.2: Implementation of Work Plans

PERFORMANCE REPORTING	PLATFORM	FREQUENCY
<b>Whole-of-Government Alignment</b>		
KPIs & Strategic Initiatives under MOT Sea Theme	MPF	Annually
WOG-Strategic Outcomes KPIs	MOT/MOF	Annually
KPIs supporting WOG outcomes, esp. under “Develop Singapore as an International Maritime Hub” outcome	Budget Book - MOT/MOF	Annually
<b>Internal Reporting (MPA, MPA Board, MOT)</b>		
Corporate Performance Reporting	SMM, MSM & Board	Twice yearly: mid-year & annual
Management Indicators	SMM, MSM & Board	Monthly
Future Ready Progress Reporting	SMM	Quarterly (New in 2016)
Divisional Reporting	SMM	Quarterly
BSC KPI Progress Review	Divisional Meetings	Monthly
Staff Progress & Performance Review	Staff Performance Appraisals	Twice yearly: mid-year & annual

3.2b Describe how the organisation allocates resources in a timely manner to achieve strategic goals

**Financial Resources**

At MPA, the annual work plan process is synchronised with finance allocation. Divisions are required to submit budget requirements as part of their work plan submissions. Finance will reconcile the various budget submissions in line with the organisation’s priorities and submit the requests to SM for discussion and endorsement.

Table 3.2.3: Financial Resources Review Platforms

Review & Engagement Platforms (Finance)
Financial Review with CFO (Monthly)
Financial Reporting, Board (Monthly)
Fees Appeal Committee (Monthly)
Audit Review Committee (Every 2 Months)
Marksmanship Reporting to SMM (Quarterly)
Investment Committee (Quarterly)
Governance Briefings to HODs & Depts (Half-yearly)
Budget and Financial Reporting to Board (Annual)

**Human Resources**

To ensure there is sufficient manpower to implement work plans, HR planning at MPA is integrated into the annual corporate planning cycle. HR works closely with each division to support the execution of its work plans by ensuring:

- **The Right Organisation.** This is achieved by creating the right organisational structure for each division to best allow it to perform its function.
- **The Right People.** This is achieved by recruiting, developing and retaining the right people to execute work plans.
- **Engaged People.** This is achieved by ensuring that all employees are engaged and work with a sense of purpose.

**Review Engagement Platforms (HR)**

SMM Meetings (Weekly)
HR Dept Meeting (Monthly)
HR Board Meeting (Quarterly)
HOD Sharing (Quarterly)
Senior Personnel Board (Annual)
HR Workplan Session (Annual)

3.2c Describe how the organisation engages key stakeholders in the strategy implementation process

MPA frequently involves its key stakeholders in the implementation of its strategies. Some examples are listed below:

**Strategy Implementation**

- In 2014, MPA partnered industry players and the maritime industry to launch the Safety@Sea campaign to inculcate a safety-first culture and increase awareness of safe practices.
- In 2014, MPA co-organised a tax seminar with the Inland Revenue Authority of Singapore and the SSA to raise awareness of tax compliance issues and highlight common tax filing pitfalls among shipping companies.
- In 2014, MPA worked with 20 players in the LNG bunker supply chain to develop a pilot programme to establish safety and operation protocols for LNG bunkering.
- MPA works closely with partners such as SSA in engaging sectoral players in co-creating solutions.

## 4.1 Human Resource Planning

4.1a. Describe how the organisation anticipates HR needs and develops HR plans and policies which are aligned to strategic goals and organisational values

One of MPA's internal thrusts in the Future Ready Framework is to ensure that MPA continues to be a Choice Employer. This entails actualising the Right Organisation, Right People and Engaged People, while exhibiting HR Process Excellence at all times as shown in Figure 4.1.1.

Figure 4.1.1: HR Mission



The HR team works closely with Management, Union and Staff through a robust tripartite arrangement to develop and implement improvements to MPA's HR plans and policies catering to the changing needs of the people.

Table 4.1.1 summarises the different platforms that HR leverages on to obtain feedback, anticipate HR needs, review and develop HR plans and policies to ensure strategic alignment.

Table 4.1.1: Platforms to Develop HR Plans and Policies

Level	Platform	Purpose
Senior Management	SMM	<ul style="list-style-type: none"> <li>• Review Corporate HR Performance</li> </ul>
	HR Board Meetings	<ul style="list-style-type: none"> <li>• Review HR Strategies, Policies and Plans</li> <li>• Review Compensation &amp; Benefits</li> <li>• Discuss and Support Succession Planning</li> </ul>
	Ministry of Transport	<ul style="list-style-type: none"> <li>• Review Development of Staff in Professional Tracks (POCC &amp; Mariners)</li> <li>• MPA Talent Development &amp; Management</li> <li>• MPA Succession Planning</li> </ul>
Supervisors	Staff Meetings	<ul style="list-style-type: none"> <li>• Identify areas for improvements in HR matters and developmental programme within departments – staff engagement, core competencies, performance management etc</li> </ul>
	Staff Appraisals	<ul style="list-style-type: none"> <li>• Establish KRAs and develop learning roadmaps for subordinates</li> </ul>
Staff	Employee Engagement Survey	<ul style="list-style-type: none"> <li>• Solicit feedback from staff</li> </ul>
	Staff Welfare and Work Life Sub-Committees	<ul style="list-style-type: none"> <li>• Identify areas of improvement for staff engagement</li> </ul>
Union	Union Meetings	<ul style="list-style-type: none"> <li>• Work collaboratively to ensure staff well-being</li> </ul>

Figure 4.1.2 further illustrates the current manpower planning which is aligned with the annual corporate planning cycle to ensure a holistic implementation of the work plans.

The process begins with HR working closely with each division to support its divisional work plans by:

- Creating the right structure for divisions to best perform their roles. This include redesigning of organisational structure where appropriate
- Recruiting, developing and retaining the right people to carry out work plans, and
- Ensuring that all employees are engaged and work with a sense of common purpose through the strategic employment of both direct and indirect policies and schemes. Some of these require personnel to work in cross department committees to increase situational awareness of areas outside their work scope.

Figure 4.1.2: HR Planning Process



# PEOPLE

## New HR Strategy Map to Support MPA's Future Ready Journey

In a tight labour environment like Singapore, the fight for talent is intense. It is even more pronounced in the maritime arena. Thus, a HR stocktake was done to identify the key domain expertise needed to achieve the long term strategic outcomes shown in Figure 4.1.3. This will then form the technical track. For the management track, a steady flow of talent has to be developed, identified and retained for seamless succession planning.

To put ourselves in the shoes of the employees, the strategic outcome desired is to be able to enjoy a rewarding career with MPA. To help them achieve these, we focus on four main internal processes namely: Competencies Development, Talent Management, Staff Engagement and HR Processes Excellence.

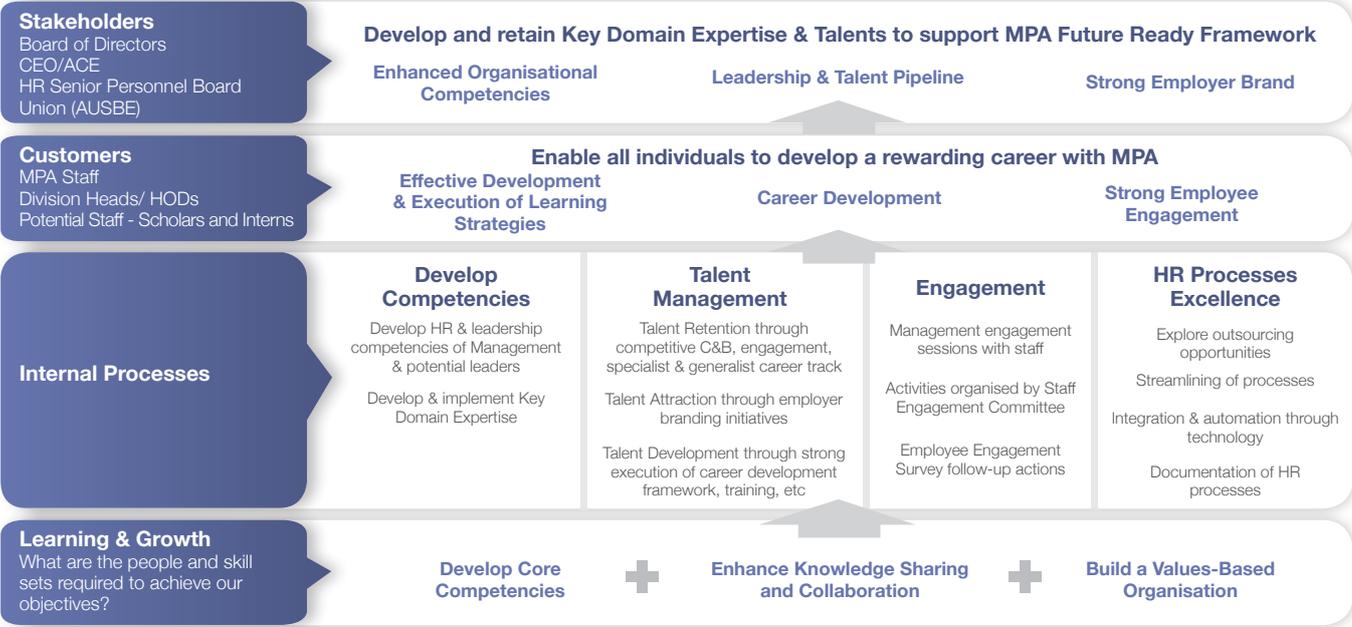
In the area of Competencies Development, HR focuses on developing the key domain expertise and leadership competencies required for current and potential leaders in MPA to perform effectively.

In the area of Talent Management, we will continue to seek to attract talented individuals by offering competitive compensation packages and bonuses and by providing for attractive specialist and generalist career tracks via a defined, structured career development framework.

In the area of Staff Engagement, we are focusing on a programme of dynamic engagement with our employees. This features a raft of engagement activities enterprise wide.

In the area of HR Processes Management, we will further streamline our processes, enhance the documentation of our processes and leverage on technology for more efficient HR management.

Figure 4.1.3: HR Strategy Map



## Developing HR Plans and Policies

MPA's HR plans and policies are developed to support and complement the divisions' work plans, as well as to drive human capital management strategies at the corporate level. These plans and policies shape areas such as manpower planning, succession planning, talent management, rewards and recognition.

To measure the effectiveness of HR plans and programmes, a set of HR measurements and key performance indicators (KPIs) are closely monitored by SM and Ministry of Transport (MOT).

For those which were ranked lower year on year, structured reviews and evaluations by divisions were performed in order to seek solutions for improvements such as in the areas of leadership and learning and development.

## 4.1b. Describe how the organisation identifies and grooms employees for high performance

### Leadership Development

The qualities required in our leaders are the ability to inspire others and the capability to steer and develop teams and individuals.

In response to a lower scoring from the recent EES on leadership, HR developed the MPA Leadership Competency model (mentioned in Category 1.1c). Based on these competencies, we have identified developmental programmes for each level of leadership with the corresponding roadmap to facilitate our leaders in acquiring and developing new competencies that help them stay relevant, resilient, responsive and resourceful when responding to challenges.

## Talent Identification and Development

HR ensures that there is a leadership and talent pipeline so that we will always have the leaders we need to support MPA's Mission and Vision. We do this by creating a system for rigorously identifying and grooming talent.

Each year, talents at MPA are identified by the annual ranking board based on performance and potential. To be identified as a talent, employees have to meet strict qualifying criteria. For instance, to be categorised as a talent, employees need to show good performance and potential over a period of time. Each year, a list of talents are collated and reviewed by the ranking board.

Once the talents have been identified, MPA grooms these employees for leadership positions by applying a suite of programmes.

Chief among the programmes is the MPA Leadership Development (LEAD) Programme which is structured to sharpen the leadership and general management skills of high potential officers so that they develop into more effective leaders. Under LEAD, younger participants benefit from being mentored by members of the SM team, while executive development courses and post-graduate programmes are offered to those with more working experience. Participants will also undertake projects and other developmental activities to expose them to strategic issues.

Beyond LEAD, HR has assembled a wide spectrum of internal and external programmes.

To give our talents greater exposure to the maritime business, we offer local and overseas postings as well as attachment programmes with industry partners. Secondment opportunities are also offered within the MOT family for our officers to gain a strategic and macro perspective of the ministry.

MPA also encourages its officers to go beyond their core responsibilities by providing opportunities for cross-functional learning through championing inter-departmental projects, participating in work plan seminars and Management Advance programmes, serving on technical committees and presenting at internal platforms such as MPA's SM meeting, MPA's Board meeting or the Transport Minister's meeting with MPA's SM.

Directors in charge of talents will review their subordinates' performance and potential, monitor if they display leadership qualities and take in inputs from their peers and other supervisors to form a holistic assessment of the talents. In addition, while undergoing the developmental programmes listed above, talents are also evaluated on their performance in the programmes.

## Succession Planning

To facilitate succession planning, HR actively identifies talents to place in positions of higher responsibilities or in positions where they can progress to positions of greater responsibilities.

MPA charts its succession planning using succession plans with three different time horizons: immediate (within the next one year), medium (in the next two to four years),

and long term. These succession plans are drawn up by our Directors in discussion with the CE and ACEs. For key management positions, the succession plans are discussed with Permanent Secretary of the Ministry of Transport (PS MOT) on an annual basis. For each succession plan, HR consults with the Directors to identify possible rotations and milestone developmental plans for potential successors so as to prepare them for succession along a structured development path.

## 4.2 Employee Learning and Development

4.2a Describe how the organisation engages employees to identify current and new competencies required to meet strategic goals

### Learning Needs Analysis

MPA adopts both the top-down and bottom-up approach to identify staff learning needs. Both approaches take into account MPA's Future Ready Framework, strategic thrusts, objectives, organisational and departmental work plan and staff's learning needs.

The top-down approach is taken to address organisational level needs, such as the push for service excellence and enhanced enterprise risk management. These needs are identified as emerging competencies that the organisation as a whole will require in order to achieve its objectives moving forward.

In the bottom-up approach, supervisors discuss training needs with staff during on-going developmental and appraisal conversations to assess individual training needs and build technical competencies. Feedback and inputs of the employees are actively solicited during this process. Heads of departments also identify relevant training for their respective work units for performance improvements.

In reviewing the competency and learning roadmaps, MPA takes into consideration performance gaps, new work challenges and the work plan for the coming year. The outcome of the process is an annual learning plan that caters to the needs of all employees and the organisation.

4.2b Describe how the organisation provides learning and development opportunities to employees to drive organisational productivity and personal growth

MPA believes strongly in nurturing its human capital through employee learning and development and places a strong emphasis on both the professional development and personal growth of its employees.

To ensure that the training provided is relevant to employees' needs, MPA adopts a competency driven approach to develop the capabilities of its employees. The MPA Learning Framework was formulated to guide the learning and development of its employees. The framework outlines the relevant training programmes based on the core knowledge, skills and behaviours expected of each individual in order for him or her to meet key performance indicators.

**Figure 4.2.1: Learning Framework**



Different programmes are designed to close the different competency gaps of officers.

**Figure 4.2.2: Programme Categories**

Programme Categories	Milestone Development Programmes	Corporate Development Programmes	Functional Development Programmes	Other Development Programmes
<b>Objective</b>	To prepare the staff for the role that they are taking	To address the gaps identified for the core skills and knowledge	To address the gaps identified for the functional skills and knowledge that is directly relevant to the staff's work	To address the gaps that are identified for staff's development
<b>Programme Identification</b>	SM / HR	HR / Division / Department / Staff	Division / Department / Staff	Division / Department / Staff
<b>Criteria</b>	Within first 2 years at the level (Identified by HR in consultation with line managers.)	Based on competency gaps identified during LNA Exercise	Based on functional gaps identified during LNA Exercise	Based on specific focus area/gaps identified during LNA Exercise

MPA provides employees with a wide array of learning opportunities to build their competencies and capabilities. These include both internal and external courses as well as conferences to help our employees keep abreast of the latest industry developments. Other developmental opportunities such as overseas study trips, job rotation, stints on cross-functional project teams and secondments to other government agencies are also made available to staff who are assessed to be suitable for these learning opportunities. HR continuously strives to improve upon the effectiveness of the training provided to our employees. Towards this end, all employees are required to complete a course evaluation form at the end of each training

session. The training programmes and course contents are then fine-tuned based on the feedback and other recommendations received.

**Service Excellence Competency Framework**

In line with MPA's continuing efforts to nurture a spirit of service excellence across the organisation, we have in place a service excellence competency framework and corresponding training roadmap (see Figure 4.2.5). The competency framework is aligned with the overall whole of government direction.

**Figure 4.2.3 : Service Excellence Competency Framework**



### Continuing Education

MPA supports continual and lifelong learning by providing all its employees with ample opportunities for personal and professional development beyond their vocational needs. For example, an interest-free study loan initiative was introduced in 2009 to encourage officers to enrol in higher studies. The MPA Partial Sponsorship Scheme was first introduced in 2011 to encourage employees who wish to deepen their maritime knowledge by taking up certifiable maritime-related courses approved under the Maritime Cluster Fund (MCF) Training Grant. This

scheme was subsequently revised to the current MPA In-Service Sponsorship Scheme for Part-time Studies so as to cater to the staff's aspiration to pursue higher academic qualification. Officers who meet specified criteria may be sponsored up to 100% of the course fees for certifiable maritime-related courses approved under the Maritime Cluster Fund (MCF) Training Grant, part-time masters and bachelor degree programmes offered by the local universities as well as Association of Chartered Certified Accountants (ACCA) Qualification. In addition, the officers are granted paid study and examination leave.



#### UPGRADE Account: Flexibility In Learning

As part of MPA's efforts to support our People in achieving their aspirations and realising their fullest potential, UPGRADE Account was introduced in 2010 to support their pursuit of lifelong learning and self-development. This additional learning opportunity goes beyond training which are of direct relevance to their job scope. Employees who have completed 2 years of

service will be eligible for the UPGRADE account with an initial "deposit" of \$1,500. The account can be used to co-fund up to 75% of the fees for any non-work-related training course or programme of their choice.

Employees above 45 years of age can also make use of their UPGRADE Accounts to co-pay for up to 75% of the fees for vocational courses such as Taxi or Bus Driver certification training, as well as courses offered by the Singapore Workforce Development Agency. UPGRADE accounts are topped up annually (up to \$750), subject to a maximum balance of \$1,500.

## 4.3 Employee Engagement and Well-being

4.3a Describe how the organisation supports individual and team participation to achieve strategic goals

An engaged workforce is a productive workforce which can better deliver our strategic goals. The MPA Employee

Engagement and Well-being Framework is key to ensuring that our employees remain engaged and motivated. The framework drives MPA's engagement efforts which are aligned with the organisation's strategic goals and is structured around four key engagement levers: WeShare, WeChat, WeCelebrate and WeAppreciate. Figure 4.3.1 provides examples of key engagement platforms that MPA uses to reach out to our employees.

Figure 4.3.1: MPA Employee Engagement and Well-being Framework



# PEOPLE

In addition to the staff engagement platforms listed above, MPA also provides opportunities for employee's involvement in our innovation and service excellence journeys.

At the individual level, all employees can contribute suggestions through an online portal (i-Suggest), participate in service and innovation learning journeys and Innovation Festival (InnovFest).

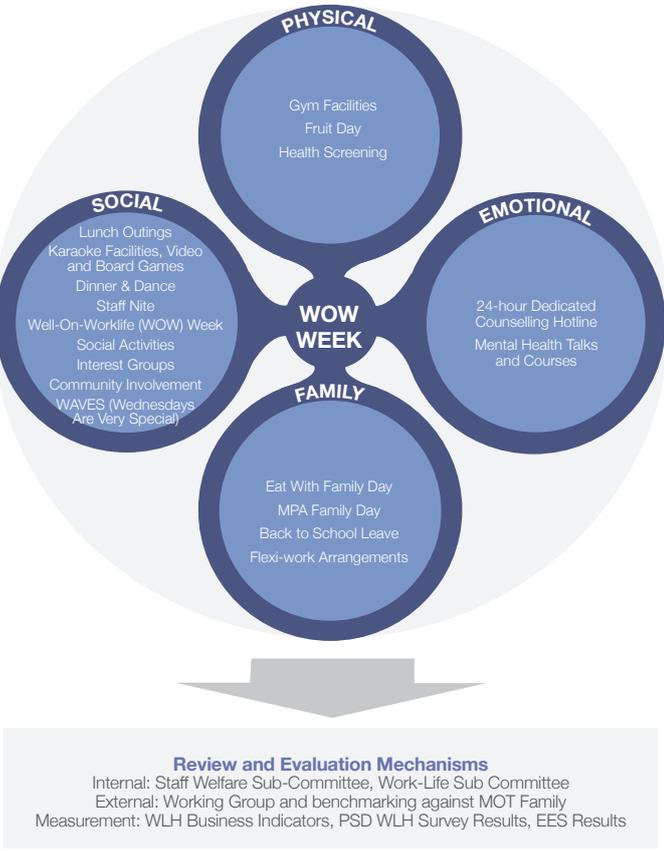
At the team level, staff can participate in Innovation Xchange - a series of sharing sessions to highlight innovations across operational, technology and service areas of MPA and from the industry. Other platforms include Ideathon (thematic brainstorming sessions), Work Improvement Teams, Quality Service Manager (QSM) network and the various internal committees.

4.3b Describe how the organisation develops a conducive work environment that enhances employee health and well-being

MPA looks after the physical, emotional and social well-being of our employees and the needs of their family in a structured, comprehensive way, steered by our Work-life Harmony Framework (see Figure 4.3.2).

Initiatives within the umbrella of the Work-life Harmony Framework are driven by a cross-functional committee under the guidance of Director, Human Resource.

