IT Taskforce Report - 2016

सत्यमेव जयते

Ministry of Shipping
Government of India

NEXT GENERATION PORT INFRASTRUCTURE

Technology Transformation for Integrated Port Operations

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सत्यमेव जयते

मंत्री सड़क परिवहन राजमार्ग एवं पोत परिवहन
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Foreword

India has a golden history of trade across seas. Genesis of the Indian maritime system dates back to the 3rd millennium BCE when inhabitants of the Indus valley initiated maritime trading contact with Mesopotamia. From pre-historic days to contemporary era, India has made great strides to meet the challenges posed by the global trading system. India has around 7516 kilometres long coast line, forming one of the biggest peninsulas in the world.

As we are progressing ahead and connecting decisively with the world markets, we clearly feel that Information and Communications Technology (ICT) is changing every facet of tour lives. It is changing the way we do business, the way we live and , more importantly, the way we learn. I am happy to note that our port authorities are making efforts to catch up with the new trends in port strategies that are emerging around the world. To compete with the global trading system, our port authorities should aggressively modify their nature and their role, acquiring more and more an active role in the governance of logistics systems and often adopting managerial and entrepreneurial behaviors. As a part of our Integrated Competitiveness Strategy, we must ensure strong domain based software components and sound infrastructure and Security Management Policies for rendering reliable services.

Having realized the potential and socio-economic significance of our Ports, I had constituted a Task Force which included experienced and reputed professionals from the industry and officials from my Ministries.

I am pleased to note that the Task Force through various rounds of meetings, brain storming, and field visits has completed its report and given the recommendations. I acknowledge the efforts of the members of the Task Force who took time out of their busy schedules to complete this report. I am sure the recommendations of the Task Force would pave the way for modernizing our port system for better efficiency, speed and delivery.

N Gadkari
(Nitin Gadkari)
Minister of Shipping

"It is not the strongest of the species that survives,
nor the most intelligent, but the one
most responsive to change."

Charles Darwin

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EXECUTIVE SUMMARY

There are many developed countries in today's world whose applications of ITS (Intelligent Transportation System) technologies for solving the transportation problems have reached to a fairly advanced level. India, though, being at a fairly nascent stage is developing and implementing such ITS solutions.

Our study and recommendations are structured in the following ways

(1) Section 2 provides with a brief highlight on the Ports in India and the importance of ports for the economy of a country

(2) Section 3 focuses on ITS technologies that are developed and implemented by the ports in Singapore and Rotterdam. We focused on these 2 ports as these are two of the leading ports and have used technology as an enabler for port operations. Our main focus has been to provide a governing structure for developing and implementing ITS technologies in Singapore; the system and process for a uniform approach towards implementation of solutions and the standards and protocols put in place for efficient communication and exchange of data.

(3) Section 6 focuses on the as-is situation in India and highlights the ongoing issues in the port sector.

(4) In Section 5, we have provided our recommendations.

(5) In Section 6, the road-map for implementation of the initiatives has been discussed.

Our main focus has been to provide a structure for developing and implementing ITS technologies in India. At the moment, the development and implementation of technologies are happening in an ad-hoc manner resulting in different standards and stages of implementation, ensuing that we have not been able to see productive outcomes out of such implementation.

The benefits of some of the measures that we have suggested are:

1) Creation of ITS department, development of ITS architecture, standards and protocols that will help in structuring our investments in transportation and delivering safe and effective transportation.

2) Smart Ports, which would help usher in optimization of space, personnel and traffic.

3) Single Window System, which would help in reducing transaction costs and logistics costs involved in the movement of cargo.

4) Technology implementation at the gates for processing will help reduce the delay in receiving and dropping of cargo.

5) Setting up an innovation / R&D fund will help drive innovation and an ecosystem for the maritime sector in India.

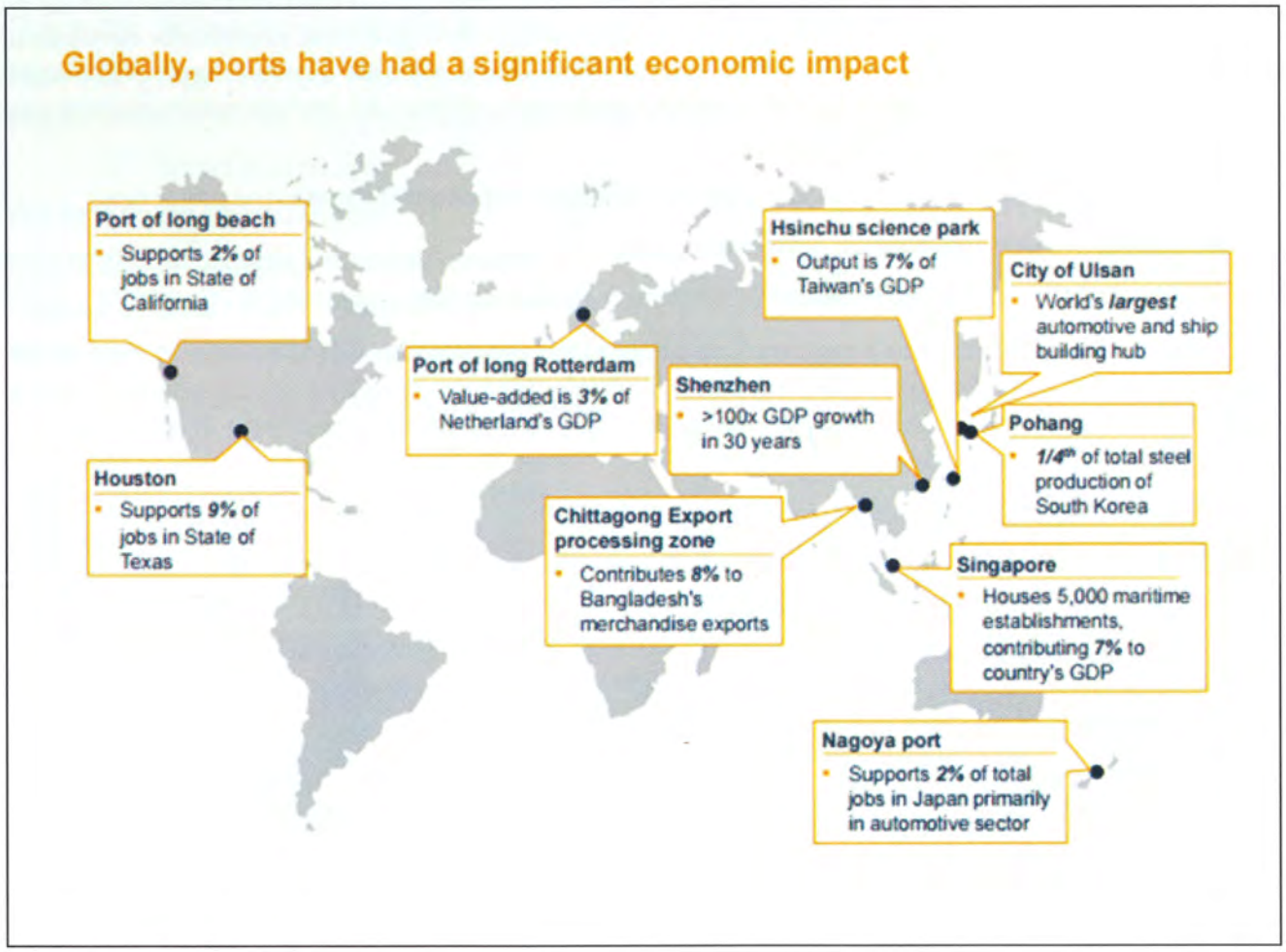
6) Standardization of messages, protocols, standards and processes will help in operational efficiency and increase productivity parameters of ports operations.

PORTS IN INDIA

Ports are essential for India's trade as they account for 95% of freight transport (in volume) and around 70% (by trade value). India has 212 ports of which 12 are major ports and the rest are non-major ports. Many of the non-major ports are small although 61 of the non-major ports handle cargo.

As has been demonstrated in numerous studies, port-led industrial growth has a significant impact on a country's economy. China has demonstrated the importance of using the ports to strengthen its export-based manufacturing, thereby ushering in broad based economic development for the entire country.

Figure 1: Economic impact of Port



Source: Update on India Port Sector

Indian government has recently approved the Sagarmala initiative which aims to achieve the same port-led industrial development. As stated in the "The Competitiveness of Global Port Cities: Synthesis Report" by OECD (Organization for Economic Co-operation and Development), "Ports facilitate export-based manufacturing by reducing export time and variability. Time is the essence for export competitiveness of manufactured goods. Studies claim that one day of delay adds on an average of 0.8 per cent to the cost of manufactured goods. A delay by week, therefore, could add 5-6 per cent to the cost of goods, often equivalent to the total profit margin available to some manufacturers of mass-produced goods. Further, uncertainty regarding export time has a bigger impact than the longer (but certain) export time itself. That is why several export-oriented discrete manufacturing clusters have come up either at ports or close to ports to provide a low cost and faster mode of exporting products. Of the top-20 global free-trade zones, 14 are either port-based or port-proximate. A comparative impact of port-led development on economies of India and China is presented in the figure below:

Figure 2: Comparison of impact on economies because of port

Comparative impact of port-led development on economies of India and China

			India	China	China / India
Size		Land mass (mn sq km)	3.3	9.6	3X
		GDP (USD trillion)	1.9	9.2	5X
Port-led development	Energy	Cost of energy (cents/kWh)	19	11	-42%
		Electricity production (billion kWh)	1,000	5,000	5X
		Petchem crackers (number)	07	46	7X
	Materials	Steel production (million tonne)	87	823	10X
		Cement production (million tonne)	280	2,480	9X
	Discrete Mfg	Container traffic (mn TEUs)	11	174	16X
		Merchandise export (USD billion)	317	2,343	7X
Services		Mobile subscription (million)	1,000	1,290	1X
		Internet subscription (million)	354	659	2X

Source: Update on India Port Sector

The following tables give information on cargo handled (in Million Tonnes) at the Top-20 ports as well as the ports in India. The traffic in Indian ports is valued in Thousand Tonnes. Indian ports have a long way to go before they can be classified as a Top-20 global port.

Figure 3: Top 20 World Major Ports

Table 12 - Top 20 World Major Ports (in Million Tonnes)				
S.No.	Port	2012	2013	2014
1	Ningbo & Zhoushan (PRC)	744.0	809.8	873.0
2	Shanghai (PRC)	736.0	776.0	755.3
3	Singapore	538.0	560.8	580.8
4	Tianjin (PRC)	476.0	500.6	540.0
5	Tangshan (PRC)	364.6	446.2	500.8
6	Guangzhou (PRC)	434.0	454.7	500.4
7	Qindao(PRC)	402.0	450.0	480.0
8	Rotterdam(Netherlands)	441.5	440.5	444.7
9	Dalian(PRC)	373.0	408.4	420.0
10	Port Hedland (Australia)	246.7	288.4	372.4
11	Rizhao (PRC)	281.0	309.2	353.0
12	Yingkou	301.1	330.0	330.7
13	Hong Kong 1)	269.3	276.1	297.7
14	Qinhuangdao(PRC)	271.5	272.6	274.0
15	Busan 2)	260.0	269.5	266.7
16	South Louisiana(USA)	253.5	241.6	264.7
17	Shenzen (PRC)	228.1	234.0	223.2
18	Xiamen(China)	172.0	191.0	205.0
19	Antwerp (Belgium)	184.1	190.8	199.0
20	Port Klang (Malaysia) 2)	158.3	160.2	162.0
	Total of Top 20 Ports	**7134.7**	**7610.4**	**8043.4**

Source: Port Statistics, Port of Rotterdam Authority;
PRC: Peoples Republic of China;
: 1) Including river trade, 2) Converted from freight ton to metric ton

Source: Update on India Port Sector

Figure 4: Traffic handled at Major Ports

TRAFFIC HANDLED AT MAJOR PORTS (Thousand Tonnes)							
					April - July (P)		
PORTS	2012-13	2013-14	2014-15	2015-16	2015-16	2016-17	% Change over CP
KOLKATA	11844	12874	15283	16688	5558	5386	-3.09
HALDIA	28084	28511	31010	33507	11636	10966	-5.76
PARADIP	56552	68003	71011	76386	24335	28655	17.75
VISAKHAPATNAM	59040	58503	58004	57033	18468	20901	13.17
KAMARAJAR	17885	27337	30251	32206	10788	10129	-6.11
CHENNAI	53404	51105	52541	50058	17820	17417	-2.26
TUTICORIN	28260	28642	32414	36849	13065	13068	0.02
COCHIN	19845	20887	21595	22099	7422	7824	5.42
NEW MANGALORE	37036	39365	36566	35582	11685	11580	-0.90
MORMUGAO	17693	11739	14711	20776	5390	9954	84.68
MUMBAI	58038	59184	61660	61110	20798	20119	-3.26
J.N.P.T.	64490	62333	63801	64027	22010	20929	-4.91
KANDLA	93619	87004	92497	100051	33159	35851	8.12
All Major Ports	545790	555487	581344	606372	202134	212779	5.27

Source: Update on India Port Sector

INTELLIGENT TRANSPORT SYSTEMS – INTERNATIONAL SCENARIO

IT plays a key role in the Port and Shipping industry by providing near real-time information to the stakeholders on their cargo and containers. It can also streamline operations by providing the interacting parties with a channel to communicate effectively through standardized documentation procedures, means to exchange information, monitor yards and ships in ports (using advanced radar and communication systems), to unload, transport, store and reload ships thereby ensuring reduction in delays incurred through paper-based movement of documentation.

According to "Future of Container Terminal Software – 2012 &beyond" (Sea Ports Business Oct-Nov2012), container terminals and ports use software for the following areas:

- ERP (Enterprise Resource Planning)
- Human Resource Planning
- Terminal Purchasing Management
- Financial ERP
- Operations
- Commercials and Contract Management

For Terminals Planning and Design:

Terminal Design and Planning (3 Dimensional Planning Software) – vessel stowage planning solutions to allocate slots and space within the terminal and ships to which the cargo will have to be loaded. The solution helps in avoiding delays and turnaround of the vessels.

Equipment Planning

As specified in the article "Future of Container Terminal Software", "Handling equipment within a terminal is the second largest capital investment after the terminal construction and associated land costs. Quay cranes cost around an average of $5million, Straddle carrier in the range of $750,000 and RTG could be estimated to be around $1.6 million. Every mile or lift these machines make equates to a cost or revenue for the terminal. Software can help maximize the asset utilization while also reducing dead lifts/moves and maximizing effective usage of the terminals' equipment. Planning can help prepare the load sequence and optimize on the physical moves to and from the quayside. Round trip of assets preventing deadhead moves reduces Co2 emissions and provides better returns on equipment utilization."

Equipment Maintenance

- RFID and Real Time Tracking,
- Resource Allocation and
- Central Core.

For Terminal Operations:

- Vessel operations,
- Commercial Agreements,
- Booking and Documentation Process and
- Financial Billing and Administration Process.

Listed below are the ITS implementation at Singapore and Rotterdam (2 of World's major ports).

Singapore

The Port of Singapore Terminals are run by PSA (Port of Singapore Authority) and Jurong. Jurong Port handles general cargo, bulk cargo and containers. PSA manages the Pasir Panjang Terminal, TanjorPagar Terminal, Brani Terminal and Keppel Terminal and deals with containers.

The Port started implementing technologies to automate operations in the 1980s with port operating systems like PORTNET and CITOS.

PORTNET is the system used by shipping lines, freight forwarders, shippers and government agencies for online bookings of resources, e-fulfillment of port services, facilitation of billing processes, vessel inquiries, pilotage ordering, tugboat services, cargo declaration and submissions, planning and manifests, sailing/berthing schedule inspection and container status monitoring etc. PORTNET also provides STAR (Shipping Line Throughput Analysis Report), which furnishes information on overall port performance, cost, vessel throughput, port and cargo expenses, transshipment, terminal performance and dwell-time reports. PORTNET even uses FEDI (Financial Electronics Data Interchange) for billing and payment and FASTCONNECT for documentation purposes.

Figure 5: PORTNET

Source: https://www.singaporepsa.com/our-commitment/innovation

According to PSA, PORTNET handles a wide variety of operations varying from managing complex transshipment processes of shipping lines (EZShip®), supporting slot exchanges among alliance partners (ALLIES™), enabling companies to monitor performance and make critical business decisions (TRAVIS™), integrating port documentations seamlessly with the haulage processes and work flow (Haulier Community System™) to providing a documentation portal between shipping lines and shippers (CargoD2D™). PORTNET® simplifies and synchronizes millions of processes for customers moving their cargo through Singapore. It has 9500 integrated users to its system and processes almost 200 million transactions a year.

The Singapore Port uses CITOS (Computer Integrated Terminal Operations System) for container management. CITOS is an Enterprise Resource Planning System that coordinates assets to containers and drivers. CITOS integrates all information for operations such as planning vessel, berth and ship operations, command and control, administration, gate and customer interface system, equipment and manpower. CITOS uses Automatic Position Indication System to monitor the yard and update the container location in real-time. CITOS also provides information on the possible delays and congestion over the next few hours.

As given in the figure below, CITOS helps in

- Berthing System,
- Ship Planning System,
- Yard Planning System,
- Resource Allocation System,
- Flow-through gate and
- Reefer monitoring.

Figure 6: CITOS

Source: https://www.singaporepsa.com/our-commitment/innovation

According to PSA, the technology involved in such an operation is as follows:

Planning begins 72 hours before the ship arrives, at the time when the shipping line applies for a berth and sends ship stowage and connection instructions to PSA through PORTNET®.

Once berthed, the quay cranes unload boxes destined for other ports and load boxes brought in by other vessels. The prime movers are tracked individually via the Global Positioning System (GPS) and distributed dynamically among the vessels.

The prime mover moves off to a container holding area in the yard. There, the yard cranes lift containers from prime movers and stack them in the yard. The sequence is reversed for delivery out of the yard to a connecting vessel.

Containers are not stacked in a random manner. When the information is keyed into the system through PORTNET®, CITOS® automatically generates ship stowage plans and yard layout plans based on factors, such as:

- Ship stability (for stowage planning)
- Weight
- Destination
- Size
- Special requirements (e.g. reefers, dangerous goods, out-of-gauge cargo, tight connections)

This allows PSA to:

- maximise land use and optimize container retrieval
- track the location of each container
- maximise resource productivity by planning ahead

CICOS (Computer Integrated Conventional Operations System) is used for ship planning and go-down operations for conventional and non-containerized cargo. The Flow-Through Gate System (FTGS) is integrated with CITOS to automate gate operations. With CNRS (Container Number Recognition System), container numbers, shipper's declaration information (received through EDI) and drivers' identity details (RF contactless cards) are matched to enable seamless transportation of cargo.

