

Port Management and Operations



Maria G. Burns



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Port Management and Operations

To my beloved husband, Leonard

Preface

This book was written with the purpose of redefining the strategic role of global seaports in the present “Post-New Economy Era.”

Ports are these remarkable human constructions that over centuries reflect the epitome of global evolution, economic growth, and innovation. As 70.8% of the global surface is covered by water, seaports reflect all sovereign nations’ political superiority and financial prosperity. Ports are the pillars of global economy, trade, and transport: 80% of global commodities are carried by water; over 9000 seaports, harbors and inland waterways, and multiple terminals per port facilitate world trade by serving over 50,000 oceangoing ships while generating over 30% of the global GDP on an annual basis.

Historically, the rise and fall of empires has been associated with seaports, either through naval battles at times of war or through sea trade and transport at times of peace. In fact, superpowers and robust economies show their long-standing strength and dominance through seaports.

The shipping industry has phenomenal depth, perspective, and structure, and it comprises a plethora of sciences and arts: for maritime professionals to survive in this highly competitive, rapidly changing environment, they need to possess both practical and theoretical knowledge of as many disciplines as possible, including strategic thinking; global economics; political science; laws and regulations on safety, security, the environment, and so on; trade agreements among countries; contracts; naval architecture; novel ship designs; emerging technologies; engineering; navigation; marketing; risk management; emergency response; incident investigation and root cause analysis; oceanography and weather studies; operations; bunkering; the energy markets; major global commodities; logistics; and so much more.

Today, the role of modern ports and sea trade is more crucial than ever. The power of global key players has never before shifted in such an unpredicted manner, and the necessity for innovation, energy efficiency, and economy efficiency probably has never before been more compelling.

This is a critical era of wealth distribution among nations: global economies still struggle to overcome the 2008 global financial meltdown, while sovereign nations are now classified into “budget deficit nations” versus “budget surplus nations.” The years to come will be characterized by intense global competition among the developed and emerging markets whose effects will affect the Eastern and Western Hemispheres. The Western world has wrongly assumed that the Asian economy will either prevail through Westernization or collapse. In the following years, the Western Hemisphere will observe Asia’s progress without necessarily assuming a Western cultural or philosophical stance. For example, China’s 12th five-year plan (2011–2015) will see Hong Kong as a leading financial, stock-exchange, and trade center, with significant impacts in the Western

financial and commodity markets. Most important, a severe currency crisis may seek to redefine the global currency standard.

As the global sea trade will multiply in volume, not all commodity prices will increase. This new era may generate a new necessity of government protectionism, port specialization, and redistribution of power. The industry will be governed by stricter regulations in terms of security, safety, and the environment, with significant commercial and financial consequences to ports and ships alike.

While some global mega-ports will become strategic hub centers to distribute significant volumes of cargoes to the hinterland markets, the majority of seaports will serve as feeder ports. Despite the industry's need for innovation and because of the global system's powerlessness to protect original ideas and discoveries through copyright and patents, novelty may not be encouraged or rewarded financially at a personal or corporate level. On the other hand, powerful economies may be established through cost-efficient factors of production, with the elements of time, safety, security, and product integrity being decisive marketing factors. The new era will signify new trade routes and new strategic ports, determined by outsourcing, insourcing, and global production/consumption distribution patterns.

Economics is a major issue for ports and the shipping industry: nations will have to achieve political stability through overcoming financial obstacles such as (i) monetary deficits, (ii) national and private debt, (iii) interest rates, (iv) inflation, and (v) currency fluctuations and exchange rates. The ongoing currency wars will need to be addressed, as the profitability of any and all trade and transport contracts is determined by the currency stipulations. The rising price of gold and other precious metals, as well as oil price versus natural gas/LNG price, will determine the future commodities markets.

