



109<sup>TH</sup> ANNUAL  
CONFERENCE

# Cost-effective digitalisation for small ports **THE FIJI EXPERIENCE**



**VAJIRA PIYASENA**  
Chief Executive Officer



**FIJI PORTS CORPORATION PTE LTD**  
*The Smart, Green Gateway for Trade in the Pacific region*



## CORPORATE PROFILE

FIJI PORTS

## DIGITALISATION FOR SMALL PORTS

PACIFIC CONTEXT

## COST-EFFECTIVE DIGITALISATION AT FPLC

CASE STUDY

## RECOMMENDATIONS FOR SMALL PORTS





# CORPORATE PROFILE

FIJI PORTS



# ABOUT FPCL



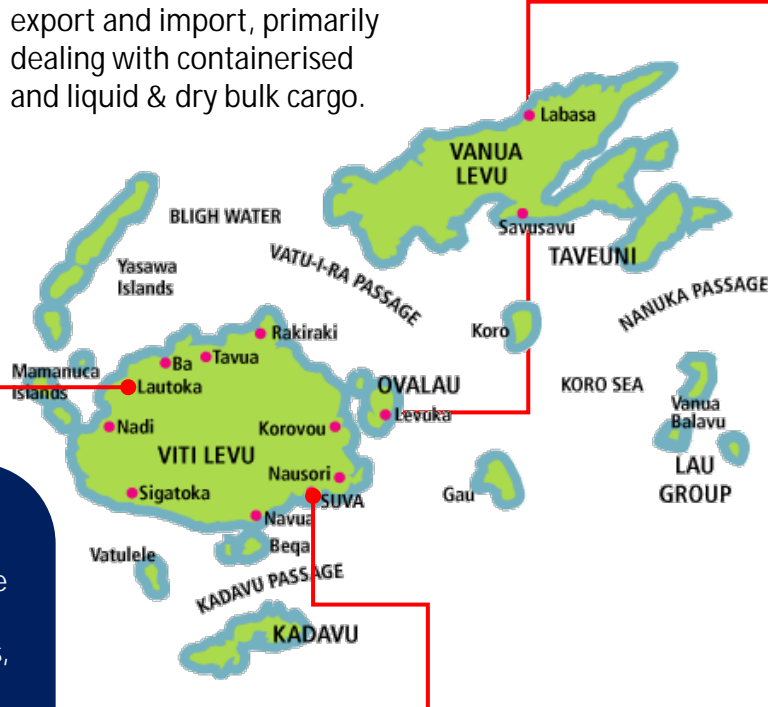
## PORT OF LAUTOKA

Has an 11m deep berth, handles 40% of Fiji's total export and import, primarily dealing with containerised and liquid & dry bulk cargo.



## PORT OF LEVUKA

A fishing port with a 12m deep berth, it handles a minor 0.22% of the total cargo, primarily dealing with frozen fish for a government-owned tuna canner and some liquid bulk.



## PORT OF SUVA

This port has a 12m deep berth, and is Fiji's primary port, handling 60% of all cargo, with a majority being containerised, followed by liquid & dry bulk, and a minor part non-containerised.

As a Port Management Company, Fiji Ports also oversees the operations and International Ship and Port Facility Security (ISPS) requirements for Fiji's secondary ports



Wairiki



Vuda



Malau



The Fiji Ports Corporation Limited (FPCL), originally established as the Ports Authority Fiji (PAF) in 1975, underwent two significant reforms, first in 1998 dividing it into the Maritime and Ports Authority of Fiji and Ports Terminal Limited, and then in 2005, resulting in its current form as FPCL, with the goal of streamlining and improving efficiency in Fiji's port operations.



# ABOUT FPCL

**FY 18 – FY 22**

**TOTAL VESSELS (EXCL FISHING)**  
4,316

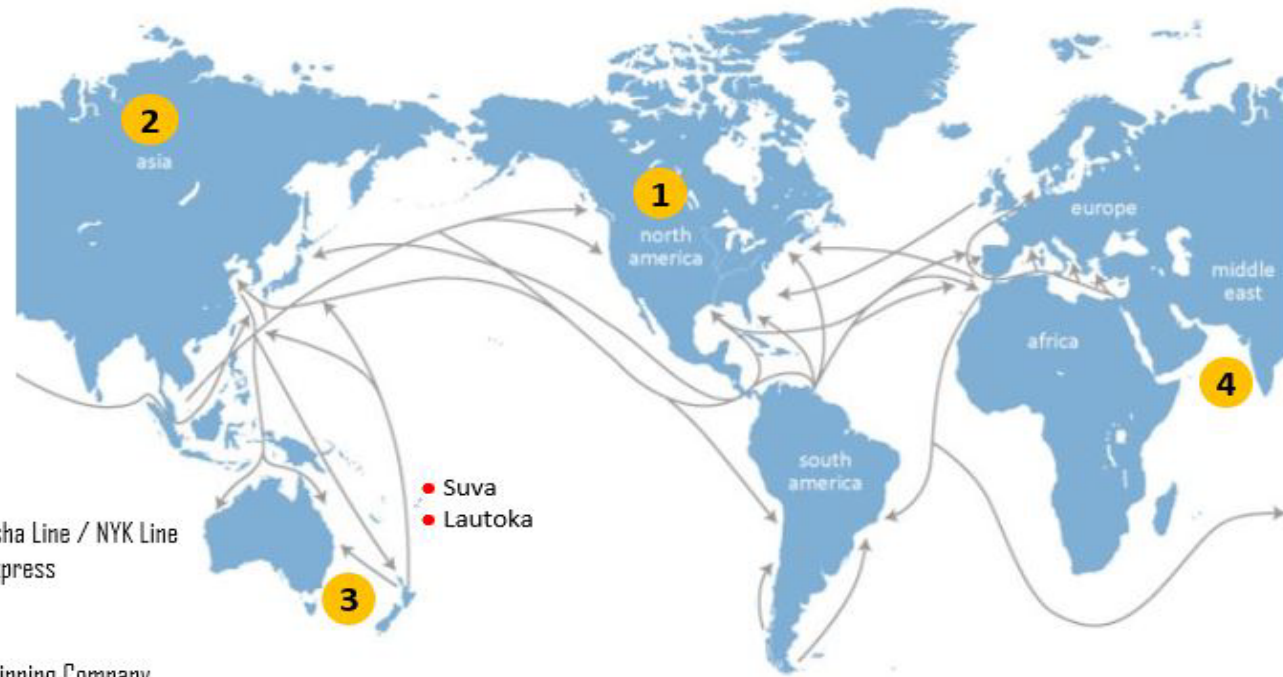
**FISHING VESSELS**  
3,221

**TOTAL GRT**  
73,925,822

**CRUISE VESSELS**  
185

**23 SHIPPING LINES**

- Pacific Direct Line
- Cooltainer
- Cosco Shipping Line
- Moana Shipping
- Pacific International Line
- Compaigne Mamage Line/CMA CGM
- Australian & New Zealand Line
- Pacific Forum Line
- Sofrana Unilines
- American President Lines
- Neptune Shipping Line
- Matson Shipping Line
- Swire Shipping Line
- Amarcup Shipping Line
- Maersk Line
- Hamburg Sud
- Hapag Lloyd
- Nippon Yusen Kaisha Line / NYK Line
- Ocean Network Express
- Mitsui DSK Line
- Kyowa Line
- Mediterranean Shipping Company
- P&O



