Project Design Phase-I
Proposed Solution

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Team ID	PNT2022TMID00825
Project Name	Project - Traffic and Capacity Analytics for Major Ports

Proposed Solution :

S.No.	Parameter	Description
1.	Problem Statement (Problem to be solved)	The Infrastructural development and capacity augmentation of Major Ports is a continual process. The process inter-alia includes mechanization of the Ports by way of use of latest version of crane and other equipments/techniques for quicker turnaround of cargo. Implementation of some of the new initiatives suggested by benchmarking consultants had a positive impact in this regard. Keeping in view the recent initiatives taken like new Berthing Policy, 2016, Stevedoring Policy, Project Unnati, an exercise was taken to re-rate the capacities of Major Ports. This has resulted in the installed capacity of the Major Ports going up from 1065.83MTPA during 2016-17 to 1359MTPA.
2.	Idea / Solution description	Port Technology International defines a smart port as a port that uses automation and innovative technologies including AI, Big Data, IoT and Blockchain to improve its performance. Korean Maritime Institution defines Therefore, a smart port can be defined as a port that pursues port facility automation and becomes an autonomous port with integrated information management, rational decision-making, and efficient use of resources through the 4IR technologies. In other words, it means a port that optimizes its operations by applying advanced technologies and improving business processes, thereby reducing costs, and processing time, increasing port productivity and efficiency, and minimizing the impact on the environment. A smart port is also data-centric, so it can produce, manage, and share related information. Furthermore, smart ports will play

		a key role as a data service provider in the data economy, thereby increasing their importance.
3.	Novelty / Uniqueness	Port of Visakhapatnam, a natural harbour is located almost between Kolkata and Chennai on the East coast of India at latitude 17041' and longitude 83017'. It was opened to commercial shipping on 7th October, 1933. The Visakhapatnam Port is the only Indian Port possessing three international accreditations viz. ISO 14001; 2004 (EMS)/ OHSAS 18001 and ISO 90001:2000 (QMS). The Port has mechanized handling facilities for iron ore, iron pellets, alumina, fertilizer raw material, crude oil & POL products, liquid ammonia, Phosphoric acid, edible oil, caustic soda and other liquid cargoes. The inner harbor can accommodate fully laden Panamax vessels of draft upto 14.5 meters and the outer harbor can accommodate Supercape vessels of 200,000 DWT with a draft upto 18.10 meters. The port has the distinction of possessing Supercape handling facility and the deepest container terminal among Major Ports of India.
4.	Social Impact / Customer Satisfaction	Developing countries such as China and India are major drivers for port development due to their high economic growth rates. India is having a large growth in international trade (over 25% compounded annual growth rate during 2003–2004 to 2008–2009). Now, 95% of India's trade by volume and 77% by value move through Indian ports. This trend is also true worldwide, with over 9 billion tonnes of goods shipped internationally in 2012, and an estimated growth rate of 4.3% per year (UNCTAD, 2013)
5.	Business Model (Revenue Model)	Port performance plays a vital role in determining a port's market position. Port users are concerned with port performance while stakeholders have their own agenda regarding port and associated activities. The level of performance is affected by different factors and can be enhanced in a variety of ways. Excluding management factors and the country's current political situation.

6.	Scalability of the Solution	Countries need to develop a roadmap or masterplan and secure the needed budget and resources for smart ports in advance. A crucial element in this work is accurate assessment of the port development level at the beginning of the process in order to define the most suitable action plan for a smart port. Before proceeding with the implementation of a smart port project, it is recommended checking the preliminary requirements identified in this report and verifying the state of readiness according to the stated content. First, at the national level a smart port roadmap is needed, together with a comprehensive analysis of the industrial ecosystem, such as the direction of vessel development, changes in the global economic structure, the transshipment port and the trade structure of the port's city. Then countries should define a detailed strategy and action plan as well as an analysis of which technologies are useful to a smart port.