TradeNet is the EDI system interface provided to customers to submit permitted applications, declaration papers and cargo clearances to Customs, Excise Department and other relevant departments. PSA uses BoxNet for coordination between terminals and hauliers. BoxNet provides information on estimated berthing times, completion of discharge of vessels, export schedules, bookings, tracking of truck moments etc. This enables hauliers to efficiently schedule their resources (prime movers, chassis and drivers). PSA uses CEDEX (Container Equipment Data Exchange) codes for transacting with freight containers. Shipping lines uses EZShip for transshipment processes and SlotMax for trading empty vessels and increasing the utilization of ships. BoXchange is a matching system for containers and GEMS (Global Equipment Management) monitors and records information on worldwide empty container stock at container terminals, on-dock depots, external depots, inland depots and off-shore sites.

The figure below provides information on the impact of TradeNet on the port operations:

Figure 7: TradeNet - Impact

Characteristics	Previous Manual process	TradeNet
Processing time/permit	4hrs to 2 – 7 days	**1 min or less**
Submission of document	Multiple Submission	**Single document through a single interface**
Number of documents	3 – 35 documents	**1 document**
Trade documentation fees	S$10 per document	**S$2.88**

Source: The Single Electronic Window – Singapore's TradeNet – Scope of Services and Pricing Model

Security

The MPA uses VTIS (Vessel Traffic Information System) at its two POCCs (Port Operations Control Centre) to monitor traffic in the Singapore Strait. The VTIS uses 11 radars and can monitor 5000 vessels in real-time. MPA also uses HARTS (Harbor Craft Transponder System) to track small crafts in the port waters. HARTS captures real time data (vessel identity, position, speed, course etc.) from the transponder through wireless communication. In case of any emergency situation, provision for a panic button has been provided.

Capacity Building

MPA (Maritime and Port Authority of Singapore) partners with higher education institutions to enhance maritime-related degree/diploma programs. In 2014, more than 1000 students were enrolled in over 20 maritime programs offered at these educational institutions. MPA also offers Tripartite Maritime Scholarship (TMSS) and the MPA Global Internship Award (MPA GIA). MPA GIA is a 10-week maritime internship program in which the students get to work with international maritime companies. There are certain other MPA programs available with a view to enhance skills, which are discussed below in Figure no. 8:

Figure 8: Maritime Cluster Fund

MCF IN A NUTSHELL

MCF-Manpower Development (MCF-MD) provides for the training as well as manpower and capability development of the maritime industry. The fund is available to all maritime companies for the development and skill enhancement of its employees through the following three programs:

Training@MaritimeSingapore

It upgrades knowledge and expertise of local maritime personnel through approved training programs.

Talent@MaritimeSingapore

Also, it encourages companies to invest in the development of expertise through attachments and career development programs.

InvestManpower@MaritimeSingapore Promotes the adoption of well-structured HR and training infrastructure, tools and processes in maritime organizations.

and associations so as to attract, train and develop the maritime talent pool.

MCF-Business Development (MCF-BD) supports eligible expenses incurred by new maritime organisations setting up of CES in Singapore, or by existing maritime organisations expanding into new lines of maritime businesses. The fund is available to all maritime organisations committed to grow and succeed in Singapore.

MCF-Productivity (MCF-PD) supports initiatives to improve productivity by enhancing business processes or adopting new technology. This fund is available to the maritime industry and associations, as well as technology and engineering companies with a maritime focus.

Source: MPA integrated report 2014

Port of Rotterdam

The Port of Rotterdam uses the Port base (Port Community System) to facilitate logistics movement and electronic reporting. The PCS provides information on vessels' movement, harbor transactions etc.

PCR uses "Cargo Card" to efficiently transport cargo. The information on the truck transporting the cargo, its (truck's) destination is transmitted to the Port terminal through EDI (Electronic Data Interface) The driver uses the Cargo Card to transport the cargo. The drivers' information is stored and verified in biometric form. The card helps in the secure transportation of Cargo by efficiently taking care of reporting, inspections, customs, loading and unloading etc.

PCR uses the "EDI-LAND" (Electronic Data Interchange LAND-side)to process documents in electronic format in real-time so as to enable handling procedures which are done only when the containers and their respective documents have been received. Standards have been defined for Uniform Electronic Data Interchange.

PCR uses PROTECT as the standard for declaration of dangerous goods and ELO (Electronic Authorities Counter) for declaration of information (one-time information declaration) at a nodal point which transmits information to all the required authorities.

BICS (Inland Shipping Information and Communication System) is a system used by shippers to pass information electronically to all traffic posts in Netherlands and is also used by the Department of Public Works to track the vessels in inland waterways.

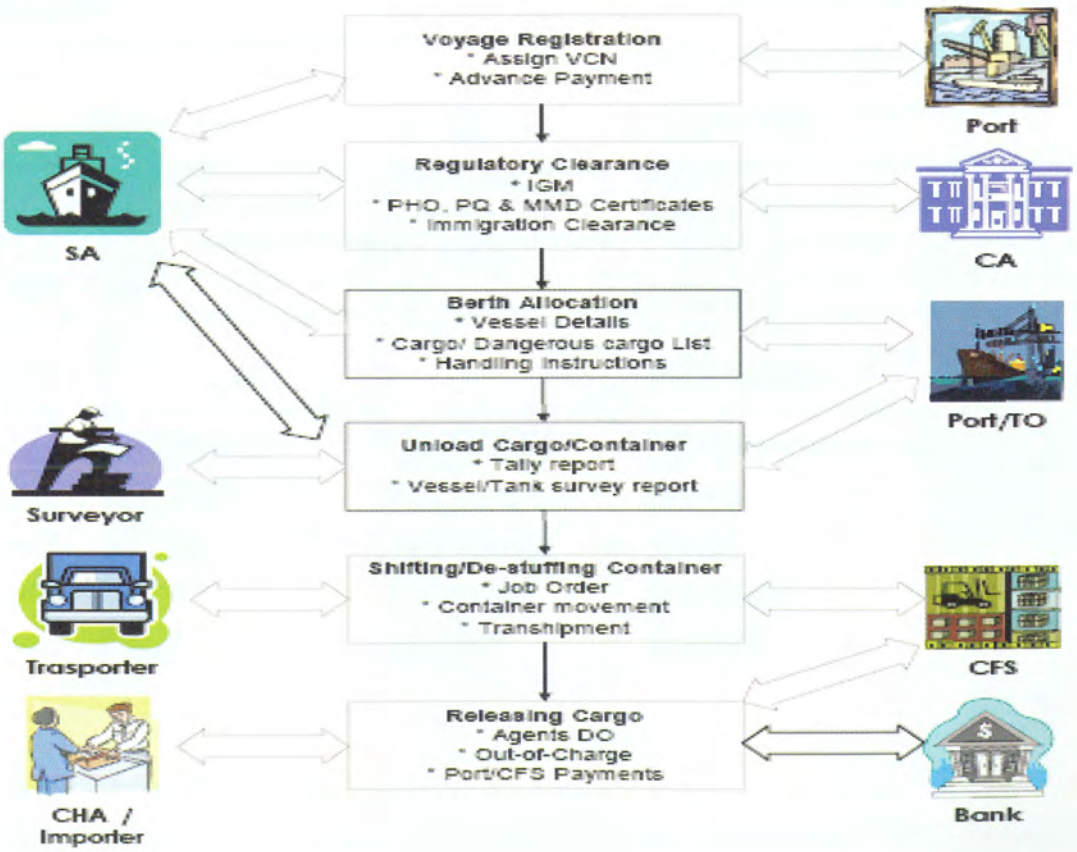
RODOS (Rotterdam Douane System) is the system used by Customs to transact with ship brokers, stevedores, forwarders, shipping agents, terminal agents and other stakeholders.

AS-IS STATUS OF IMPLEMENTATION OF ITS TECHNOLOGIES IN THE PORT SECTOR IN INDIA

The Indian ports are governed by the Indian Ports Act, 1908. All the major ports come under the ambit of the central government (Ministry of Shipping). The Major ports are governed by Board of Trustees constituted by the central government. The Ministry of Shipping is responsible for the Shipping policy and legislation, safety, pollution prevention and control, promotion of maritime education and training. Maritime States Development Council (MSDC), formed in the 1997, is responsible for guiding the development of major and non-major ports in a holistic manner. MSDC, consisting of ministers of ports for States and Union Territories, works with state and central governments to formulate policies.

The overall flow from voyage intimation till sail is out from the port is as shown in the figure below:

Figure 9: Work flow



Source: Indian Ports Association

The following table provides the important Key Performance Indicators (KPI) to measure the operational efficiency of a port. The table maps the performance drivers, derived KPIs to the leading KPI. It also provides for the parties involved to the KPI.

Figure 10: Key Performance Indicators

Leading KPI	Performance Drivers	Derived KPIs	Parties Involved
Cargo Dwell Time (excluding vessel related time)	• Terminal Management System (IT system and yard operating system) • Dwell-time incentives (free storage time)/ customer preferences (to use port as forward storage location) • Customs clearance process	• Vessel pre-berthing time • Yard dwell time • Gate transit time	• Customs/port authority • Terminal operator, customs, cargo owner • Customs, shippers
Vessel turn-around time	• Amount of traffic to be loaded/unloaded • Distance from anchor point to berth • Efficiency of port service operators (tugs/pilots) • Efficiency of terminal operator (working hours, number of cranes, crane speed)	• Pre-berthing time (hours) • Berthing time/unit of cargo handled • Post-berthing time	• Customs/port authority (service providers) • Terminal operator
Asset Utilization	• Handling equipment (number of cranes, crane spacing, crane speed, operating hours) • Yard storage system (RMG, RTG, straddle carrier, forklifts etc.) • Amount of cargo throughput	• Cargo throughput (TEU/ ton) per quay meter • Cargo throughput (TEU/ ton) per hectare of land	• Terminal operator (quay design parameters) • Terminal operator (yard design)

Source: India Transport Report, Moving India to 2032

As provided in the India Transport Report, Moving India to 2032 report, Cargo Dwell Time is defined as the time the ships spend unloading and loading the goods and also includes the time that the cargo spends in the yard before being picked up or dropped off by shippers in the port. The shorter the dwelling time of cargo, the lower will be the inventory cost of the shippers. ITS systems can play a major role in reducing the cargo dwell time by automating the customs clearance process, efficiently using the yard by using the yard operating system and other terminal management system.

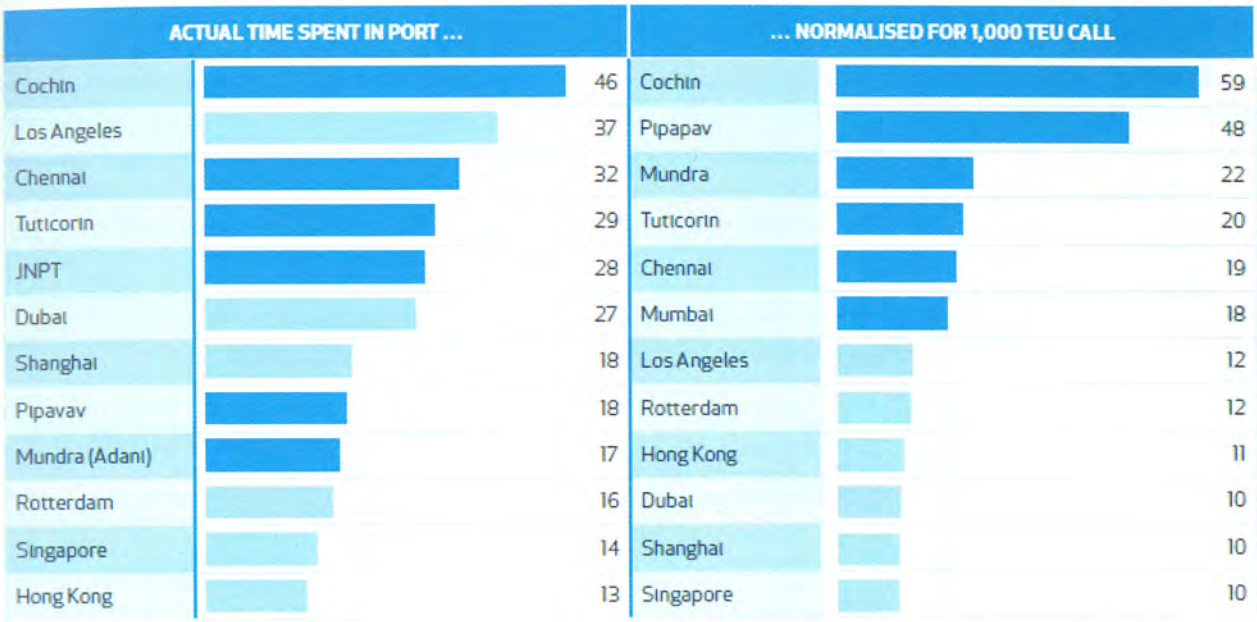
The following figures provide information on the performance of India ports vis-à-vis their international counterparts on the above mentioned KPIs.

Figure 11: Vessel Turnaround Time and Terminal Quayside Productivity - Comparison

Figure 4.30

Vessel Turnaround Times at Indian Ports in Comparison with Global Best Practices

Indian ports have much longer vessel turnaround times than global best practices
Vessel time spent in port[1], hours, 2010

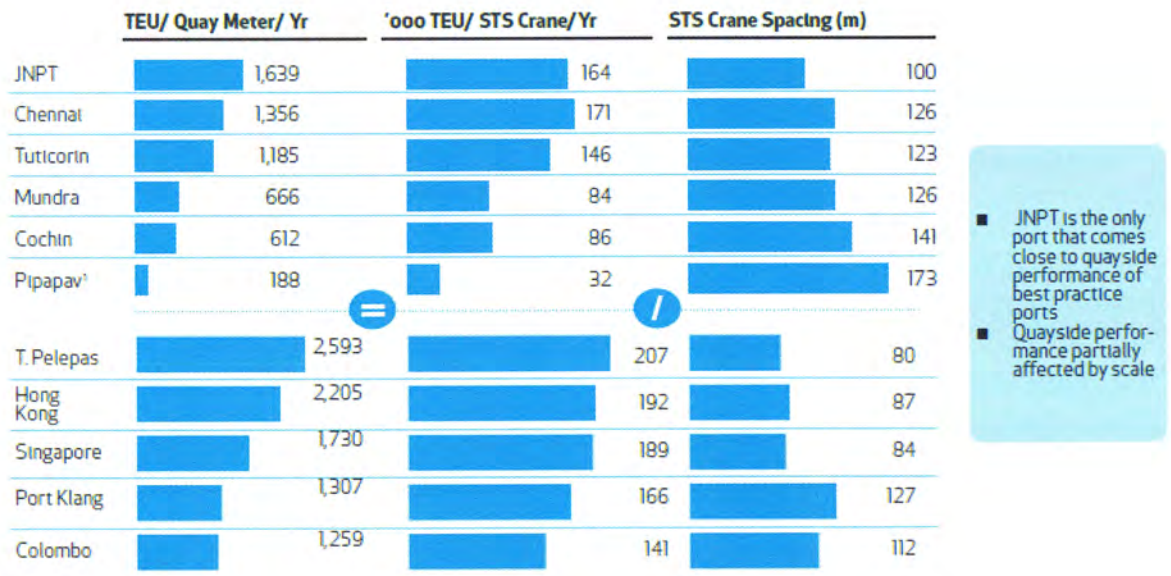


1 Derived from several months of Maersk Line's recorded statistics of port entry and exit times of their vessels
Source: Maersk Line Website

Figure 4.31

Terminal Quayside Productivity at Indian Ports in Comparison with Other Countries

Terminal quayside productivity at Indian ports is far below global figures
2008



1 Pipapav is in ramp-up phase
Source: Containerisation International

Source: India Transport Report, Moving India to 2032

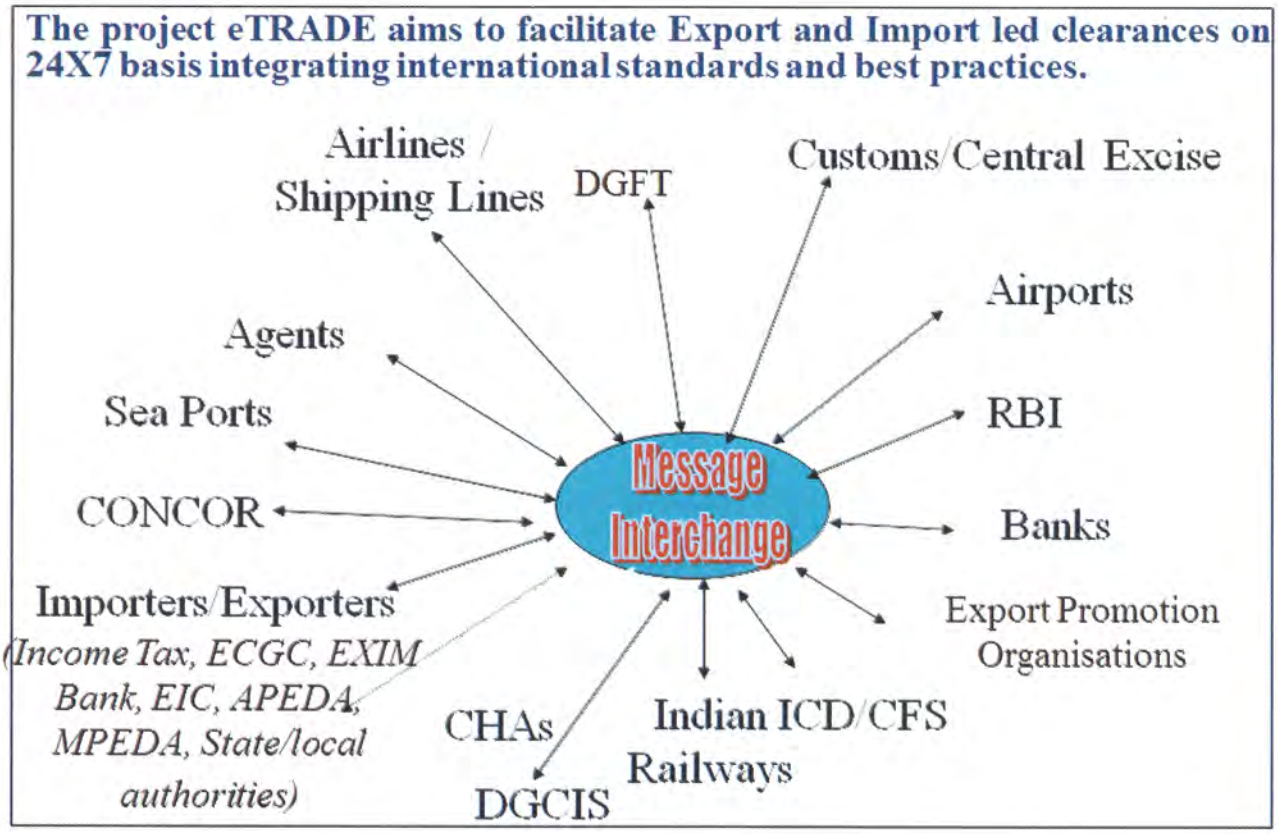
The following section provides information on some of the technologies implemented at Ministry of Shipping, IPA (Indian Ports Association) and the individual ports.