This book examines the ways in which global seaports will be affected by all the changes occurring at a national, regional, and global level. For the sake of good order, this wide spectrum of interrelated port management principles, strategies, and activities is classified in a logical sequence and under four cornerstones: (1) Port Strategy and Structure, (2) Legal and Regulatory Framework, (3) Input: Factors of Production, and (4) Output and Economic Framework. These four pillars are subdivided into the 12 book chapters as illustrated in Figure P.1:

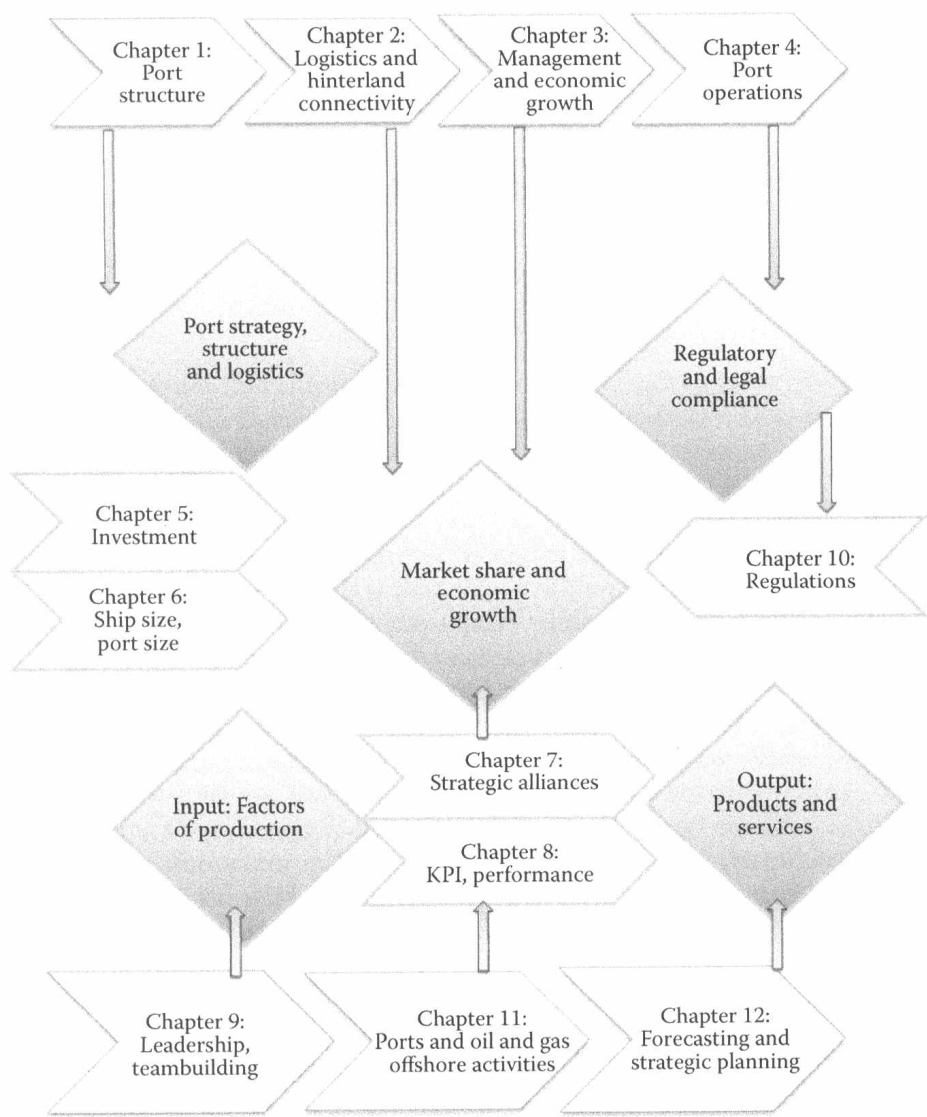


FIGURE P.1 The interrelated port management principles, strategies, and activities as explored in this book.

Maria G. Burns
Managing Director,
Center for Logistics and Transportation Policy,
University of Houston

Foreword

It is with great pleasure that through this Foreword, I introduce the readers to this book authored by Prof. Maria Burns, which maps out the multidisciplinary practices of port management and operations, as well as the distinctive contribution of the shipping industry to the global economy, through trade and development.