Figure 4.3.2: Work-Life Harmony Framework



## Well-On-WorkLife Week: Finding the Right Balance

MPA has been celebrating Well-On-WorkLife Week (WOW) since 2009 to draw attention to the importance of work-life harmony in MPA. The week is packed with activities that our people and their families could participate in for their physical, emotional, mental and social health. One of the key highlights of WOW week is Juniors@Work, where staff can bring their children to office to see how their parents work. In 2014, we had Movie Nite Out for the staff, a SEA Aquarium for the Family outing and a Charity Flea Market where staff and their children ran mini stalls on MPA premises to raise funds for charity.

WOW Week 2015 was just as exciting with a Charity Flea Market, a visit to POCC Vista with our adopted charity Kids in Play (KIP), a movie outing and a fun-filled Juniors@Work at KidsSTOP.

Throughout the entire WOW week, our employees are given time off to participate in each of these activities.



MPA created an Interest Group Framework in 2011 to systematically and actively support our employees in their pursuit of personal passions and interests. Under the framework, MPA provides support in the form of funding to cover event registrations, cost of training lessons, rental of venues and facilities, essential materials, refreshments, specialised apparel and equipment as well as the free use of MPA's facilities such as staff lounges and meeting rooms.

To raise awareness of the various MPA Interest Groups and to facilitate communication within and across groups, MPA allocated a dedicated microsite on the staff portal, e-Connect, to MPA Interest Groups. To date, we have 19 Interest Groups (see Figure 4.3.3) with 446 members.

Figure 4.3.3: MPA Interest Groups (IG)

<b>Sports &amp; Fitness</b>	Aerobics	Running
	Badminton	Scuba Diving
	Basketball	Soccer
	Bowling	Table Tennis
	Brisk Walking	Tennis
	Dragon Boat	Yoga
<b>Arts &amp; Lifestyle</b>	Outdoor Activities	
	Arts & Craft	Cooking
	Baking	Photography
<b>Performing Arts</b>	Line Dancing	K-Pop

### Workplace Safety and Health

To better ensure the workplace safety and health of its employees, MPA re-constituted the Workplace Safety and Health Committee in 2014. The Committee is chaired by Director, Human Resource and comprises representatives from HR, the Operations Cluster, Facilities Management and the Union. The committee meets monthly to review and update the safety plans for MPA.

The five key safety and health principles of MPA are:

- If safety is a cost, lives cost more
- Value every officer's safety and health
- Zero tolerance for non-compliance on safety and health issues
- Recognise and reinforce safe behaviour
- Promote health and safety excellence

4.3c Describe how the organisation measures employee engagement and well-being

Internal feedback from both formal and informal channels reveals that our employee engagement initiatives are warmly received by all our employees. One of the strongest indicators of the success of our employee engagement initiatives is the improvement in results of the Employee Engagement Survey (EES). The EES is conducted every two years to track employee satisfaction levels and gather feedback from the ground. The survey results are highlighted and analysed at SM level. Starting from 2013, a pulse survey is conducted in the years when there is no EES.

MPA's employee engagement index has continued to show improvement, having increased from 73% in 2010 to 82% in 2015.



**Mr Hone Swee Sang :**  
Passion for Work

At MPA, we have many dedicated officers who are passionate about their work. One such example is our Port Chemist, Mr Hone Swee Sang who is 66 and still climbs the pilot's ladder for his regular inspections. The work of port chemists helps to prevent accidents involving dangerous goods at our ports. Mr Hone's contributions to MPA demonstrate the commitment of our staff and his spirit encapsulates that of many officers in MPA.



## 4.4 Employee Performance and Recognition

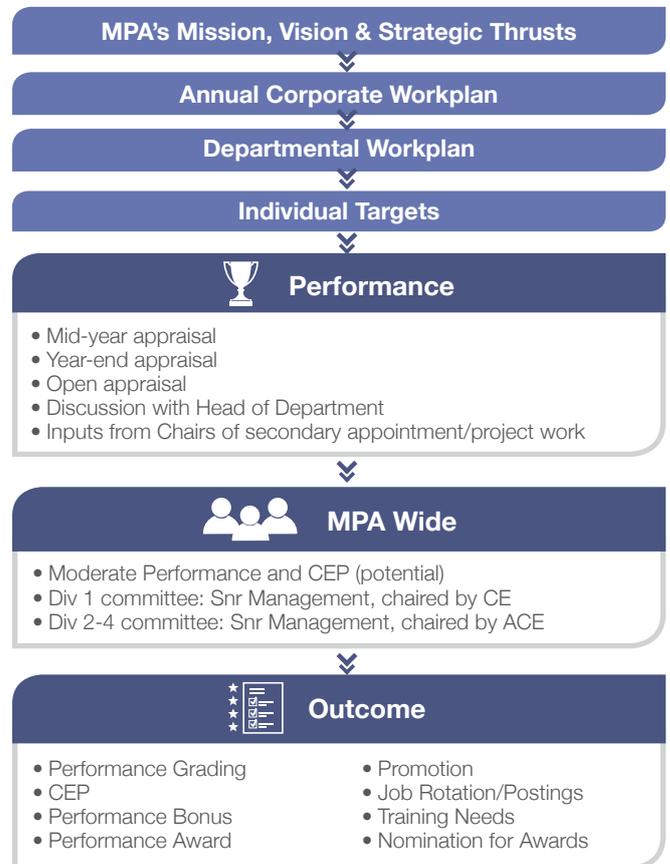
4.4a Describe how the employee performance and recognition system supports high performance, productive and innovative behaviours to achieve strategic goals

Figure 4.4.1 illustrates how MPA manages employee performance to achieve strategic goals.

Employees are assessed through mid-year work review to ensure that they are on track to perform optimally and to address any mid term issues with workplan achievements. This is done to allow interim remedial actions to be taken before the end of the year. The year-end performance appraisal review is done to assess work performance, discuss strengths and weaknesses and set work and training targets for the coming year. During the appraisal review, supervisors are highly encouraged to have face-to-face meetings with their employees to discuss their achievements and other performance-related matters.

MPA also features an online appraisal system that allows our employees to highlight their individual contribution to cross-functional projects, as well as corporate-level projects such as service and innovation excellence.

Figure 4.4.1: Performance Management



# PEOPLE

## 4.4b Describe how the employee performance and recognition system reinforces desired behaviours and organisational values

MPA recognises staff contributions beyond the Performance Management system to reinforce desired behaviours and organisational values including innovation and service excellence.

The MPA FIRST Award is given out every quarter to employees who exemplify the organisational values – FIRST. These award winners (also known as FIRST Champions) become ambassadors of our FIRST values and, in this way, serve as role models for other employees. The FIRST Champions are profiled and featured at annual workplan seminar, townhall, corporate video and also in our internal publicity blasts.

In the area of service excellence, MPA recognises officers who provide excellent service to external customers through the Star in Service initiative. Certificates and collar pins are given to officers who have received compliments from customers. These officers are also featured in internal

publicity blasts. From this pool, selected officers are then nominated for the Public Sector Star Service Award.

In the area of innovation excellence, incentive awards were introduced to incentivise cross-divisional WITS projects. The cash award quantum for such projects ranges from \$200 to \$3,000.

Good service and innovation group projects are further shortlisted and submitted for MOT Ministerial Awards.

## 4.4c Describe how the employee performance and recognition system provides a variety of rewards and recognition to achieve organisational values and strategic goals

MPA has put in place a myriad of monetary and non-monetary rewards to encourage officers to strive for continual improvement, not just in their work performance but also in demonstrating the organisational values. Figure 4.4.3 summarises the various employee performance and recognition mechanisms in MPA. These remained a key strong point in EES for MPA which is ranked above public sector norms.

**Figure 4.4.3: Employee Performance & Recognition Mechanism**



# 05 / PROCESSES

## 5.1 Innovation Capabilities

5.1a Describe how the organisation gathers, evaluates and implements innovative ideas for products, services and related processes to create new value

Innovation is key to maintaining Singapore's hub port leadership. With competing maritime hubs around the world lifting their operations with new infrastructure and technologies to meet customers' growing expectations in the efficiency and safety domain, Maritime Singapore must blaze new technological trails in order to stay ahead of the pack and remain attractive to its customers. Accordingly, MPA has made innovation one of its core attributes to achieve its Mission.

### The MPA Innovation Framework

Innovation is embedded in MPA's core values, as the "Forward Thinking" in the FIRST Values. Because MPA understands the importance for all staff to apply innovation in their work, we have developed an innovation framework (see Figure 5.1.1) that provides an environment for innovation to thrive.

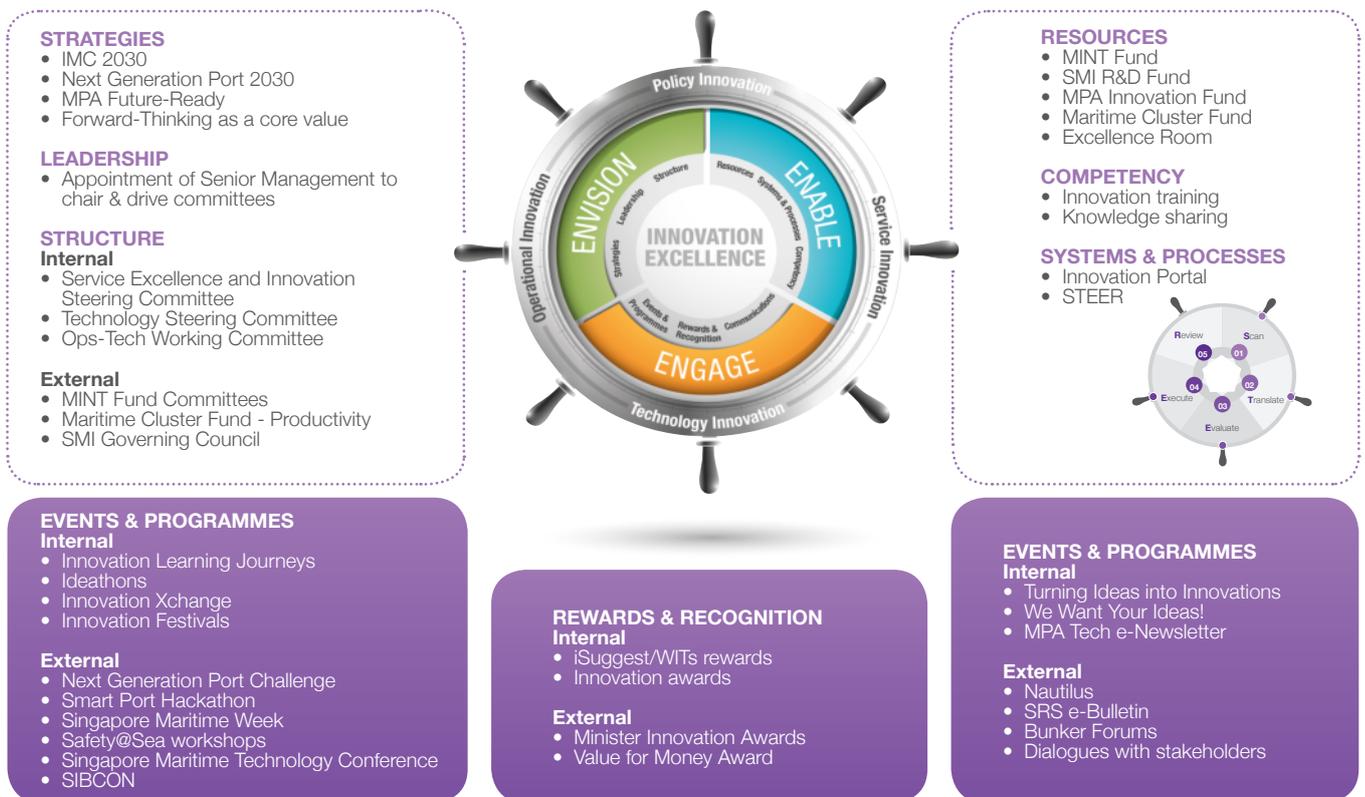
The framework comprises three thrusts - Envision, Enable and Engage – (see Figure 5.1.1) that work together in synergy so that MPA is better able to innovate and create value.

**Envision:** MPA drives innovation among its people by providing the big picture and goals through master plans and key strategies. These visions and strategies are formulated and led by dedicated committees such as the Service Excellence and Innovation Steering Committee and the Innovation Working Committee.

**Enable:** MPA enables innovation by providing its people with the tools and resources to nurture innovative ideas. These tools and resources include funding, innovation workshops, sharing of innovation stories and a structured process to review and implement ideas.

**Engage:** MPA strives to create an environment where creativity and innovation can flourish by engaging its employees in the innovation journey. It does this through recognition and reward schemes, innovation events and by continually celebrating innovation, reinforcing its messages and communicating its Vision.

Figure 5.1.1: MPA Innovation Framework



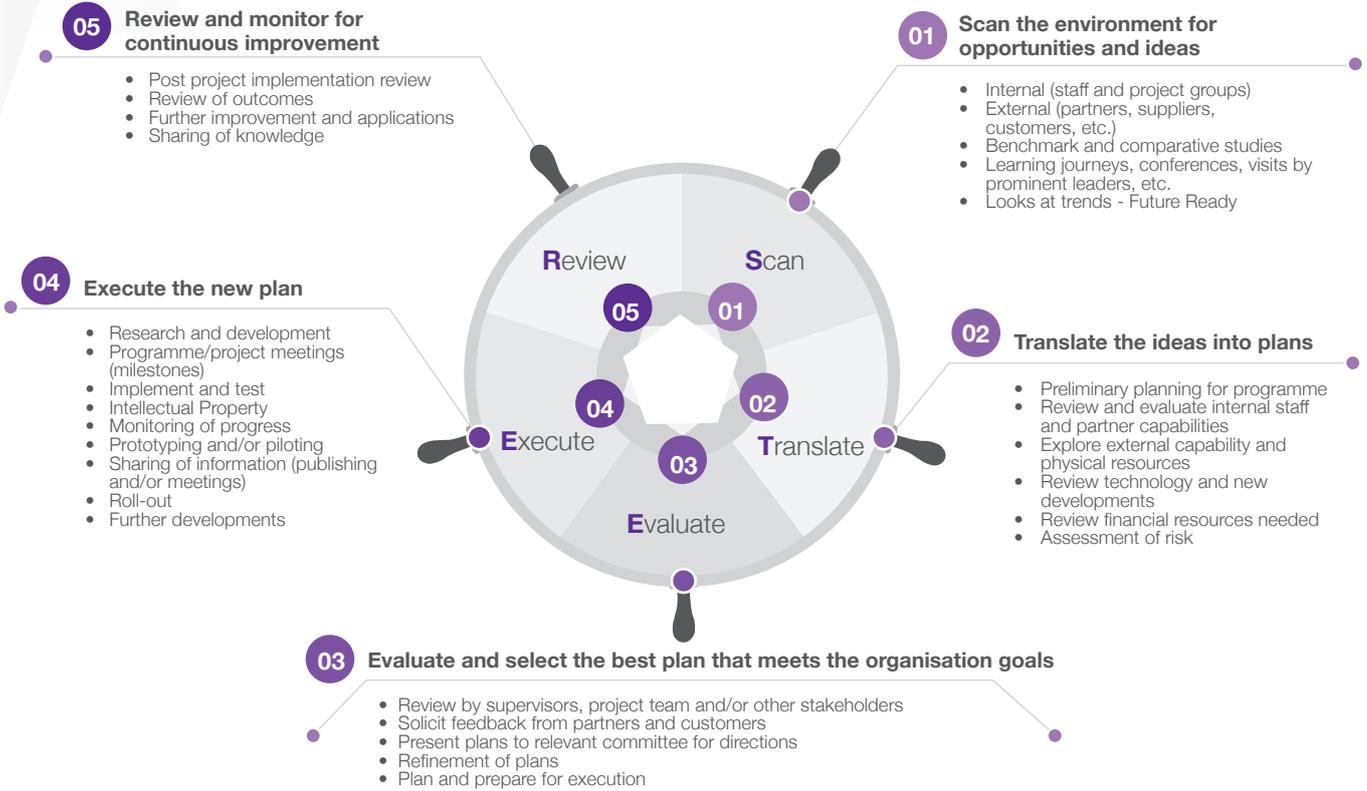
### Innovation Process - STEER

MPA adopts a structured five-step process called STEER (see Figure 5.1.2) in evaluating and implementing feasible ideas. Having this structured process fosters innovation

throughout MPA and allows MPA to develop and launch innovation quickly and effectively. Through STEER, stakeholders such as employees, customers, suppliers and partners are actively engaged in the innovation process.

# PROCESSES

Figure 5.1.2: Innovation Process - STEER



## 5.1b Describe how the organisation involves key stakeholders in generating and implementing innovative ideas and solutions

MPA views its stakeholders as key partners in its innovation journey. In line with this, MPA has a broad range of schemes to encourage the industry, institutions, companies and students to conduct research and development, innovation and test-bedding. These include the Maritime Innovation and Technology (MINT) Fund and schemes to promote research & development, test-bedding, product development and technology adoption.

Partnering external organisations allows MPA to leverage on the knowledge base of its external partners and associates to extend its own innovation capability and boost its innovation yields. These partnerships also allow MPA to build up the innovation capacity of its stakeholders.

MPA's partnerships range from bilateral arrangements to mega-scale partnerships involving more than a dozen stakeholders (see Table 5.1.1).

MPA engages its stakeholders to collaborate in innovation through these vehicles:

- Industry initiatives (see *Driving Innovation With Smart Port Initiatives*)
- Competition
- Funds and schemes offering incentives for maritime-related innovations
- Joint R&D partnerships with tertiary institutions and industry
- Call for Proposals to solicit R&D proposals



### Driving Innovation with Smart Port Initiatives

In March 2015, MPA launched a raft of Smart Port initiatives centering on building a more interconnected port with high-speed internet, extensive use of data analytics and innovative mobile solutions to enhance Singapore Port's overall competitiveness.

A key Smart Port initiative saw MPA and M1 partnering to make available 4G broadband access in Singapore port waters for the maritime community in March 2015.

In 2015, MPA and the Singapore Shipping Association joined hands to launch a call-for-proposals for the maritime community and solution providers to develop innovative business-to-business applications. MPA has set aside S\$2 million to co-fund projects approved under this initiative.

Other Smart Port initiatives include MPA's collaboration with PSA on several port automation R&D projects. MPA has also partnered local universities and A\*STAR to conduct R&D in areas such as new container terminal concepts, modelling and simulation and autonomous systems.