**300+**  
**VESSEL ARRIVALS  
IN A YEAR**

**10 SHIPPING AGENTS**

**4 CONTINENTS**

- |                               |                                |
|-------------------------------|--------------------------------|
| • Campbell Shipping           | • Swire Shipping Services      |
| • Neptune Pacific Direct Line | • Carpenters Shipping Services |
| • Transam Shipping            | • Oceania Agencies             |
| • Coral Sea Shipping          | • Shipping Services Fiji Ltd   |
| • Williams & Gosling          | • Manz Shipping                |

- 1 North America
- 2 Asia
- 3 Oceania
- 4 Indian Subcontinent





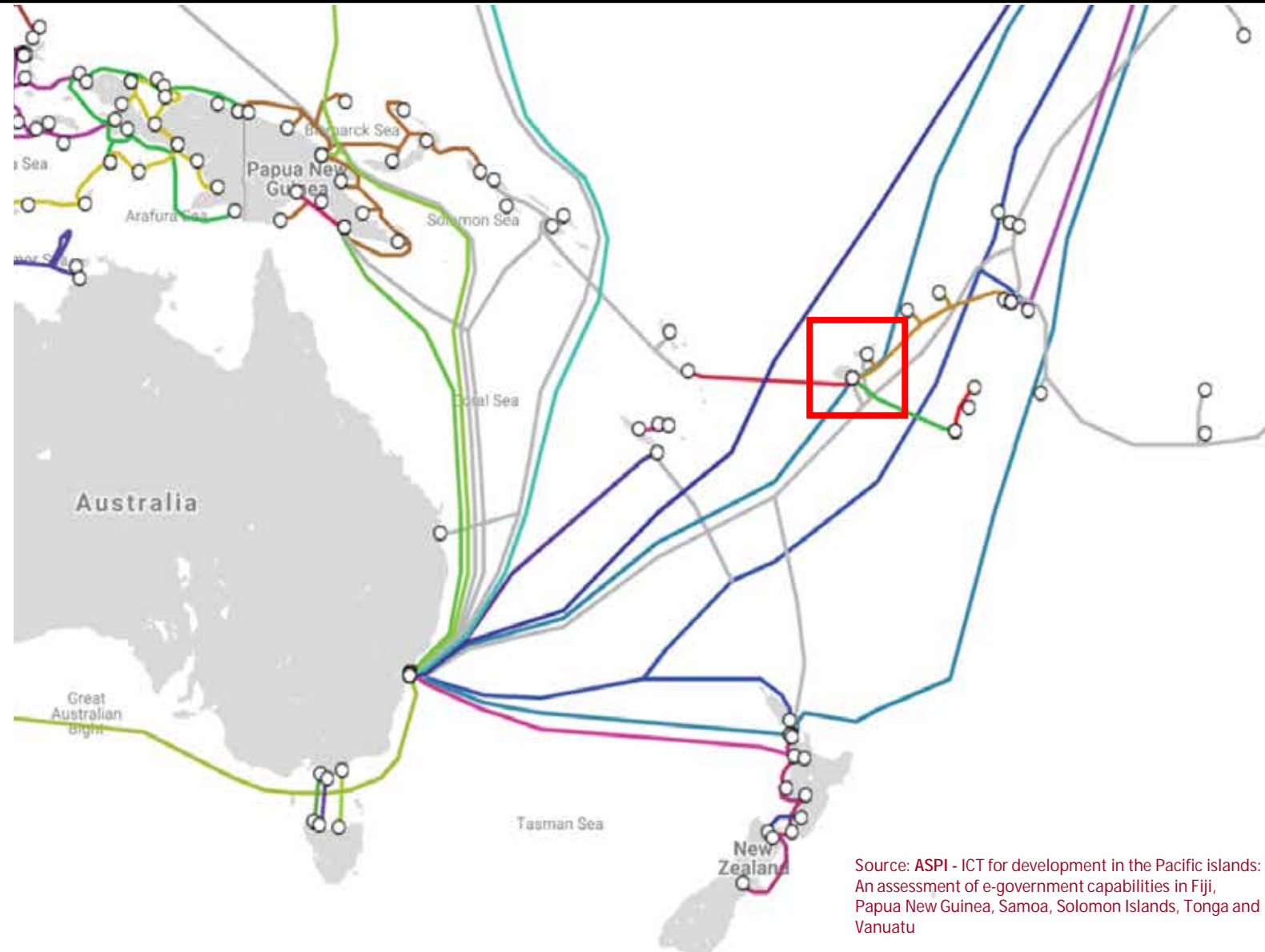
# DIGITALISATION FOR SMALL PORTS

PACIFIC CONTEXT



# ICT INFRASTRUCTURE IN PACIFIC SMALL ISLAND DEVELOPING STATES

- The Pacific Island states' digital journey started in the early 2000s, marked by significant ICT advancements and infrastructure development.
- Despite increased connectivity, challenges like high internet costs, dependence on foreign data services, and the need for rural electrification persist.
- The current e-government strategy in the Pacific focuses on user-centric services, digital identities, unified e-government platforms, and cybersecurity investments.
- There's a need for enhanced regional cooperation in ICT developments amidst apparent intra-regional competition to lead in this field.



Source: ASPI - ICT for development in the Pacific islands: An assessment of e-government capabilities in Fiji, Papua New Guinea, Samoa, Solomon Islands, Tonga and Vanuatu



# CHALLENGES FACED BY SMALL PORTS

-  **Economic Constraints**
  - Small ports often face financial limitations that significantly hinder their capacity to develop, maintain, and modernise infrastructure, thereby affecting operational efficiency and safety.
-  **Need for Sustainable Development**
  - Balancing sustainable growth requirements (i.e., environmental conservation, social responsibility, innovation, and climate change mitigation) with economic development presents a multifaceted challenge for small ports.
-  **Resource & Technological Alignment**
  - Small ports grapple with aligning progress with available resources, balancing the need to adopt advanced technologies and effectively use existing infrastructure.
-  **Competitive Pressure from Larger Ports**
  - Small ports face stiff competition from larger ports which benefit from economies of scale, superior connectivity, and well-established relationships, making it difficult to attract and retain clients.
-  **Bureaucratic Challenges & Regulatory Compliance**
  - Navigating complex regulatory frameworks, bureaucratic procedures and ensuring compliance with safety, security, and environmental regulations pose considerable administrative and financial challenges for small ports.
-  **Human Resource Limitations**
  - Constraints in human resources, including limited staffing and lack of skilled labour, can impede the efficiency and effectiveness of critical port operations, like vessel scheduling, cargo handling, and customer service.





# CHOOSING THE RIGHT WAY FORWARD

	ERP SYSTEMS	vs	SMALL IN-HOUSE DIGITALISATION PROJECTS
	Comprehensive software solutions integrating various business functions		Individual digital solutions tailored to specific needs or processes.
ADVANTAGES	Centralised data management, standardised processes, improved efficiency, and scalability.		Flexibility in implementation, cost control, and ability to address specific business needs.
DISADVANTAGES	High upfront costs, complex implementation, and significant resources required for customisation and training.		Integration issues leading to data silos, operational inefficiencies, and potential challenges in scalability.