As I read the book chapters, I cannot help but reflect on a Greek saying I heard in the Dodecanese: “The sea doesn’t separate us, it unites us” («θάλασσα δεν μας χωρίζει, μας ενώνει»). The reason for saying this is that ships with no ports are useless, but also ports without ships are equally useless, as ships carry almost 90% of world trade. With this in mind, it underlines, in my opinion, the necessity of adequate and correctly educated, certified, motivated, and happy seafarers and port personnel. My late twin brother—a qualified captain—when he was honored by the Greek state some months before dying, couldn’t make his prepared speech. He stood up and said only two lines “A ship without a competent crew is nothing, but competent crew without a seaworthy ship is also nothing,” thus showing the synergistic correlation between ship and crew.

As I recall the important milestones proclaimed by the modern shipping industry, I am profoundly pleased with modern shipping and its future: Contemporary seaports are involved in myriad ambitious undertakings, all of which require technological innovation, reinventing and reallocating the factors of production, but most importantly a new thought process—all of which are offered in this book. Today, in the aftermath of the 2008 global economic crisis, nations’ future will be won or lost in their geography and the efficiency of their ports. Napoleon Bonaparte remarked that “Geography is destiny.” Indeed, throughout the history of mankind, nations sought to extend their commercial and political authority by taking advantage of their geographic particularities.

I am a firm believer in Maria’s compelling way of writing a maritime book, which combines the most recent port developments and state-of-the-art technologies with the traditional maritime practices and seafaring concepts that go back in the millennia. The book is very impressive in terms of analysis, while demonstrating in-depth research, covering a plethora of disciplines. This is no surprise to me, knowing both her Greek lineage and her professional background.

To get into the realm of this book is to experience an aspiring terrain where resourceful ideas and concepts await for you, vibrant with passion for the sea, ports, and ships.

Burns is exhilarating as she explores global ports in a panoramic view, covering the commercial, financial, logistics, operational, technical, regulatory, and legal aspects of port activities, while offering practical advice that heightens the awareness of modern shipping and modern port management.

The outstanding contribution of this book is to reveal the role of seaports as a critical component of modern supply chains, enhanced with guidance into the significance

of strategic and tactical port planning, modern maritime professions, working practices, and trends that are frequently only vaguely understood, if not completely overlooked.

The readers will discover in this book a considerable variety of usefulness, encompassing port professionals, ashore executives, and shipboard officers and crew. Burns is a connoisseur of the variety of principles and methods that constitute shipping practice. The book chapters and well-researched material have been organized in a sequence and manner so that the components make up a meaningful entity.

One of the remarkable aspects of Prof. Maria Burns is that she uses her enormous energy in order to develop valuable guidelines for the maritime industry, while combining creative thinking with down-to-earth perception. It is mainly through authorship and research that scientists build their reputation, and only when their views are widely accepted, their contribution might someday become legacy. The supreme ambition of an inventive maritime professional is to perform the type of work that will be both useful and acclaimed by fellow professionals most competent to evaluate its value. In the maritime industry, empirical studies and scientific research are well regarded to the extent that the industry may frequently refer to it to progress and grow.

Burns' book captures the readers' mind, soul, and intellect; it is a well-written expository book of port management and shipping practices, which is truly accessible to everyone.

Nicky Pappadakis
President Emeritus, Intercargo

NICKY (NICHOLAS) PAPPADAKIS
President Emeritus, Intercargo

Chairman of the Malta International Shipping Council (Shipowners' Association under Malta flag), ex-Chairman of the Greek Committee of RINA, immediate past Chairman of INTERCARGO and present Chairman Emeritus, immediate past President of the US Propeller Club International Port of Piraeus, member of the current Board of Governors, Vice President of The Hellenic Chinese Chamber of Commerce, and a former member of the Board of Directors of the Union of Greek Ship-Owners.