Table 5.1.1: Examples of Innovation Projects

Project	Intent	Stakeholders	Outcome and Value Created
<b>Mega Innovation project - with Multiple Stakeholders</b>			
Next Generation Port (NGP) 2030 (see <i>Next Generation Port 2030</i> )	To map out how Singapore can utilise a new generation of technologies to increase efficiency and productivity, intensify land-use in its port, improve safety and security and raise the level of sustainability.	<p>NGP Steering Committee is made up of representatives from MOT, Govt Agencies (JTC, LTA, URA, EDB, DSTA, etc), Terminal Operator (PSA), A*STAR, RIs and IHLs.</p> <p>3 NGP Working Committee are made up of representatives from MOT, Govt Agencies (JTC, LTA, URA, DSTA, NEA, ICA, etc), Terminal Operator (PSA), A*STAR RIs, IHLs and Service Providers for Port Services, Shipping.</p>	<p>Holistic master planning of future port that incorporate stakeholders' views in developing a port that is efficient, intelligent, safe and sustainable.</p> <p>NGP 2030 is the development of the next-generation Tuas Terminal (a 65M TEUs mega container terminal), which will be the largest single mega container terminal in the world when completed.</p>
<b>Policy Innovation</b>			
Maritime Singapore Green Initiative	To recognise and incentivise maritime companies to adopt clean and green shipping practices and go beyond the minimum mandated requirements.	<p>Shipping lines, ships and offshore structures.</p> <p>Singapore-flagged ships.</p> <p>Terminal operators.</p> <p>Harbour craft operators.</p>	<p>Green Ship programme - A total of 267 Singapore-registered ships have enrolled in programme as at 2015. Vessel emission reduction has increased to a 48.66% reduction beyond IMO EEDI requirements.</p> <p>Green Port Programme - encourages ocean-going ships at the Port of Singapore to reduce the emission of pollutants. As of 2015, 3745 vessels calls have enjoyed concession in port dues under the Green Port Programme while a total of 574 vessels have registered in the GPP since July 2011.</p> <p>Green Technology Programme - encourages local maritime companies to develop and adopt green technologies. With the execution of 21 innovation projects, maritime companies managed to directly reduce CO<sub>2</sub> emissions by 177,000 tons a year, at a cost saving of \$7.2 per tonne.</p>
<b>Service Innovation</b>			
Enhanced Service Delivery through Revamp of Port Ops Systems	<p>This project brought about new concepts such as e-services, where customers are able to view softcopies of invoices and statements of accounts online.</p> <p>A new tariff concession was introduced for the Offshore Marine sector.</p> <p>A policy review was also conducted to rationalize rates to incentivise shorter port stay and deter idle time.</p>	<p>Cross-divisional MPA team, PSA, Jurong Port and IT consultants.</p>	<p>Efficiency, effectiveness, economic and innovation benefits were derived.</p> <p>Auto-computation of port dues charges, minimizing human errors through manual computation. System is able to re-compute charges if there is any amendment on vessel information.</p> <p>Increased customer satisfaction as customers can view softcopies of invoices and statements of accounts online. The system also has in-built intuitive alerts automatically sent to customers to take necessary action in a pro-active manner.</p> <p>Estimated savings of S\$573k per annum through re-engineering and automation of processes.</p> <p>New tariff concession to defray business costs for the Offshore Marine sector.</p>
<b>Technology Innovation</b>			
Next Generation Container Port (NGCP) Challenge	To spur revolutionary new ideas and to encourage the industry to challenge conventional designs and thinking.	56 exciting proposals submitted by 37 groups and 19 individuals from various IHL and companies.	A team from the National University of Singapore, Shanghai Maritime University and Shanghai Zhenhua Heavy Industries Company Limited walked away with the top prize for its proposal for the SINGA (Sustainable Integrated Next Generation Advanced) port. A concept of a double-storey stacking yard addresses Singapore's land scarcity problem and increases efficiency by reducing the time spent transporting containers over large distances.
Next-Generation Vessel Traffic Information System (VTIS)	<p>To enhance safe navigation of vessels to aid MPA's role of managing port traffic and provides information and advice to ships transiting through the Singapore Straits.</p> <p>The VTIS is able to integrate tracks from multiple sensors into one system to monitor vessel movements which can track up to 10,000 vessels at any one time. All these information are displayed on the console screen and enable our officers to work more effectively and efficiently.</p>	Supplier: Kongsberg Norcontrol IT	<ul style="list-style-type: none"> <li>• Improve capability to enhance navigational safety (results: 0.005 Incidents per 1,000 movements)</li> <li>• Efficient traffic flow</li> <li>• Enhanced situational awareness</li> <li>• Multi-smart sensor tracking</li> <li>• Tracking capacity: 10,000 tracks</li> <li>• Integrates Radar, AIS, CCTV and Harbour Craft Transponder System</li> <li>• Advanced Monitoring functions: <ul style="list-style-type: none"> <li>- Conflict warning list</li> <li>- Deep draft Monitoring Function</li> <li>- Integrated CCTV</li> </ul> </li> </ul>
Building a Smarter Port with Connectivity and Mobility Embedded into the Infrastructure	<p>To transform Singapore's Port into a Smart Port with a new level of connectivity and mobility, MPA has since 2014 commenced the use of innovative mobile applications.</p> <p>MPA has facilitated the development and use of online contents and applications by setting up 4G/Wi-Fi Infrastructure, launching the myMaritime@SG mobile application and issuing a Call for Proposals for business-to-business (B2B) mobile application development.</p>	<ul style="list-style-type: none"> <li>• Visiting ship owners</li> <li>• Maritime service providers</li> <li>• Shipping agents</li> <li>• Shipping crew</li> <li>• Terminal operators</li> <li>• Harbour craft operators</li> </ul>	<ul style="list-style-type: none"> <li>• Improved communication between MPA Port Operations Control Centre and maritime service providers and shipping agents</li> <li>• Improved communication with visiting ships and shipping agents</li> <li>• Improved efficiency and productivity</li> <li>• Improved field workers' efficiency and productivity</li> <li>• Improved welfare and well-being</li> <li>• Reduced cost of internet connectivity</li> </ul>
<b>Operational Innovation</b>			
Mass Flow Metering System (MFM) for Bunker Deliveries	To enhance transparency, productivity and minimises illegal bunkering activities during custody transfers by providing accurate mass flow volume and density measurements.	Mass Flow Meter Working Group consists of members from SPRING Singapore (Quality & Excellence Group), A*STAR's National Metrology Centre, MPA, Singapore Shipping Association and the International Bunker Industry Association.	To safeguard Singapore's reputation as a top bunkering port in the world, the Port of Singapore is the first in the world to mandate the use of mass flow metering (MFM) system.

# PROCESSES



## Next Generation Port 2030: Developing Future Port Infrastructure and Capabilities

As a global hub port, Singapore is embarking on a key national initiative to develop the Next Generation Port at Tuas. In planning the 65 Million TEUs Tuas container terminal, the NGP 2030 initiative was conceived to intensify the use of our limited port land, enhance safety and security of our port waters, boost efficiency and productivity of our port operations, leverage on advanced technologies to become a smart port and increase community engagement and sustainability of our port.

On the physical infrastructure front, a blue print master plan covering new above-ground spaces above and underground spaces beneath the container terminal at grade will guide the development of a maritime hub at Tuas. On the systems capability front, the new port systems roadmap will guide the development and integration of various systems for vessel traffic management, crisis command and control, port marine

safety, maritime sense making, just-in-time planning and coordination and a maritime single window for the Next Generation Port by 2030.



## 5.2 Process Management

5.2a Describe how the organisation manages key and support production and service delivery processes to meet customer and operational requirements

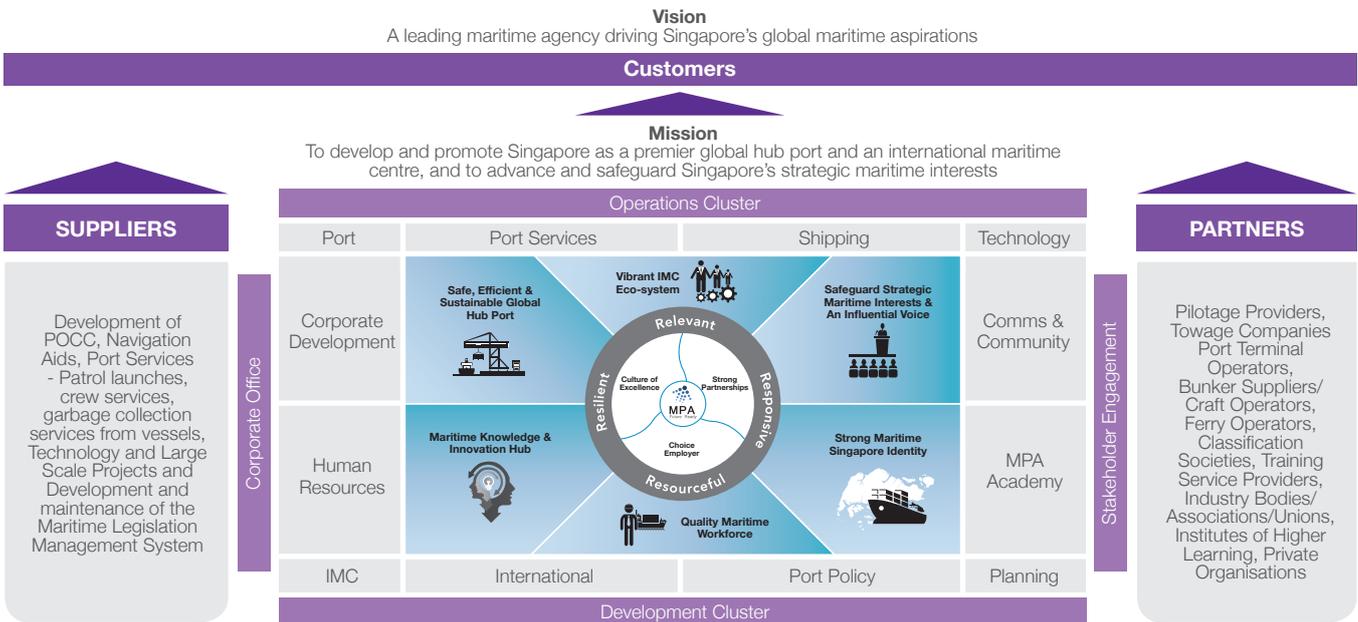
In support of our Mission and Vision, MPA manages key and support processes mapped to the following four clusters (see Figure 5.2.1):

- Operations cluster
- Development cluster
- Corporate cluster
- Stakeholder engagement cluster

MPA sets goals for each key and support process, and divisional work plans are then drawn to achieve these goals. To ensure that each key and support process is heading in the right path and delivering on performance, MPA sets Key Performance Indicators (KPIs) for each process. The KPIs serve to:

- Monitor the success of initiatives and schemes launched.
- Track whether the key or support process fulfils MPA's strategic thrusts or meets customers' expectations.
- Measures how productive the key or support process is.

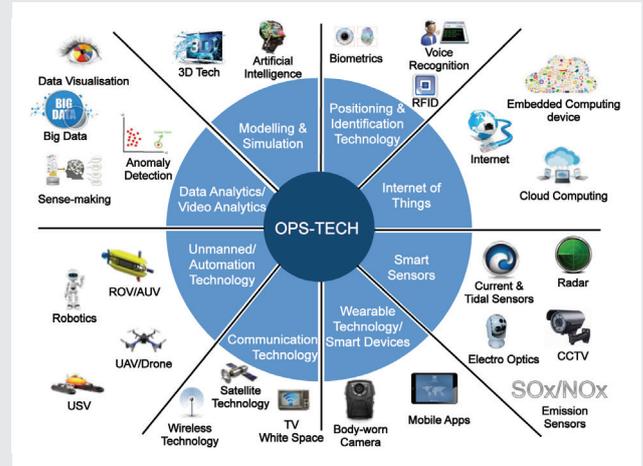
Figure 5.2.1: Key Processes Map





### Ops-Tech Efforts: Nurturing a Culture of Excellence

Ops-Tech initiative is part of the future ready framework to prepare for future operational challenges by harnessing technology as a force multiplier. As the maritime environment becomes more competitive and challenging, there is a need to leverage on technology to gain operational advantages for our port. The MPA Ops-Tech Roadmap guides technology developments for the current and future operational needs and challenges, and will be reviewed regularly to ensure that it keeps pace with technology developments and remains relevant. Ops-Tech efforts encompass a wide range of staff levels, from field personnel and ground supervisors to Head of Departments and above from Port, Port Services, Shipping and Technology divisions.



5.2b Describe how the organisation drives process improvement to improve productivity and ensure timely delivery

Table 5.2.2 lists examples of process improvement initiatives that MPA has put in place that have improved productivity and efficiency.

Table 5.2.2: Examples of Processes Improvement Initiatives

MPA Strategic Thrust	Division	Project	Improvements
Safe, Efficient & Sustainable Global Hub Port	Port	National Maritime Safety at Sea Council (NMSSC)	To sustain efforts in promoting safety at the national level, MPA formed the NMSSC. The council is made up of professionals from a wide spectrum of the maritime industries.
Safe, Efficient & Sustainable Global Hub Port	Port Services	Implementation of LNG bunkering in Singapore	<ul style="list-style-type: none"> <li>• SPRING (Singapore’s Chemical Standards Committee) had approved the formation of a Technical Committee in May 2015, to be led by MPA. Three working groups were also formed to develop LNG bunkering standards, with MPA as the lead stakeholder in the Technical Committee and the working groups.</li> <li>• MPA worked closely with the Energy Market Authority and Singapore LNG Corporation (SLNG) to streamline plans for LNG bunkering in Singapore. Together, the three parties worked out funding, legislation and procedures at SLNG terminal.</li> </ul>
Safe, Efficient & Sustainable Global Hub Port	Shipping	Growth of the Singapore Registry of Ships (SRS)  ISO 9001:2008 certification of Quality Management System and compliance with IMO Instruments Implementation Code (III Code)  Enhanced leverage on IT and electronic transactions (paperless)	SRS continues to grow in size and influence. SRS has grown by 5% on year to reach 86.3 mGT in 2015. SRS retained its 5th position in world ranking and its “White List” status under the Tokyo and Paris MOUs on Port State Control.  ISO-certified QMS and implementation of III Code aligns business processes to our overarching Mission and objectives, to better utilise resources and improve overall organizational performance as well as enhance customer satisfaction.  The implementation of Maritime Legislation Management System (MLMS) and Electronic Data Interchange (EDI) provide surveyors with ready access to up-to-date national legislation, policies and standards as well as ship information to facilitate their work. Launch of more mobile devices and ship inspection applications allow surveyors to be more versatile and efficient in the field and enables electronic filing of inspection reports.
Safe, Efficient & Sustainable Global Hub Port	Port Policy	Singapore Container Port Competitiveness Benchmarking Study	MPA embarked on a study on International Benchmarking of Container Port Competitiveness. The results and recommendations are expected to be used to derive productivity and operational service level KPIs for PSA Corporation. This study is expected to be completed by the second half of 2016.
Safe, Efficient & Sustainable Global Hub Port	Technology	MPA’s New Smart Port Initiatives	Provision of 4G broadband access and WiFi allows the maritime community to leverage on mobile technology to enhance productivity and crew welfare. Mobile alerts offer maritime service providers more timely information on ship arrivals and departures and location of ships in ports that help them manage and plan their resources more effectively.
Safeguard Strategic Maritime Interests & an Influential Voice	International	Active voice at IMO committees and sub-committees	MPA continues to engage Singapore’s maritime interests through its active contributions to the work of key IMO committees and sub-committees.

# PROCESSES

MPA Strategic Thrust	Division	Project	Improvements
Strong Maritime Singapore Identity	Communications & Community	NGO public engagement programmes	To reach out to the community at large and showcase MPA's sustainable environmental efforts, MPA has been building strategic partnerships with the NGOs. These partnerships have allowed MPA to leverage on the expertise of the NGOs to make greater contributions to the marine environment. For instance, the MPA-TMSI Coral Nursery Volunteer Programme 2015 led MPA to offer two rounds of training to public volunteers, who have since joined MPA's monthly volunteer programmes.
Quality Maritime Workforce	IMC	Supporting the national SkillsFuture initiative	To support more up-skilling and competency building efforts as part of the SkillsFuture initiative, MPA injected another \$65 million to the MCF-MD programme to attract and groom local talent for the maritime sector with additional funding used to introduce new initiatives and improve existing efforts.
Maritime Knowledge & Innovation Hub	Port Policy	Inaugural Port Authorities Roundtable (PAR) 2015	To demonstrate Singapore's maritime thought leadership in the international maritime community and enhance collaboration among port authorities, MPA organised the inaugural Port Authorities Roundtable in conjunction with SMW 2015. This a high-level strategic platform allows top leaders of port authorities to network and share insights on pertinent issues and best practices, and seek mutually beneficial collaboration opportunities.
Culture of Excellence	Planning	Enterprise Risk Management (ERM) Framework	MPA established a risk management framework where we mapped out MPA's risk appetite and corporate risk matrices for strategic, operational and corporate governance risks. The Inaugural ERM community of Best practices was organised in Jun 2015. The Risk Digest was published which featured procurement and cyber-security risk, lessons learnt from audit findings.
Culture of Excellence	Corporate Development	Provision of e-services for the maritime industry	<p>New online services were developed and implemented to allow the maritime community to transact more conveniently with MPA. They include:</p> <ul style="list-style-type: none"> <li>• Online services for craft licensing, applications of manning licences and Powered Pleasure Craft Driving licences.</li> <li>• Online application and issuance of seafarer certificates.</li> <li>• Online application of Certificate of Pilotage Exemption.</li> <li>• Administration of Frequent Caller Scheme, Special Port Dues for salvage and offshore support vessels.</li> <li>• Online module for certifying Seafarers Recruitment and Placement Service (SRPS).</li> </ul>
Choice Employer	Human Resource	Recruitment of key domain experts	MPA appointed Tower Watsons consultant to aid in the development of Key Domain Expertise Frameworks. These frameworks will help build a strong quality MPA workforce to meet the needs of a challenging and complex maritime environment. Six jobs families have been identified and will be developed as Key Domain Expertise.

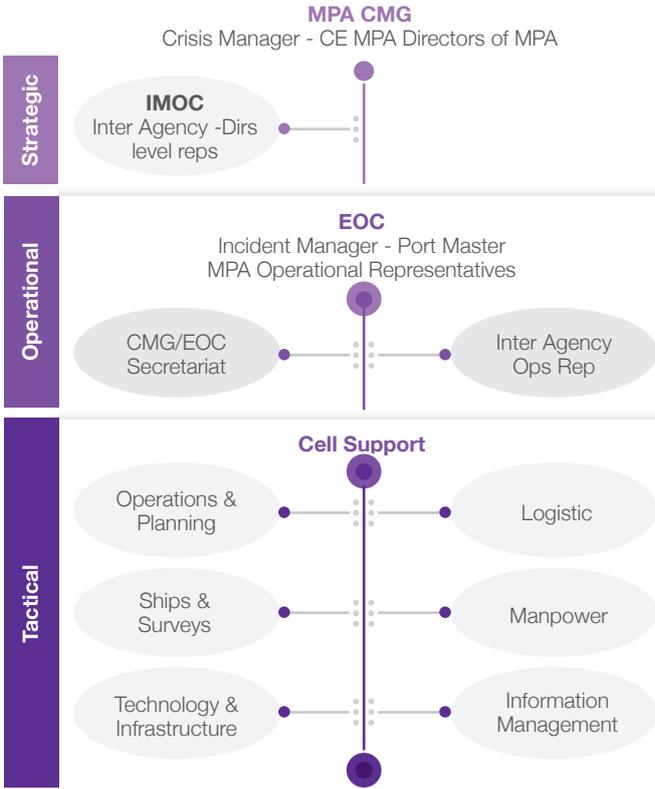
## 5.2c Describe how the organisation sustains its key processes in times of emergencies to ensure business continuity

The MPA Crisis Management Group (CMG) headed by CE MPA (see Figure 5.2.2) will provide policy guidance to the Emergency Operations Committee (EOC) on the conduct of the rescue operations and exercise command and control of all the resources assigned as part of this plan.

In addition, other members will be co-opted into the committee depending on the nature of the crisis. The co-opted members could include representatives from government and commercial resources.

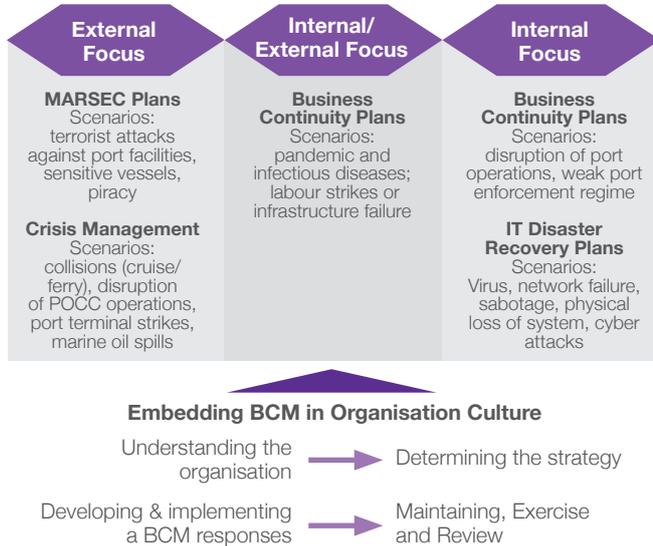
In the event of any major maritime emergency, it is usually the responsibility of the stricken vessel to provide the first-line of response during an incident unless it escalates to a higher level which warrants the activation of the contingency plan. Broadly, the MPA has adopted a phased approach to crisis management with clear lines of responsibility and established protocols for prompt and coordinated response to any crisis event under MPA's purview. There are two response layers in the crisis management setup namely, the Crisis Manager (CM) and the Incident Manager (IM). This is in line with the national crisis management framework which stipulates the structure to adopt in handling any crisis situations. In essence, the CM will assume the executive command which sets out the overall objective of the emergency operations, while the IM executes the tactical activities in fulfilment of that objective.

Figure 5.2.2: MPA Crisis Management



MPA has put in place a comprehensive Business Continuity Management (BCM) Framework (see Figure 5.2.3) to ensure business continuity in the event of crises.

**Figure 5.2.3: MPA's Business Continuity Management Framework**



Some of the exercises that MPA organises yearly include SAREX, Oil Spill Exercise, Chemical Spill Cleanup and Border Health Control Ex.

### 5.3 Supplier and Partner Management

5.3a Describe how the organisation identifies and manages key suppliers and partners to achieve organisational goals

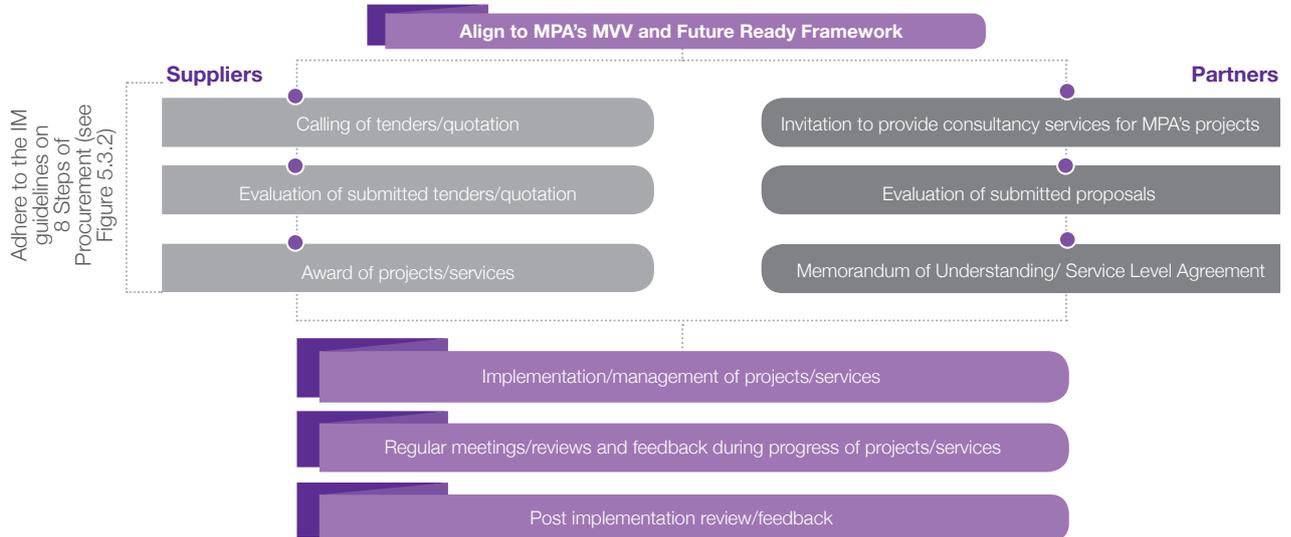
MPA works with suppliers to enhance its capability and efficiency as well as to realise its Mission and Vision. We have made it a core principle that the key partners and suppliers we identify have organisational objectives that are aligned with MPA's Mission and Vision.