Project e-TRADE

E-TRADE, is a project of Department of Commerce, which aims at facilitating foreign trade by providing services in an online environment and enabling efficiency in delivering the services by promoting inter agency cooperation through interagency business process re-engineering. It aims to integrate international standards and trade facilitation recommendations of UNCEFACT (UN Centre for Trade Facilitation and Electronic Business). The other objective of the project is to reduce cost and time involved in foreign trade by simplifying procedures and making them online.

As defined in the website (http://etrade.gov.in/project.aspx), the major stakeholders for the project are Customs (as shown in Figure 12), Directorate General of Foreign Trade (DGFT), Seaports, Airports, Container Corporation of India (CONCOR), Inland container Depots(ICDs)/ Container Freight Stations (CFSs), Banks, importers/exporters, agents, airlines/shipping lines.

Figure 12: Work flow



Source: MoC/Indian Ports Association

The services provided are:

- E-delivery of services / clearances by community partners like Customs and Custodians at Sea Ports, Airports and ICD/CFSs, to exporter, importer, agents;
- E-filing of export/import documents by exporter, importer, agents etc. to Customs and Custodians at Sea Ports, Airports and ICD/CFSs;
- Electronic exchange of documents between community partners i.e. Customs and Custodians at Sea Ports, Airports, ICD/CFSs;
- e-Payment by exporter, importer, agents;
- Custom duties;

- DGFT's license fee and
- Charges (handling/freight, etc.) of Custodians at Sea Ports, Airports, ICD/CFSs.

The impact of EDI on the Kolkata Port Trust (Kolkata dock system) is shown in Figure 13:

Figure 13: Impact of EDI – Kolkata Port Trust

Messages	Time taken before PCS implementation	Take taken after PCS implementation	Remarks
Vessel Profile(submission and Approval)	2 days(48 hrs.)	Average 1-2 hrs.	In many cases it is immediate
Voyage Registration and VCN Allocation	2 days (48 hrs.)	Average 1-2 hrs.	
Berth Request and Berth Allocation	Next day in the Berthing meeting	Immediate without any manual intervention	
Container Related Messages	Physical Submission	All the documents are submitted by the Users from their office and these are uploaded in the system	
Cargo Related Messages - Delivery Orders	5-6 hrs.	ONLINE within 1 hr.of submission	

Source: e-Trade Portal (http://etrade.gov.in/project.aspx)

Port Community System

1) PCS is a Mission Mode Project (MMPs) which is an initiative of Government of India and comes under e-Trade project of India.
2) PCS is a Centralized, Web Based, On-line & Real time, Message Exchange gateway for Port Community Partners/ Stakeholders.
3) It is a SINGLE WINDOW Platform for electronic exchange of information among stakeholders.
4) It facilitates Paperless regime in Ports.
5) It even reduce transaction time & cost in Port business.

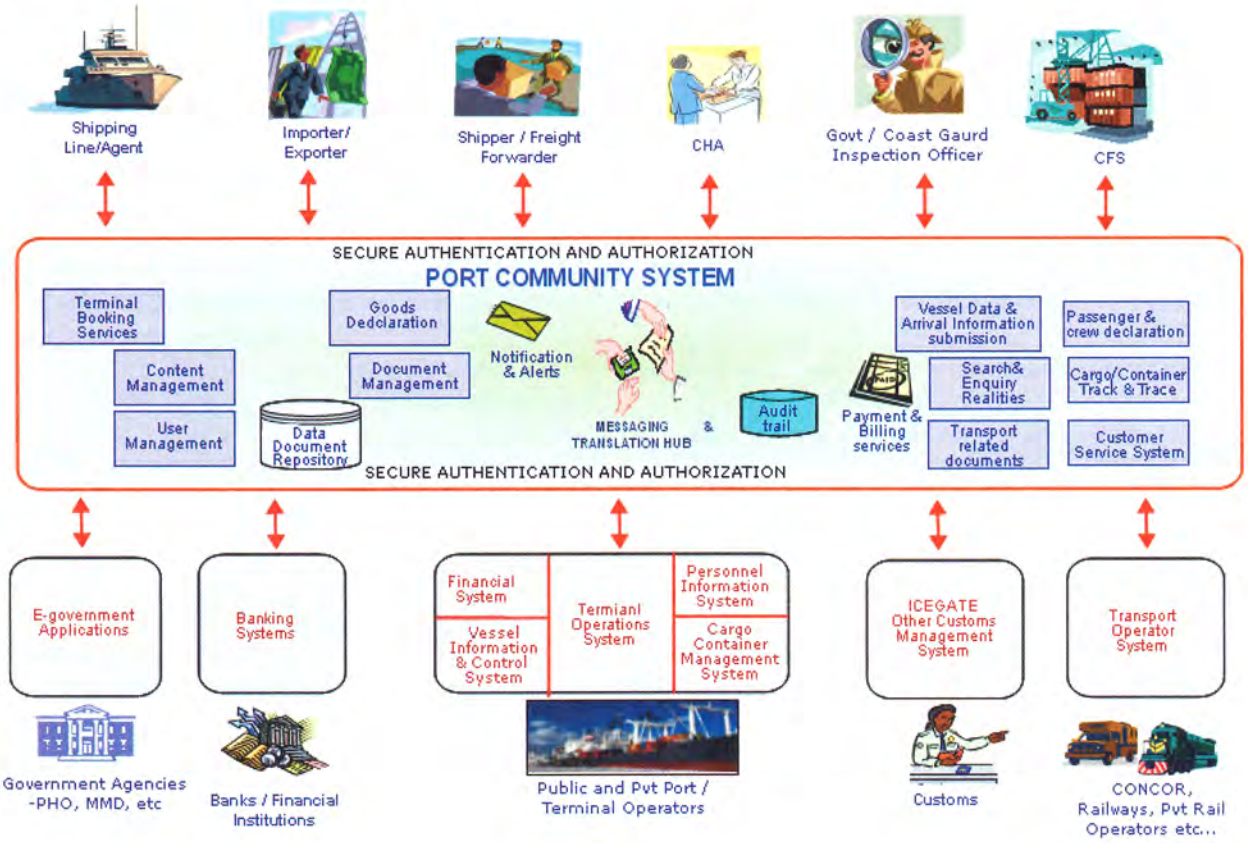
The Indian Port Community System (IPCS) aims to increase security and efficiency of Port operations through modernization. It aims to move towards a paper-less regime thereby increasing productivity and reducing transaction time and costs involved in core Port business. This system aims at increasing the competitiveness between the Indian Ports vis-à-vis the international ports.

The present status of PCS is as follows:

1) Participants/Stakeholders : 12 Major Ports and 6 Non Major Ports, Private Terminal Operators, Customs, Shipping Agents, Container Agents, CHAs, CONCOR, Railways, MMDs, PHOs, Stevedores, CFSs, Coast Guard, Navy and Banks.
2) Modules/Messages Covered: Vessel, Container, Cargo, Transport, Finance, Customs, PHO, MMD and e-payment.
3) Exchange around 11-12 lakhs messages every month.
4) Notifications through e-mail and SMS.
5) 24x7 Help Desk services

Mudra, Dahej, Pipavav, Cuddalore ports along with Chennai, Krishnapatnam and Kakinada ports have migrated to PCS. Four more ports of GMB (Jamnagar, Sikka, Bedi, Magdala) are in the process of integrating in PCS. In total around 22 ports will be online with PCS and these ports cover 92% of total EXIM trade in volume.

Figure 14: PCS FRAMEWORK – CONNECTING THE TRADE COMMUNITY



Source: Indian Ports Association

The features of PCS are

1) Single Window System for the Stakeholders

2) On-line Stakeholder registration

3) Flexible submission of information in multiple formats like XML, UN/EDIFACT and Propriety

4) Message Translation, which works towards translating one format to another format like XML →TXT, TXT →XML, XML → UN/EDIFACT, UN/EDIFACT → XML, etc.

5) Message HUB, viewing the messages ONLINE using Web User interface(MHUB)

6) Role based menu for the Stakeholder

PCS provides file formats like XML and EDI which conform to International standards like UNEDOCS, UN/CEFACT and UN/EDIFACT.

Outcomes of the implementation

Figure 15: Implementation Outcome (case study - Kolkata Port)

Messages	Time taken before PCS implementation	Take taken after PCS implementation	Remarks
Vessel Profile(submission and Approval)	2 days(48 Hrs)	Average 1-2 Hrs	In many cases it is immediate
Voyage Registration and VCN Allocation	2 days (48 Hrs)	Average 1-2 Hrs	
Berth Request and Berth Allocation	Next day in the Berthing meeting	Immediate without any manual intervention	
Container Related Messages	Physical Submission	All the documents are submitted by the Users from their office and these are uploaded in the system within very less time	
Cargo Related Messages - Delivery Orders	5-6 Hrs	ONLINE within 1 Hrs of submission	

Source: Indian Port Community System (IPCS) and Interoperability – Presentation 28th October 2014- by Indian Ports Association

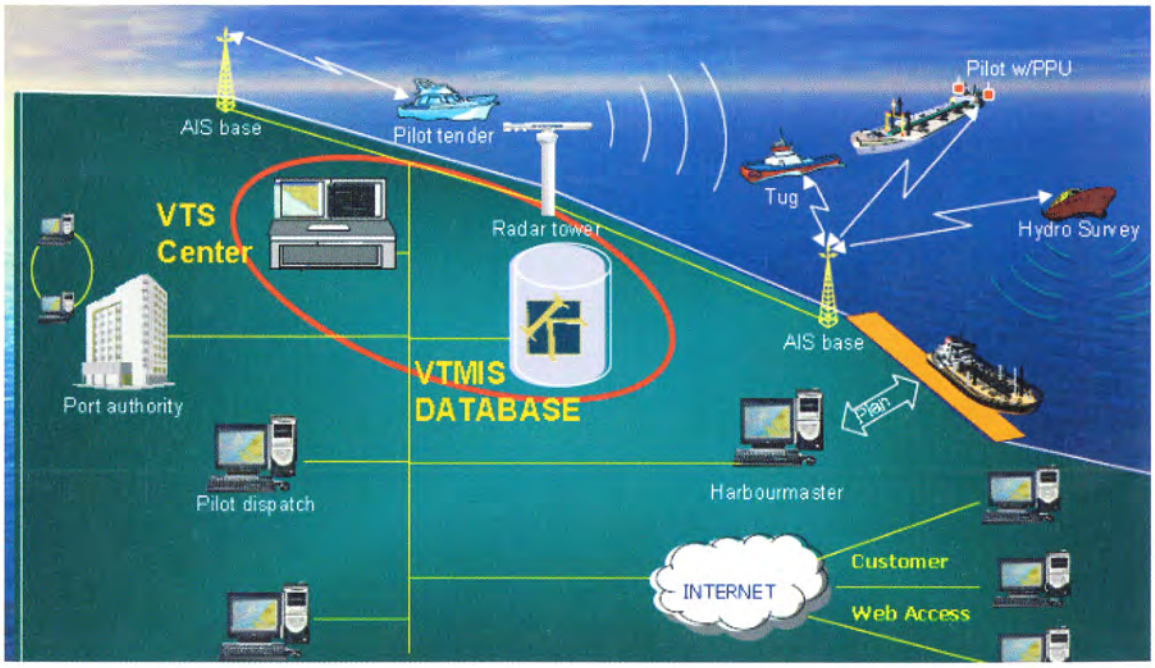
VTMS (Vessel Traffic Management System)

1) It is already installed at Kolkata, Paradip, Chennai, Ennore Port Ltd, VOCPT, Cochin, New Mangalore, Mormugao, Mumbai, Jawaharlal Nehru, and Kandla Ports.

2) Is also installed at Gulf of Kutch covering Kandla and non-Major Ports

3) A radar based system is implemented at Vishakhapatnam Port.

Figure 16: Vessel Traffic Management System



Source: Sheltermar (http://www.sheltermar.com.br/en/files/2015/06/VTMIS-Diagram-2.png)

ERP implementation at Ports

1) Major Modules Implemented

   a. Finance & Control Management,

b. Material Management,

c. Human Resources,

d. Project Monitoring,

e. Land/Real estate Management,

f. Industry Specific Utilities, etc.

2) Port Operations System (POS)/Terminal Operation System (TOS)

3) Other Applications:

a. Hospital Management,

b. Bespoke System like File Tracking, Employee welfare, etc.

4) ERP is implemented at Cochin, Mormugao, New Mangalore, Vishakhapatnam and VOCPT.

5) All other Ports to implement by June 2017.

6) GIS based land/estate System is to be implemented by all Ports.

Other security systems installed in process are : **Automation of Processes and Surveillance System and Safety/ Security System**

1) RFID /Gate automation system

2) Surveillance System (CCTV) and Safety System

3) Bio Metric Based Access Control

Future plans for implementation of technology at Ports are:

1) PORT COMMUNITY SYSTEM (PCS)

a. Integration of more non-major ports

b. Additional module for Coastal Shipping(modal shift of cargo)

c. Bring in more stakeholders & new functionalities under the ambit of PCS in next version (PCS version 2.0)

d. Mobile Applications for Stakeholders

2) OTHER IT IMPLEMENTATION

a. Indian Port Business Intelligence System(IPBIS)

b. Interoperability RFID at all Ports

A detailed explanation of IPBIS and Interoperability RFID is provided in the Appendix.

Issues with implementation of technologies:

There are around 21 government departments which are involved in the export-import chain in some way or the other. It takes about 7-10 days, 7 for exports and 10 for imports, for completing documentation in India, compared with four days in Germany.

Although major ports have implemented some IT applications in one form or the other, there is lack of coordination in the approach towards designing, developing and installing these applications. There are cases where, even though automation software has been installed in certain counters, manual processing is still in practice.

The following are the major issues confronting our ports today:

- Lack of a Port architecture system
- Lack of an integrated approach towards designing, developing and installing applications
- Lack of standards in exchanging information and manual processing of documents
- Lack of terminal and yard planning software
- Lack of access to real-time information
- Lack of full-automation at Gates and equipment handling
- Lack of access to multi-modal means of transportation
- Lack of centers of Excellence / Research institutions for the port industry and institutions to develop capabilities for Port technology development

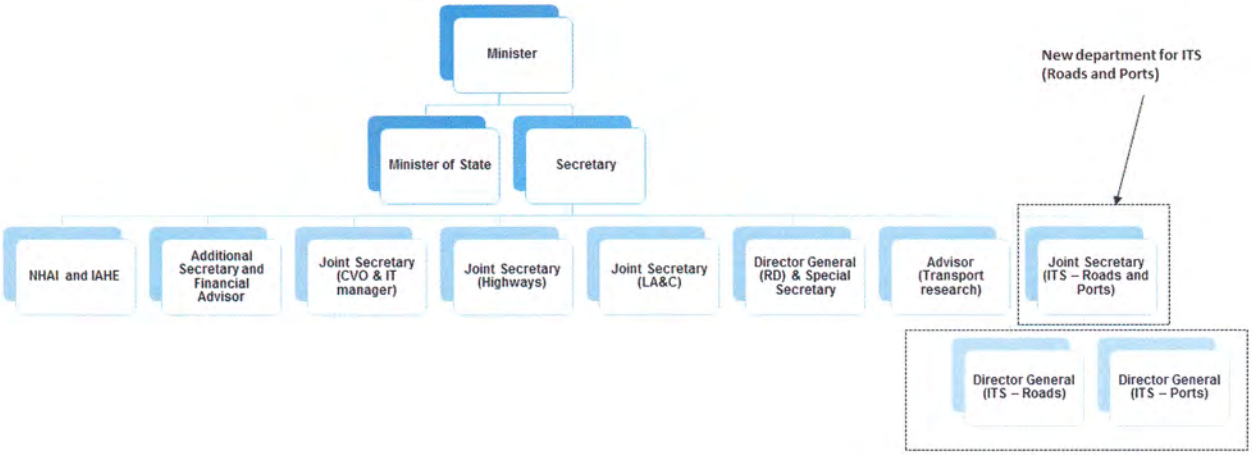
Other major issues confronting India Ports are the absence of information which has been highlighted by the India Transport Report, Moving India to 2032 report, etc.

- Data on country-wise break up of origin and destination of cargo is frequently asked for by researchers. Shipping lines/ companies generally provide information on the port of country from where the cargo is loaded or where the cargo is to be discharged, and not the actual country from where the cargo originated or is destined to.
- Container cargo is the fastest growing form of traffic at Major Ports. However, the commodity-wise data handled in containers is not being maintained.

RECOMMENDATIONS AND WAY-FORWARD

1) **Create a separate department for IT and ITS** (for both roads and ports) reporting directly to the Secretary as shown in the figure below:

Figure 17: Proposed ITS department within MORTH for Ports



The head of such institution could be a Director General or a CIO (Chief Information Officer). The CIO shall be responsible for developing the ITS architecture blueprint for individual as well as multi-modal sectors and for implementing ITS projects across the country. Moreover, similar structure needs to be created at state levels (State CIOs head the State ITS departments). The CIO should have both management and ITS experience. The CIO should also be responsible for creating standards for various ITS project development and implementation, maintenance of ITS projects, collaboration among all stakeholders, data and protocol standards, resource planning and security of the ITS projects including cyber security.

2) **Design national level IT strategy** for application of technologies in Ports. Different Ports have implemented different softwares and are at various stages of IT maturity. This creates a huge bottleneck with respect to communication between Ports, Ports and government, Ports and other stakeholders.

3) The central government should develop **ITS architecture plan for the Ports**. This architecture plan should be shared with all the major Ports and must be used as the basis for the individual ports to develop their own ITS architecture plans.