## ASK YOURSELF

- **Strategic Alignment & Goals:** Does our digitalisation strategy align with our broader business objectives and enhance customer experience?
- **Change Management & Resources:** How will we manage the impact of digital transformation on our employees and processes, and do we have the necessary resources and expertise to drive this transformation?
- **Data Security & Technology Integration:** What steps will we take to ensure data security, and how do we plan to integrate new digital technologies with our existing systems to maintain efficiency?
- **Scalability, Evaluation & Budget:** How will we ensure our digital solutions are scalable, monitor success and make necessary adjustments, and plan to budget for this transformation and control costs?
- **Long-term Commitment:** Are we ready for the long-term commitment and cultural shift that digital transformation requires?



# COST-EFFECTIVE DIGITALISATION INITIATIVES

## CLOUD-BASED PORT MANAGEMENT SOLUTIONS

- Utilising cloud systems for process automation and operational optimisation (i.e., Revenue Automation)
- Implementing real-time data sharing (i.e., via platforms like Office 365, SharePoint)
- Developing in-house applications (i.e., berthing app)

## STAKEHOLDER ENGAGEMENT

- Regularly engaging with various stakeholders (i.e., government agencies, shipping lines & agents)
- Establishing data-sharing MoUs, system integration, and efficient communication to optimise productivity and cost-efficiency.

## WORKFORCE EMPOWERMENT & SKILL DEVELOPMENT

- Promoting digital literacy through tailored training programs (i.e., Percipio)
- Empowering staff to effectively utilise digital tools (i.e., ESS, Teams, and Video Conferencing)

## CYBERSECURITY EMPHASIS

- Adopting cybersecurity measures to safeguard infrastructure, data, and systems
- Implementing Email and Endpoint Security measures for threat protection
- Exploring comprehensive security protocols, routine audits, and employee education

## GRADUAL & STRATEGIC SCALING

**PILOT PROJECTS:** Testing and validating digital solutions in smaller, controlled settings such as CCTV upgrades, VTMS, or revenue automation.

**PHASED IMPLEMENTATIONS:** Gradual rollout of technologies for risk minimisation, allowing for adjustments and course correction based on feedback and real-world challenges.

**PRIORITISED IMPROVEMENTS:** Identifying and allocating resources to areas most benefit from digitalisation, promoting a steady pace of change.

**SCALING UP:** Expanding successful digital initiatives across the organisation iteratively, leveraging lessons learned from the pilot and initial phases.



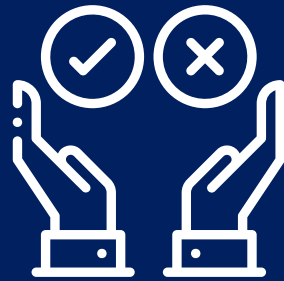
# THE BENEFITS OF COST-EFFECTIVE DIGITALISATION

## OPERATIONAL EFFICIENCY & COST REDUCTION



Digitalisation reduces manual errors, enhances productivity, and manages cargo flow with real-time tracking, which leads to better use of storage space and resources. This increased efficiency translates to cost savings.

## IMPROVED DECISION-MAKING & TRANSPARENCY



Access to accurate, real-time data supports better decision-making and improves transparency with stakeholders, facilitating clear and accurate communication.

## ENHANCED SERVICE DELIVERY & COMPETITIVE ADVANTAGE



Faster processing times and better communication via digital tools improve customer service and satisfaction. This improved customer experience and the adoption of modern technology enhance the port's competitiveness.

## ENVIRONMENTAL SUSTAINABILITY & RESILIENCE IN CRISES



Digitalisation promotes environmental sustainability by reducing fuel consumption and using paper. Additionally, digitised systems are more resilient to disruptions, facilitating business continuity during crises.

## SECURITY & COLLABORATION



Digitalisation enhances data and transaction security and promotes collaboration through easy data sharing between different departments or ports.



# COST-EFFECTIVE DIGITALISATION AT FPLC

CASE STUDY



# FPLCs INFORMATION SYSTEM STRATEGIC PLAN

As part of Fiji Ports' 5-Year Strategic Plan, technology was identified as one of the key strategic goals to "Adopt Smart Port initiatives to achieve best practice in International Port Security and safe working environment".

The objectives are embedded in Fiji Ports' Information Systems Strategic Plan with the vision of being the business enabler on the digital frontier, aiding Fiji Ports to implement **SMART PORT INITIATIVES**.

## STRATEGIC DRIVERS

### Financial Drivers

- Revenue growth
- Profitability
- Cash flow

### Customer Drivers

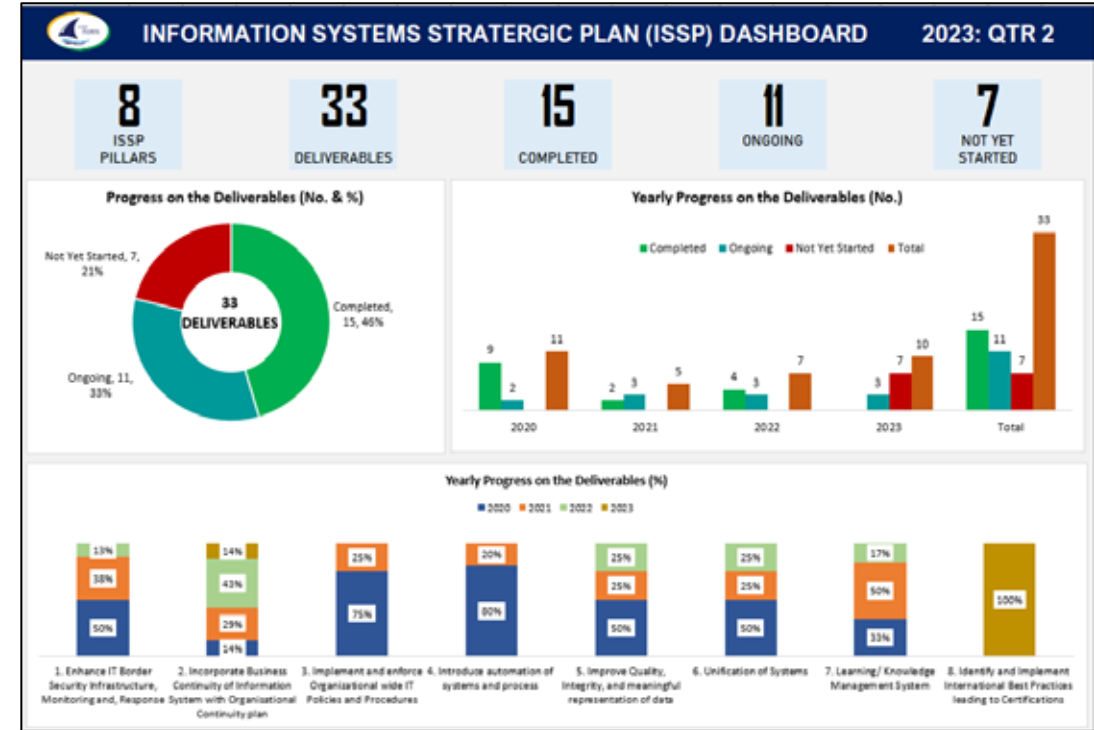
- Customer satisfaction
- Customer acquisition
- Customer retention