MPA works with two groups of partners: regulated partners and capability development partners, as illustrated at Figure 5.3.1.

Regulated partners are MPA partners that are also regulated by MPA in its role as industry regulator. Regulated partners must meet key performance indices (see Table 5.3.1).

Capability development partners are organisations that MPA partners in order to develop the capability of Maritime Singapore. In particular, MPA has been partnering tertiary and research institutes to develop its maritime R&D capability and innovation yields (see Table 5.3.2).

**Figure 5.3.1: Identification and Management of Key Suppliers and Partners**



**Table 5.3.1: List of Regulated Partners**

MPA's Future Ready -Strategic Thrust	Class of key suppliers /partners	Division	Description of services rendered by partners
Safe, Efficient & Sustainable Global Hub Port	Port Terminal Operators	Port Policy	• Provides cargo handling facilities
	Pilotage Providers	Port	• Provides harbour pilots who are familiar with local conditions and help ships navigate while in port waters
	Ferry Operators	Port	• Provides transportation services to neighbouring foreign ports
	Towage Companies	Port Services	• Provides tugs that assist ships to berth safely
	Bunker Suppliers/ Craft Operators	Port Services	• Supply bunkers to vessels in port • Ensures that the right quality and quantity of bunkers are supplied as per contract

Table 5.3.2: List of Capability Development Partners

MPA's Future Ready Strategic Thrust	Class of key suppliers /partners	Division	Description of services rendered
Vibrant IMC Eco-System	Training Service Providers (TSPs)	IMC	<ul style="list-style-type: none"> <li>Works with TSPs to enhance the provision of training courses on topics related to maritime</li> <li>TSPs may apply to MPA for Maritime Cluster Fund to fund the development and running of their courses</li> </ul>
	Industry Bodies/Associations/ Unions	IMC/SG	<ul style="list-style-type: none"> <li>Works with these entities to achieve MPA's Mission and Vision</li> </ul>
	Institutes of Higher Learning (IHLs), Junior Colleges and Schools. Including SMA, SIT, Ngee Ann Polytechnic, Singapore Polytechnic, ITE, NTU, NUS and SMU.	IMC	<ul style="list-style-type: none"> <li>Works with IHLs to widen and enhance the range of maritime courses and modules offered by the institutes</li> <li>Works with IHLs to get the young people of Singapore interested in the maritime sphere</li> </ul>
	Private Organisations. Including SMF, ASMI, SMU, SSA, Singapore Exchange, SMI, SCMA and SUTD	IMC/Technology	<ul style="list-style-type: none"> <li>Consults private organisations on its plans and seeks feedback on the initiatives it rolls out</li> </ul>
Safeguard Strategic Maritime Interests & An Influential Voice	Classification Societies	Shipping	<ul style="list-style-type: none"> <li>Partners classification societies to conduct statutory surveys, audits and certification of Singapore ships and companies</li> </ul>
		Technology	<ul style="list-style-type: none"> <li>Collaborates on maritime R&amp;D and the organising of maritime forums</li> </ul>
Key Maritime Knowledge & Innovation Hub	Institutes of Higher Learning (IHLs) including NUS, NTU, SMA/SP, NA, SMU and SUTD	Technology	<ul style="list-style-type: none"> <li>Works with IHLs on technology related research and innovation development projects</li> </ul>

Suppliers play a key role in intensifying, developing and sustaining the maritime Singapore ecosystem. MPA's key suppliers are at Table 5.3.3, and includes consultants and contractors implementing our projects and supporting our key activities.

Table 5.3.3: List of Suppliers

MPA's Future Ready Strategic Thrust	Division	Suppliers	Description of support provided by suppliers
Safe, Efficient & Sustainable Global Hub Port	Port/ Shipping	NorControl Kongsberg IT	<ul style="list-style-type: none"> <li>Development of POCC Changi and Vista</li> <li>Supplies ship training simulators</li> </ul>
	Port Services	• Zeni Lite • Kems • AB Pharos	<ul style="list-style-type: none"> <li>Provides aids to navigation</li> </ul>
	Port Services/ Port	Tian San Shipping Pte Ltd (TSSPL)	<ul style="list-style-type: none"> <li>Provides patrol launches and crew services</li> <li>Provides garbage collection services for vessels</li> <li>Co-created to build purpose built craft to ferry our staff to carry out our statutory duties such as enforce port regulations and procedures; respond to marine incidents; ensure compliance of bunkering procedures; port state and flag state inspections. TSSPL also provide garbage collection services to vessels at the anchorages and flotsam retrieval services to ensure our waters remain clean.</li> </ul>
	Technology	<ul style="list-style-type: none"> <li>Surbana</li> <li>Penta Ocean-Hyundai-Van Oord-Koon Construction Joint Venture</li> <li>Dredging International-Daelim JV</li> <li>DHI Water &amp; Environment (S) Pte Ltd</li> </ul>	<ul style="list-style-type: none"> <li>Supplies alternative materials for the reclamation of Pasir Panjang Terminal Phases 3 &amp; 4 and Tuas Terminal Phase 1</li> <li>Conducts environmental impact assessment for PPT and Tuas Port</li> <li>Developed an Environment Monitoring and Management Plan for PPT reclamation</li> </ul>
Maritime Knowledge & Innovation Hub	Shipping	xEdge Consultancy Pte Ltd	<ul style="list-style-type: none"> <li>Develops and maintains the Maritime Legislation Management System</li> </ul>

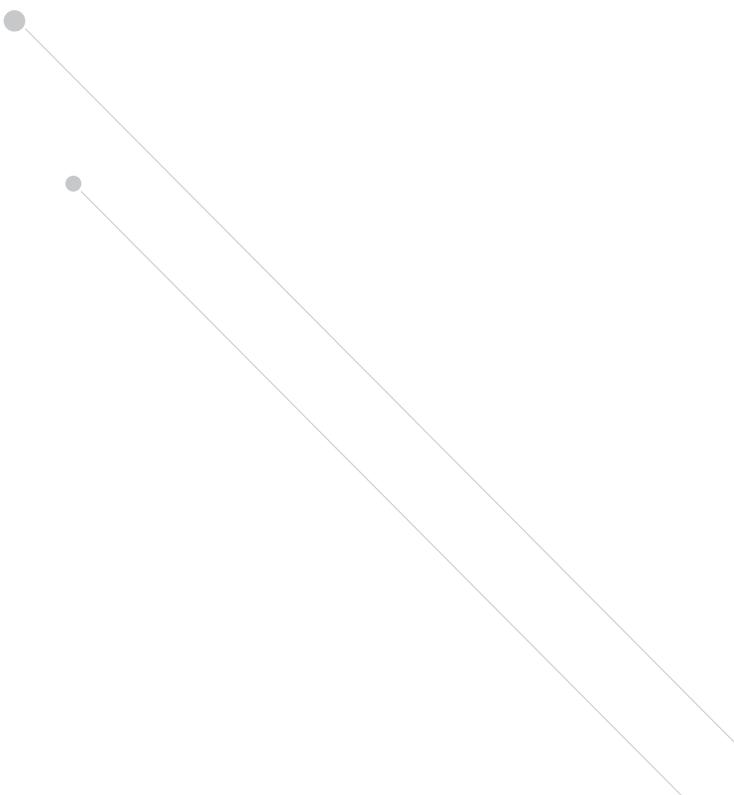
5.3b Describe how the organisation engages key suppliers and partners to co-create products and services

MPA has collaborated with key suppliers and partners on many innovative projects in order to co-create products and services.

Some of the examples are found in Table 5.3.4.

**Table 5.3.4: Examples of Co-Creation of Products and Services**

Project	Description	Key Supplier and Partners
Engaging Project Consultant, Supplier and Key Partners to Uncover Alternative Materials for the Reclamation of Pasir Panjang Terminal Phases 3 And 4	In 2004, MPA commenced a major port development project at Pasir Panjang to create more port land to house container handling facilities. The project will allow the terminal to meet Singapore's future growth in container volume. The project involved reclaiming about 200 hectares of land for the development of 15 modern container berths with the capacity to hold 14 million twenty foot equivalent units of container boxes. MPA worked hand in hand with the project consultant to ensure sustainable reclamation work by seeking alternative fill material instead of marine sand. These alternative fill materials drastically cut the use of marine sand for the project by about 45%, yielding cost savings of S\$470 million and a reduction in needless waste disposal.	Key supplier: Penta Ocean- Koon Hyundai-Van Oord Joint Venture Key partners: LTA and HDB Consultant: Surbana International Consultants Pte Ltd
Engaging Partners to Develop the Enhanced Racon Positioning System	Enhanced Racon (eRacon) is a joint development between MPA, Furuno and Tideland Signal. <ul style="list-style-type: none"> <li>eRacon is a terrestrial based positioning system that is able to provide vessels' position in real time.</li> <li>This independent positioning system is meant to complement satellite-based positioning systems such as GPS.</li> <li>Pilot trials were successfully carried out in 4Q 2015.</li> </ul>	Key partners: Furuno and Tideland Signal
Engaging a Partner to Develop More Visible Aids to Navigation	<ul style="list-style-type: none"> <li>Project sought to improve navigational safety by enhancing the conspicuousness of Aids To Navigation (AtoN) against the strong competing lights emitted by coastal developments.</li> <li>The project resulted in the development of Aids to Navigation (AtoN) equipped with Light Emitting Diode (LED) Litepipe technology. Litepipe light character is synchronised with the navigational lantern.</li> <li>The technology is energy efficient and green as it is powered by solar energy.</li> </ul>	Key partner: Pharos Marine Automatic Power



# 06 / KNOWLEDGE

## 6.1 Knowledge Management

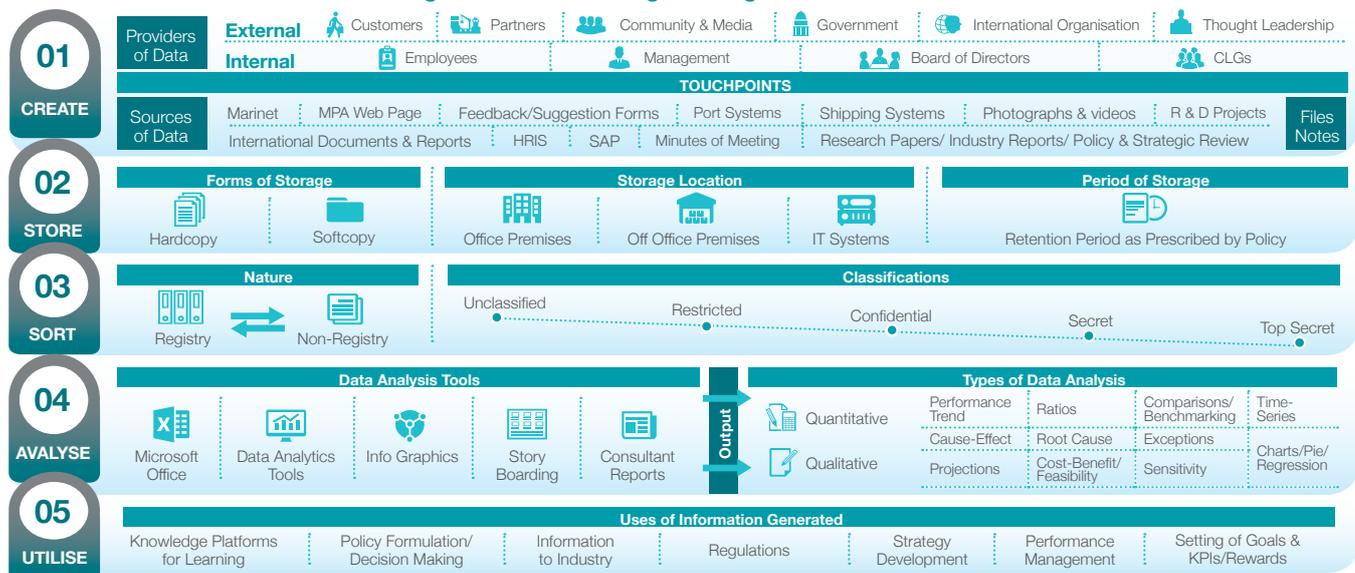
6.1a Describe how the organisation collects and manages information for strategy development, decision-making and organisational learning

MPA established a Knowledge Management (KM) Framework to guide its strategic development, steer key decision making allowing MPA to incessantly learn and improve. The framework structures information management in MPA into a five-step process of: Create, Store, Sort, Analyse and Utilise. This is best illustrated in Figure 6.1.1.

One example of how MPAA makes use of the KM system to improve their operations is the documentation/storage of materials from technical courses for staff and presentation materials from thought leadership talks. The information is useful for officers who were unable to attend the courses or talks. Officers who are required to lecture at courses can also use the information to prepare and update their lecture notes.

Another example is how our Legal Department uses the KM system to make use of past cases as precedents for future oil spill claim process.

Figure 6.1.1: Knowledge Management Framework



6.1b Describe how the organisation ensures the accuracy, reliability and accessibility of information

To manage the great volume of data we receive in our daily operations, MPA built a real-time and comprehensive information architecture to collect and store all data.

The reliability of information is assured by subjecting all contents to stringent integrity and security checks in compliance with IDA requirements.

MPA has also installed security systems to establish accessibility protocol, so that sensitive information is circulated only to authorised personnel.

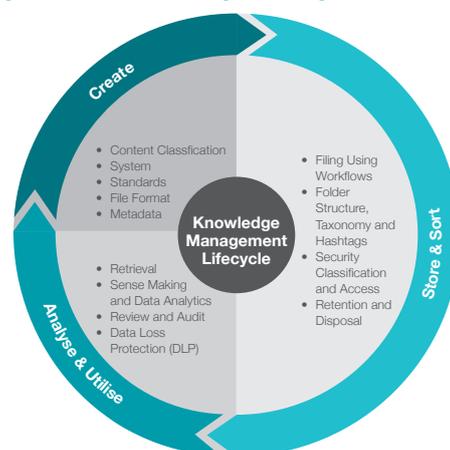
Any unusual records are systematically sieved out to exception reports which are printed and analysed manually to ensure data completeness and that programs are working as intended. These are subjected to tight supervisory and audit reviews at regular intervals.

Data protocol, accessibility, integration, retention time frame and disaster recovery in compliance to IM8 are deliberated and monitored at KM working committee guided by the KM Instruction Manual. Periodically, strategic matters are discussed at KM Steering committee.

The KM Policy is aligned to established standards that enable MPA to efficiently and effectively retain and retrieve essential knowledge.

It is structured around the KM framework and provides guidelines to each component of the KM lifecycle (see Figure 6.1.2), from Create, to Store & Sort and finally, Analyse & Utilise.

Figure 6.1.2: Knowledge Management Lifecycle



### Easy Access to Information Without Compromising Security

MPA has created a secure infrastructure to host its various corporate systems to allow its authorised personnel easy access to information across the various information systems.

This is best illustrated in Figures 6.1.3 and 6.1.4.

For its external stakeholders, MPA installed a network of secure systems and platforms so that these external stakeholders can enjoy easy access to information without compromising security.

Figure 6.1.3: MPA's Information System Architecture

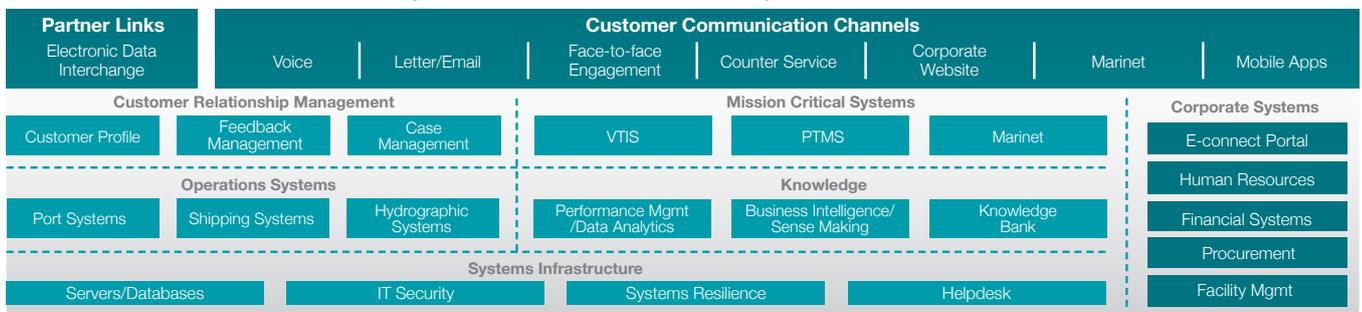
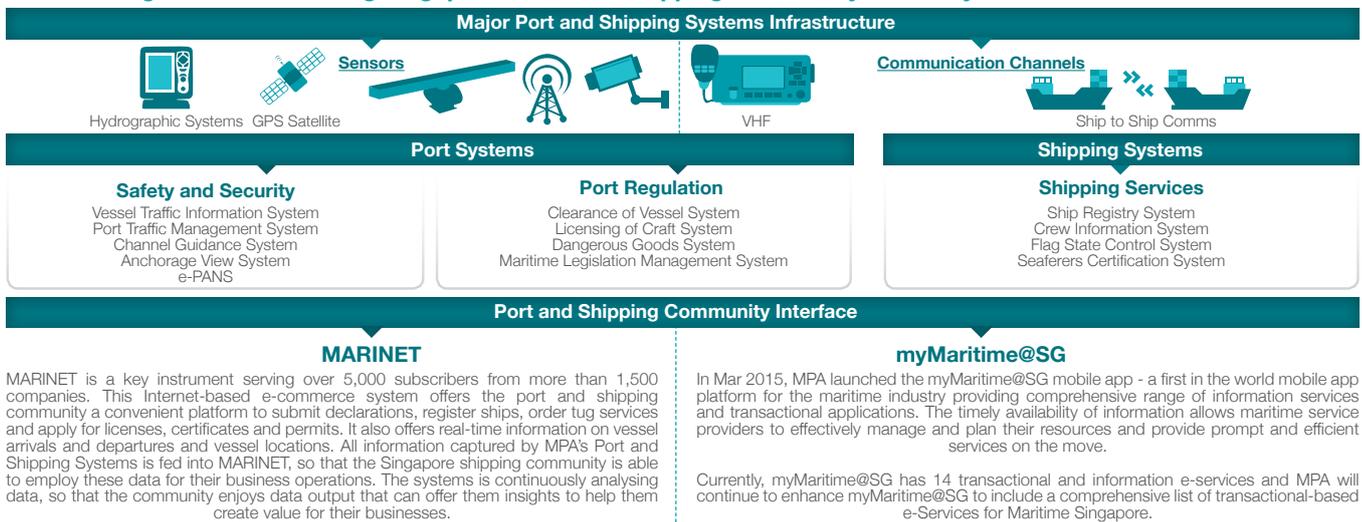


Figure 6.1.4: Providing Singapore's Port and Shipping Community with Easy Access to Information

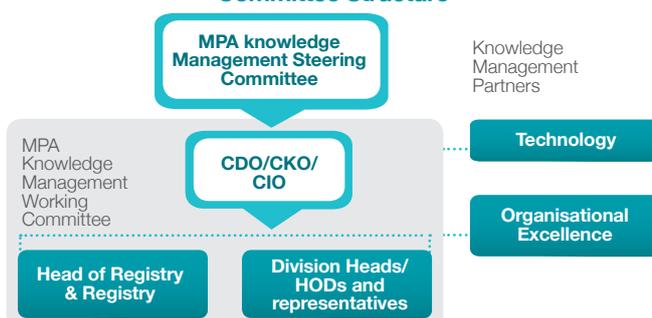


## 6.2 Analytics for Performance Management

6.2a Describe how the organisation leverages on information and knowledge to create value

At MPA, the Knowledge Management Steering Committee steers knowledge management. Chaired by the Chief Executive, this committee is charged with the responsibility of leveraging on enterprise information to create value.

Figure 6.2.1: Knowledge Management Steering Committee Structure



### Development of KM Instruction Manual

To guide MPA staff on the storage of documents and records in order to achieve prompt and efficient retrieval and to ease cross divisional sharing of information, MPA developed a KM Instruction Manual. These procedures are based on international guidelines and are structured around the KM framework. It guides users on the details of filing, including taxonomy, file naming conventions, retention periods and file access rights, to name a few. The KM Working Committee meets regularly to fine tune the policy so as to ensure it is kept abreast with the latest KM updates in the industry.

### Learning from Others

MPA is highly oriented towards leveraging on the knowledge base of external partners and associates. This orientation extends MPA's ability to serve as a leading maritime agency driving Singapore's global maritime aspirations.

MPA uses the STEER process as a guiding principle to identify benchmark projects to learn effectively from other organisations.

# KNOWLEDGE

Figure 6.2.2: STEER Process



## Maritime Legislation Management System (MLMS): Applying Knowledge Management to the Drafting of Maritime Legislation

National legislations and IMO conventions, codes and guidelines governing maritime safety, security and marine environmental protection are voluminous and subject to regular amendments. Information also resides on disparate media, such as LawNet and Lloyds Register Rulefinder. This makes it challenging for MPA to collate, update and share maritime legislation information. It is also difficult to locate relevant information.

MPA created the centrally managed MLMS to address this challenge and to support MPA's legislation change process.

MLMS collates relevant legislation information from multiple sources, uploads the information onto a web-based portal and provides references and interpretations, easing work processes and improving transparency in legislation making.

MLMS has brought MPA the following benefits:-

- Institutionalises technical knowledge within MPA
- Improves productivity
- Adds transparency to the legislation change process
- Enhances customer service

MLMS has won wide recognition, winning several awards including the silver award at the International Association of Ports and Harbors (IAPH) Awards 2013 and the Minister's Innovation Award 2013 (Merit).