As defined in the TEAP framework, the framework for developing the architecture should help in

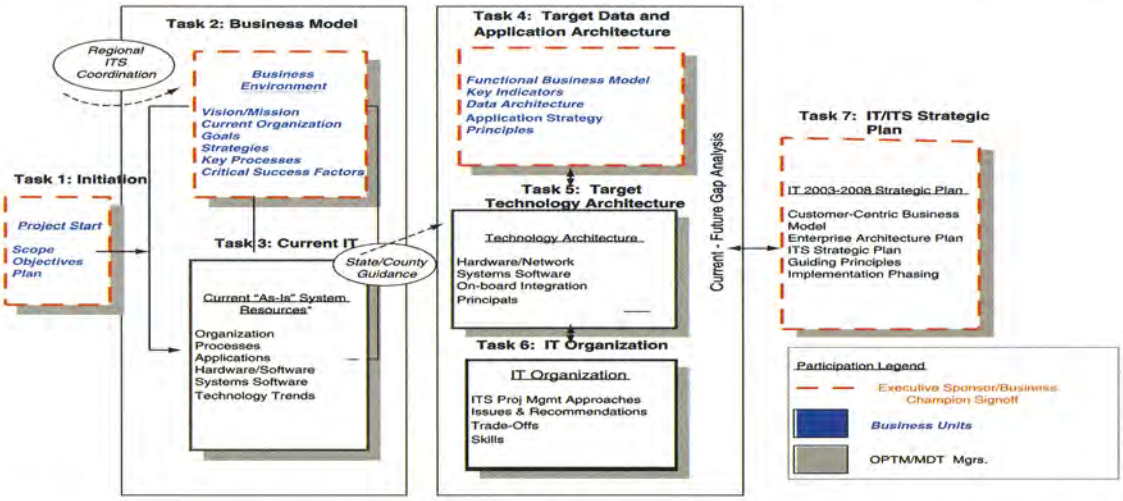
- Planning the interconnection of information, services and technology so as to support business processes and ensure effective operations
- Promoting the sharing of information across institutions
- Ensuring IT/ITS projects are defined and implemented properly to achieve business outcomes and meet stakeholders needs
- Ensuring that proper leadership and processes are implemented across organizations to support IT department's objectives and assure success of the organizations strategy as a whole.

A reference model for developing the ITS architecture is provided as a Figure: **Case Study** .

4) The central government should **facilitate harmonized exchange of data** so as to enable inter-port and cross-border continuity of services.

Figure :Case Study

Miami-Dade Transit (MDT) initiated an enterprise architecture planning process in 2002. The project lasted about 18 months including the development of the Transit Mission and Goals through the development of the IT/ITS Strategic Plan. Consultants were hired to develop the Enterprise Architecture current "as is" architecture domains (business, data, applications and technology) and to develop the stakeholder-driven target architectures, understand the gap between the current and target and describe how the IT organization needed to adapt to the changes. Finally, the IT 2003–2006 Strategic Plan was developed and a subset of the plan was extracted to define the IT/ITS Strategic Plan.



MDT enterprise architecture planning process and project tasks. Source: MDT.

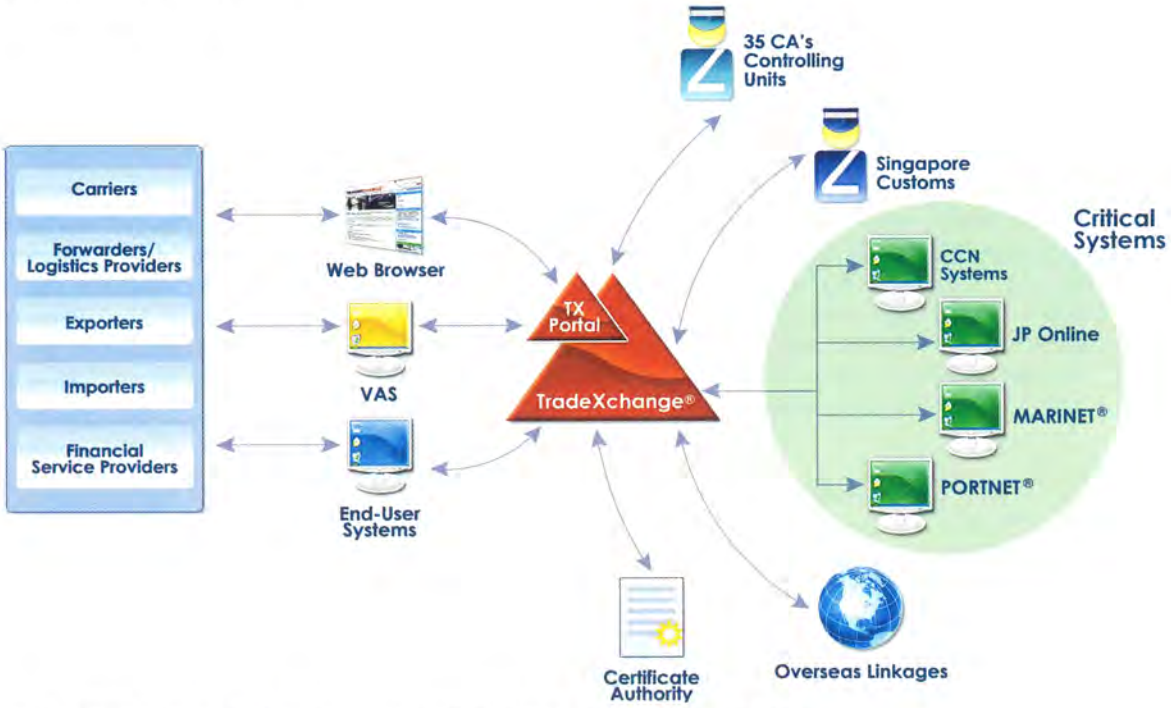
The Business Architecture was divided into several segments. Figure shows how the six major corporate goals (Maximize Use & Efficiency, Educate Community, etc.) drive the business processes (Service Implementation, Service Management, etc.). The goals are traced from the business processes to the other architecture domains and eventually to the strategic plan, showing the impact, dependencies, and overlap among the projects in meeting those goals.The gap analysis and corporate goals drove the sequencing and scope of the projects included in the strategic plan. The strategic plan is being used as a roadmap to help MDT and the IT staff build out the architecture.

5) National repository/exchange: An EXIM stakeholder is required to prepare twice the number of documents as compared to the number of documents required for submission in other developing economies. There are approximately 30 types of documents and over 120 copies printed whilst moving a shipping, resulting in excessive documentation. It also takes about thrice the time to complete EXIM procedures as compared to the time taken to complete procedures of other developing countries. This increases the cost of logistics. India's logistics costs, as a percentage of its GDP, is about 13% as opposed to the global average of 8%. India's costs per unit for EXIM are almost thrice that of leading countries.

Implement a National repository/exchange that is accessible to relevant government stakeholders on real-time basis. This initiative will make the ports more efficient, paperless and "SMART", which is also in tune with the central government's "Digital India" mission. Such an exchange, apart from providing real-time visibility to stakeholders, should also address the need for operational functions for SME entities (which constitute a large percentage of entities dealing with cargo at Indian Ports) so that they become IT-enabled and are seamlessly connected to the exchange. This will help in widespread adoption and true benefits will be trickling down to the least IT enabled stakeholder.

This information could be modeled based on the TradeXchange as shown in Figure 18

Figure 18: TradeXchange



Source: The Single Electronic Window – Singapore's TradeNet – Scope of Services and Pricing Model

5) **Single Window System**: India should move towards a Single Window system to facilitate document submission, processing and getting clearances for EXIM. This will help reduce the number of clearances and documents needed for submission thus simplifying the process and improving the various operational parameters associated with the operation of Ports. According to UNECE Recommendations 33, Single Window is defined as"... to lodge standardized information and documents with a single entry point in order to fulfill all export, import and transit related regulatory requirements;"; "if the information is electronic, then individual data elements should only be submitted once";

There are 3 models for implementing Single Window:

- Single authority
- Single automated system
- Automated information transaction system

"Recommendation 34 recommends data simplification and standardization by:

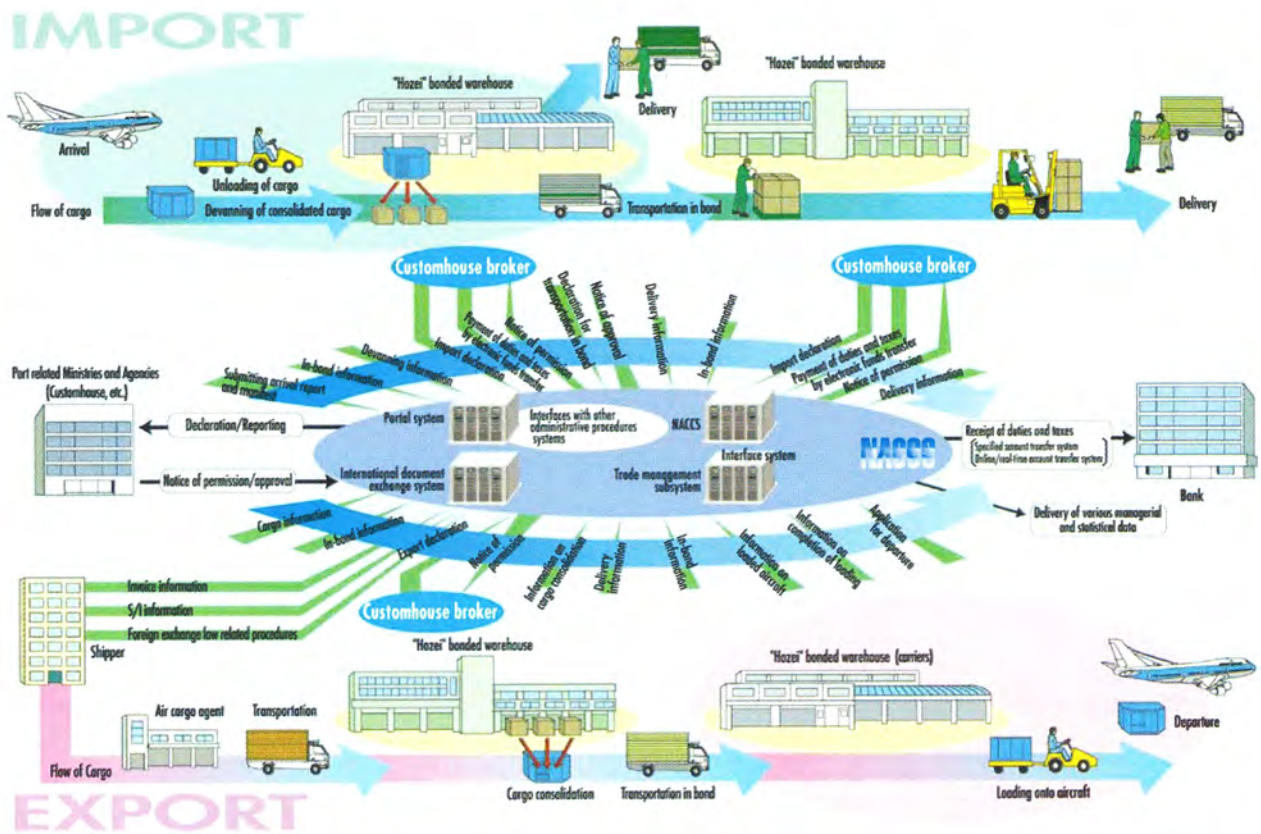
- Capturing existing requirements into a national trade data inventory
- Defining the individual data elements
- Analyzing the need for, and context of the data requirements
- Reconciling the national trade data inventory with international standards"

Japan's move towards a Single Window System is provided as a case study in Figure 19

Figure 19: Japan's Single Window System

Nippon Automated Cargo and Port Consolidated System (NACCS) as National Single Window in Japan:

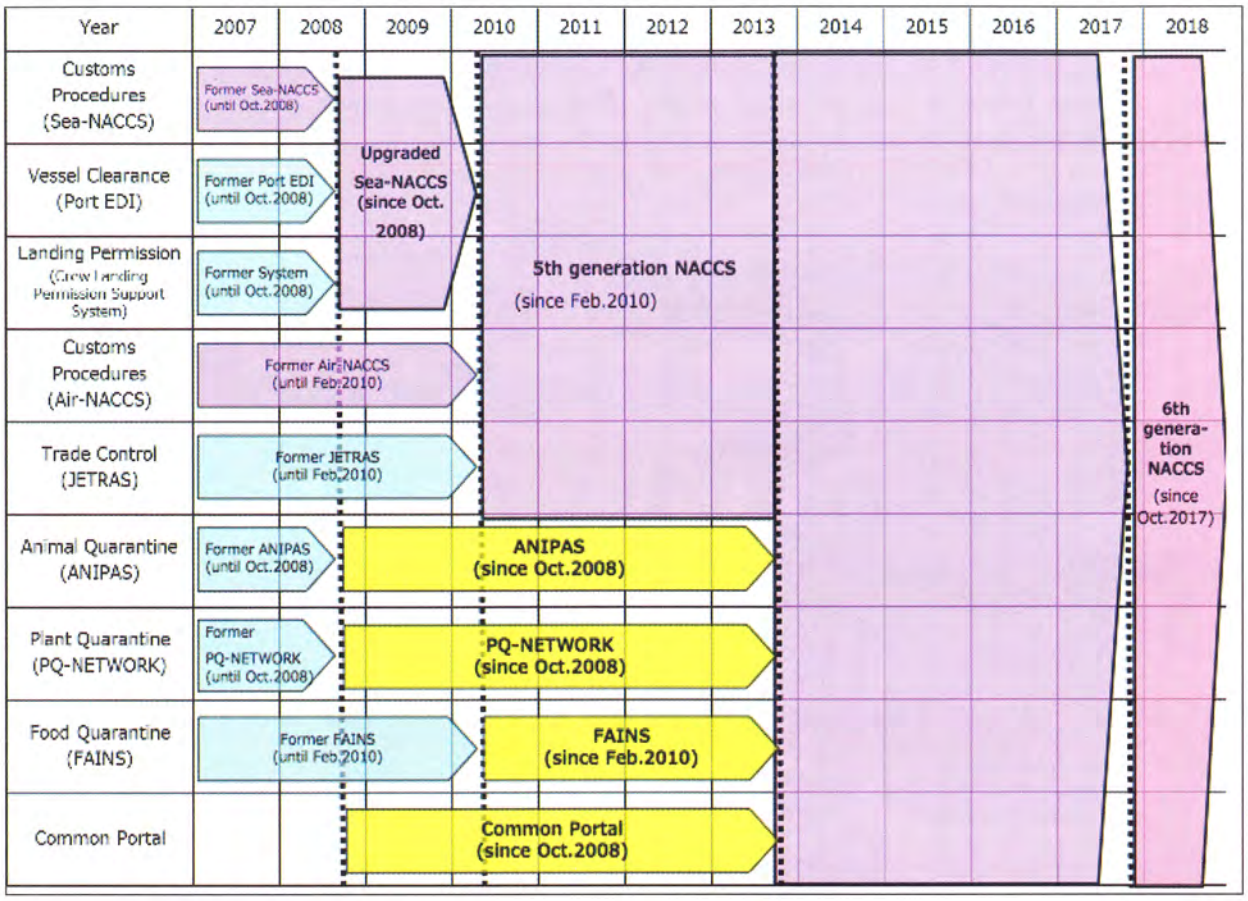
NACCS was established in May 1977 as an authorized corporation to administer Air-NACCS and was privatized by the new NACCS act* in October 2008 for improved corporate management and provisions of better services. The supervisory Ministries include Minister of Finance (main) with other relevant Ministers from Justice, Transport, Agriculture, Health and Trade. The figure below provides the features of NACCS



Source: Japan's Single Window System – For ITPD session on 24th UN/CEFACT Forum in October 2014

The development of Single Window System Timeline

Figure 20: Japan's Single Window System development Timeline



Source: Japan's Single Window System – For ITPD session on 24th UN/CEFACT Forum in October 2014

6) **Smart Ports**: India should strategize and implement the Smart Ports initiatives to transform its major ports. As part of the Smart Ports initiative, a national Port Community System (PCS) needs to be developed. Smart Ports can be defined as a system of systems to facilitate

(i) Optimization of traffic to the ports

(ii) Designing, Planning and efficient usage of Yards and Terminals

(iii) Efficient and productive usage of personnel

(iv) Automated facility to store cargos and transport them

(v) Automated movement for freight trucks

(vi) Standardized method for electronic data exchange and

(vii) Provide integrated logistics services along with

(viii) secure and safe systems to ensure freight integrity and port safety

The below figure provides the evolution of the ports over the last 80 years. Ports in the 2020s will be heavily dependent on technologies to ensure smooth, safe, secure and faster operations.

Figure 21 illustrates the growth in the Port model

Figure 21: UNCTAD (United Nations Conference on Trade and Development) Smart Port model

.4.23 UNCTAD Smart Port Model

1st Generation	2nd Generation	3rd Generation
?????/1940	1960	1980
Mechanic Port	Container Port	EDI Port

Source: Smart Ports – TrainMoS II – University of Strathclyde

Smart Ports Model:

Figure 22 provides the model for a Smart Port. Smart Port will have to ensure that all the stakeholders are able to access the Port through a Single Window System. It should be

(i) a portal for one-stop service

(ii) able to facilitate standard process for work

(iii) a collaborative system for all the entities involved

(iv) a portal which ensures faster processing of work orders

Smart Ports is a collection of systems like

(i) TOS - Terminal Operating Systems

(ii) PMIS – Port Management Information System – Provides a wholesome picture of the port operations

(iii) PCS – Port Community System

(iv) ERP

(v) Yard Planning and Management Software – Software that interfaces with Sensors, other IoT devices with GIS (Geographic Information Systems) to understand the storage space and optimally use it

(vi) Resources operation and control Software – suite of applications to deploy resources such as overhead cranes, prime movers etc. and optimize loading/unloading of cargo. It also facilitates remote control of operations and real-time monitoring of the jobs

(vii) Safety and security systems – Use of RFID, e-sealing of Containers and radiation detection equipment can help in locating the cargo and the safe transportation of containers from source to destination thus providing end-to-end logistics for freight forwarders and other systems

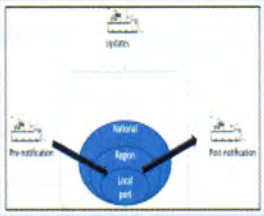
Figure 22: Smart Port model

Source: Smart Ports – TrainMoS II – University of Strathclyde

Figure 23 provides information on Smart Port internal services (services for the internal operation of the port) and Smart Port external services (services provided to external stakeholders)Figure 23: Smart Port – Internal Services

PCS – Port Community System

Port Community System is an electronic trading platform A2A or A2B depending on the type of property and business of the Port Authority. It is a centralized Web services architecture to improve safety and reduce costs.