### Operational Drivers

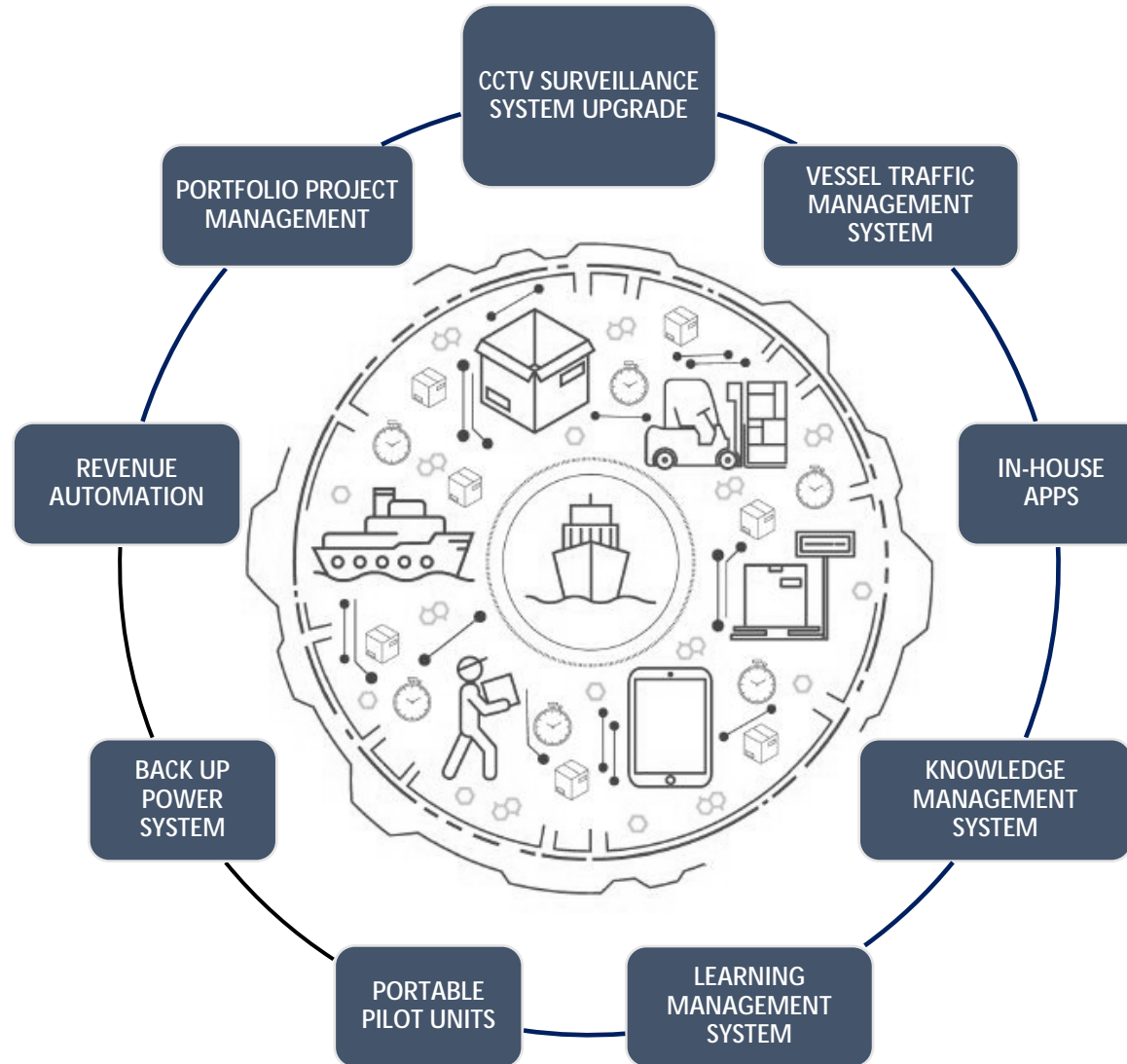
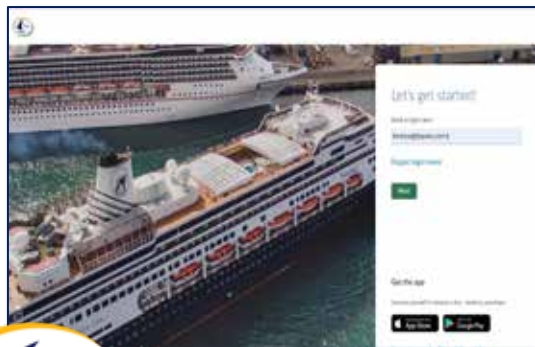
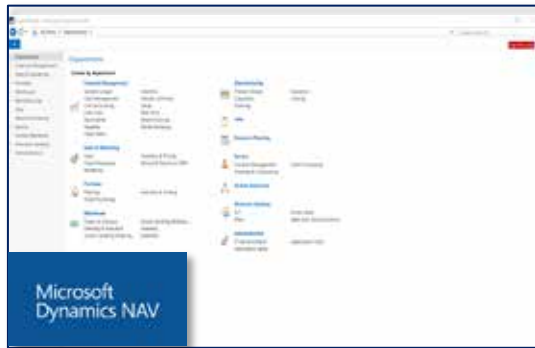
- Service or Product quality
- Operational efficiency
- Supply chain management

### Organisational Drivers

- Leadership
- Communication
- Team dynamics



# SMART PORT INITIATIVES



# ENHANCING DIGITAL CONNECTIVITY & COMMUNICATION

## ENHANCING DATA EXCHANGE AND COLLABORATION AT FPLC

**Modernising Network Equipment:** Upgrading network and firewall equipment to meet industry standards, enhancing security and compliance.

**Enhancing Communication:** Integration of higher bandwidth and Software-Defined Wide Area Network (SD-WAN) connectivity to facilitate advanced communication and stable connections.

**Reliable Internet Connectivity:** Ensuring continuous and dependable Internet connectivity as the backbone of seamless workflow and collaboration.

**Robust Network Infrastructure:** Investment in a robust network infrastructure to support ongoing digitalisation efforts, empowering the organisation to thrive in the digital landscape.

**Efficient Data-Sharing Platforms:** Implementation of secure and efficient data-sharing platforms is critical for internal collaboration and effective teamwork.



## THE IMPACT OF DIGITAL CONNECTIVITY ON COST-EFFECTIVE DIGITISATION

**Driving Progress & Innovation:** Focusing on advancing digitalisation to stimulate growth and creativity within the industry.

**Investment in Cost-Effective Technologies:** Utilising VTMS, CCTV upgrades, and Revenue Automation to enable real-time data exchange, remote monitoring, and coordinated port activities.

**Reducing Costs:** Achieving significant cost reduction through optimised logistics, enhanced vessel scheduling, and efficient allocation of resources, all supported by digital connectivity.