## Smart Port Hackathon 2015: Leveraging on Knowledge from the Community at Large

Each year MPA organises a maritime-themed hackathon called Smart Port Hackathon to capitalise on the knowledge residing within the community at large.

The event sees MPA issuing challenges that spur maritime professionals, data scientists, developers, designers and students to generate innovative solutions. In 2015, this open event drew 200 contestants to create 21 technology prototypes within 48 hours.

Smart Port Hackathon has produced many ideas that have enhanced the productivity, efficiency and sustainability of the Port of Singapore. Ideas that are currently under

development include using drones to extend inspection range; predictive analytics software that is able to determine vessel arrival times; and a software to track operational efficiencies and the sustainability of Singapore-flagged vessels.

Smart Port Hackathon 2015 embraces a multi-stakeholder approach from the very creation of the challenge question to the test-bedding of submitted proposals.



## MPA Insight Series: Driving Thought Leadership in the Maritime Industry

MPA Academy (MPAA), the training arm of MPA, regularly organises public lectures by maritime industry leaders and academics in order to drive thought leadership in the maritime industry. The talks also create greater awareness about the maritime industry. This creates value in terms of promoting Singapore's thought leadership in the field, and making the industry more attractive to potential recruits.

The academy organises three types of thought leadership talks:

- Under the MPAA Distinguished Speaker Series, the academy invites speakers who are internationally renowned or of international repute in the maritime industry to share their knowledge.
- Speakers under the MPAA Insight Series are senior personnel with extensive expert knowledge on key maritime issues.
- The academy also organises Fireside Chats, which are dialogue sessions between younger MPA officers and prominent maritime industry professionals.

**Knowledge Transfer**

As an industry champion, MPA also seeks to spark value creation among the stakeholders of the local maritime industry.

To support value creation, MPAA documents its enterprise information in the form of case studies and shares these case studies with its external stakeholders to keep them informed and for them to gain insights. Table 6.2.1 below offers examples of the case studies shared by MPAA recently.

**Table 6.2.1: Sharing by MPAA**

MPA Future Ready -Strategic Thrust	Title	Synopsis
Strong Maritime Singapore Identity	Seaports Urban Systems Study	Over the last few decades, Singapore has harnessed the natural advantage of a deep water harbour and geographical location along the major shipping routes to become a major hub port with well-developed port infrastructure backed by efficient marine services. In addition, the success of Singapore's seaports would not have been possible without a "good workforce, ranging from the highest executive talent to the man who actually handles the cargo". Given Singapore's scarce resources, this study looks at the importance of urban governance and integrated master planning in managing our ports as part of a global city that is both liveable and sustainable. In particular, it will examine the trade-offs involved in city-planning in relation to the port.
Safe, Efficient & Sustainable Global Hub Port	The Evoikos Oil Spill Incident	On 15 Oct 1997, a collision occurred between the oil tanker Evoikos and another oil tanker, Orapin Global, at 5km south of Pulau Sebarok, in Singapore's waters. The Evoikos suffered severe damage to 3 of its cargo tanks, resulting in a spill of 28,500 tonnes of heavy marine fuel oil in the waters. The bow of the Orapin Global was also damaged. Due to the swift response by MPA and its participating agencies, the massive oil spill from the Evoikos was contained and a potential economic and ecological disaster was averted. The worst oil spill in the history of Singapore was cleaned up in a record time of 3 weeks. The case will recount the actions taken to manage the incident, the critical success factors such as preparedness and response, communications, as well as the lessons learnt.

**6.2b Describe how the organisation conducts competitive analysis and benchmarking to improve performance**

The three forms of knowledge gathering exercises that MPA regularly undertake are: study visits/learning journeys, comparative analysis and benchmarking studies involving its counterparts and best-in-class organisations.

This is best illustrated in Figure 6.2.3.

In particular, MPA continually conducts benchmarking exercises and comparative analysis using its counterparts and best-in-class organisations to set performance standards so as to better gauge its performance. These benchmarking studies and comparative analysis help MPA to identify areas of improvements to lift its operations. Findings and best practices from such exercises are assimilated into work plans where appropriate.

**Figure 6.2.3: Knowledge Gathering Channels**

Area	Description
Study Visits or Learning Journeys	<ul style="list-style-type: none"> <li>Carried out to gain an understanding in the areas we wish to learn from</li> <li>The visits can highlight potential areas for benchmarking studies</li> </ul>
Comparative Analysis	<ul style="list-style-type: none"> <li>Carried out to assess our performance against that of our counterparts and best-in-class organisations to gauge the effectiveness of our policies and programmes, and to identify comparative data or benchmarks to set stretched goals</li> <li>Conducted by close monitoring of local and international rankings</li> </ul>
Benchmarking Studies	<ul style="list-style-type: none"> <li>Carried out for areas that are strategically important and will result in breakthrough improvements</li> <li>Conducted by analysing the business processes of our counterparts or best-in-class organisations that deliver results</li> </ul>

Benchmarking studies are vital instruments that have helped MPA to improve its performance and reach new levels in performance. The benchmarking projects that MPA is currently undertaking are listed in Table 6.2.2.

**Table 6.2.2: Examples of Benchmarking Projects**

Strategic Thrust	Lead Division	Title	Synopsis
	PP	Study on International Benchmarking of Container Port Competitiveness	This study will compare costs, connectivity, operational service level KPIs, productivity and other qualitative factors of Singapore's port against other ports. The objective of the study is to ensure Singapore's continued relevance and competitiveness as a global transshipment hub port.
		Towage & Water Boats	The study aims to establish the i) the current state of the towage and water boat industry; ii) if Singapore's towage and water boat services internationally competitive and iii) whether Singapore's supply of towage and waterboat services is able to meet future demand.
Safe, Efficient & Sustainable Global Hub Port	SG	Port Sustainability Benchmarking Study - Air Emission Study	This study seeks to benchmark the Port of Singapore against other major international-ports, in terms of emission per TEU and other relevant metrics. An analysis on the efficacy of measures (both international and MPA) will also be undertaken, along with projections of the emission-level for year 2020 and beyond. In addition, this study will evaluate and recommend appropriate abatement measures for Singapore's ships and terminals, to further reduce air emissions from ships and/or Singapore's port and terminals.
	SG	Port Sustainability Benchmarking Study -Energy Efficiency Benchmarking	This study will compare Energy sustainability efforts in Singapore change to against selected international ports for container terminals. This study will also compare the list of operational (port operators) and legislative (port authority) measures observed at international ports for policy consideration by MPA towards Next Generation Port.
	PS & PT	Port Services Benchmarking Study (Bunkering, Pilotage and Garbage)	The study is to benchmark the competitiveness of Singapore's port services against those of other major ports. It will also the compare market structure, price, availability, operational service level KPIs for pilotage, bunkering and garbage management of Singapore's port against other ports. It is part of MPA's work to complement the development of the Next Generation Port, and to obtain an understanding of how Singapore stands internationally in key port services and how it can do better in this aspect.

# 07 / RESULTS

## 7.1 Customer Results

### 7.1a Customer Satisfaction and Experience

The Pro-Enterprise Ranking (PER) Survey is conducted by Ministry of Trade and Industry (MTI) annually. The survey evaluates the effectiveness and efficiency of government agencies in supporting the private sector in building a pro-enterprise regulatory environment to increase the ease of doing business. The PER Survey aims to measure and improve the effectiveness of current government initiatives to build a pro-enterprise regulatory environment in Singapore.

7.1a-1 illustrates that MPA consistently ranked top among 26 government agencies since 2011. In the most recent 2015 survey, MPA emerged top for the 4<sup>th</sup> consecutive time with a new record score of 94.9% and was conferred the top PEP-SBF Pro-Enterprise Award. These results were possible because of MPA's continued service excellence efforts via focus group discussions after every survey.

#### 7.1a-1: Overall Pro-Enterprise Ranking by Agencies

Overall Pro-Enterprise Ranking by Agency	Rankings					
	2009	2010	2011	2012	2014	2015
Maritime and Port Authority of Singapore (MPA)	1	3	1	1	1	1
Singapore Land Authority (SLA)	21	1	6	4	3	2
Inland Revenue Authority of Singapore (IRAS) **	22	6	16	15	17	3
Central Provident Fund Board (CPF) **	5	12	2	3	7	4
Energy Market Authority (EMA)	25	9	3	12	13	5
Civil Aviation Authority of Singapore (CAAS) **	2	13	9	10	14	6
Singapore Customs (SC) **	10	16	11	2	2	7
Infocomm Development Authority of Singapore (IDA)	4	19	5	9	4	8
IE Singapore (IES)	3	2	12	13	6	9
National Environment Agency (NEA)	7	17	18	11	5	10
Land Transport Authority (LTA) **	16	7	14	14	20	11
Media Development Authority (MDA)	23	18	20	7	9	12
Agri-Food & Veterinary Authority of Singapore (AVA)	12	14	17	21	18	13
Building and Construction Authority (BCA) **	18	4	4	18	11	14
Singapore Civil Defence Force (SCDF) **	15	15	24	17	21	15
Ministry of Manpower (MOM) **	13	23	21	23	12	16
Urban Redevelopment Authority (URA) **	20	25	25	19	25	17
Accounting and Corporate Regulatory Authority (ACRA)	11	22	22	8	8	18
Monetary Authority of Singapore	9	5	7	5	15	19
Housing Development Board (HDB) **	6	10	10	6	16	20
Health Sciences Authority (HSA)	24	26	13	16	10	21
JTC Corporation (JTC)	17	21	23	22	19	22
Singapore Tourism Board (STB)	8	20	26	25	26	23
Immigration & Checkpoints Authority of Singapore (ICA) **	19	11	8	20	22	24
Public Utilities Board (PUB) **	14	24	15	24	23	25
Insolvency & Public Trustee's Office (IPTO)	26	8	19	26	24	26

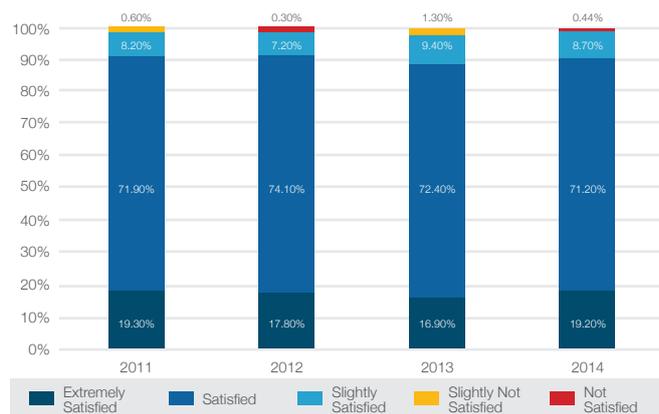
Note: \*\* Past Singapore Quality Award Winner

7.1a-2 shows MPA's ranking across the various PER components. MPA's PER component rankings saw significant improvements after the 2010 survey, consistently the top for overall performance and leading in all PER components.

#### 7.1a-2: MPA Pro-Enterprise Component Rankings (2009-2015)

PER Overall and Components Ranking	Rankings					
	2009	2010	2011	2012	2014	2015
Overall Pro-Enterprise Ranking	1	3	1	1	1	1
Customer Responsiveness	1	6	4	1	1	3
Transparency	2	2	2	1	2	1
Review of Rules & Regulations	1	8	1	1	1	1
Pro-enterprise Orientation	1	2	1	1	1	1
Compliance Costs	3	5	1	1	1	1

#### 7.1a-3 Marinet Survey



Marinet is an online platform to facilitate the maritime community in performing their statutory compliance functions such as declarations of vessel arrival and departure, submission of crew manning documents, requesting for port services, obtaining permit approvals and obtaining critical business information on vessel movements. These used to be paid services but in 2014, they were made free-of-charge in response to customers' requests.

MPA is constantly co-creating e-solutions with our customers to reduce compliance cost and improve productivity for the entire industry.

Results of the Marinet survey showed that consistently more than 90% of MPA's Marinet customers were satisfied with the e-services.

### 7.1b Product and Service Performance

#### Safety and Key Port Statistics

Safety is high on MPA's priority due to the large number of vessels calling at the busy Port of Singapore daily. We track the number of marine incidents per 1,000 vessel movements in Singapore's busy port waters closely. As shown in 7.1b-1, the incidents have declined steadily over the years.

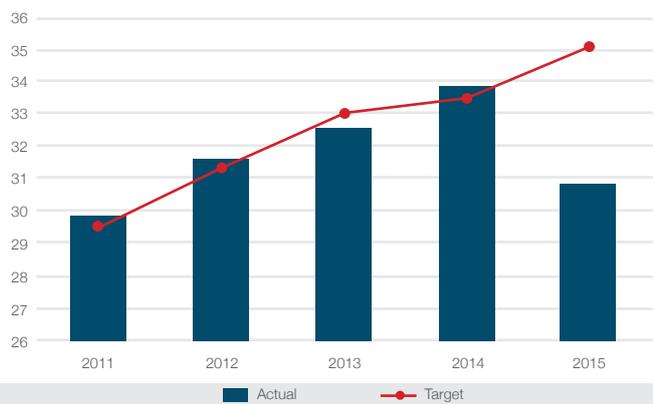
**7.1b-1: Number of Marine Incidents Per 1,000 Vessel Movements in Singapore Waters**



We cannot rest on our laurels. In 2014, MPA embarked on greater efforts to instil a safety-first culture at sea. Led by MPA, the industry collaborated in the launch of the Safety@Sea Campaign, Safety@Sea Week and a Maritime Safety Forum. This was further enhanced and elevated to the nationwide level in 2015 with the formation of the National Maritime Safety@Sea Council led by Prof Richard Lim bringing together many experts working in tandem.

With that, we endeavour to keep the number of marine incidents below 0.0012 per 1,000 vessel movements in port from 2016. This represents a stretch target in consideration of higher vessel traffic movements.

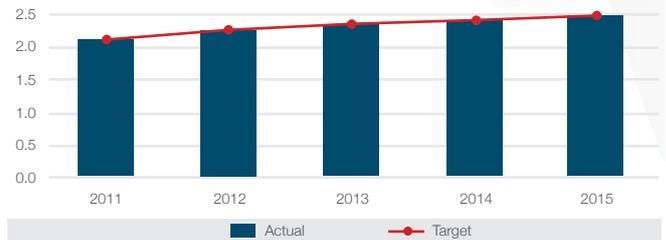
**7.1b-2: Volume of Container Throughput (mTEUs)**



The indicator shown in 7.1b-2 measures container throughput handled by PSA and JPPL. Container throughput increased steadily from 2011 to 2014. However in 2015, container throughput declined significantly due to weak global economic conditions and changing dynamism in the maritime industry. In response, the Hub Port Competitiveness Committee was formed, led by MOT to address the options and offer solutions.

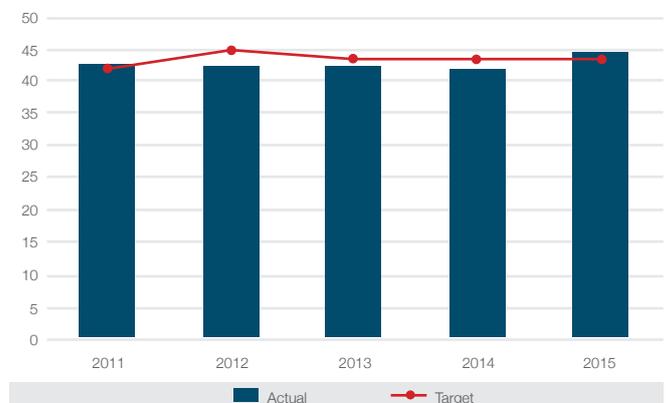
Benchmark measures of Volume of Container Throughput by Containerisation International can be found in 7.2b-9. Singapore consistently holds the Number 2 position behind Shanghai, China in terms of overall volume. However, Singapore remains the Number 1 transshipment hub for gateway port.

**7.1b-3: Ship Arrival Tonnage (bil GT)**



The indicator, as shown in 7.1b-3, measures the total tonnage of vessels >75GT calling at the Port of Singapore. Ship arrival tonnage has grown steadily from 2011 to 2015 as larger vessels called at the Port of Singapore.

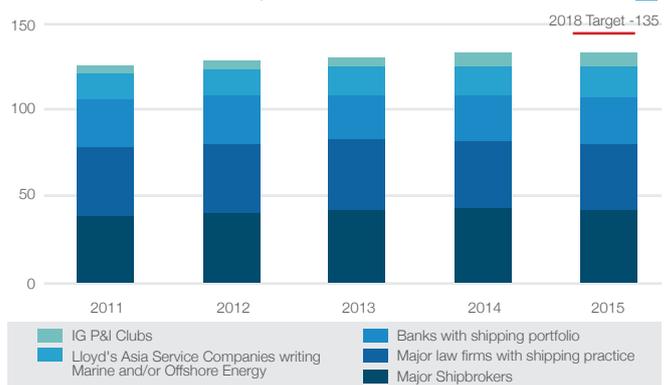
**7.1b-4: Volume of Bunker Sales (mil MT)**



The indicator in 7.1b-4, measures bunker sales to ships of 75GT and above. From 2011 to 2014, contraction in bunker sales was consistent with the general decline in global bunker demand due to cost-cutting and energy saving measures, including a switch to cleaner fuels undertaken by the shipping industry. In 2015, bunker sales volume rebounded by 6.46%. The increase could be attributed to lower oil prices resulting in lower bunker costs. Singapore remains the top and busiest bunkering port in the world. 7.2b-4 shows the comparative data of the top 3 bunkering ports:

- Singapore
- Fujairah, UAE
- Rotterdam, Netherlands

**7.1b-5: No. of Major Maritime Service Providers**



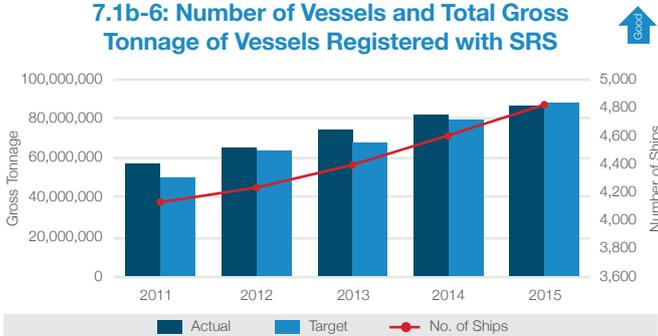
# RESULTS

In order to build Singapore as an International Maritime Centre, it is imperative not only to grow a significant cluster of shipowners and operators but to complement it with a comprehensive and diverse range of maritime services and facilities. Such maritime services would include ship financing, marine insurance, shipbroking, maritime law and arbitration, among others. Our efforts through the years were lauded in two international reports.

Singapore was ranked 1<sup>st</sup> by Menon Report as the world's leading centre for maritime services and 2<sup>nd</sup> by Xinhua-Baltic Exchange. 7.1b-5 shows an impressive number of service providers offering a diverse buffet of one stop shop maritime services. For example for International Group of Protection & Indemnity Clubs (IGP&I) of which there are only 13 globally, 7 are already in Singapore. We have also set a target of 8 IGP&I Clubs by 2018.

## Singapore Registry of Ships

**7.1b-6: Number of Vessels and Total Gross Tonnage of Vessels Registered with SRS**



The Singapore Registry of Ships (SRS) is the administration responsible for executing the proper registration of ships flying the Singapore Flag and ensuring that ships and owners meet the stringent criteria that entitle their ship to obtain Singapore nationality.

Established in 1966, the SRS has close to 50 years of experience and is administered by MPA. With more than 4,500 ships that aggregate over 85 million gross tons (GT), the SRS has grown in size over the years and ranks amongst the top five registries in the world with one of the youngest quality fleets.

The strong growth of the SRS can be attributed to its reputation as a responsible and quality registry, internationally recognised for its efficient and reliable services, high operational and pollution control standards and professionalism. This has resulted in new registrations from existing and new SRS customers. The fleet comprises mainly tankers, bulk carriers and container ships, which play an important role in moving goods around the world. Many banks and ship financiers also highly regard the SRS as a quality ship registry that safeguard their interests over the ships they finance.

7.1b-7 shows that Singapore and Liberia are the most efficient countries when it comes to processing and issuance of COEs.

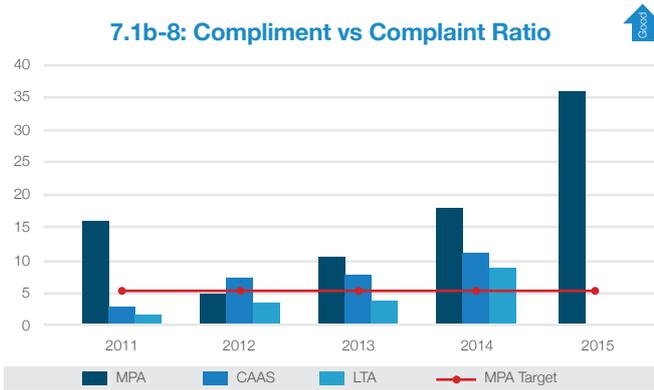
7.1b-7 also shows the service standards for: Registration of Vessel, Issuance of BCC/CLC, Manning Certificates and COE of the 7 largest ship registries in the world. Comparatively, Singapore is one of the fastest registries for the issuance of COEs and above average for the other services.