PSW – Port Single Window

Port Single Window. There are two definitions and other technical legal. The first refers to a type platform A2B or B2B transactions along the lines of property and business of the Port Authority. The second I defined in European Directive 2010/65

S&S– Safety and Security Services

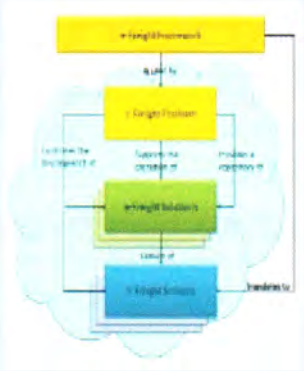
Infrastructure safety and security of people are two critical services in transport. IMO regulations as ISM or ISPS apply to maritime transport, or technical standards such as ISO-28000, to improve security in international supply chains. The IMO conventions are mandatory for Ports worldwide

Source: Smart Ports – TrainMoS II – University of Strathclyde

Figure 24: Smart Port – External Services

VTMIS : Vessel Traffic Management and Information System

It is the intelligent maritime traffic system, based on satellites, radar, AIS transponders and in Europe on LRIT, SSnet and CleanSeaNet, and related services such as e-maritime and e-navigation. It aim is to integrate all traffic management systems: VTMIS, ATM, ERTMS and RMS: sea, air, rail and road respectively,.



e- freight

It was defined in 2007 in the Logistics Action Plan, as the result of the interaction of transport services with ICT and the Internet. It describes the processes, actors and data streams to allow exchange of information in electronic formats - paperless - in all modes of transport

Source: Smart Ports – TrainMoS II – University of Strathclyde

7) **Manage skill development by setting up institutions for all sectors**. Create a **research Centre of Excellence** for all sectors and multi-modal transportation. It has become imperative to setup an institution specifically dedicated to the Port Sector to serve as a Centre of Excellence. This institution
   - Will build capabilities for the sector by aligning with institutions on its own to provide diploma and degree courses in maritime sector.
   - Will work with firms, educational institutions, government institutions, Ports (domestic and international) other institutions to serve as the fountainhead of knowledge and skill development in the maritime sector.
   - Will be the leader in research and innovation and thought leadership for the Port sector in India
   - Will help the government in developing the ITS architecture plan for the Port sector
   - Coordinate with the government in developing the ITS strategic plan for the Port sector every five years
   - Work with the government in defining standards, protocols and processes for the Port sector
8) Setup an **investment fund** to invest in R&D activities and to fund start-up technology companies in maritime sector. MPA established a fund, Maritime Innovation and Technology Fund (MINT), of $100mn to invest in R&D projects for the development of maritime R&D sector. The fund was set up in 2003 for a period of 10 years and in 2011 it received a top-up of $50mn thus the investment period has been extended until 2018.
9) **Technology implementation for processing at Gates**: At the moment most of the delay in receiving and dropping cargo happens at the following points:
   I. Paper-based submission of documents and subsequent verification
   II. Manual checking at the gates
   III. Ad-hoc arrival of trucks

IV. Manual checking of seals

a. The following solutions can be implemented to obtain productivity at gate processing:

V. **Pre-defined appointment** systems can be provided to curtail ad-hoc arrival of trucks.

VI. **Document Management System** should be implemented to facilitate paper-less movement of goods, trucks, and so on. The ports handle physical file handling system. The ports should move towards a paperless regime and implement e-office and other software to cover the port's operational workflow and facilitate an end-to-end electronic processing of port activities.

VII. Freight forwarders can log-on to a **web-portal (EDI based verification)** to provide necessary details on the cargo, trucks etc. They can also book appointments to ensure faster processing.

VIII. Upon arrival, the driver verification can be done through **biometric identity verification** (RF-based contactless cards). Prior electronic transmission of data can be cross-verified at the gate.

IX. Details about the truck can be verified through **Optical Character Recognition (OCR)** solutions.

X. **Electronic Sealing (e-seal)** can be implemented for faster checking of containers. Electronic sealing is reusable and provides information on the opening of the seal and the duration of the opening. E-sea is a wireless transmitter system that uses RFID-based communication.

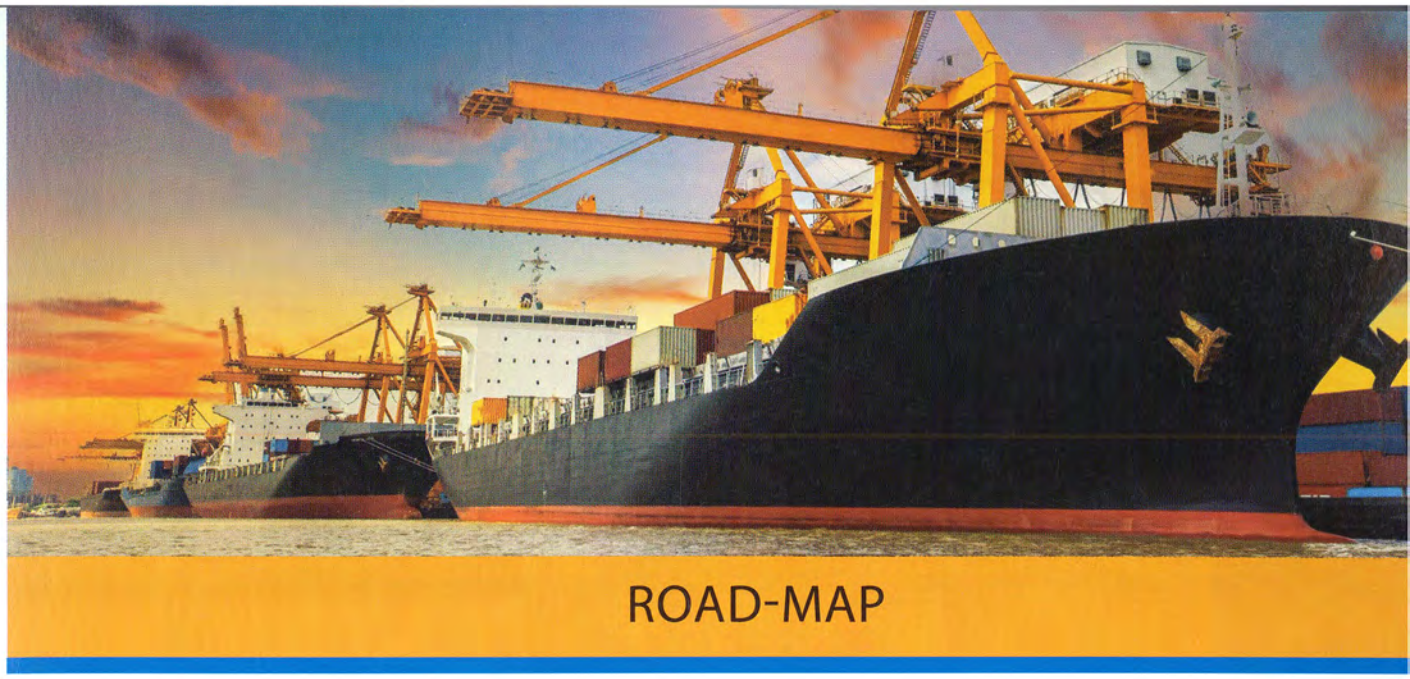
10) Ports have developed and implemented different applications for managing their in-house administration activities. Due to the differences in applications, there is no uniformity in data across ports. To **standardize the operations** and to help facilitate a dashboard representation of Ports across India, ERP (Enterprise Resource Planning) solutions have to be implemented across the major ports. Instead of implementing ERP systems at individual ports, a centralized system hosted on cloud could be implemented and individual ports could plug-in to the system. Where customization might be necessary, such customization should be done on a standard basis so that it does not impact exchange of data or data representation across ports or on ports with their stakeholders.

11) The central government should also come out with **specific guidelines in respect to hosting software on a cloud environment**, data hosting and transfer in such an environment. Specific rules and regulations with respect to handling of data addressing privacy concerns need to be taken care of.

12) Under the overall leadership of IPA Chairman, create a transformation group at IPA inviting all ports CIOs as members. The group should meet at-least once in a quarter to discuss issues and challenges associated with modernization efforts (both new and existing system) at their respective locations. This will help in creating a platform for regular exchange of knowledge and expertise, explore the possibility of resource optimization and share best practices for fast track implementation of various programs.

13) Conduct a detailed digital security audit to identify gaps at all the port locations. Once the gaps are identified, constitute a high-powered working group inviting experts from academia and industry to select appropriate solutions and facilitate implementation.

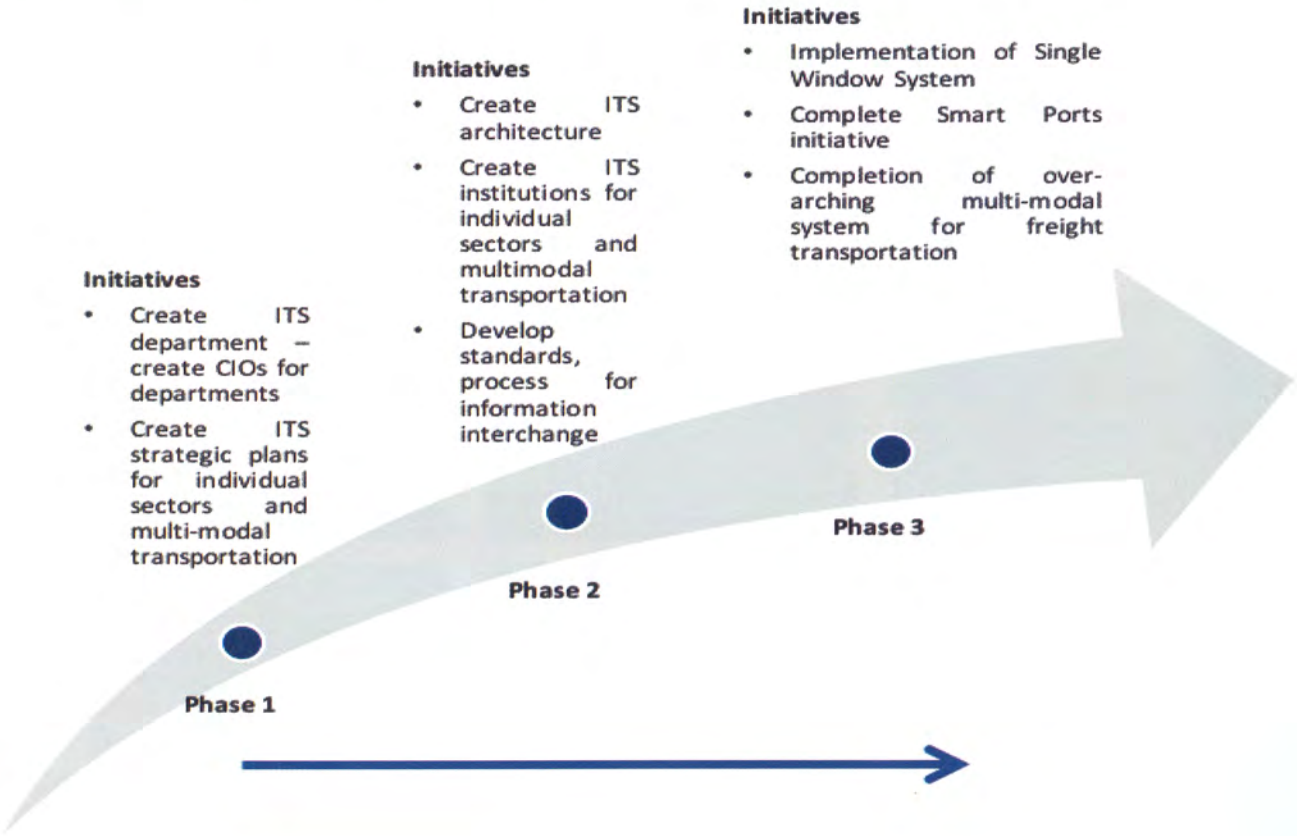
14) As mentioned in the Road Report, an **over-arching multi-modal system** needs to be created.Such a system can help in end-to-end pickup, delivery of freight and reduce logistics costs along with the time taken for transportation.



ROAD-MAP

The below figures provides the roadmap for the implementation of our recommendation:

Figure 25: Roadmap for implementation of initiatives



Appendix

Appendix No. 1

Maritime and Port Authority (MPA) Singapore

Organization Structure: MPA was setup under the MPA Act by the Singapore Parliament. It is an autonomous agency and reports to the MPA Board of Directors. The Board comprises of the Chairman and 11 directors. The Board is appointed by the Minister of Transport for a 3-year term.

Board and Board Committees:

Figure 26: MPA Board and Board Committees

MPA Board and Board Committees

Source: MPA integrated report - 2014

Organization structure:

Figure 27: MPA Organization structure

OPERATIONS CLUSTER

SHIPPING DIVISION
- Flag State Control Dept
- Port State Control Dept
- Registry Dept
- Seafarers Management Dept
- Ship Investigation Dept
- Ship Regulation & Development Dept
- Training Standards Dept/ISC

PORT SERVICES DIVISION
- Hydrographic Dept
- Marine Licensing & Permits Dept
- Marine Services Dept

PORT DIVISION
- Marine Environment & Safety Dept
- Operations Planning Dept
- Security Dept
- Vessel Traffic Management Dept
- Operations Policy Unit
- Safety Inspectorate Dept
- Emergency Preparedness Dept

TECHNOLOGY DIVISION
- Electronics & Communications Dept
- Engineering & Planning Dept
- Information Technology Dept
- Tuas Port Development Dept
- PPT Development Dept
- Research & Technology Development Dept

COMMUNICATIONS & COMMUNITY DIVISION
- Community Engagement Dept
- Corporate Communications Dept
- Maritime Gallery Office

HUMAN RESOURCE DIVISION
- Human Resource Development Dept
- Human Resource Management Dept

CORPORATE DEVELOPMENT DIVISION
- Financial Planning & Analysis Dept
- General Accounting Dept
- Organisational Excellence Dept
- Service Quality Unit
- Procurement & Admin Dept
- Facility Management Dept

DEVELOPMENT CLUSTER

IMC DIVISION
- IMC Capability Development Dept
- IMC Promotion Dept
- IMC Services Development Dept

INTERNATIONAL DIVISION
- International Dept
- IMO Affairs Office
- London Office

PORT POLICY DIVISION
- Port Policy Dept

PLANNING DIVISION
- Corporate Planning Dept
- Maritime Economics Dept
- Strategic Planning Dept

Source: MPA integrated report - 2014

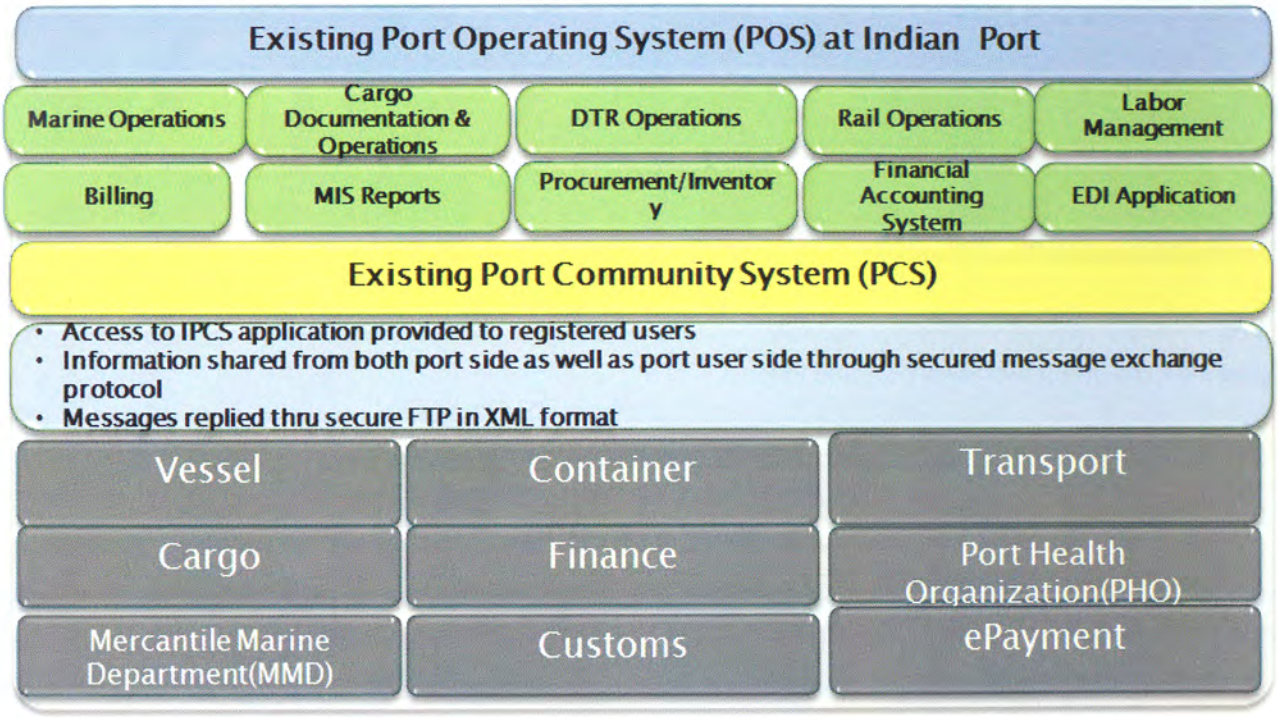
Future ITS projects in India

Indian Port Business Intelligence System (IPBIS)

While ERP implementation is for ports to be operationally efficient and productive, IPCS was aimed at community level aggregation. IPBIS aims to be implemented at the overall sector level.