# ENHANCING DIGITAL CONNECTIVITY & COMMUNICATION

## CORE APPLICATIONS

- Financial Management
  - MS Dynamics - Nav
- HR and Payroll
  - MYOB PayGlobal
  - Employee Self-Service - HR access
- Learning Management
  - Percipio
- Vessel Management
  - Vessel Traffic Management System
- Threat Management
  - Mimecast - Email Security
  - Endpoint Security - ESET
  - Fortinet - Firewall
- Cloud Services
  - Azure and O365 Platform
- Project Management
  - MS Project: Project Management
- Maintenance and Support
  - Service Desk - Support
  - Maintenance Management – CARL
  - Solar Edge: Solar PV System Monitoring
  - AutoCAD – Design & Drafting
  - SPACE GASS – Structural Engineering

## IN-HOUSE APPS

- Vessel Berthing Application
- Derelict Vessels Reporting
- Logistics Request
- FPCL Vaccination
- ICT New User Request
- Maintenance Request (now replaced by CARL)
- Project Assigning
- Office Supplies Request
- OHS – PPE Request
- Training Needs Request
- Transport Request
- Vessel Information (now replaced with VTMS)

### Apps were developed in-house to

- Improve and simplify business processes
- Increase operational efficiency
- Maintain monitoring and reporting of work/tasks

## FUTURE COLLABORATIONS

- Service Now – Enterprise Resource Planning



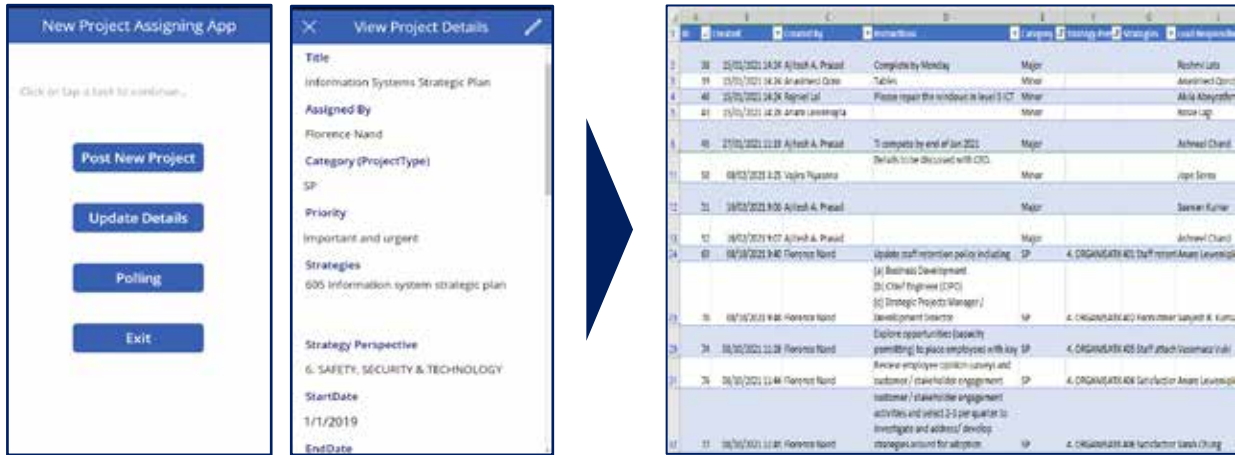


# PROJECT ASSIGNING APP

Projects are delegated by Management & Supervisors through an in-house developed Project Assigning App.

Benefits include:

- **Enhanced Communication and Collaboration:** Fosters improved teamwork and information sharing among team members.
- **Efficient Resource Management:** Enables optimal allocation and utilisation of resources, aligning them with project needs.
- **Effective Deadline Setting & Progress Tracking:** Facilitates the establishment of clear deadlines and continuous monitoring of project progress, ensuring timely completion.

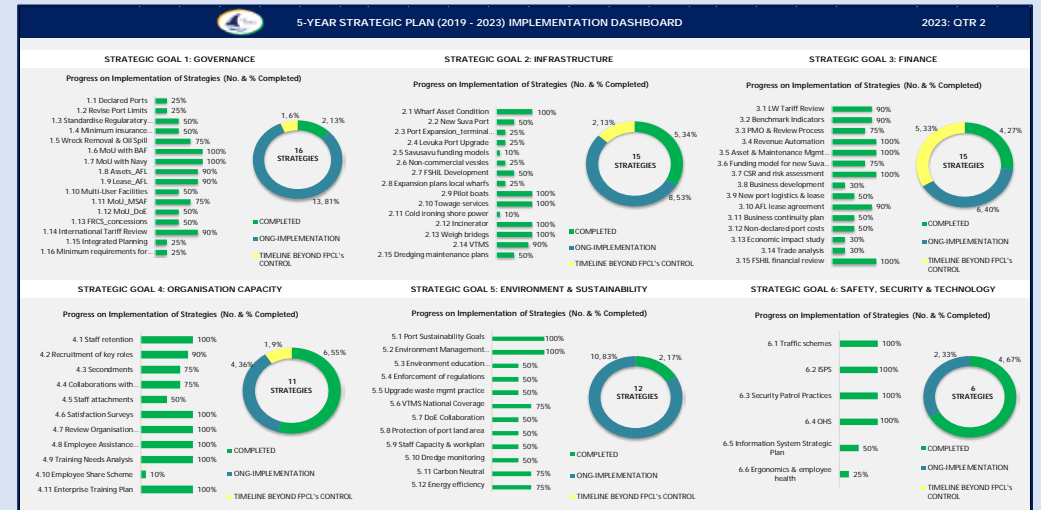


App entries are stored in a centralised database

# ROLLED-UP VIEW OF STRATEGY IMPLEMENTATION PROGRESS

**Holistic View:** A rolled-up dashboard view consolidates key project information into one unified view, allowing executives and managers to quickly grasp overall project status, aiding in strategic decision-making.

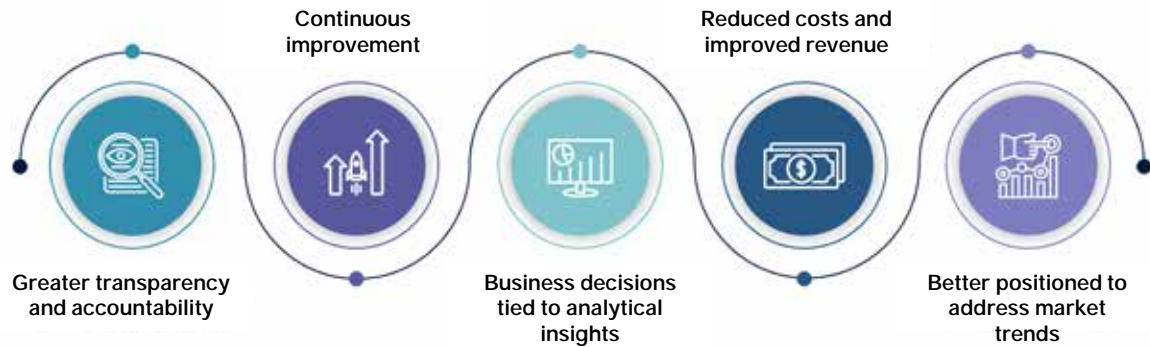
**Real-Time Insights:** The dashboard's real-time updates enable immediate identification of trends or issues, allowing for proactive measures to keep projects on track.