## 7.1b-7: Comparison of Services Offered by the 7 Largest Ship Registries (Ranked 1-7)

Registry <sup>1</sup>	Panama	Liberia	Marshall Islands	Hong Kong	Singapore	Malta	Bahamas
Gross Tonnage	217,604,861	126,990,680	109,383,818	92,355,284	77,041,087	56,238,637	54,949,775
# of ships	8,092	3,062	2,579	2,322	3,270	1,936	1,363
Average age of ships	16	9	7	8	8	10	13
<b>Liberia</b>							
Registration of vessel	7 working days	Issued instantly <sup>[i]</sup>	5 working days	2 hours <sup>[ii]</sup>	5 working days	1 working day	1 working day
Issuance of BCC <sup>2</sup> /CLC <sup>3</sup>	3 working days	2 working days	2 working days	5 working days	5 working days	1 working day	1 working day
Issuance of Safe Manning Certificate	3 working days	4 working days	2 working days	3 working days	3 working days	4 working day	1 working day
Issuance of COE <sup>4</sup>	44 working days	2 working days	66 working days	7 working days	2 working days	55 working days	66 working days

Note:  
 1 Source of information on Ship Registry taken from 2014 IHS world merchant fleet data (for ships above 100GT) <https://www.ihs.com/index.html>  
 2 Civil Liability for Bunker Convention Certificate  
 3 Civil Liability Convention Certificate  
 4 Certificate of Endorsement  
 i Liberian certificates are issued instantly upon compliance by the owner with respective registration requirements. Liberia issues electronic certificates which, if necessary, could be sent by email directly to the owner, agent, and vessel. Depending on the Registration type, the requirements vary. Initial BCC/CLC and Minimum Safe Manning Certificates issued by Liberia are part of the Vessel's Registration Certificates issued at the time of registration.  
 ii In general, the completion of ship registration is 2 hours upon their receiving all the required documents. Should the ship be arranged to flag in Hong Kong that day, it is required to ensure the registration documents are ready on or before 3pm such that the certificate of registry could be collected within the same day  
 Source of Information: 1. Epic Ship Management (Subsidiary of Epic Gas Ltd) 2. PACC Ship Managers Pte Ltd 3. Berlitz Marine Pte Ltd 4. Executive Ship Management Pte

7.1b-8: Compliment vs Complaint Ratio



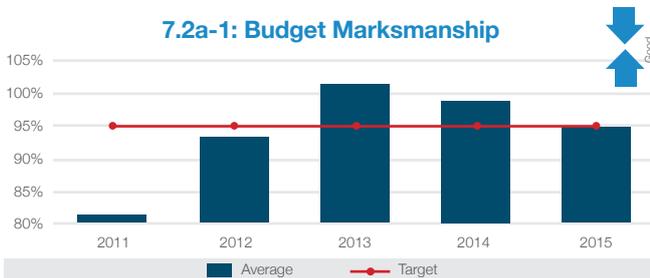
MPA uses the compliments-complaints ratio to measure our service quality.

7.1b-8 shows an improving trend for the compliments-complaints ratio for the past 4 years. To spur higher performance, in 2015, the compliments-complaints ratio was reviewed by the Service Excellence & Innovation Steering Committee with the target raised from 5 to 10 for 2015 onwards.

## 7.2 Financial & Market Results

7.2a Financial performance, including financial results and economic value

7.2a-1: Budget Marksmanship



MPA is a self-funded Statutory Board. Thus, there is an opportunity cost to holding budget as cash since any surplus cash could be invested for capital preservation. In order to reduce opportunity cost, we have a stringent budget process. Meetings are held with Division Heads to review their budget marksmanship every quarter.

Budget marksmanship is computed as actual expenditure as a proportion of budgeted expenditure. The indicator measures the actual utilisation of the budget, where MPA aims to attain a budget marksmanship ranging from 95% to 105%. MPA has met budget marksmanship targets in the last 3 years.

7.2b Marketplace performance, including growth and market share, position and acceptance results and economic value



### Awards & Accolades

#### Best Seaport in Asia

The Port of Singapore cemented its status as Asia's port of choice by garnering the widely recognised 'Best Seaport-Asia' award at the 2015 Asia Freight, Logistics and Supply Chain Awards for the 27<sup>th</sup> time. Singapore was given the award for performance in cost competitiveness, container shipping-friendly fee regime among a range of criteria readers of Asia Cargo News voted on. Such international awards allow us to appraise our performance objectively.

In 2014, the Port of Singapore was also awarded the 'Best Green Service Provider- Seaport' at the 26<sup>th</sup> edition of the Asian Freight and Supply Chain Awards (AFSCA).

In 2013, a 'Hall of Fame' award was also presented to the Port of Singapore for winning the 'Best Seaport in Asia' award 25 times.



PEP-SBF Pro-Enterprise Award 2014 & 2015

MPA has been ranked as the top agency in the PEP-SBF Pro Enterprise Ranking survey for the 4<sup>th</sup> consecutive time.

# RESULTS



Best Pro-Enterprise Initiative (Silver) Award 2014

MPA received the Silver Public Sector Pro-Enterprise Initiative Award in 2014. The award recognises agencies whose officers have contributed useful ideas and/or suggestions to improve service delivery and reduce business compliance costs. These initiatives benefit both businesses and the agencies through costs and time savings, and help to strengthen the relationship between agencies and their business customers.

## Singapore Sustainability Awards 2015 – Large Enterprise



MPA clinched the Singapore Business Federation Singapore Sustainability Award 2015 – Sustainable Business Awards Category (Large Enterprise).

As one of the world's busiest ports, the Port of Singapore values environmental sustainability alongside port efficiency and competitiveness. On that note, MPA takes a proactive and leading stance in advocating and driving overall sustainability efforts in Maritime Singapore.

## Top in Singapore Environmental Achievement Awards



## Environmental Achievement Awards (SEAA) 2015

For MPA's ongoing commitment to environmental and social responsibilities, in particular, our committed efforts towards green shipping, we clinched two coveted awards: (1) Singapore Environmental Council – Lee Foundation Singapore Environmental Achievement Award (Public Sector); and (2) Singapore Environmental Council – City Developments Limited Outstanding Singapore Environmental Achievement Award (Overall Winner).

## Top in Singapore Apex CSR Award (Small and Medium Organisations Category)



MPA also garnered the top award in the inaugural Singapore APEX CSR Awards 2015 for exemplifying CSR and sustainability excellence in our business practices.

**Maritime Singapore Green Initiative**

The Maritime Singapore Green Initiative seeks to reduce the environmental impacts of shipping and related activities and promote clean and green shipping in Singapore. It is a comprehensive initiative consisting of three programmes: Green Ship Programme, Green Port Programme and Green Technology Programme.

In 2011, the Maritime and Port Authority of Singapore (MPA) pledged to invest up to \$100 million over the next five years to the Maritime Singapore Green Initiative.

To further encourage companies to adopt environmentally friendly shipping practices, announcements were made to the Maritime Singapore Green Initiative, effective as of July 2013.

**Maritime Singapore Green Pledge**

The inaugural Maritime Singapore Green Pledge was signed on 13 April 2013. To date, 40 companies have pledged their commitment to promote and implement the Green Shipping in Singapore.

**Signatories of the Green Pledge:**

1. MPA
2. MPA Singapore
3. MPA Singapore
4. MPA Singapore
5. MPA Singapore
6. MPA Singapore
7. MPA Singapore
8. MPA Singapore
9. MPA Singapore
10. MPA Singapore
11. MPA Singapore
12. MPA Singapore
13. MPA Singapore
14. MPA Singapore
15. MPA Singapore
16. MPA Singapore
17. MPA Singapore
18. MPA Singapore
19. MPA Singapore
20. MPA Singapore

**MARITIME SINGAPORE Greenpledge**

As a responsible member of the international maritime community, we pledge to support and promote clean and green shipping in Singapore. We will agree to the initiative voluntarily, in order to protect and safeguard our resources.

Do your part in protecting and safeguarding the environment. Come forward and sign the Maritime Singapore Green Pledge. Visit [www.mpa.gov.sg](http://www.mpa.gov.sg) for more details.

MPA's Maritime Singapore Green Initiative was awarded the "Environmental Campaign of the Year" award at the Containerisation International (CI) Awards 2013. In addition, MPA received a High Commendation for the "Port of the Year" Award. The CI Awards, organised by Informa plc, recognise companies and individuals that have made outstanding contributions in the maritime industry, either through being innovative, proactive and/or pioneering.

In 2012, the International Drop-In Centre for Seafarers at Keppel Terminal, Port of Singapore was awarded the Drop-In Centre of the Year 2012. The International Committee on Seafarers' Welfare (ICSW) Awards recognises excellence in the provision of welfare facilities and services for seafarers.

MPA was awarded the Minister for Home Affairs Award in 2012. The award recognised the significant contributions and support of the NSmen and the employers, to the safety and security of Singapore.

In 2011, MPA was awarded the Norwegian Business Association Singapore Award for its commitment and efforts to enhancing bilateral trade and business relations between Norway and Singapore.

**7.2b-1: PER Ranking MPA vs SQA Agencies (2010-2015)**

Agency Rankings: Overall Pro-Enterprise Ranking (SQA Organisations)	Ranking				
	2010	2011	2012	2014	2015
<b>Maritime and Port Authority of Singapore (MPA)</b>	<b>3</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>
Inland Revenue Authority of Singapore (IRAS)	6	16	15	17	3
Central Provident Fund Board (CPF)	12	2	3	7	4
Civil Aviation Authority of Singapore (CAAS)	13	9	10	14	6
Singapore Customs (SC)	16	11	2	2	7
Land Transport Authority (LTA)	7	14	14	20	11
Building and Construction Authority (BCA)	4	4	18	11	14
Singapore Civil Defence Force (SCDF) **	15	24	17	21	15
Ministry of Manpower (MOM)	23	21	23	12	16
Urban Redevelopment Authority (URA)	25	25	19	25	17
Housing Development Board (HDB) **	10	10	6	16	20
Immigration & Checkpoints Authority of Singapore (ICA) **	11	8	20	22	24
Public Utilities Board (PUB)	24	15	24	23	25

Note: \*\* Singapore Quality Award Special Commendation Winner

MPA topped the PER in 2015 with the highest ever score of 94.9%, a strong testament to our close partnership with the industry and other partners which is key to our efforts to develop and promote Singapore as a global hub port and international maritime centre. MPA's efforts in establishing a pro-enterprise environment in the maritime sector is validated in the PER Survey. MPA has consistently topped the survey since 2011.

7.2b-1 shows MPA's PER ranking against Singapore Quality Special Commendation and Award Winners. MPA's results compare favourably against the award winners.

**7.2b-2: Menon Business Economic Report - Leading Maritime Capitals of the World (2012 & 2015)**

2012 Cities	Overall Ranking	Shipowners & Shipping Operations	Maritime Finance	Maritime Law & Insurance	Maritime Technology & Competence
<b>Singapore</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>3</b>	<b>1</b>
Oslo	2	1	1	5	4
London	3	9	3	1	7
Hamburg	4	8	6	6	2
Hong Kong	5	6	5	4	8
New York	6	11	2	2	10
Shanghai	7	4	9	7	3
Tokyo	8	5	7	10	5
Copenhagen	9	7	8	8	9
Pireus/Athens	10	3	10	9	11
Rotterdam	11	10	11	11	6
Rio De Janeiro	12	12	12	12	12

2015 Cities	Overall Ranking	Shipping Centres	Maritime Finance & Law	Port & Logistics	Maritime Technology
<b>Singapore</b>	<b>1</b>	<b>2</b>	<b>4</b>	<b>1</b>	<b>5</b>
Hamburg	2	3	7	6	2
Oslo	3	6	2	14	1
Hong Kong	4	5	5	2	11
Shanghai	5	8	6	4	6
London	6	7	1	11	8
Tokyo	7	4	8	9	3
Rotterdam	8	13	10	3	7
New York	9	10	3	8	10
Pireus/Athens	10	1	9	10	13
Busan	11	12	12	7	4
Copenhagen	12	9	11	12	9
Dubai	13	11	13	5	15
Mumbai	14	14	14	13	12
Rio De Janeiro	15	15	15	15	14

Singapore cemented its maritime status as the top global shipping centre in the latest benchmarking study by Norwegian consultancy firm Menon Business Economics. First conducted in 2012, the study benchmarked maritime cities based on five categories: Shipping Centres, Maritime Finance and Law, Ports and Logistics, Maritime Technology, and Attractiveness and Competitiveness (perception component).

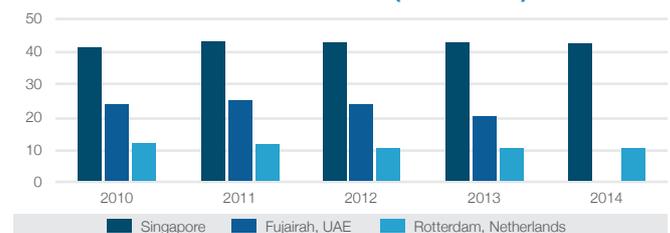
**7.2b-3: Xinhua – Baltic International Shipping Centre Development Index Report (2014 & 2015)**

Cities	2014	2015
<b>Singapore</b>	<b>1</b>	<b>1</b>
London	2	2
Hong Kong	3	3
Rotterdam	4	4
Hamburg	5	5
Shanghai	7	6
Dubai	6	7
New York	9	8
Busan	10	9
Pireus/Athens	-	10
Tokyo	8	-

Singapore also retained its top ranking as the world's leading maritime city in the latest industry benchmarking study undertaken by the Baltic Exchange and China's Xinhua news agency. The first study was conducted in 2014. The Index was based on evaluations under three categories: Maritime Services, Business Environment and Port Conditions.

According to the results, Singapore, together with 9 other top port cities were regarded as "international" shipping centres with very strong competitive advantage over other port cities in terms of port throughput and shipping services.

**7.2b-4: World's Top Bunkering Ports' Annual Bunker Sales (mil Tonnes)**



# RESULTS

In the recent World Oil Outlook 2015 report by the Organization of the Petroleum Exporting Countries (OPEC), it was noted that even though there were approximately 600 major bunkering ports in the world, just 6 countries were responsible for almost 60% of the global bunker sales. The six countries were Singapore, UAE, Netherlands, China, US and South Korea.

Singapore is well-known as the world's biggest bunkering port by volume, having established its reputation for several years with consistent sales of around 42 million tonnes (7.2b-4). Besides being located along one of the busiest shipping lanes, Singapore is close to nearby refineries and has exceptional infrastructure.

Fujairah in the United Arab Emirates is the world's second largest bunkering port as it enjoys a strategic location at the crossroads of shipping between East and West while Rotterdam is the biggest port in Europe and the third largest bunkering port.

## 7.2b-5: SRS Ranking

By Gross Tonnage	2010		2011		2012		2013		2014	
	Rank	GT								
Panama	1	201,264,453	1	214,760,075	1	218,663,214	1	218,269,034	1	217,604,861
Liberia	2	106,708,344	2	121,518,618	2	126,017,230	2	126,439,315	2	126,990,680
Marshall Islands	3	62,011,182	3	76,054,142	3	85,320,403	3	95,024,687	3	109,383,818
Hong Kong	4	55,543,246	4	70,205,767	4	78,299,096	4	85,575,633	4	92,355,284
<b>Singapore</b>	<b>6</b>	<b>44,869,918</b>	<b>5</b>	<b>53,829,803</b>	<b>5</b>	<b>60,317,803</b>	<b>5</b>	<b>69,352,556</b>	<b>5</b>	<b>77,041,087</b>
Malta	8	38,737,657	7	45,116,912	7	44,168,107	7	49,707,064	6	56,238,637
Bahamas	5	50,369,836	6	52,389,512	6	52,424,297	6	52,986,208	7	54,949,775
China	9	34,705,141	9	37,923,929	9	40,612,372	8	43,064,026	8	44,474,904
Greece	7	40,795,358	8	41,275,953	8	41,140,885	9	41,734,666	9	42,347,060
Cyprus	10	20,732,488	10	20,992,521	10	20,038,519	10	21,049,236	10	21,078,582

By Number of Ships	2010		2011		2012		2013		2014	
	Rank	GT								
Panama	1	7,986	1	8,127	1	8,083	1	8,066	1	8,092
Liberia	3	2,726	3	3,030	3	3,098	4	3,080	4	3,062
Marshall Islands	7	1,622	6	1,876	6	2,056	5	2,282	5	2,579
Hong Kong	5	1,736	5	1,935	5	2,128	6	2,267	6	2,322
<b>Singapore</b>	<b>4</b>	<b>2,667</b>	<b>4</b>	<b>2,877</b>	<b>4</b>	<b>2,954</b>	<b>3</b>	<b>3,096</b>	<b>3</b>	<b>3,270</b>
Malta	6	1,724	7	1,815	7	1,764	7	1,816	7	1,936
Bahamas	9	1,384	8	1,409	8	1,375	8	1,348	8	1,363
China	2	4,080	2	4,147	2	3,718	2	3,937	2	4,242
Greece	8	1,433	9	1,386	9	1,343	9	1,315	9	1,305
Cyprus	10	1,014	10	1,022	10	1,013	10	1,041	10	1,036

By Age of Ships	2010		2011		2012		2013		2014	
	Rank	Age								
Marshall Islands	1	8	1	8	1	7	1	7	1	7
Hong Kong	3	9	2	9	1	7	1	7	2	8
<b>Singapore</b>	<b>1</b>	<b>8</b>	<b>2</b>	<b>9</b>	<b>3</b>	<b>8</b>	<b>3</b>	<b>8</b>	<b>2</b>	<b>8</b>
Liberia	4	10	4	10	4	9	4	9	4	9
Malta	6	12	5	12	6	11	5	10	5	10
Cyprus	5	11	5	12	5	10	5	10	6	11
Bahamas	7	13	7	14	7	13	7	13	7	13
China	10	22	9	21	9	16	8	15	8	15
Panama	8	17	8	17	8	15	8	15	9	16
Greece	9	21	9	21	10	20	10	20	10	20

The SRS remained the 5<sup>th</sup> largest registry in the world since 2011. The ship registry ranking is based on IHS Fairplay World Fleet Statistics (formerly Lloyd's Register). The statistics exclude ships that are non-self propelled and below 100GT (7.2b-5).

## 7.2b-6: Stay within White Lists:Tokyo MOU Regime (Ranking of Top 10 Ship Registries) 2010- 2014

Ship Registry (Rank 1 - 7)	Tokyo MOU Regime				
	2010	2011	2012	2013	2014
Panama	24	22	19	16	18
Liberia	15	14	14	14	17
Marshall Island	20	15	10	6	5
Hong Kong	2	3	3	3	3
<b>Singapore</b>	<b>6</b>	<b>6</b>	<b>5</b>	<b>4</b>	<b>4</b>
Malta	Grey List	30	24	22	21
Bahamas	10	10	7	9	9
China	1	1	1	2	2
Greece	14	16	12	13	20
Cyprus	26	28	26	20	19

The "White, Grey and Black (WGB) List" presents the full spectrum, from quality flags to flags with a poor performance that are considered high or very high risk. It is based on the total number of inspections and detentions over a 3-year rolling period for flags with at least 30 inspections in the period. The "White List" represents quality flags with a consistently low detention record.

The SRS has consistently maintained its "White List" status under the Tokyo and Paris MOUs on Port State Control. In 2014, it also qualified for the US Coast Guard QUALSHIP 21 Programme.

## 7.2b-7: Stay within White Lists: Paris MOU Regime (Ranking of Top 10 Ship Registries) 2010- 2014

Ship Registry (Rank 1 - 7)	Paris MOU Regime				
	2010	2011	2012	2013	2014
Panama	40	36	32	36	39
Liberia	24	18	14	13	17
Marshall Island	17	24	18	17	12
Hong Kong	21	7	3	6	2
<b>Singapore</b>	<b>20</b>	<b>8</b>	<b>16</b>	<b>14</b>	<b>11</b>
Malta	28	28	23	22	21
Bahamas	19	14	8	11	3
China	9	26	20	18	13
Greece	12	10	5	16	14
Cyprus	23	21	22	23	25

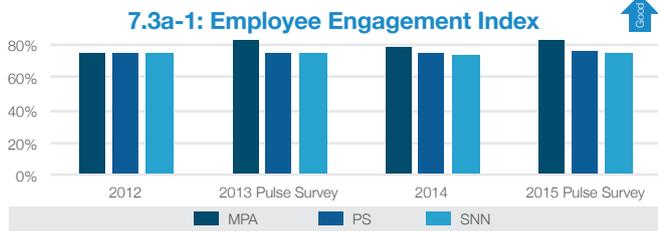
## 7.2b-8: Containerisation International's Top 100 Container Ports 2011- 2015

Countries	2011		2012		2013		2014		2015	
	Rank	mTEU								
Shanghai, China	1	31.70	1	32.53	1	33.62	1	35.30	1	36.54
<b>Singapore</b>	<b>2</b>	<b>29.94</b>	<b>2</b>	<b>31.26</b>	<b>2</b>	<b>32.24</b>	<b>2</b>	<b>33.90</b>	<b>2</b>	<b>30.92</b>
Shenzhen, China	4	22.57	4	22.94	3	23.28	4	22.40	3	24.20
Ningbo, China	6	14.69	6	16.18	6	17.35	5	19.40	4	20.63
Hong Kong, China	3	24.38	3	23.12	4	22.35	3	22.30	5	20.08
Busan, South Korea	5	16.18	5	17.04	5	17.69	6	18.70	6	19.43
Guangzhou, China	7	14.40	7	14.76	8	15.31	8	16.40	7	17.57
Qingdao, China	8	13.02	8	14.50	7	15.52	7	16.60	8	17.50
Dubai, UAE	9	13.00	9	13.28	9	13.64	9	15.20	9	15.59
Los Angeles, USA	16	7.94	16	8.08	18	7.87	19	8.30	10	15.35
Long Beach, USA	20	6.06	22	6.05	20	6.73	20	6.80	10	15.35
Tianjin, China	11	11.50	10	12.30	10	13.01	10	14.10	11	14.11
Rotterdam, Netherlands	10	11.88	11	11.87	11	11.62	11	12.30	12	12.23
Port Klang, Malaysia	13	9.60	12	10.00	13	10.35	12	10.90	13	11.89
Kaohsiung, Taiwan	12	9.64	13	9.78	14	9.94	13	10.60	14	10.26
Antwerp, Belgium	15	8.66	15	8.64	16	8.58	16	9.00	15	9.65
Dalian, China	19	6.40	17	8.92	12	10.86	14	10.10	16	9.30
Xiamen, China	18	6.46	19	7.20	17	8.01	17	8.60	17	9.18
Tanjung Pelepas, Malaysia	17	7.50	18	7.72	19	7.63	18	8.60	18	9.13
Hamburg, Germany	14	9.02	14	8.89	15	9.30	15	9.70	19	8.87

Singapore maintained our position as one of the world's busiest ports and the busiest container transshipment hub since 2011. In 2015, Singapore handled some 30.9mTEUs of container throughput (7.2b-8).