The following is the existing application landscape:

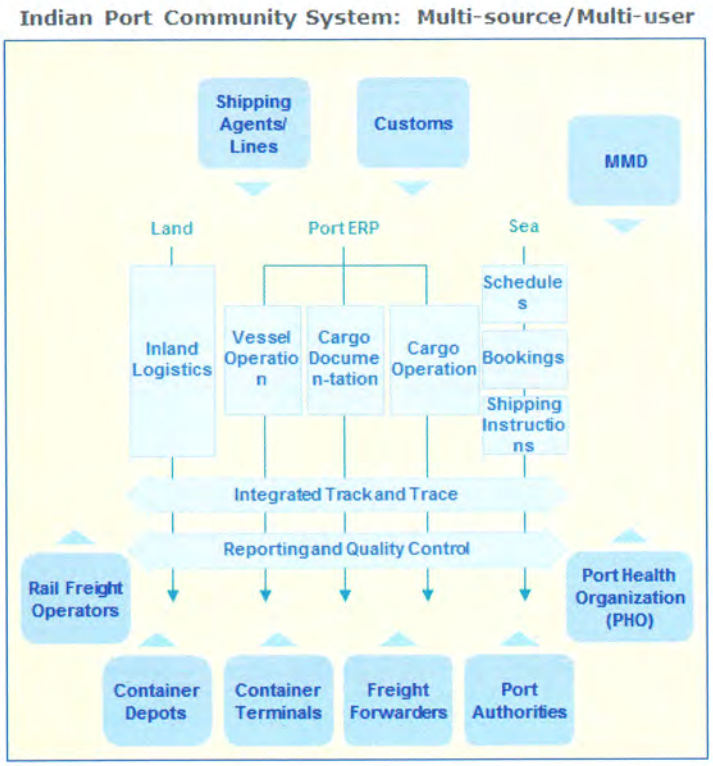
Figure 28: Existing application landscape



Source: Implementation of IT at Indian Ports Association by IPA

IPBIS Model:

Figure 29: IPBIS Model



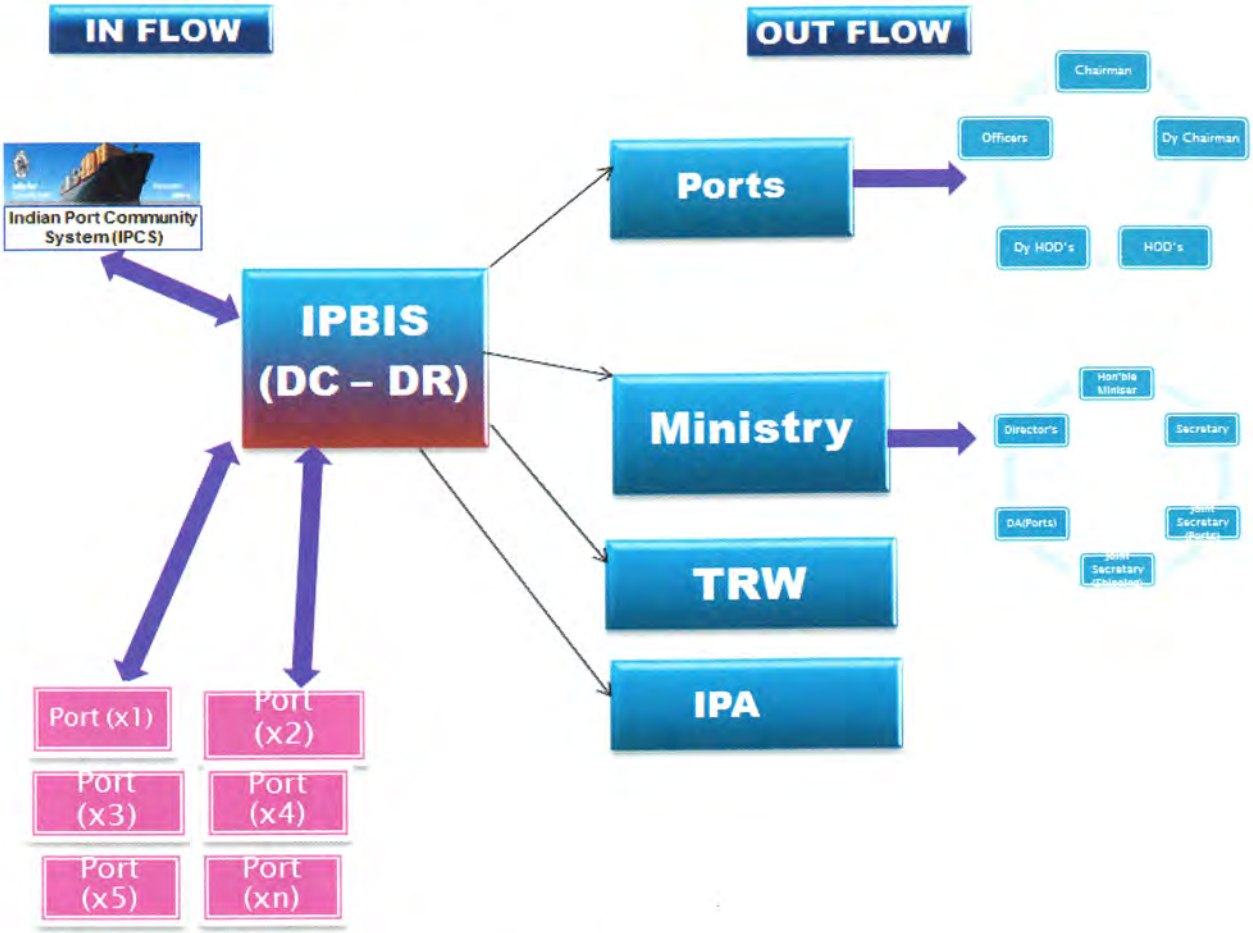
Integration with IPCS and ERP:

Figure 30: IPBIS integration with IPCS and ERP

Source: Implementation of IT at Indian Ports Association by IPA

IPBIS interface with stakeholders:

Figure 31: IPBIS interface with stakeholders



Source: Implementation of IT at Indian Ports Association by IPA

Interoperability RFID at all Ports

To implement ISPS compliant RFID based Port Access Control System for providing physical access control to the port premises. The physical access control system is to control, monitor and track traffic through the Port Gates with the following comprehensive features:

1) ISPS compliant Port Access Control Security.
2) Diversify & streamline the congestion at the gates & pass issue section
3) Personal Identity Verification (PIV) mode based on RFID enabled card
4) Create a highly interoperable system that integrates with other Systems/Data base like NHAI, RTO, etc
5) The Pass issue data and activities could be centrally pooled at Port Community System (PCS)

Management of Visitor & Vehicle Entry/Exit to/out Port limits

The objectives of the implementation are as follows:

1) Tracking of Visitor & Vehicle inside port
2) Accounting of in and out timing of vehicles plying inside the Port
3) Photos of drivers and cleaners in their vehicles to be captured for photograph purpose even in mobile condition.

4) The photo passes for Containers and Bulk Cargo is envisaged to be issued at Container Freight Station (CFS) or suitable bulk cargo agent locations.

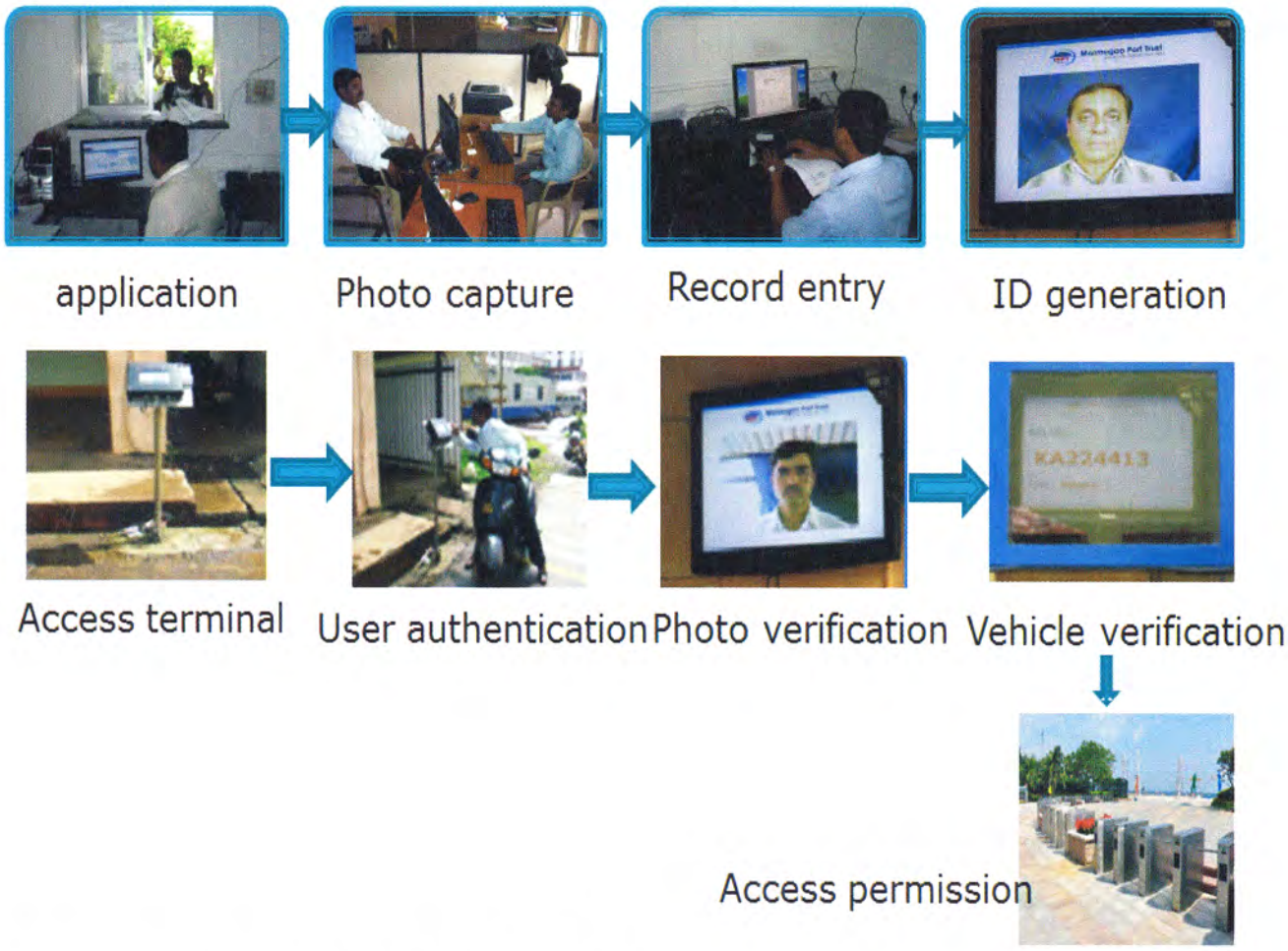
5) The entry fee as may be fixed by the Port to be collected from each person/vehicle at entry into Port.

6) In case of passes issued at CFS, a bulk amount may be collected from CFS operator and passes may be issued to that extent as per pre-paid mechanism.

7) A suitable mechanism to undertake all above requirements for the Port has to be evolved by keeping in view those customizations and integrations will be part of the requirement.

User access at Ports

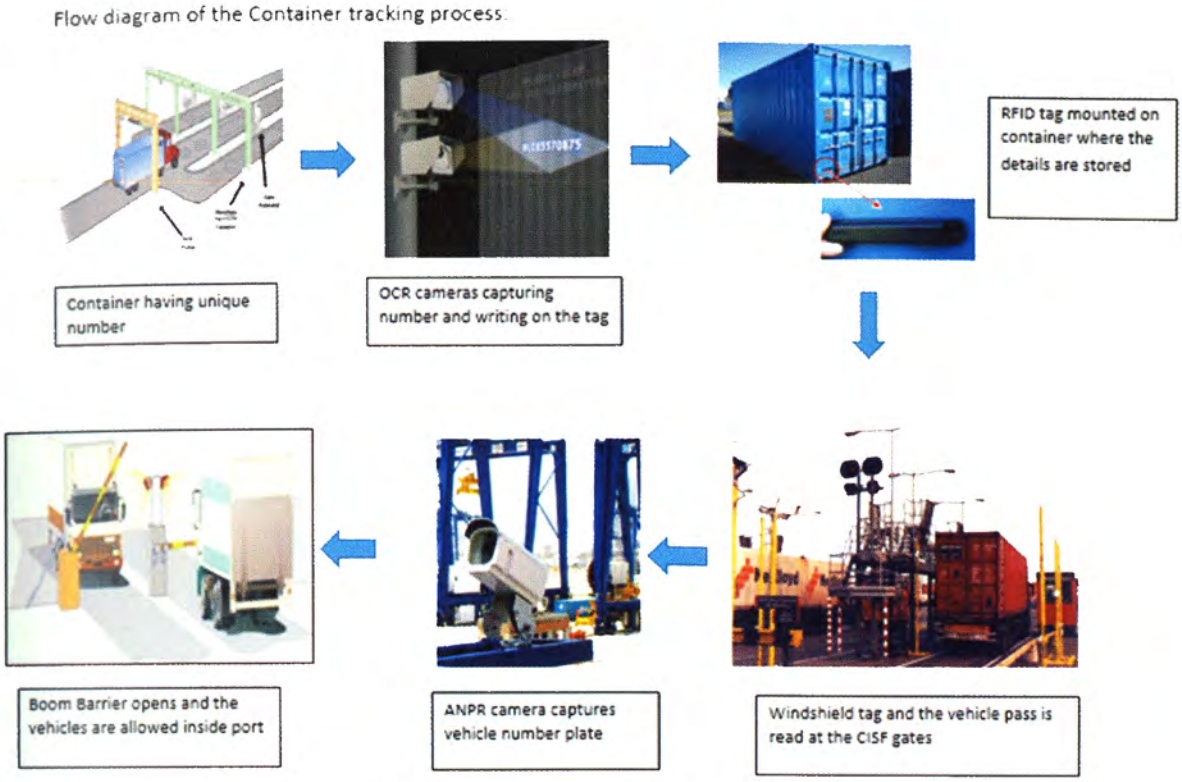
Figure 32: User access at Ports



Source: Implementation of IT at Indian Ports Association by IPA

Container access at Ports

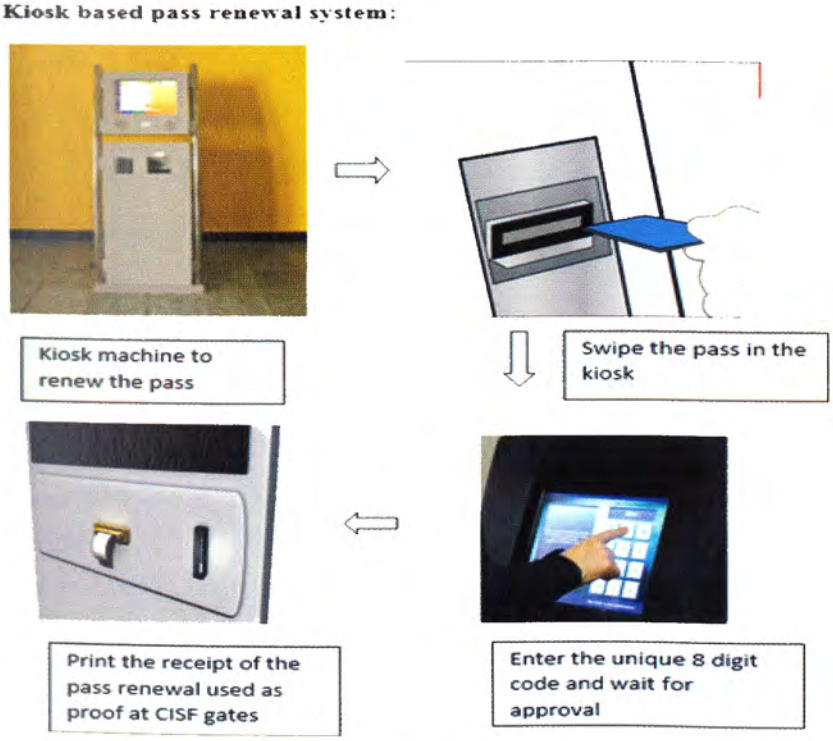
Figure 33: Container access at Ports



Source: Implementation of IT at Indian Ports Association by IPA

Kiosk based Pass renewal:

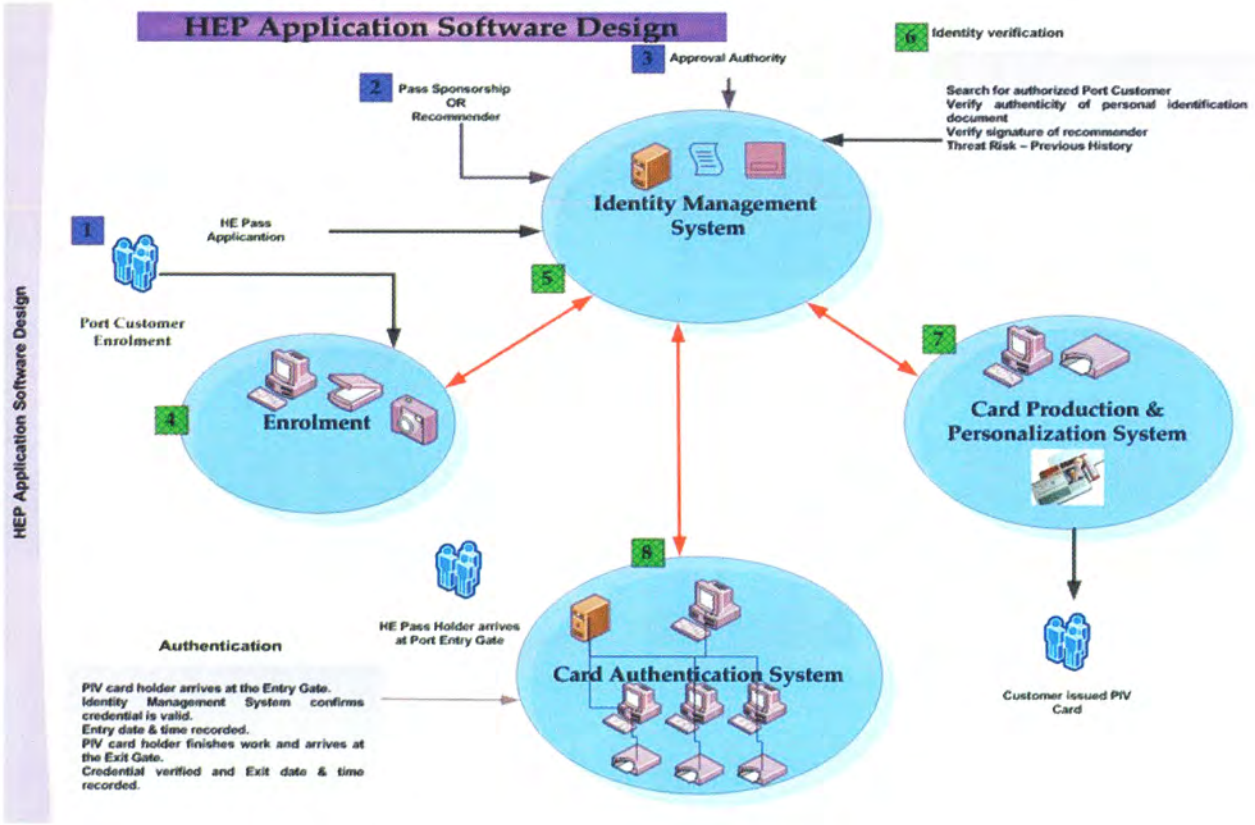
Figure 34: Kiosk based Pass renewal



Source: Implementation of IT at Indian Ports Association by IPA

Access Control design

Figure 35: Access Control design



Source: IPA - Implementation of IT at Ports

Indian Ports - Operational Parameters

Average Turn-Round Time (TRT)

Figure 36 gives the Average Turn-Round Time (TRT) for all the 12 major ports. Figure 36.1 provides the average TRT for individual ports. Although there is a clear pattern of downward trend, the TRT numbers still do not match up to the best of the global ports.