# DATA ANALYTICS & PREDICTIVE MAINTENANCE

## LEVERAGING DATA-DRIVEN DECISION-MAKING

- Established a **Business Information Unit** within the organisational structure, facilitating data analysis and driving informed decisions.
- Conducted **benchmarking** against international, regional, local companies, and ports, enhancing competitive positioning through data insights.
- Utilised **dashboards** for interpreting, analysing, monitoring, and reporting port activities, supporting continuous data-driven improvements.
- Employed **Portfolio Project Management software** for monitoring and reporting, allowing data-centric project oversight.
- Implemented **CARL Maintenance software** for maintenance work monitoring, enabling data-driven maintenance management.



## DATA ANALYTICS AT FIJI PORTS



### Supply Chain Management

- Vessel Berthing Application

### Vessel Routing Optimisation

- VTMS
- CCTV
- Vessel Berthing Application

### Resource Allocation

- Portfolio Project Management
- Project Assignment App





# RECOMMENDATIONS FOR SMALL PORTS



# LEARNINGS FROM THE FIJI EXPERIENCE

## ASSESSMENT & STRATEGY DEVELOPMENT

- Conduct a comprehensive digital readiness assessment to evaluate current capabilities.
- Develop a clear digitalisation strategy, outlining goals, objectives, and a tailored roadmap.

## STAKEHOLDER ENGAGEMENT & COLLABORATION

- Engage stakeholders and secure their buy-in through open communication.
- Collaborate with other ports, fostering relationships and sharing best practices.

## INITIATE & MONITOR PROJECTS

- Start with pilot or small-scale projects, assessing feasibility and risks.
- Monitor progress, evaluate outcomes, and adapt strategies as needed.

## DATA MANAGEMENT, SECURITY & INNOVATION

- Focus on robust data governance, compliance, and security protocols.
- Promote a culture of innovation, encouraging creative thinking.

## INVESTMENT IN TRAINING & TECHNOLOGY

- Invest in targeted training and upskilling to enhance digital literacy.
- Measure ROI to ensure alignment with objectives.

## CONSIDERATION OF SUSTAINABILITY & COMMUNITY IMPACT

- Incorporate sustainability principles and assess potential societal impacts.



# PACIFIC PORTS VISION 2030-2050 RECOGNITION FRAMEWORK

Some digitalisation projects can be initialised to make progress against the newly introduced Pacific Ports Vision 2030-2050 Recognition Framework.



#### ABSTRACT

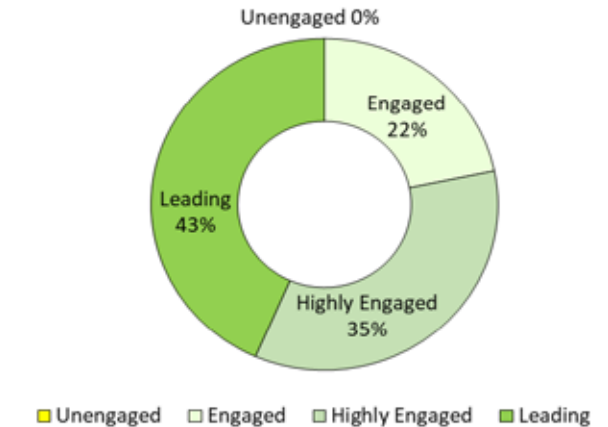
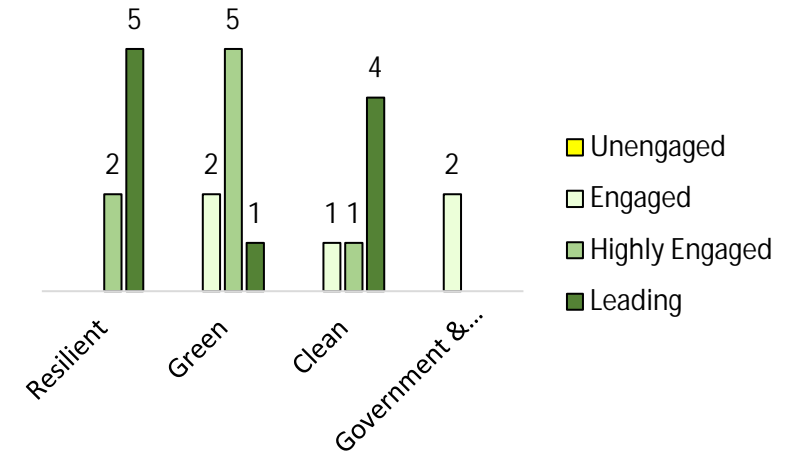
The draft Pacific Ports Vision 2030-2050 Recognition Framework has been developed to help Pacific ports become more resilient, greener, and cleaner. The Framework defines the terms "resilient", "green", and "clean", identifies the dimensions of each, and then identifies long-term objectives for each dimension. Each objective has performance indicators, which can be used to assess the level of a port's performance, from unengaged through to leading. The Framework also suggests pathways for ports to follow to assist their progression and commitment to the long-term objectives.

This Recognition Framework is accompanied by the Recognition Indicators document, which provides a concise overview that ports can use to track their progress to becoming resilient, green, and clean.

Cover image: An aerial view of the Port of Suva. Credit: Fiji Ports Corporation Limited.



PACIFIC PORTS VISION 2030-2050 RECOGNITION INDICATORS	
Indicator	FPCL's Status
<b>RESILIENT</b>	
1 Climate change adaptation	Leading
2 Disasters and emergency response	Leading
3 Cybersecurity	Highly Engaged
4 Support for economic development and operational efficiency	Leading
5 Compliance with international standards: Security	Leading
6 Compliance with international standards: Safety	Leading
7 Compliance with international standards: Data exchange	Highly Engaged
<b>GREEN</b>	
<b>Climate Change Action</b>	
8 Carbon neutrality	Engaged
9 Leadership	Highly Engaged
10 Measurement and monitoring	Highly Engaged
11 Execution	Leading
<b>Energy Efficiency</b>	
12 Awareness	Highly Engaged
13 Execution	Highly Engaged
<b>Incentivizing and enabling green shipping</b>	
14 Engagement	Engaged
15 Implementation	Highly Engaged
<b>CLEAN</b>	
16 Water quality	Engaged
17 Marine spills	Leading
18 Waste management	Leading
19 Community and neighbourhood relations	Leading
20 Dredging and coastal hydrology	Highly Engaged
21 Environmental engagement and compliance	Leading
<b>GOVERNMENT &amp; STAKEHOLDERS</b>	
22 Government	Engaged
23 Stakeholders	Engaged





# THANK YOU

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# 5 YEAR STRATEGIC PLAN

The 5-Year Strategic Plan (2019-2023) encompasses six key **Strategic Perspectives (SP)** that will be the **Road Map** for the future