He is a member of the Board of Directors of the Maritime Authority of the Cayman Islands, Hellenic Committee of Lloyds Register, Hellenic Committee of Germanischer Lloyd, Hellenic Committee of American Bureau of Shipping, Hellenic Committee of Det Norske Veritas, Mediterranean Committee of China Classification Society, The London Steam-Ship Owners' P&I Club Committee, and HELMEPA & INTERMEPA (Hellenic Maritime Protection Association).

He is a Life Member of NAMEPA and has an ongoing deep concern and commitment for the sea, seafarers, and environment.

Foreword by Panama Canal Authorities

Professor Burns has meticulously authored a book with knowledge and enthusiasm. She efficiently takes the pulse of the supply chain, consisting of canals, ports, shipowners, and the global logistics networks, in an effort to identify the current and future trends.

While reading this book, and its focus on the strategic significance of global seaports, I reflected on the history of the Panama Canal, from the early explorers of the Americas, to October 10, 1913, when the waters of the Atlantic and Pacific oceans first met. This is when US President Woodrow Wilson relayed a telegraph to set off the ignition of 8 tons of dynamite, which created the first version of the Panama Canal. The peoples' ecstatic cheers and cries of 1913 were followed by intelligent strategies, work ethics, and tireless, disciplined work on behalf of the Panama Canal organization for the next 100 years, which has led the Panama Canal and the Panama Flag to take a prominent role as a key player in the twenty-first century shipping industry and exceeded the success of any other manmade Canal the world over.

A new era has commenced for the maritime industry in anticipation of the inauguration of the Panama Canal expansion in 2015. The state-of-the-art "Third Set of Locks Project" is designed to increase Panama Canal's capacity by twofold, via building an additional navigational lane and thus facilitating global trade in this strategic geopolitical region, by significantly increasing economies of scale. The project includes (i) constructing two new locks, on the Atlantic and Pacific sides, respectively, while dredging new channels for each; every lock will consist of three compartments with water-saving basins; (ii) broadening and deepening of the existing channels; (iii) excavating a new Pacific Access Channel with post-Panamax dimensions; and (iv) increasing the existing maximum operating level of Gatun Lake.

Burns has a scintillating rapport with her readers, as she manages to bring together a plethora of disciplines, sciences, and concepts, and explain the reason for the industry's developments over different time periods. Under the principle that history repeats itself, her comprehensive examination of past trends can be used by the readers as a useful tool to speculate potential future developments. This is an eye-opening book, rich in content and quality that should not be missed! I know this work will become a treasure for anyone involved in the maritime field anywhere in the world. Kudos for a great accomplishment!

Yira A. Flores Naylor
Communications and Historic Documentation Section
Panama Canal Authorities

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It is a great honor to host two distinguished individuals in the global maritime industry that generously forwarded this book:

Nicky Pappadakis (President Emeritus, Intercargo; Chairman of the Malta International Shipping Council, and one of the wisest—and smartest—maritime leaders of our times.

Yira Flores Naylor, Communication and Historic Documentation Department, Panama Canal Authority. Thank you for generously and zealously sharing with our readers valuable data on the historic timeline and innovative expansion of the Panama Canal.

Thank you for making this book possible with your professionalism, leadership, and integrity.

My lifelong appreciation and gratitude goes to the US Coast Guard for conferring my Honorary Membership to the US Coast Guard Auxiliary. Serving the purposes of the US Coast Guard Auxiliary is a most noble cause. My deepest respect and appreciation also go to the National Maritime Center, Washington DC, and also to the US Coast Guard Auxiliary.

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It is an honor to host in this book the distinguished port authorities, corporations, associations, and their most capable “Corporate Ambassadors” who greatly enhanced this book with primary data, images, and interviews, all of which are duly referenced. I hereby wish to thank each and every professional who generously shared information on their corporate achievements and contributed to this publication.

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Please accept my sincere thanks for bringing life to the theories and practices of Port Management and Operations, with your most impressive innovations and meaningful accomplishments.

Last but not least, thank you to each and every one of my global colleagues, research partners, mentors and students! We are all part of this exhilarating voyage to global growth, innovation and prosperity!!!

Prof. Maria G. Burns

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