Figure 36: Average Turn-Round Time at Major Indian Ports

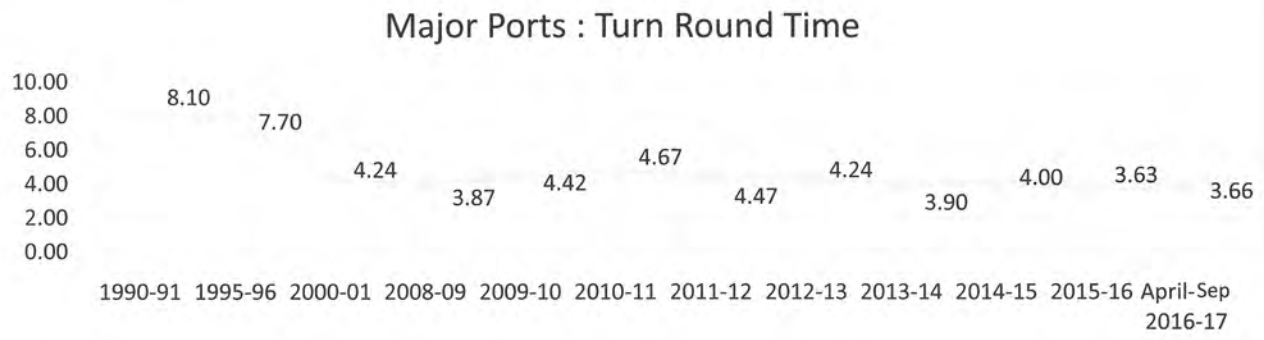


Figure 36.1: Average Turn-Round Time at Major Indian Ports

	AVERAGE TURN ROUND TIME (DAYS)										
PORT	1990-91	2000-01	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	April-Sep 2016-17
1	2	3	4	5	6	7	8	9	10	11	12
KOLKATA DOC SYSTEM	11.86	5.50	4.60	5.47	5.37	4.95	4.49	4.22	4.18	3.98	4.62
HALDIA DOC COMPLEX	6.47	3.96	4.21	5.01	4.53	3.66	3.99	3.80	3.37	3.27	4.97
PARADIP	8.42	4.16	4.78	9.04	7.73	6.33	4.39	4.62	7.01	4.50	5.24
VISAKHAPATNAM	7.07	3.71	3.93	4.78	5.84	5.68	5.39	4.73	5.67	3.84	3.77
KAMARAJAR	-	-	2.35	2.35	2.78	2.17	2.95	4.24	4.32	6.53	3.31
CHENNAI	7.17	5.80	4.15	4.05	4.36	3.91	3.24	2.46	2.54	2.53	2.69
TUTICORIN	4.67	4.10	3.66	3.97	4.11	4.89	4.31	3.92	3.55	3.73	3.76
COCHIN	3.95	3.10	2.14	2.08	2.20	1.82	1.58	1.76	1.69	2.18	1.89
NEW MANGA-LORE	5.01	2.89	3.00	3.06	2.71	2.95	3.29	3.18	2.46	2.63	2.35
MORMUGAO	6.39	4.25	3.61	5.63	6.15	4.80	3.93	4.34	4.15	3.65	5.81
MUMBAI	10.85	5.20	4.95	4.61	4.96	5.22	5.58	4.78	5.28	4.58	3.38
J.N.P.T.	-	2.48	1.97	2.02	2.67	2.46	2.54	2.44	2.24	2.44	2.01
KANDLA	10.04	4.72	5.20	5.03	5.90	6.42	6.40	5.66	5.38	4.66	4.72
TOTAL	8.10	4.24	3.87	4.42	4.67	4.47	4.24	3.90	4.00	3.63	3.66

Source: Update on India Port Sector

Average Pre Berthing Detention Time (PBDT)

Figure 37 gives the Average Pre Berthing Detention Time (PBDT) and the Average PBDT on port account for all the 12 major ports. Figure 37.1 provides the average PBD (Days) for individual ports. Although there is a clear pattern of downward trend in average PBDT on port account, the average PBDT numbers exhibit a see-saw pattern.

Figure 37: Average Pre Berthing Detention Time

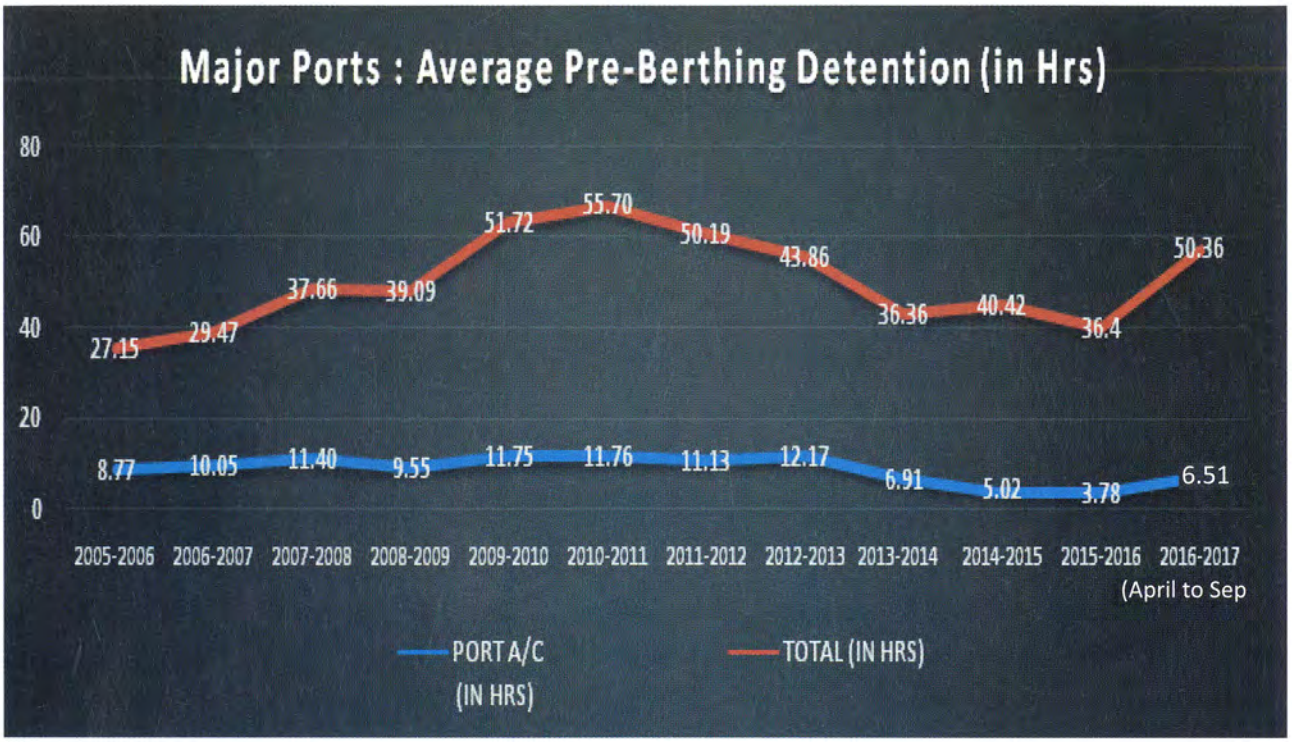


Figure 37.1: Average Pre Berthing Detention Time

AVERAGE PRE-BERTHING TIME (HOURS) (Under Port A/c)											
PORT	1990-91	2000-01	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	April-Sep 2016-17
1	2	3	4	5	6	7	8	9	10	11	12
KOLKATA	5.28	1.20	1.27	5.8	3.45	0.67	0.02	0	0.14	0.31	0.25
HALDIA	33.36	3.6	24.45	33.29	25.68	13.10	20.49	18.81	11.84	3.57	17.99
PARADIP	30.96	8.88	1.30	1.29	2.51	1.17	1.16	1.09	0.88	4.75	20.67
VISAKHAPATNAM	33.12	6.72	4.35	18.96	2.28	2.22	1.41	1.45	1.89	0.96	0.47
KAMARAJAR	-	-	0.74	0.42	0.01	0.02	0.05	0.02	0.03	0.04	0.03
CHENNAI	19.2	38.40	0.93	0.98	0.97	0.94	0.89	0.90	0.81	0.81	0.82
TUTICORIN	12.48	15.84	3.36	9.60	9.36	18.96	8.40	5.04	3.84	6.48	14.40
COCHIN	14.64	3.12	1.31	2.39	4.57	3.68	1.46	0.98	1.84	1.39	0.0
NEW MANGALORE	17.04	4.32	0.90	0.72	0.68	1.00	1.20	26.40	0.96	1.00	3.76
MORMUGAO	9.12	12.00	11.48	19.81	17.91	15.23	19.38	8.51	6.00	4.23	14.05
MUMBAI	24.72	6.72	7.37	7.22	8.18	7.70	7.80	12.26	7.10	7.41	1.78
J.N.P.T.	-	10.08	9.50	6.29	13.40	8.24	9.08	11.17	9.50	8.88	7.20
KANDLA	52.8	8.16	28.08	22.80	36.24	42.96	49.20	14.16	9.60	3.60	2.20
TOTAL	51.84	28.56	9.55	11.75	11.76	11.13	12.17	6.91	5.02	3.78	6.51

Source: Update on India Port Sector

Appendix No. 4

Office Memorandum for Setting up of IT Task Force

Most Immediate

Government of India
Ministry of Road Transport & Highways
(O&M-IT Section)

No. I-34016/14/2015-O&M(IT) New Delhi, 26th February, 2015

OFFICE MEMORANDUM

Subject:- Constitution of a Task Force under the Chairmanship of Hon'ble Minister for Shipping, Road Transport & Highways to facilitate simplification of procedures by leveraging the use of Information Technology(IT) in the Ministries of Shipping, Road Transport & Highways.

The undersigned is directed to state that it has been decided with the approval of Hon'ble Minister for Shipping & Road Transport & Highways to constitute a Task Force to facilitate simplification of procedures by leveraging the use of Information Technology(IT) in the Ministries of 'Shipping, Road Transport & Highways in the context of Minimum Government Maximum Governance envisaged by Hon'ble Prime Minister. The composition of the Task, Force would be as follows:-

1,	Hon'ble Minister for Shipping, Road Transport & Highways:	Chairman
2.	Shri T.V. Mohandas Pai, Chairman, Manipal Global Education Services Pvt Ltd. Bangalore.	Member
3.	Shri Girish Srivastava, Policy & Strategy Consultant,(Former Head-Public Policy, NASSCOM), NOIDA, UP	Member
4.	Shri Prashant Pole, Director, Disha Consultants, Jabalpur,	Member
5.	Shri Abhijit Purushottam Desai, Partner, Ekam Consulting, LLP, Mumbai	Member
6.	Shri Sanjay Jaju, Director, National Highways Infrastructure Development Corporation Limited	Member

Other Members:

7.	Member(Admn), NHAI	Member
8.	Joint Secretary (Establishment), MORTH	Member
9.	Joint Secretary(Admn), Ministry of Shipping	Member
10.	Representative of Indian Ports Association or selected Ports	Member

2. The Task Force can co-opt any other person as Member of Task Force with the approval of the Chairman.

3 The O&M(IT) Unit of Establishment Wing of Ministry of Road Transport & Highways will provide secretariat support to the Task Force.

4. The aims and objectives of the Task Force are enclosed as Annexure. In line with the aims and objectives, the Task Force shall prepare /formulate its Terms of Reference and detailed work plan during its kick- off meeting.

(V. Krishnaswamy)
Director (IT)
Telefax : 23710450
(email : v.krishnaswamy@nic.in

To

1. All Members of the Task Force

   (i) Shri T.V Mohandas Pai, Chairman, Manipal Global Education Services Pvt Ltd. No. 70, Grace Towers, 4th Floor, Miller's Road, Bangalore, PIN- 560052 (Tele 080-30789205-Fax 080=30789222- email mohan.pai@manipalglobal.com).

   (ii) Shri Girish Srivastava, Policy & Strategy Consultant, (Former Head-Public Policy, NASSCOM), B-245, Sector-71, Near Sai Mandir, NOIDA ,Uttar Pradesh, -PIN -201301(Mobile-9811205633- email - grish@gnsadvisory.net).

   (iii) Shri Prashant Pole, Director, Disha Consultants, 'Maitra ,1126, Beside Samadhan Hospital, Wright Town, Jabalpur- PIN 482002- Tele: 0761-4004032- Mob- 09425155551 email-telemat@airtelmail.in, email-telemat@bsnl.in)

   (iv) Shri Abhijit Purushottam Desai, Partner, Ekam Consulting, LLP Address 707, Anant Patil Marg, Golden Heights "B"CHS Ltd, #16,Shivaji Park,Mumbai- PIN 400028- Mob-09820040555-email ad@ekamconsulting.net)

   (v) Shri Sanjay Jaju, Director, National Highways Infrastructure Development Corporation Limited, Transport Bhavan (Tele No 23351282- iajus@ias.nic.in)

   Other Members

   (vi) Shri Satish Chandra, Member(Finance) & (Admn), NHAI G 5&6 Sector 10, Dwarka, NHAI(Tele: 25093512- Telefax- 25093502-email¬memberfinance@nhai.org)

   (vii) Shri Niraj Verma, Joint Secretary (Establishment), MORTH

   (viii) Shri Barun Mitra, Joint Secretary (Admn), Ministry of Shipping, Transport Bhavan, New Delhi.

Copy to :-

2. PS to Hon'ble Minister for Shipping, Road Transport & Highways
3. PS to Hon'ble Minister of State for Shipping, Road Transport & Highways
4. Sr. PPS to Secretary(RT&H)
5. Sr. PPS to Secretary(Shipping)
6. PPS /PS to Chairman, NHAI
7. PPS to SS & FA
8. Sr PPS/PS to DG(RD) & SS
9. PPS/PS to ADGs
10. PPS/PS to Principal CCA
11. Managing Director; National Highways Infrastrcuture Development Corporation Limited
12. Coordinator II- Shri D.O.Tawade, Chief Engineer
13. JS(T)/JS(H)/JS(LA&P)/JS(EIC)/Adviser (TRW)
14. All Chief Engineers in MORTH.
15. Director (Admn), Ministry of Shipping with a request to kindly nominate a representative of Indian Ports Association or selected Ports to this Ministry urgently.

Proposal for constitution of Task Force for speedy Implementation of Information Technology Solutions in Shipping, Road Transport & Highways Ministry

Objectives of the proposed Task Force can be as below:

1. Under the Chairmanship of Hon'ble Minister, Task Force will have representations from Industry, academia, well-known subject matter experts and respective departments.
2. The task force shall review all e-governance initiatives presently implemented in both the ministries and shall help
   a) Integrate them
   b) Devise strategy for speedy implementation
   c) With a objective to bring in Transparency, Reduce loss of time and resources, simplify processes for users/ citizens, eliminate corruption and provide effective monitoring solutions.
3. The Task Force will engage if necessary with knowledge partners, research agencies, and subject matter experts to carry our quick research around the innovative ideas generated during the course of discussions.
4. The Task Force will formulate procedures.
5. In case of specific assignments, the Task Force will have powers to co-opt other members' temporarily, as also to constitute a Technical Evaluatior Group.
6. The Task Force will ensure speedy implementation of perspective plan and related activities and, for this purpose, work out time frames.
7. Sufficient budgetary provision will be made to meet the expenses related to the initial groundwork for the constitution of the committee (travel, boarding, lodging, local transport, perdiem etc.)
8. The task force shall prepare TOR and a detail work plan during the kick-off meeting.

FAX/Speed Post

No. I-34016/01/2015-Estt.
GOVERNMENT OF INDIA
MINISTRY OF SHIPPING
(ESTT. SECTION)

1, Parliament Street, Transport Bhawan
New Delhi, the 4th March, 2015

To,

1. Director General of Shipping,
2. Chairman, Cochin Port Trust,
3. Chairman, Visakhapatnam Port Trust,
4. Managing Director, Indian Ports Association

Subject: Constitution of a Task Force under the Chairmanship of Hon'ble Minister for Shipping, Road Transport & Highways to facilitate simplification of procedures by leveraging the use of Information Technology (IT) in the Ministry of Shipping, Road Transport & Highway.

Sir,

I am directed to inform you that Hon'ble Minister for Shipping, Road Transport & Highways, Government of India has proposed for extensive use of Information Technology and e-governance which is to be encouraged and developed in all field of activities of the two Ministries to achieve the goal of Minimum Government Maximum Governance. Accordingly, Hon'ble Minister (S&RTH) has approved the constitution of dedicated and focused Task Force involving all stakeholders to explore the possibility of implementation of IT and e-governance in all fields of activities of both the Ministries. The members of the Task Force have to assist in preparation of detailed Terms of Reference (ToR) for the purpose of achieving the objective mentioned above.

2. You are informed that a meeting is to be convened under the Chairmanship of Hon'ble

   Minister for Shipping, Road Transport & Highways on 9.3.2015 at 05.00 p.m, in the Conference Room, Ground Floor, Transport Bhavan, 1-Parlimant Street, New Delhi-110001 and the following officers have been nominated by the competent authority of this Ministry as a member of Task Force:-

   i) Director General (Shipping)
   ii) Joint Secretary (Ports)
   iii) Chairman- Cochin Port Trust
   iv) Chairman- Visakhapatnam Port Trust
   v) Managing Director- IPA

3. You are therefore, requested to kindly make it convenient to attend the above mentioned meeting of the Task Force chaired by the Hon'ble Minister (RT&H and Shipping) on 9.3.2015 at 5.00 p.m.

Yours faithfully,

(Ashwani Kumar)
Director (Admn.)
Tel. No. 23710220
Fax No. 011-23356713

Copy to :-

(1) Joint Secretary (Admn.), Ministry of Road Transport & Highways; **for including the above names in Task Force.**

(2) Joint Secretary (Ports), Ministry of Shipping.

Most Immediate

Government of India
Ministry of Road Transport & Highways
(O&M-IT Section)

No. I-34016/14/2015-O&M(IT) New Delhi, 25th May, 2015

OFFICE MEMORANDUM

Subject: Terms of Reference of the Task Force on simplification of procedures by leveraging the use of Information Technology(IT) in the Ministries of Shipping, Road Transport & Highways.

The undersigned is directed to state that pursuant to the meeting of the Task Force on simplification of procedures by leveraging the use of Information Technology(IT) in the Ministries of Shipping, Road Transport & Highways, on 9.4.2015, Terms of Reference of the Task Force has been formulated with reference to the suggestions received from the expert members of the Task Force. The same has been approved by the Hon'ble Minister of Shipping, Road Transport & Highways. A copy of the same is enclosed for necessary action.

(V.Krishnaswamy)
Director (IT)
Tele : 23710450
(email : v.krishnaswamy@nic.in)

Encl: As above

All Members of the Task Force:

(i) Shri T.V.Mohandas Pai, Chairman, Manipal Global Education Services Pvt Ltd. No. 70, Grace Towers, 4th Floor, Miller's Road, Bangalore, PIN- 560052 (Tel:080- 30789205 Fax:080-30789222 e-mail mohan.pai@manipalglobal.com).