## 7.3 People Results

### 7.3a Employee Engagement and Well-being



#### Employee Engagement

The Employee Engagement Survey (EES) is the main tool used to assess MPA staff engagement and to gather staff feedback on various aspects of the organisation. The EES is conducted once every 2 years. In between, a pulse survey is conducted.

7.3a-1 shows our engagement scores over the past years. In 2015, we further improved on our engagement results with a score of 82%, 3% higher than that obtained in the 2014 EES. Our score was also 6% higher than the Public Sector Norm and 8% higher than the Towers Watson Singapore National Norm.



#### Staff Participation in Suggestion Scheme

The iSuggest scheme provides a platform for staff involvement in making organisational improvements. 7.3a-2 shows the results of the iSuggest Scheme. The decline in participation rate was due to greater emphasis placed on quality suggestions vis-à-vis quantity, as well as the lowering of target to 1 suggestion accepted for implementation per staff instead of 3 per year. This has generated tangible results in terms of the value of ideas submitted, which is measured by the amount awarded for the suggestions.



### Staff Participation in Work Improvement Teams (WITS)

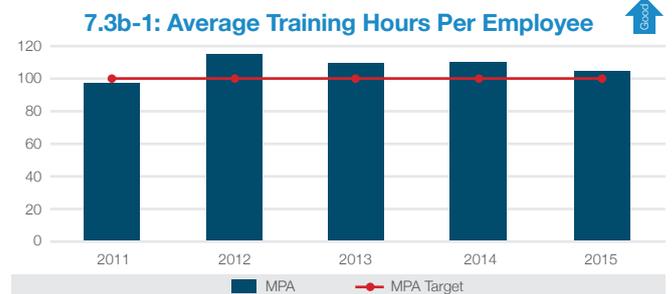
MPA WITS teams proactively embark on projects to improve areas of the organisation (7.3a-3) e.g. streamlining of processes, enhancements to service delivery procedures, resource management, work environment, etc.

Our WITS initiative has received good staff participation over the years. With the implementation of our WITS projects, substantial savings have been reaped. In 2015, we benefited from substantial cost savings of more than \$1.9 million as a result of greater use of automation and consolidation of our processes.

Some of our WITS projects have won local and international awards at various platforms such as the Singapore Productivity Association's Team Excellence Symposium, International Convention on Quality Control Circle (ICQCC) 2015, MOT Minister's Innovation Award, and the Value-for-Money Achievement Award.

In 2014, 3 of our WITS teams participated in the Team Excellence Symposium and won 1 Bronze & 2 Silver Awards. In 2015, 6 WITS teams participated and won 2 Gold & 4 Silver Awards. In the ICQCC 2015, our WITS team won a Bronze Award.

### 7.3b Employee Learning and Development



Over the years, as shown in 7.3b-1, MPA has invested substantially in developing its staff through training. Average learning hours per employee has consistently been above the target. In addition to the functional learning, MPA also emphasises on building strong corporate values and a culture of service excellence. In 2015, we organised the Values Workshop and Service Bootcamp for all staff.

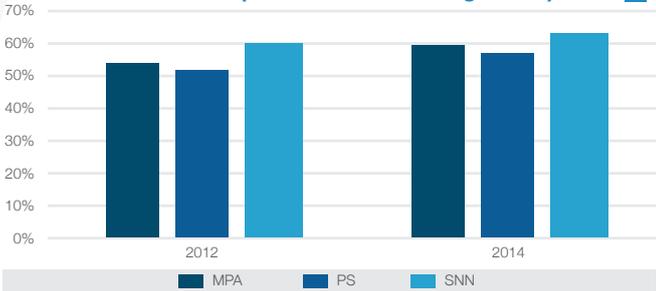


7.3b-2 shows the percentage of staff who met the target of 100 hrs/12.5 training days. It is computed by the number of staff who met training days target over total number of MPA staff.

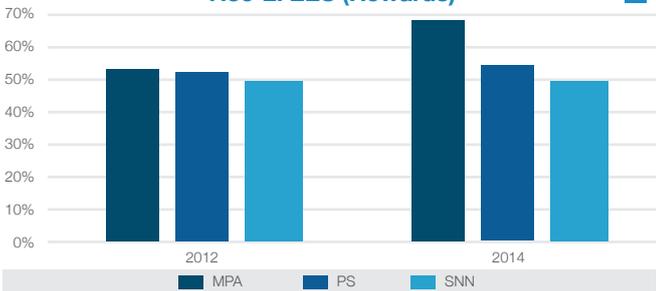
# RESULTS

## 7.3c Employee Performance and Recognition

### 7.3c-1: EES (Performance Management)

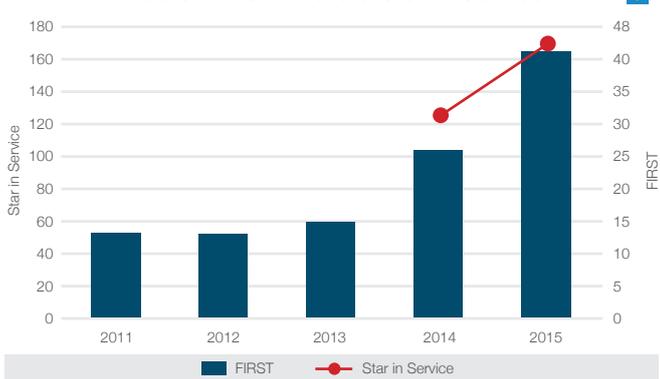


### 7.3c-2: EES (Rewards)



In the area of Performance Management (7.3c-1), MPA achieved a 6% improvement over the 2012 scores, which was above the PS EES. This score provides a gauge on employee sentiments with regard to MPA's performance management process. Based on the EES 2014 results, as shown in 7.3c-2, MPA achieved a 16% improvement over the 2012 scores in the area of Rewards, which is about 18% higher than the PS EES and Singapore National Norm. Among other things, the score measures whether employees feel that MPA's pay and benefits are as good as or better than the benefits of other organisations.

### 7.3c-3: FIRST Award & Star in Service



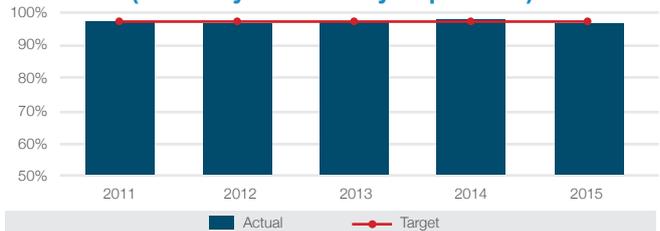
The MPA FIRST Award recognises and rewards staff who have exemplified MPA's core values. In 7.3c-3, the number of FIRST Awards given out each year has increased steadily in the last 5 years, from 13 in 2011 to 41 in 2015. The increasing number of FIRST Awards given out over the years is testament that our employees have internalised, and embody our core values. In 2014, MPA further introduced the Star in Service initiative to recognise officers for good service rendered to external customers in the course of their work. The number of officers recognised has increased by 30% in 2015.

## 7.4 Operational Results

### 7.4a Process performance

The indicator 7.4a-1 measures the ratio of number of inspections with "Passed" status to total number of inspections. Compliance rate of harbour craft has remained consistently above the target since 2011. MPA has continuously placed emphasis on safety and security of harbour craft through its safety briefings to the harbour/pleasure craft community on a regular basis. The long term target is to achieve 97% compliance rate from 2016.

### 7.4a-1: Compliance Rate of Harbour Craft (i.e. safety and security inspections)



Singapore's membership to the Council of the IMO has enabled the Republic to contribute significantly towards advancing the efforts of the international maritime community to enhance navigational safety, promote efficient and sustainable shipping, and protect the marine environment.

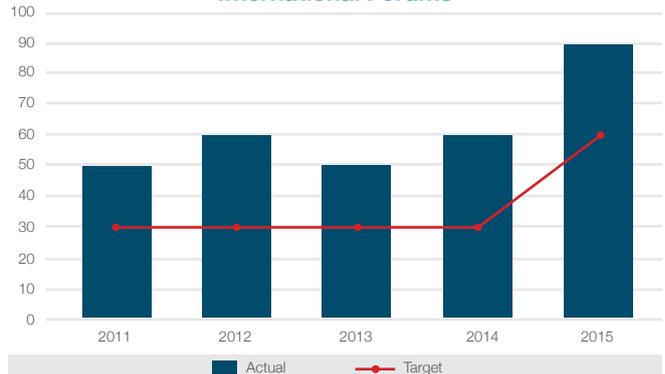
Singapore has served on the IMO Council since 1993 for 12 consecutive terms during which it has made several important contributions as a member state. We have held key leadership positions such as Chairman of the IMO Council, Vice-Chair of the Maritime Safety Committee.

Year	IMO Council Membership
2011	Elected into Cat C
2012	No elections*
2013	Elected into Cat C
2014	No elections
2015	Elected into Cat C

\* Re-election is held biennially.

The indicator 7.4a-2 measures the number of leadership positions (i.e. Chairman/Vice-Chairman) at key international maritime committees/working groups/bodies.

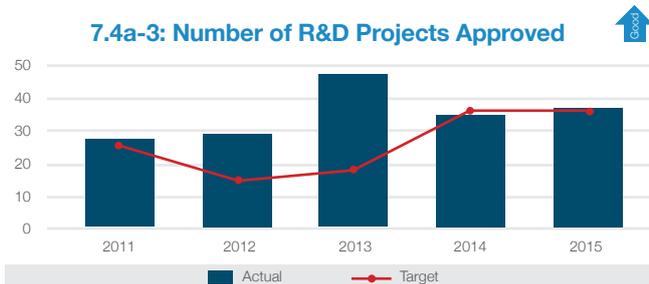
### 7.4a-2: Number of Key Positions Held at International Forums



MPA is committed towards developing Singapore as a centre of excellence for maritime R&D and technology. We continue to support R&D projects through the \$150 million Maritime and Innovation and Technology (MINT) Fund. The Singapore Maritime Institute (SMI) was established in 2011 to provide dedicated focus on driving maritime R&D and education within the institutes of higher learning and research institutions. Together, MPA and SMI promote and support the following knowledge building and innovation activities:

- R&D capability development
- Applied R&D and test-bedding of new technologies
- Development of new products and services
- Adoption of technologies that benefits Maritime Singapore

7.4a-3: Number of R&D Projects Approved

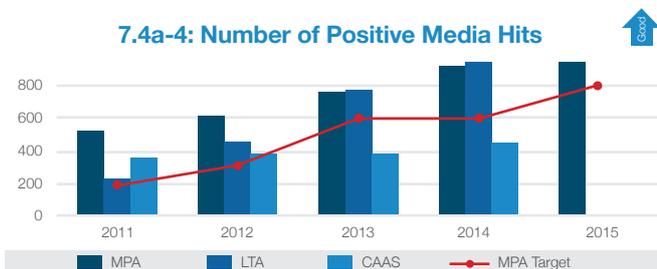


In 7.4a-3, the yearly figure of R&D projects is an aggregation of projects supported by MPA and SMI, and carried out by the tertiary research institutes, the maritime industry and technology companies.

The actual number of R&D projects in 2013 surged to 47 due to additional projects generated from an one-off industry adoption programme for Bunker Flow Meter (BFM), and the ramp up of SMI R&D activities in 2013. To better reflect SMI's activities, the KPI target on "number of R&D projects" was raised to 36 in 2014.

7.4a-3 shows that MPA has consistently achieved or exceeded this KPI target in the past five years (except for 2014 where the number of projects achieved was 1 short of the stretched target of 36). MPA has consistently achieved or exceeded this KPI target in the recent five years.

7.4a-4: Number of Positive Media Hits

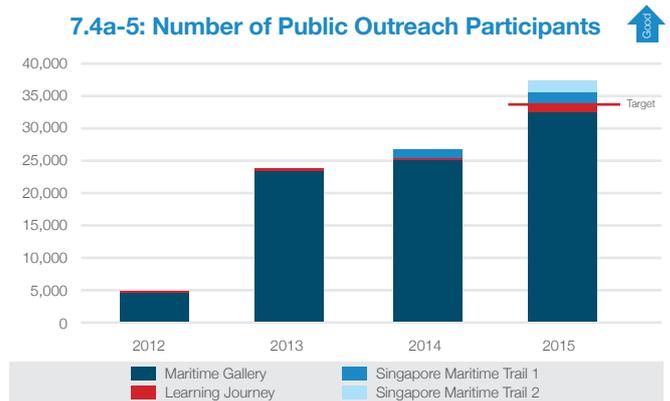


The number of positive media hits has increased steadily over the past 5 years from 519 in 2011 to 1,113 in 2015.

The impressive performance was mainly due to the increasing number of media reports generated from the corresponding increase in MPA announcements and events, as well as greater efforts to pitch to the media stories about Maritime Singapore.

In 2014, to raise awareness of the maritime sector among the general public, MPA worked with the Singapore Press Holdings to run a 10-week series in the Straits Times showcasing the maritime industry and maritime careers. The areas profiled included the Next Generation Port Development, Maritime R&D, maritime safety and aids to navigation. Additionally, over the years, there has been greater media coverage with the increasing number of MPA events held during the annual Singapore Maritime Week.

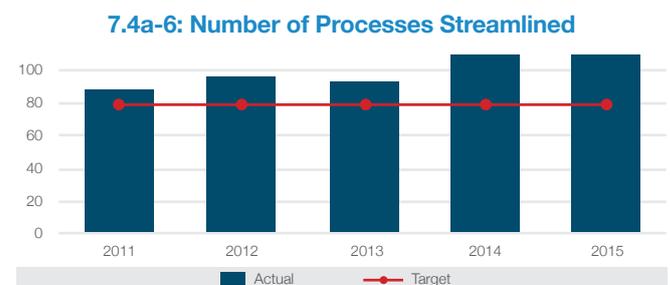
7.4a-5: Number of Public Outreach Participants



7.4a-5 shows the number of public outreach participants for MPA's programmes. MPA embarked on its outreach initiatives in 2012 with the opening of Singapore Maritime Gallery. The Gallery, provides insights into Maritime Singapore to help visitors understand the story of contemporary Maritime Singapore, its importance to Singapore's economy, and the diverse range of exciting and rewarding career options it offers, among other things.

Outreach efforts have intensified in recent years with the launch of new initiatives. The Singapore Maritime Trails bring participants on a journey that tells the story of the progress of Singapore's maritime industry through a guided tour of historical landmarks. The Maritime Learning Journeys provide opportunities to visit the ports, MPA's Port Operations Control Centre and Raffles Lighthouse, etc. No specific targets were set for the newly launched programmes in their initial years as more time is needed to monitor the operations and visitor flow to set meaningful targets. In 2015, more concerted efforts were put into marketing the different outreach programmes and targets were set for each of the programmes thereafter.

7.4a-6: Number of Processes Streamlined



The indicator in 7.4a-6 measures the number of processes streamlined which include WITs projects, Economy Drive (ED) projects and IT enhancement projects.

# RESULTS

There has been a steady increase in the number of processes streamlined from 2011 to 2015. In 2014, there was a 22% increase as compared to 2013. This was due to the increase in the number of IT enhancement projects undertaken. The IT enhancement projects were related to mainframe right sizing with MPA migrating its old systems to a newer platform.

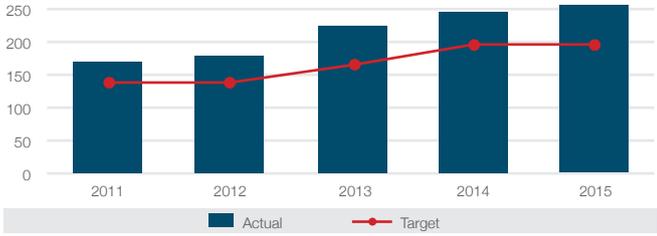
**7.4a-7: Number of Infrastructure Projects in the Pipeline** ↑ Good



The indicator in 7.4a-7 measures the number of infrastructure projects to be developed and implemented on time to meet the requirements of MPA and the maritime industry.

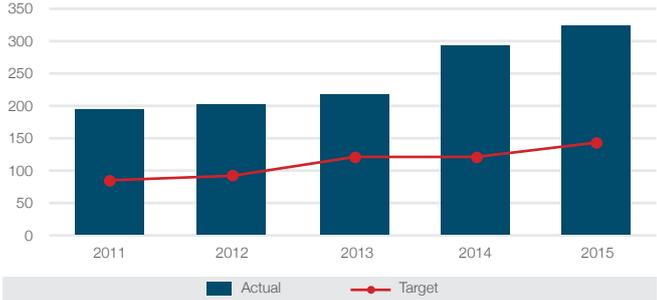
The number of projects would vary year to year according to the additional requirements and the need for upgrading of the infrastructure. The projects include Tuas Terminal developmental works, Tuas Maritime Hub, IT projects on cyber security protection, mobile app development, data analytics, AIS-B/ECS, integration of new radars to VTIS, KM system etc.

**7.4a-8: Number of New/Enhanced Collaboration Initiatives to Build Partnerships** ↑ Good



7.4a-8 shows the number of collaboration initiatives with targeted partners has increased steadily since 2011 as a result of efforts with industry, government, IHLs, research cluster, MaritimeONE partners, multilateral/international organisations to build R&D capabilities & knowledge, partnerships, thought-leadership programmes, etc.

**7.4a-9: Number of Engagement Activities with Targeted Partners** ↑ Good



MPA engages our partners (i.e. maritime community) to connect and communicate policies, standards and developments affecting them.

- Engagement activities include:
- i. Multi-agency exercises
  - ii. Dialogue/networking/consultation sessions with local industry/ companies/ bankers
  - iii. Company visits local/overseas (pro-business side – e.g. overseas missions/trips led by high-level officials)
  - iv. Media engagements, international engagement activities (include Distinguished Visitors Programme/ Maritime Visitors Programme/ Third-Country-Training-Programme)
  - vi. Events organised/co-organised by MPA (conferences/ seminars/SMW events/MOUs)

7.4a-9 shows the number of engagement activities has increased steadily since 2011.

## 7.4b Suppliers and Partners performance

**7.4b-1: Pilotage Services - Percentage of All Vessels to be Serviced Within 30 Minutes of Service Request Time** ↓ Good



The Port of Singapore is divided into 3 pilotage districts namely Pilotage District A, B and D. The MPA Act (Chapter 170A) requires every vessel navigating in any pilotage district or part thereof to be under pilotage. Pilotage entails the movement of vessels within the Port of Singapore. MPA is the licencing authority for the pilotage service providers. It has in place a set of performance standards that these providers have to achieve. These indicators help to ensure that the overall pilotage service meets the expectations of the shipping industry.

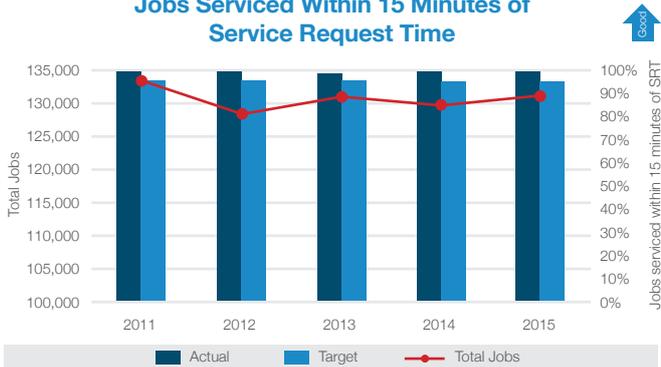
To spur and encourage the pilots to strive towards better performance, greater efficiency and higher safety standards, MPA presents the annual Pilotage Incentive Award to the harbour pilots.

MPA did an industry consultation in 2013, through the Singapore Shipping Association (SSA), to obtain feedback on the pilotage service provider's performance. The industry's expectations is for 95% of all jobs to be serviced within 30 minutes of the Service Request Time. We communicated SSA's feedback to PSA Marine (PSAM). The action plan was to progressively bring up the manpower strength within PSAM to meet the 95%

Pilotage Service Level (PSL) expected by the industry. The action plan was divided into 3 phases. Phase 1 -90%; Phase 2 -92% and Phase 3 - 95% to allow PSAM to recruit and train the necessary manpower.

The increasing trend in the total number of pilotage jobs was likely a result of the need to import distance sand using bulk carriers for the reclamation works and the development of Singapore.