SP 1



GOVERNANCE

SP 2



INFRASTRUCTURE

SP 3



FINANCE

SP 4



ORGANISATION  
CAPACITY

SP 5



ENVIRONMENT &  
SUSTAINABILITY

SP 6



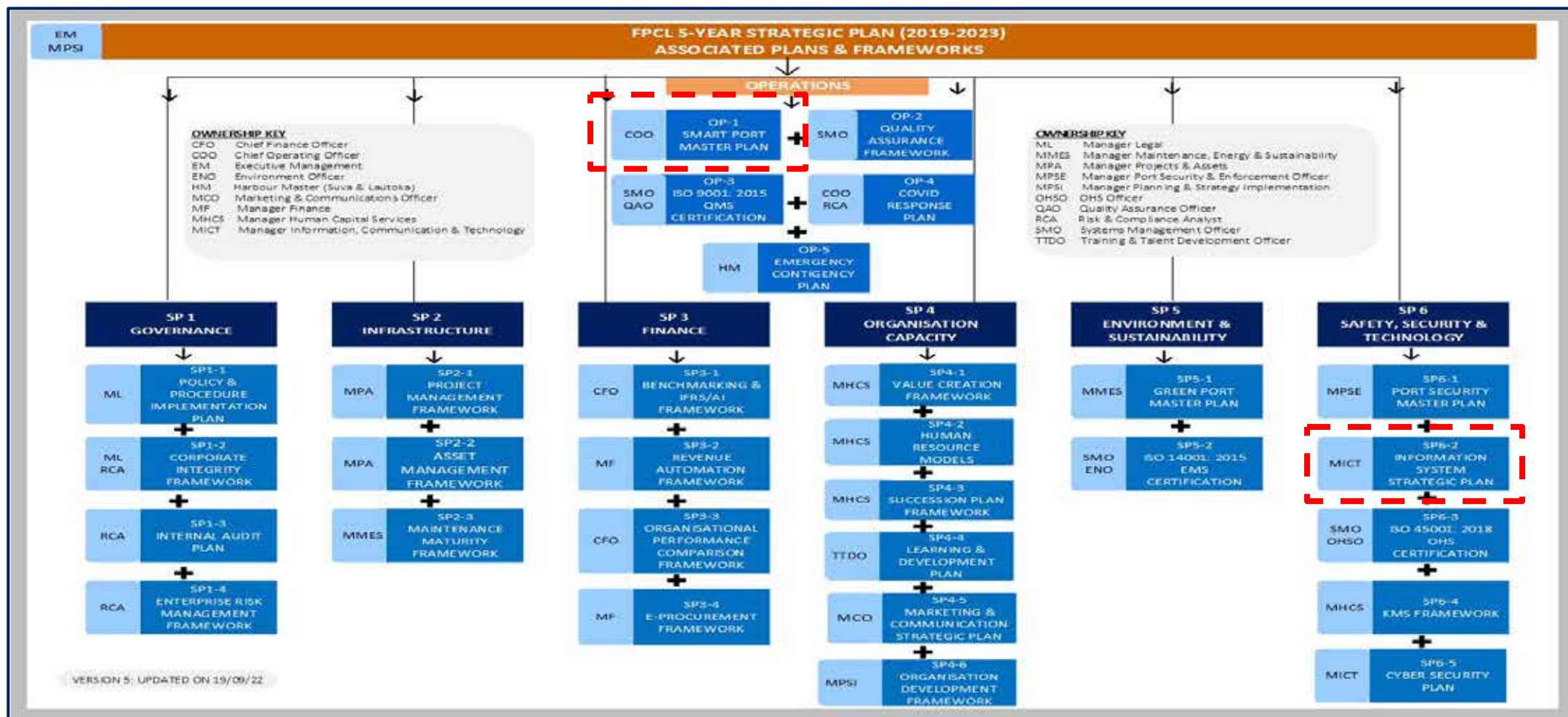
SAFETY, SECURITY &  
**TECHNOLOGY**





# ASSOCIATED PLANS & FRAMEWORKS

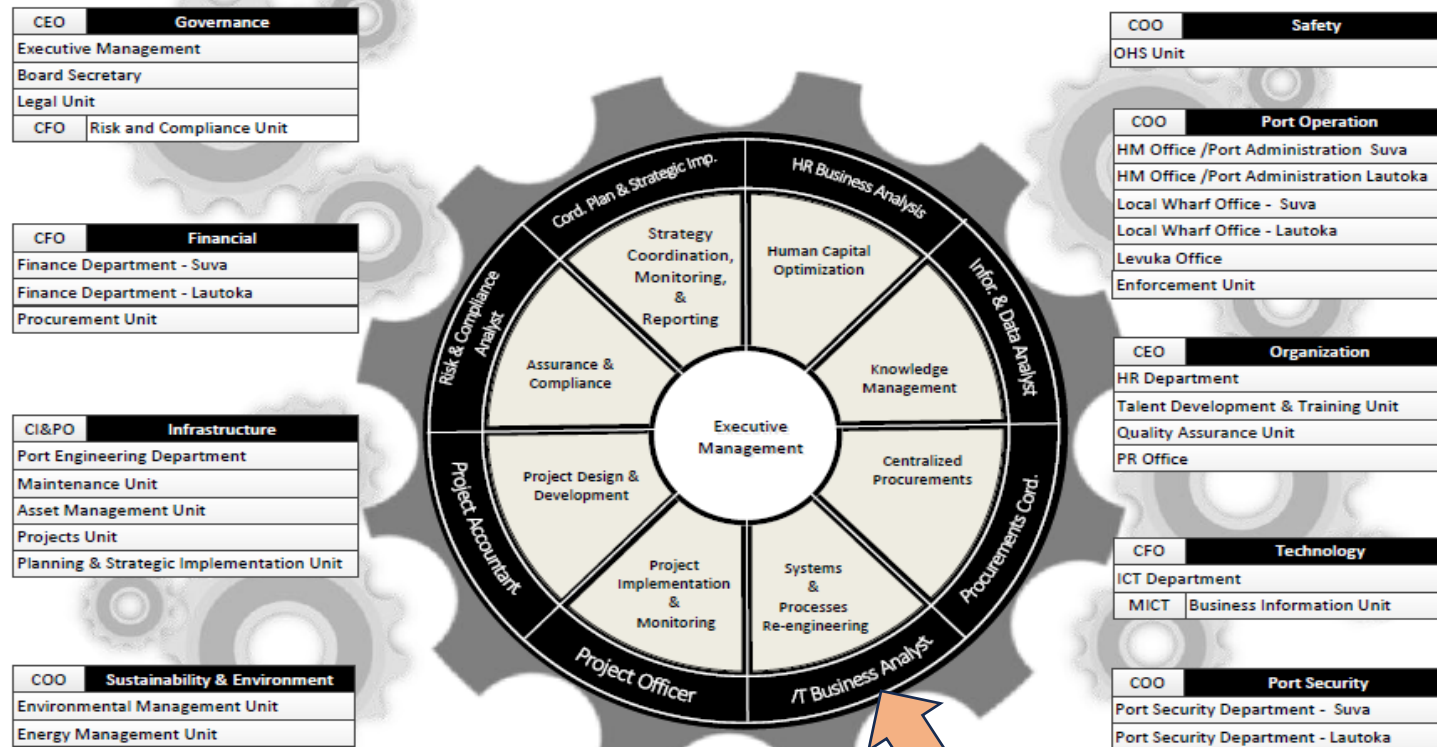
29 Associated Plans & Frameworks derived from the 5-Year Strategic Plan are put in place for Effective Implementation at an Operational Level



# ORGANISATION STRUCTURE & STRATEGY EXECUTION

All Depts and Units are **Aligned** to Strategic Perspectives linked to **75 Strategies** and we have Created an **Innovative Strategy Execution Mechanism**.