(ii) Shri Girish Srivastava, Policy & Strategy Consultant,(Former Head-Public Policy, NASSCOM), B-245, Sector -71, Near Sai Mandir, NOIDA, Uttar Pradesh, PIN - 201301 (Mobile: 9811205633 email — girish@gnsadvisory.in)

(iii) Shri Prashant Pole, Director, Disha Consultants, 'Maitre' ,1126, Beside Samadhan Hospital, Wright Town, Jabalpur- PIN 482002- Tele: 0761-4004032 Mobile: 09425155551 email- telemat@airtelmail.in, email-telemat@bsnl.in)

(iv) Shri Abhijit Purushottam Desai, Partner, Ekam Consulting, LLP Address. 707, Anant Patil Marg, Golden Heights "B"CHS Ltd, #16,Shivaji Park, Mumbai. PIN 400028. Mobile:09820040555 email ad@ekamconsulting.net)

(v) Shri Vinit Goenka, Secretary, Centre For Knowledge Sovereignty, 1102, Park Side Tower 3, Raheja Estate, Kulupwadi, Borivali East, Mumbai -400066 (Mobile. 09820101998 e-mail: vinitgoenka@gmail.com

(vi) Shri Sanjay Jaju, Director, National Highways Infrastructure Development Corporation Limited, Transport Bhavan(Tele No 23351282- jajus@ias.nic.in)

Other Members

(vii) Shri Satish Chandra, Member(Finance) & (Admn), NHAI G 5&6 Sector 10, Dwarka, NHAI (Tele: 25093512 Telefax- 25093502 email- memberfinance@nhai.org)

(viii) Shri Niraj Verma, Joint Secretary (Establishment), MORTH, niraj.verma@nic.in

(ix) Shri Barun Mitra, Joint Secretary(Admn), Ministry of Shipping, Transport Bhavan, New Delhi.

(x) Shri Deepak Shetty, Director General of Shipping,9th Floor Beta Building, i-Think Techno Campus, Kanjurmarg (East), Mumbai - 400 042 (India)Tel. No. : 91-22¬25752040/41/42/43/45 Fax.No. :91-22-25752029/35; Email : dgship-dgs@nic.in. dshetty-dgs@nic.in

(xi) Shri N.Muruganandam, JS(Ports), Ministry of Shipping, Transport Bhavan, New Delhi., js-ports@nic.in

(xii) Shri Paul Antony, Chairman, Cochin Port Trust, Cochin Port Trust, Cochin 682009. Tel: 0484-2666592, chairman@cochinport.gov.in

(xiii) Shri M.T.Krishna Babu, Chairman Visakhapatnam Port Trust, Port Area, Visakhapatnam-530035. Phone: 91- 891- 2876001.FAX: 91- 891- 2565023 EPABX:2564841.e-mail: chairman.vpt@gov.in

(xiv) Shri A.Janardhana Rao, Managing Director, IPA,1ST FLOOR, SOUTH TOWER, NBCC PLACE, BHISHAM PITAMAH MARG, LODI ROAD,NEW DELHI 110 003,FAX 011-24365866,EPABX 24369061, 24369063 & 24368334 E-mail md.ipa@nic.in.

Copy for information to :-

10. PS to Hon'ble Minister for Shipping, Road Transport & Highways
11. PS to Hon'ble Minister of State for Shipping, Road Transport & Highways
12. Sr. PPS to Secretary(RT&H)
13. Sr. PPS to Secretary(Shipping)
14. PPS /PS to Chairman, NHAI
15. PPS to SS & FA
16. Managing Director, NHIDCL 17
    Director (Admn), Ministry of Shipping

18. Deputy Secretary(IT) (Shri Abhishek Chandra), Ministry of Shipping

Terms of Reference for the Task Force under the Chairmanship of Hon'ble Minister for Road Transport, Highways & Shipping, on simplification of procedures in the Ministries of Road Transport & Highways and Shipping by leveraging the use of Information Technology

Introduction

A Task Force has been set up under the Chairmanship of Hon'ble Minister for RTH&S to facilitate simplification of procedures by leveraging the use of Information Technology (IT) in the Ministries of Road, Transport, and Highways & Shipping. In this effort, the Task Force shall study the present state of IT adoption levels and suggest measures to reform and modernize the entire system for better transparency, efficiency and accountability. The Task Force will also help foster knowledge sharing through establishment of expert working groups and the development of a Roadmap to maximize synergies between various ports and surface transport units/locations of the ministry and help create a sound implementation framework.

Mission and Objectives

The Mission of the Task- Force would be to bring IT transformations across both the ministries (Road Transport Highways and Shipping) and its associated public entities and organizations.

To meet the stated mission, task force will hold extensive discussions and consultations with shipping and road transport officials and other key stakeholders to devise a strategic roadmap and action plan for speedy implementations.

Terms of Reference

1. Prepare a robust Information Technology (IT) Transformation document for both Shipping and Surface Transport Ministry clearly defining a long-term strategic roadmap and implementation plans.
2. Study all ports and key surface transport locations for identifying gaps between "as-is" and "desired" states and provide feed to IT transformation document.
3. Assist in finalizing the short, medium and long-term goals for modernization of Ports and Road Transport system using ICT solutions.
4. Provide expert opinion in finalizing an appropriate contracting model (outcome, transaction etc) for speedy implementation and efficient working of the overall system.
5. Identify key dissemination activities for project result

Methodology

1. The Task Force would be supported by a dedicated secretariat in National Highways & Infrastructure Development Corporation Ltd (NHIDCL) under Ministry of Road Transport & Highways with optimum technical and project management skills. Appropriate resources will be hired for setting up such a secretariat. Required budget would be earmarked by both the ministries for setting up such secretariat. The proportionate share of Ministry of Road Transport & Highways and Ministry of Shipping in the budget/expenditure for setting up Secretariat may be 2/3rd and 1/3rd respectively.
2. For gap analysis and scope finalization, technical teams shall be deployed to assist task force members during the visit at various ports and surface transport locations.

3. Ministry will internally identify project leaders both from Road Transport & Highways and Shipping to take overall responsibility of programme implementations and also act as a nodal point for interaction with Task Force members.

4. During the task force meetings, individual project leaders will provide briefing to task force members on project status and major inputs/decisions required to expedite the process.

5. During the course of the working, Ministry will engage with a knowledge partner/or subject matter experts to carry out quick research around the innovative ideas generated during the course of discussions.

6. Agenda for the meeting shall be circulated well in advance to all the task force members for necessary preparations.

7. Minutes of Meetings shall be circulated within three working days after every meeting as a draft for inputs and comments of the members.

8. The Task Force should complete its, assigned tasks by 30th September, 2015.

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Appendix No. 5

Profile of Task Force Members

T. V. Mohandas Pai

TV Mohandas Pai Chairman of Manipal Global Education P LTD, and a key player in the development of the IT services industry in India. Prior to this, he was a Member of the Board at Infosys Ltd, where he also served as CFO and later led Human Resources, Education & Research. He co-founded Aarin Capital Partners in early 2012 to fund opportunities in Health Care, Life Sciences, Education and Technology-led businesses. He also co-founded Exfinity Investment Managers in mid-2014 to launch Exfinity Technology Fund I and II, and also founded other funds to provide capital and operational support to technology companies with an India base or focus.

He was a Member of the Board of the Securities and Exchange Board of India ("SEBI"). Mohan was a Trustee of the International Financial Reporting Standards ("IFRS") Foundation, the body that oversees the International Accounting Standards Board ("IASB"), for six years. Mohan was a Member of the Dr. Anil Kakodkar Committee on Autonomy for the IITs and the Karnataka Knowledge Commission. He was a Member on the Boards of IIT – Bhubaneswar and IIT, Hyderabad. Mohan was a Member of the Kelkar Committee, constituted by the Ministry of Finance, Government of India, to reform direct tax regulations. He was also a Member of the Non-Resident Taxation Committee, the High Powered Committee on e-Commerce and Taxation, and the Empowered Committee for setting up the Country's Tax Information Network.

Girish Srivastava

Girish is presently Secretary General of Indian Broadcasting Foundation (IBF), a leading body of broadcasting sector in India.

In a career spanning over 25 years, Girish has worked with NASSCOM (National Association of Software and Service Companies), Bechtel Corporation, Bechtel Management Consulting, Reliance Industries and Toyo Engineering India.

Girish has vast experience of working on several prestigious research assignments funded by private sector, donor agencies and Government of India (Central and State) such as Human Capital Development for Information Technology, South Asia Sub Regional Economic Cooperation in ICT, India and Russia – Improving trade and investment ties, Effect of labor market restrictions in global trading system, Development of Science and Technology Park in Delhi, Development of National-level Accreditation Policy for Information Technology in the Power Sector etc. In addition, Girish is a regular author in various leading Indian newspapers and global journals.

Girish has extended his valuable contribution in various Government Committees and programmes such as Kelkar Committee for Modernization of All India Tax system by Ministry of Finance, Kelkar Committee for defense procurement reforms by Ministry of Defense, Committee for conceptualizing modernization of the Passport Issuance System by Ministry of External Affairs, Task Force for National Rural Livelihood Mission by Ministry of Rural Development, Committee on implementation of IFRS by Ministry of Corporate Affairs, Standing Committee on Modernization of Power Sector using IT solutions and several other mission mode e-Governance programs mainly falling under the ambit of Central Ministries.

Girish holds a Bachelors' Degree in Engineering from National Institute of Technology, Warangal. He is currently pursuing his Ph.D. (part-time).

Prashant Pole

Prashant is a leading Technology Expert and Consultant in IT and Telecom since more than 30 years.

Prashant has worked as Head - R & D in MELTRON and developed a few communication products, first time in India, for Defence sector. He had also headed a Technology wing of a multinational networking company.

Prashant has worked as IT Task Force Member of Maharashtra Govt during 1998 – 2000.

Prashant has a rich experience of providing technology know-how to various countries, including Ministry of Transport, Oman; Ministry of Finance, Brunei etc. He had helped various multinational and national IT / Telecom / Management companies through his consultancy services

Prashant has worked with various committees set-up by Govt of Madhya Pradesh. Currently, he is a Senate Member of MakhanlalChaturvedi National University.

A widely travelled Prashant holds a Bachelor's Degree in Electronics and Telecom Engineering from Govt. Engineering College, Jabalpur. He had completed his Master's Degree from Jabalpur University.

Abhijit Purushottam Desai

Abhijit has been associated with the IT industry for more than 22 years. After graduating in 1992, Abhijit started working for a small, but very niche firm, offering software and hardware AMC services to the Indian Defense sector. He found his calling in IT Consulting when he was handpicked to work on the first ever offshore airline IT services project at Datamatics; for Singapore Airlines. This project set the tone for the IT industry in structuring large offshore deals for margin–sensitive customers such as the airlines.

Abhijit then moved to the US in 1995 to work with one of the largest GDS (Global Distribution Services provider) called Sabre and subsequently with Visa International, the world's largest card payments systems provider. In 1998, Abhijit returned from the US to co-found a company with his industry colleagues to offer offshore bespoke software development services for Speedwing/ Bedford Associates; both subsidiaries of British Airways. Before and as part of this initiative, Abhijit was involved with a large scale implementation of a new reservations system at Indian Airlines.

In 1999, Abhijit established a consulting firm called Vega Consultants to offer custom IT consulting and delivery services. He was offered a contract by Visa International to set up and bring to a critical mass to their offshore delivery services initiative. While he helped Visa achieve their objectives in 2001, the relationship between Visa and the offshore vendor still continues! He has also helped organizations such as MTDC define their IT requirements and help them run the RFPs right through to vendor selection.

Abhijit has, over the years, developed a broad perspective of what the end-user really wants. He understands that clarity in vision and cultural alignment are critical success factors to achieving IT objectives. Abhijit works with all stakeholders of organizational initiatives to bring in that clarity in vision and the required cultural alignment. His global exposure, technical skills, collaborative approach as well as his management skills allow him to configure best-of-breed solutions.

His association with trade organizations/ industry bodies helps bring in a fresh perspective on the challenges faced by organizations operating in across the globe.

Abhijit holds a Bachelors Degree in Electronics and Telecommunication Engineering from the University of Poona, Pune, India. He is a Member of the Indian Institution of Engineers, India.

Domain expertise in aviation and card payment systems

- Exposure to Ports & shipping
- Managed and led in variety of roles; delivery -> solutions -> practice -> sales. Successful in helping customers achieve outcomes in line with expectations
- Proven record in:
  - Achieving long term sustainable growth
  - Turning prospects into customers
  - Developing and leveraging customer loyalty
  - Developing strong, cohesive, creative and performing teams
  - Managing stakeholder expectations across the complex services chain

Vinit Goenka

Vinit is a fervent nationalist, technocrat, educationist, social activist, people's man, & visionary with a tenacious drive to inspire and bring about change within society.

Vinit is an active politician with expertise in the field of IT, Transportation & Infrastructure and Agriculture. He is currently a member of the Task force IT in the Ministry of Road, Transport & Highways and Shipping, Government of India where he works closely with Hon. Union Minister Mr. Nitin Gadkari on the several nationwide IT initiatives in the context of Minimum Government Maximum Governance envisaged by Hon'ble Prime Minister Mr. Narendra Modi.

In the past, Vinit has served the BJP as its National Co-convener of the BJP central IT Cell where he spearheaded the Digital Strategy of the party in the run up to the general elections of 2014. His contribution in the land slide victory of the BJP has been widely recognized by various sections of the party, media and the society.

Vinit has over the last decade, worked extensively with the BJP at the Center and the State on an array of on-ground as well as digital initiatives. He brings with him a wealth of experience on diverse areas of the political spectrum.

Vinit is also a prolific public speaker and regularly speaks at various national as well as international events. His opinions on matters pertaining to IT & Transportation are highly sought after.

Apart from mainstream politics, Vinit has also been a long time RSS member, an ex- ABVP member and currently serves as the Secretary of Uttan Krishi Sanshodhan Sanstha, an RSS affiliated Agricultural Polytechnic Institution which focuses on Agricultural Research and Education for Tribal students from Thane and other nearby districts of Maharashtra. He also heads couple of initiatives namely Centre for Knowledge Sovereignty(CKS), policy think-tank, that works on public policies and their impact on people and Association of MSMEs in Information Technology (AIM-IT) that works in areas of policy matters with respect to MSMEs in Information Technology sector.

Vinit is associated with few other initiatives like SEIL (Students Exchange in Interstate Living) a Project that works in North Eastern States of India to encourage youth of the North Eastern States as a Trustee and also has been with FINS (Forum for Integrated National Security) organization working on India's National Security related concerns. He runs Nirman Foundation, an NGO that creates awareness programs in colleges for eye donation

Before joining active politics, Vinit was working as a part of the India leadership team of the global IT giant IBM. His decision to take the plunge in active politics was inspired by his linkages to the RSS.

Sanjay Jaju

Sanjay comes from Indian Administrative Service and is presently working on central deputation as Joint Secretary to the Government of India as Director (A&F) in the National Highways Infrastructure Development Corporation in the Ministry of Road Transport & Highways.

He had earlier worked as Secretary to Government of Andhra Pradesh in Information Technology & Communications Department. Sanjay is a Post Graduate Mechanical Engineer and a Cost & Management Accountant by background and has recently completed MBA in Finance. He has worked in diverse areas like Urban, Infrastructure, Civil Supplies, Education& Tribal Welfare. One strand common across these jobs has been his passion for Information Technology. He has been an ardent advocate of Information Technology for Development and Governance.

'MeeSeva' a comprehensive flagship initiative for delivering host of G2C services through an integrated architecture in AP (2011) was conceptualized and successfully implemented by him with over 350 G2C services clocking more than 300 Million transactions till date. The project has revolutionised citizen service delivery in AP and has become a National role model and has been awarded National e-Governance Gold Award by Government of India for the year 2014.

He also led the Country's first biometric identity project for the Civil Supplies Department and led the Aadhaar (UIDAI) Initiative in AP. AP has emerged as the leader in Aadhaar enrolment and is now bracing ahead for the use of Aadhaar in most of its welfare programmes.

An innovative project 'Hyderabad First" of the Municipal Corporation of Hyderabad initiated by him won the Golden Icon e-Governance Award of the Government of India for process reengineering. During his previous tenure as Collector & Dist. Magistrate, West Godavari, a rural e-governance initiative e-seva pioneered by him was won the Gender ICT Award and "Tony Zeitoun ICT Stories Competition" of the Global Knowledge Partnerships at the WSIS-Geneva and also won a nomination for the Stockholm Challenge Award for the year 2004. The project pioneered a self-help based e governance model in bringing technology to serve the poor.

During his previous stint as Municipal Commissioner, Visakhapatnam, a comprehensive first of its kind project "Saukaryam" (2000) was completed to improve delivery of civic services. The project won many International awards including the Cyber City Award of UNDP. The Project titled 'Head Start' for computer-enabled education was initiated and completed by him for Primary Education in MP (1998).

In the Ministry of Road Transport & Highways, he has led 3 major IT initiatives.

"ePACE"(Projects Appraisal & Continuing Enhancements)http://epace.nic.in has been designed as an online PORTAL to have an Integrated Information System for ensuring effective and real time tracking of RT&H Projects.

"INFRACON"http://infracon.nic.in has been developed as a comprehensive National Portal for Infrastructure Consultancy firms & Key Personnel to make the evaluation process during procurement more objective, user friendly and transparent.

"INAM-PRO" has been developed as a Platform for Infrastructure and Materials Providers and is a web-based application (www.inampro.nic.in) for Infrastructure and Materials Providers.

He has made presentations on e-governance all over the globe including UN, WSIS-Geneva and the World Summit on Sustainable Development held in Johannesburg. He has participated in International and National Conferences on the development of Information driven open Societies. He has written many papers that have been published and awarded in National and International Journals and Publications. He is part of the Inaugural Class of the India Leadership Initiative of Aspen Institute, USA and has been awarded e.gov Champion award by Data Quest Magazine. He loves music and pursues Cricket with interest. His wife, Dr Jyoti works for the World Health Organization.

Acknowledgement

Significant Contributors requiring Special mention

- Shri Paul Antony, former Chairman, Cochin Port Trust
- Shri M T Krishna Babu, Chairman, Visakhapatnam Port Trust
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- Shri BarunMitra, Joint Secretary (Admin), Ministry of Shipping
- Shri N Muruganandam, former JS (Ports), former Managing Director, IPA
- Shri A Janardhana Rao, Managing Director, IPA
- Shri Rajeev Puri, Chief Administrative Officer, IPA

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