**7.4b-2: Towage Services - Percentage of Jobs Serviced Within 15 Minutes of Service Request Time**



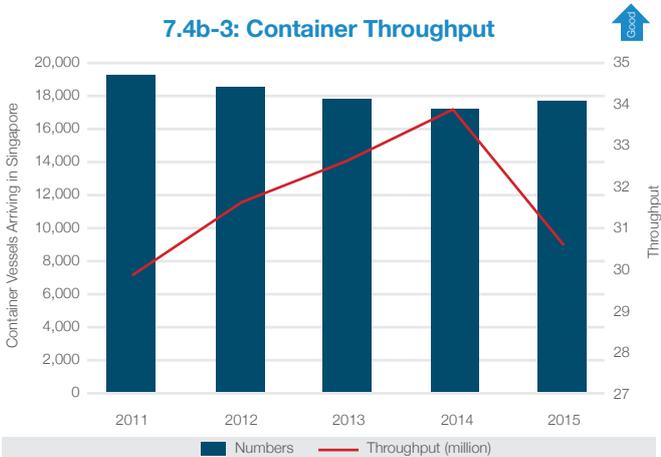
“Towage” refers to any operation in connection with the holding, pushing, pulling, moving, escorting or guiding of or standing by any vessel, via the assistance of tugs.

There are 6 licenced towage service providers:

1. Keppel SMIT Towage (Pte) Ltd
2. PSA Marine (Pte) Ltd
3. Jurong Marine (Pte) Ltd
4. Marina Offshore Pte Ltd
5. Maju Maritime Pte Ltd
6. POSH SEMCO Pte Ltd

In 7.4b-2, the number of towage jobs has remained largely consistent from 2011 to 2015, and we expect minimal fluctuations moving forward. At the same time, all 6 licenced towage service providers have met the service standard of attending to jobs within 15 minutes of Service Request Time.

**7.4b-3: Container Throughput**

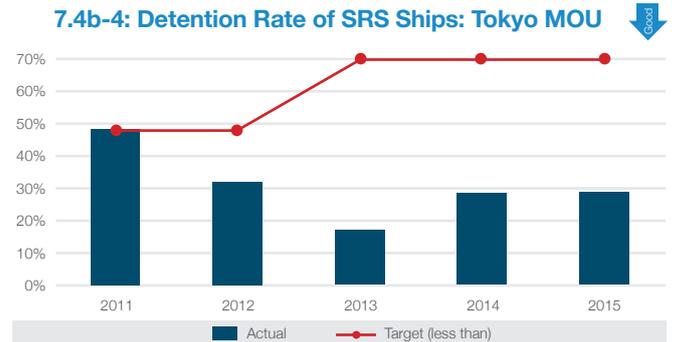


Bunkering is the activity of supplying fuel to ships. In bunkering operations, bunker suppliers will physically supply the bunkers to ships via bunker tankers.

As the top bunkering port in the world, Singapore has taken the lead in establishing operating standards and procedures for the bunkering industry. MPA collaborated with SPRING Singapore, the national standards authority, and multi-stakeholders in the bunkering industry to establish the Singapore Standard Code of Practice for Bunkering (SS600). The SS600 sets out a code of best practice for bunkering, including guidelines and procedures for tank gauging and ensuring quality and reliable bunker delivery. All bunkering operations by licensed bunker suppliers are governed by the SS600.

As part of the bunkering procedures, disputes are lodged with both Singapore Shipping Association and MPA.

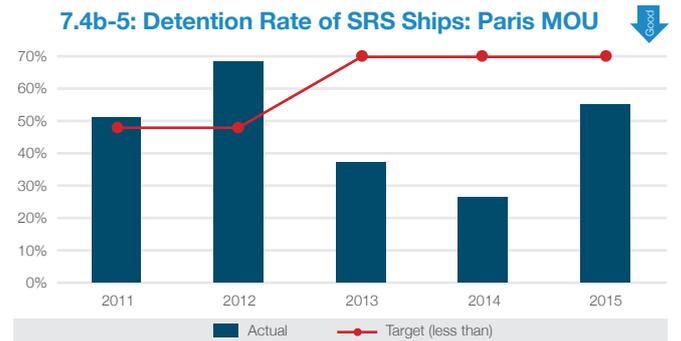
**7.4b-4: Detention Rate of SRS Ships: Tokyo MOU**



The SRS has maintained its “White List” status under the Tokyo and Paris MOU on Port State Control over the years.

The indicator 7.4b-4 measures the SRS detention rate to Tokyo MOU regional average detention ratio. The SRS has steadily reduced its detention rate from 48% to 29%. This is achieved as a result of more stringent enforcements. Despite the increase in detention ratio in 2014 due to a few PSC detentions which were deemed unreasonable and were being appealed, SRS was still able to achieve a detention rate of less than 70%.

**7.4b-5: Detention Rate of SRS Ships: Paris MOU**



The indicator 7.4b-5 measures the SRS detention rate to Paris MOU regional average detention ratio. The SRS has steadily reduced its detention rate from 68% to 54.9% since 2012. This is achieved through more stringent enforcements.

In 2015, there was a significant hike in Singapore ships detained under the Paris MOU. Many of the detentions were due to unsatisfactory fire and abandon ship drills, lifeboat not operationally ready for use in an emergency etc. Dialogue sessions were organised with owners and companies of Singapore ships to update them on the performance of the Singapore flag, PSC statistics and

# RESULTS

trend analysis of ship detentions in the Singapore fleet, sharing of experiences in managing ship safety, and engage them on ways to tackle recurring detainable deficiencies on Singapore ships.

Following the dialogue sessions, MPA also disseminated information to the companies via email on the steps to tackle shipboard deficiencies to help further enhance their Safety Management System and solve systemic issues.

MPA also has a running Quality Flag Sustainability Programme to entrench Singapore's quality flag status and safeguard its good standing in major Port State Control (PSC) regimes, as well as to promote safe practices and safety culture in our shipping community. We implemented this programme to track the SRS performance and drive our efforts to achieve better results.

We can benchmark against the top 10 ship registries – 7.2b-6/7. The Paris and Tokyo MOU annual reports show the annual and 3-year average detention ratio for the above registries.

## 7.4c Governance system and contribution to the community, society and the environment

### Governance

As a public agency, MPA is held accountable to a high standard of ethical behaviour and professional conduct. 7.4c-1 shows that there has been no fraud cases and unethical acts over the last few years.

**7.4c-1: Number of Fraud Cases and Unethical Acts Over the Last Few Years**

Year	2011	2012	2013	2014	2015
Actual	0	0	0	0	0
Target	Zero tolerance				

MPA has in place a whistle-blowing channel where staff can raise concerns/issues through this channel administered by the Internal Audit Department, which reports directly to the Audit Review Committee. As at 31 December 2015, no critical concerns on ethics and integrity has been raised to the Board.

**7.4c-2: Number of Major Audit Non-Conformances**

Audit and Assessment	Institution	Standards	2011	2012	2013	2014	2015
Financial	Internal Audit Dept	No Major Non-compliances	0	0	0	0	0
	PWC (2011 - 2014)	No Major Non-compliances	0	0	0	0	-
	Deloitte	No Major Non-compliances	-	-	-	-	0
Financial & Selective	Auditor General Office	No Major Non-compliances	-	-	0	-	-

7.4c-2 shows MPA's audit results for the last 5 years with no major audit non-conformances in the area of transparency or public accountability in decision-making.

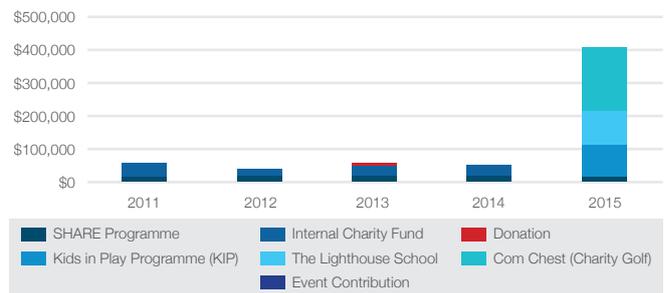
As a responsible Member State, Singapore successfully participated in the Voluntary IMO Member State Audit Scheme (VIMSAS). The IMO Member State Audit Scheme is intended to provide an audited Member

State with a comprehensive and objective assessment of how effectively it administers and implements those mandatory IMO instruments which are covered by the Scheme.

### Community

MPA is dedicated to contributing towards the wider community. 7.4c-4 shows MPA's contribution towards charity. Over the years, MPA has supported various charity organisations including the Tanjong Pagar Family Service Centre, Redhill Moral Senior Activity, etc. The MPA CARE Team has also organised activities to raise funds for our parent Ministry's charity outreach programme.

**7.4c-3: Contributions to Charity**



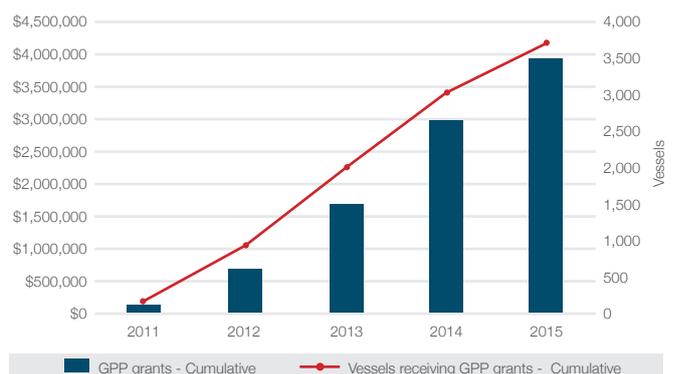
In 2014, MPA adopted The Salvation Army – Kids In Play (KIP) and Lighthouse School and organised the MPA Golf Charity to raise funds for both charities and Community Chest. A total of \$412,488 was raised. For our community efforts, MPA was awarded the Community Chest's Special Events Platinum Award in 2015. The Platinum award is the most prestigious in the category and is awarded to organisations that had raised \$300,000 or more for their fund-raising event.

### Environment

MPA is committed to reducing the environmental impact of the maritime transport sector. In 2011, we pledged to invest up to \$100 million over 5 years in the Maritime Singapore Green Initiative (MSGI) which comprises the Green Port Programme, Green Ship Programme and Green Technology Programme. Since its launch, the MSGI has garnered huge support from the maritime community.

7.4c-4 shows the results of the Green Port Programme (GPP). Since 2011 to date, some 3,745 vessel calls have enjoyed port dues concessions under the GPP.

**7.4c-4: Green Port Programme**



7.4c-5: Green Ship Programme



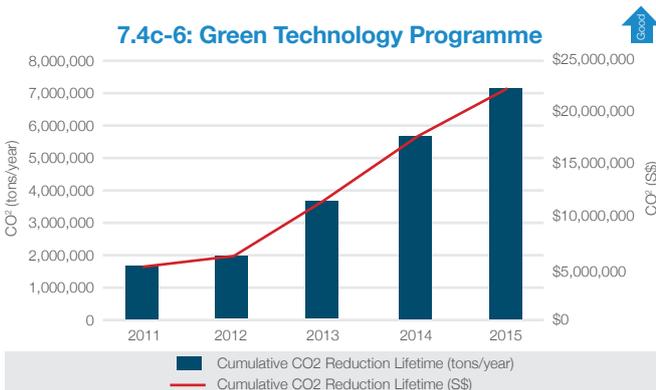
The Green Ship Programme encourages Singapore-flagged ships to reduce carbon dioxide and sulphur oxides (SOx) emissions.

Qualifying Singapore-flagged ships can enjoy a reduction of Initial Registration Fees and a rebate on Annual Tonnage Tax.

- Ships that adopt energy efficient ship designs exceeding IMO's Energy Efficiency Design Index (EEDI) will enjoy 50% reduction of Initial Registration Fees and 20% rebate on Annual Tonnage Tax.
- Ships that adopt approved SOx scrubber technology exceeding IMO's emission requirements will enjoy 25% reduction of Initial Registration Fees and 20% rebate on Annual Tonnage Tax.
- Ships that adopt both energy efficient ship designs and approved SOx scrubber technology exceeding IMO's requirements will enjoy 75% reduction of Initial Registration Fees and 50% rebate on Annual Tonnage Tax.

The GSP had seen positive growth in the number of vessels enrolled annually since 2011. To date, 267 Singapore-flagged ships have been accorded the Green Ship status (7.4c-5).

7.4c-6: Green Technology Programme



The Green Technology Programme (GTP) encourages the development and adoption of green technologies by local maritime companies to reduce air emissions. \$50 million was set aside from MINT Fund over 10 years (2011-2021) to support the GTP. GTP provides a grant of up to 70% or a cap of \$3 million per project.

7.4c-6 shows that GTP commitment averaged S\$4.5 million per year from 2011-2015. Fiscal cost of emission reduction for the programme to date is S\$7.2/tonne CO2 (based on expected ship/equipment lifespan of 25 years) which compares favourably to the current Europe carbon price of S\$12.59/tonne CO2.

MPA also seeks to minimise the environmental impact of our operations. We have taken proactive efforts in nurturing an eco-friendly culture within the organisation. Some of our efforts include: installing green features such as solar panels as well as championing the Public Sector Taking the Lead in Environmental Sustainability (PSTLES) initiative to reduce electricity and water consumption.

In MPA, we inculcate good habits in our staff to go green in our workplace. We implemented the 8 Effective Habits as guiding principles and to empower our staff to consciously adopt green practices. These habits have been communicated to all staff, and posters are placed at lift lobbies to serve as daily reinforcements.



# GLOSSARY

ABBREVIATION	DESCRIPTION
ABS	American Bureau of Shipping
ACE	Assistant Chief Executive
AD	Assistant Director
AGD	Accountant-General's Department
AGO	Auditor-General's Office
AIS	Automatic Identification System
AMSS	Annual Marine Services Survey
ASMI	Association of Singapore Marine Industries
A*STAR	Agency for Science, Technology and Research
AUSBE	Amalgamated Union of Statutory Board Employees
AVA	Agri-Food and Veterinary Authority
BCA	Building and Construction Authority
BCC	Bunker Convention Certificate
BCM	Business Continuity Management
BG Group	British Gas Group
BOA	Berth-On-Arrival
BSC	Balanced Score Card
CAAS	Civil Aviation Authority of Singapore
CAG	Changi Airport Group
C&B	Compensation & Benefits
C&C	Communications and Community
CCTV	Closed-Circuit Television
CD	Corporate Development
CDO	Chief Data Officer
CE	Chief Executive
CEP	Current Estimated Potential
CFO	Chief Financial Officer
CIO	Chief Information Officer
CKO	Chief Knowledge Officer
CLC	Civil Liability Convention
CLG	Company Limited by Guarantee
CM	Crisis Manager
CMG	Crisis Management Group
COC	Certificate of Competency
COE	Certificate of Endorsement
COP	Coefficient of Performance
CRR	Cost Recovery Ratio
CSR	Corporate Social Responsibility
DAELIM-JV	Daelim Joint Venture
DNV-GL	Det Norske Veritas-Germanischer Lloyd
DPM	Deputy Prime Minister
DSTA	Defence Science and Technology Agency
EDB	Economic Development Board
EEDI	Energy Efficiency Design Index
EES	Employee Engagement Survey
EOC	Emergency Operations Committee
e-PANS	Electronic Pre-Arrival Notification of Security
EQ	Emotional Quotient
ERM	Enterprise Risk Management
FEREX	Ferry Rescue Exercise
FTX	Full Deployment Exercise
GP	Government Procurement
GPEs	Government Procuring Entities
GPP	Green Port Programme
GPS	Global Positioning System
GTP	Green Technology Programme
HARTS	Harbour Craft Transponder System

ABBREVIATION	DESCRIPTION
HDB	Housing and Development Board
HOD	Head of Department
HPCC	High Performance Computing Cluster
HRIS	Human Resource Information System
ICA	Immigration and Checkpoints Authority
ICT	Infocomm Technology
IDA	Infocomm Development Authority
IE Singapore	International Enterprise Singapore
IGP&I	International Group of Protection & Indemnity
IHL	Institutes of Higher Learning
IHO	International Hydrographic Organization
IM	Instruction Manual
IMC	International Maritime Centre
IMO	International Maritime Organization
IMOC	Inter-Ministry Operations Committee
IN	International
IPPT	Individual Physical Proficiency Test
IRCC	Inter-Regional Coordinating Committee
ISO	International Organization for Standardisation
ISPS	International Ship and Port Facility Security
ITE	Institute of Technical Education
JOSE	Joint Oil Spill Exercise
JPPL	Jurong Port Pte Ltd
JTC	Jurong Town Corporation
KDE	Key Domain Expertise
KIP	Kids In Play
KM	Knowledge Management
KPI	Key Performance Indicator
KRA	Key Research Areas
LEAD	Leadership Development
LED	Legal Department
LNA	Learning Needs Analysis
LNG	Liquefied Natural Gas
LRM	Learning Roadmap Exercise
LSCI	Liner Shipping Connectivity Index
LTA	Land Transport Authority
MARSEC	Maritime Security
MAS	Monetary Authority of Singapore
MBCC	Marine Bay Cruise Centre
MCF	Maritime Cluster Fund
MCF-BD	Maritime Cluster Fund-Business Development
MCF-MD	Maritime Cluster Fund-Manpower Development
MCI	Ministry of Communications and Information
MDLM	Monthly Departmental Liaison Meeting
MEWR	Ministry of the Environment and Water Resources
MFA	Ministry Of Foreign Affairs
MFM	Mass Flow Metering
MHA	Ministry of Home Affairs
MINDEF	Ministry of Defence
MINT	Maritime Innovation and Technology
MJOC	MINDEF Joint Operations Centre
MLC	Maritime Labour Convention
MLJ	Maritime Learning Journey
MLMS	Maritime Legislation Management System
MND	Ministry of National Development

ABBREVIATION	DESCRIPTION	ABBREVIATION	DESCRIPTION
MOF	Ministry Of Finance	SCCPL	Singapore Cruise Centre Pte Ltd
MOH	Ministry Of Health	SCDF	Singapore Civil Defence Force
MOT	Ministry of Transport	SCMA	Singapore Chamber of Maritime Arbitration
MOU	Memorandum of Understanding	SEC	Singapore Environment Council
MPA	Maritime and Port Authority of Singapore	SEC-CDL	Singapore Environment Council-City Developments Ltd
MPAA	MPA Academy	SERC	Science and Engineering Research Council
MPF	Maritime Policy Forum	SG	Shipping
MSC	Maritime Safety Committee	SGX	Singapore Exchange
MSF	Ministry of Social and Family Development	SIBCON	Singapore International Bunkering Conference
MSGI	Maritime Singapore Green Initiative	SISC	Service Excellence and Innovation Steering Committee
MSI	Maritime Sector Incentive	SIT	Singapore Institute of Technology
MSI-AIS	Maritime Sector Incentive- Approved International Shipping	SLA	Singapore Land Authority
MSI-ML	Maritime Sector Incentive-Maritime Leasing	SLNG	Singapore LNG Corporation
MSJCE	Malaysia-Singapore Joint Committee Environment	SM	Senior Management
MSM	Ministerial Staff Meeting	SMA	Singapore Maritime Academy
MTI	Ministry of Trade and Industry	SMD	Safe Manning Document
MVV	Mission, Vision and Values	SMF	Singapore Maritime Foundation
NEA	National Environment Agency	SMI	Singapore Maritime Institute
NGO	Non-Governmental Organisation	SMM	Senior Management Meeting
NGP	Next Generation Port	SMU	Singapore Management University
NMSSC	National Maritime Safety at Sea Council	SMW	Singapore Maritime Week
NRF	National Research Foundation	SOLAS	Safety of Life at Sea
NTU	Nanyang Technological University	SP	Singapore Polytechnic
NUS	National University of Singapore	SPF	Singapore Police Force
OSDC	One Stop Document Centre	SPRING	Standards, Productivity and Innovation Board
PCG	Police Coast Guard	SQU	Service Quality Unit
PEC	Pilot Exemption Certificate	SRS	Singapore Registry of Ships
PEP-SBF	Pro-Enterprise Panel – Singapore Business Federation	SSA	Singapore Shipping Association
PER	Pro-Enterprise Ranking	SSS	Staff Suggestion Scheme
P&I	Protection and Indemnity	STCW	Convention on Standards of Training, Certification and Watch- keeping for Seafarers
POCC	Port Operations Control Centre	SUTD	Singapore University of Technology and Design
PP	Port Policy	TBS	Total Business Spending
PPT	Pasir Panjang Terminal	TCTP	Total Company Training Plan
PS	Port Services	TEU	Twenty Foot Equivalent Unit
PSAC	PSA Corporation Ltd	TMSI	Tropical Marine Science Institute
PSAM	PSA Marine	TN	Technology
PSC	Port State Control	TSD	Training Standards Department
PSD	Public Service Division	TSP	Training Service Providers
PSDG	Permanent Secretary Director General	TSSPL	Tian San Shipping Pte Ltd
PT	Port	TTX	Table Top Exercise
PTMA	Port Master	UNCLOS	United Nations Convention on the Law of the Sea
PTMS	Port Traffic Management System	UNCTAD	United Nations Conference on Trade and Development
PUB	Public Utilities Board	URA	Urban Redevelopment Authority
QMS	Quality Management System	VHF	Very High Frequency
QSM	Quality Service Manager	VRV	Variable Refrigerant Volume
RI	Research Institute	VTIS	Vessel Traffic Information System
RIC	Research and Innovation Centre	WAVeS	Wednesdays Are Very Special
RMG	Raffles Medical Group	WDA	Workforce Development Agency
RMT	Review of Maritime Transport	WEF	World Economic Forum
ROCE	Return on Capital Employed	WIT	Work Improvement Team
R&D	Research & Development	WLH	Work Life Harmony
RSN	Republic of Singapore Navy	WOG	Whole-of-Government
SAP	Systems, Applications and Products	WOW	Well-on-Worklife
SAR	Search and Rescue	WSQ	Workforce Skills Qualifications
SAREX	Search And Rescue Exercise		
SC	Singapore Customs		



MPA  
SINGAPORE

460 Alexandra Road #19-00  
PSA Building Singapore 119963

[www.mpa.gov.sg](http://www.mpa.gov.sg)