ORGANIZATION STRUCTURE & STRATEGY EXECUTION AT FPCL



ICT Business Analyst



# KEY FOCUS AREAS

FPCL'S focus on 4 Key Areas for Charting a Smart, Green Pathway – introduced in 2022 and continuing in 2023

## VALUE CREATION



INFRASTRUCTURE & PEOPLE

IMPROVEMENT OF FACILITIES

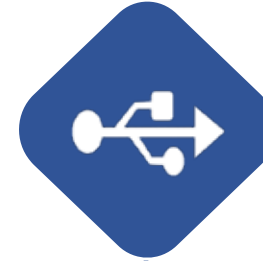
## SUSTAINABILITY



GREEN PORT MASTER PLAN

INITIATIVES AND ACHIEVEMENTS

## DIGITAL TRANSFORMATION



INFORMATION SYS. STRAT PLAN

SMART PORT INITIATIVES

## WORK-LIFE BALANCE



LEARNING MANAGEMENT

WELLBEING AND MENTAL HEALTH

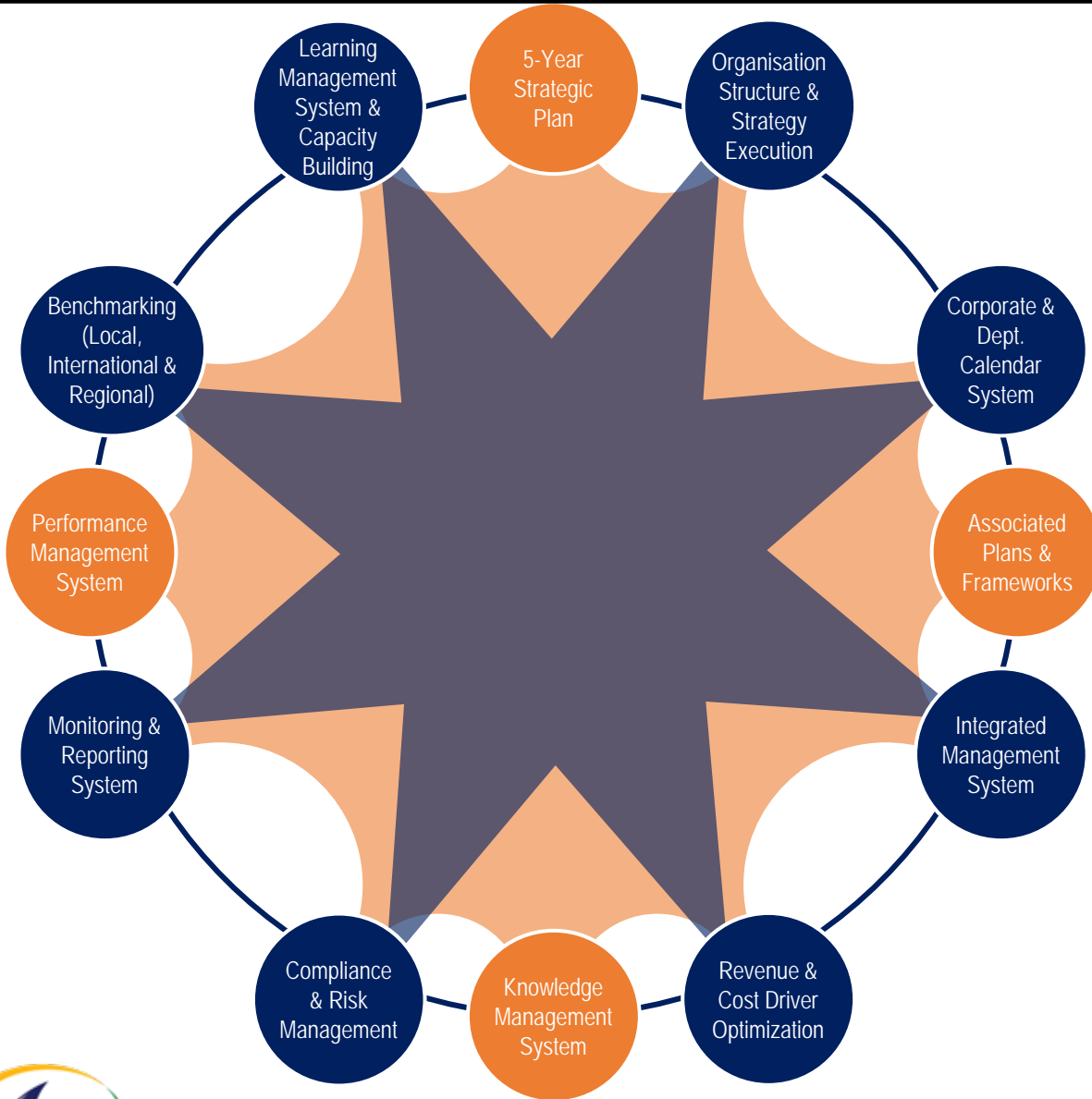
A. Resilient

B. Clean

C. Green



# FUTURE FOCUS - CREATING SYNERGY



The **Interconnectivity** between the organisation's major Strategic Initiatives/Elements **Creates Synergy** capable of moving us to the next level



# LINKING PERFORMANCE MANAGEMENT SYSTEMS WITH STRATEGIC INITIATIVES & FRAMEWORKS

FPCL has Developed and Implemented an Innovative Performance Management System to measure Value Creation by Employees.



Strategic Plan

Strategic Plan (SP) and Performance Measurement Tool (PMT) are directly linked under the Value Creation categories to employee performance relating to the implementation of SP projects is extensively measured.

Org. Structure & Strategy Execution

Individual JD's and detailed JD's of employees are directly linked to strategic objectives of Depts/Units, while Organisation Structure encompasses all Depts/Units.

Calendar

Dept Calendars will provide information relating to activities planned by Depts/Units/individual employees, and the timelines of these plans form the basis of Performance Assessment.

Associated Plans & Frameworks

PMT encompasses the achievements of projects connected to all Associated Plans & Frameworks (HOD's have been given the ownership of various Plans & Frameworks).

IMS

PMT is designed also to measure employees' performance linked to compliance/non-conformities/improvements relating to the implementation of IMS/Certification.

Revenue & Cost Driver Optimisation

In PMT, minimising costs and generating revenue are measured under the Shareholder Value Creation category.

KMS

PMT also captures employee's compliance relating to updating of company Intranet that encompasses the KMS.

Compliance & Risk Mgmt

PMT is designed to capture and measure employee's activities relating to Enterprise Risk Management/internal & external Audits.

Monitoring & Reporting System

Under the Internal Customer Value Creation category of PMT, how employees maintain the monitoring and reporting responsibilities are captured and measured (HOD's – designated employees have the direct responsibilities of updating dashboards).

Benchmarking

Once Management conducts the benchmarking exercise, a re-evaluation process takes place to review the PMS and address any high-level gaps (to raise the performance measurement levels).

LMS

Based on the results of individual performance measurement, further training development needs are directly addressed in the LMS (i.e. Training Needs Analysis Report).

