

MARKETING OF ENGINEERING CONSULTANCY SERVICES: A GLOBAL PERSPECTIVE



Pradeep Kumar Chatterjee
Partho Pratim Chatterjee

The Technical Manager's Survival Guides

Marketing of Engineering Consultancy Services: A Global Perspective

Marketing of Engineering Consultancy Services: A Global Perspective

Dr. Pradeep Kumar Chatterjee

B.E. (Mech. Engg.), M.B.A. (Mktg), Ph. D (Mktg. Mgt), A.M.T, F.I.E, M.A.I.M.A, M.I.S.C.A,
M.N.I.P.M, S.M.C.S.I, M.L.M.I.I, Chartered Engineer (India), M.A.S.M.E. (USA), M.A.M.A (USA)
Jt. General Manager (Procurement Services) MECON Limited, Ranchi (India)

And

Honorary Adjunct Faculty and Member Academic Committee,
Department of Management, Birla Institute of Technology,
Mesra, Ranchi (India)

Partho Pratim Chatterjee

B.E. (Metallurgy), A.M.I.E, M.I.S.C.A, M.A.S.M.E (USA), S.M. A. I. S.T (USA), S.M.T.M.S (USA)

The Technical Manager's Survival Guides



© 2019, The American Society of Mechanical Engineers (ASME), 2 Park Avenue, New York, NY 10016, USA (www.asme.org)

All rights reserved. Printed in the United States of America. Except as permitted under the United States Copyright Act of 1976, no part of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of the publisher.

INFORMATION CONTAINED IN THIS WORK HAS BEEN OBTAINED BY THE AMERICAN SOCIETY OF MECHANICAL ENGINEERS FROM SOURCES BELIEVED TO BE RELIABLE. HOWEVER, NEITHER ASME NOR ITS AUTHORS OR EDITORS GUARANTEE THE ACCURACY OR COMPLETENESS OF ANY INFORMATION PUBLISHED IN THIS WORK. NEITHER ASME NOR ITS AUTHORS AND EDITORS SHALL BE RESPONSIBLE FOR ANY ERRORS, OMISSIONS, OR DAMAGES ARISING OUT OF THE USE OF THIS INFORMATION. THE WORK IS PUBLISHED WITH THE UNDERSTANDING THAT ASME AND ITS AUTHORS AND EDITORS ARE SUPPLYING INFORMATION BUT ARE NOT ATTEMPTING TO RENDER ENGINEERING OR OTHER PROFESSIONAL SERVICES. IF SUCH ENGINEERING OR PROFESSIONAL SERVICES ARE REQUIRED, THE ASSISTANCE OF AN APPROPRIATE PROFESSIONAL SHOULD BE SOUGHT.

ASME shall not be responsible for statements or opinions advanced in papers or . . . printed in its publications (B7.1.3). Statement from the Bylaws.

For authorization to photocopy material for internal or personal use under those circumstances not falling within the fair use provisions of the Copyright Act, contact the Copyright Clearance Center (CCC), 222 Rosewood Drive, Danvers, MA 01923, tel: 978-750-8400, www.copyright.com.

Requests for special permission or bulk reproduction should be addressed to the ASME Publishing Department, or submitted online at <https://www.asme.org/shop/books/book-proposals/permissions>

ASME Press books are available at special quantity discounts to use as premiums or for use in corporate training programs. For more information, contact Special Sales at CustomerCare@asme.org

Library of Congress Cataloging-in-Publication Data

Names: Chatterjee, Pradeep Kumar, author. | Chatterjee, Partho Pratim, author.

Title: Marketing of engineering consultancy services : a global perspective / Pradeep Kumar Chatterjee and Partho Pratim Chatterjee.

Description: New York : ASME Press, [2019] | Includes bibliographical references and index.

Identifiers: LCCN 2018045162 | ISBN 9780791861837

Subjects: LCSH: Consulting engineers. | Consulting firms--Marketing. | Consulting firms--Management.

Classification: LCC TA216 .C495 2019 | DDC 620.0068/8--dc23 LC record available at <https://lccn.loc.gov/2018045162>

Dedication

Dedicated to my beloved mother Late Shibani Chatterjee, (a retired school teacher) for being the main spring of inspiration, for being there at every stage of arduous journey and who emotionally moulded me and taught me anything was possible and whose influence on my academic, professional and personal life has been profound, prolific and indelible.

“If my mind can conceive it, and my heart can believe it—then I can achieve it.”

Muhammad Ali

Table of Contents

FOREWORD	xiii
PREFACE	xv
ACKNOWLEDGEMENT	xix
CHAPTER 1 – INTRODUCTION.....	1
CHAPTER 2 – ENGINEERING CONSULTANCY SERVICES	5
CHAPTER 3 – THE MARKET PARADIGMS	7
CHAPTER 4 – FEATURES OF ENGINEERING CONSULTANCY SERVICES AND ITS IMPLICATIONS FOR MARKETING	15
4.1 KNOWLEDGE AND EXPERTISE BASED PROFESSION	15
4.2 INSEPARABILITY	16
4.3 CO-EXISTENCE OF SERVICE PROVIDER (CONSULTANT) AND SERVICE RECEIVER (CLIENT).....	16
4.4 VARIABILITY / HETEROGENEITY	18
4.5 INTANGIBILITY	19
4.6 PERISHABILITY	19
4.7 CLIENT’S PARTICIPATION, CO-OPERATION AND ROLE CONTRIBUTION	20
4.8 LOW ENTRY BARRIERS.....	21
4.9 ENVIRONMENTAL INFLUENCES.....	23
CHAPTER 5 – QUALITY ELEMENTS OF ENGINEERING CONSULTANCY SERVICES	25
5.1 TANGIBILITY.....	27
5.2 RELIABILITY	27
5.3 RESPONSIVENESS	28
5.4 COMPETENCE	28
5.5 COURTESY	29

5.6 CREDIBILITY.....	29
5.7 SECURITY.....	29
5.8 ACCESS.....	29
5.9 COMMUNICATION.....	30
5.10 UNDERSTANDING THE CLIENT AND KNOWLEDGE ABOUT THE PROJECT	30
CHAPTER 6 – CONCERN FOR QUALITY: COST-BENEFIT ANALYSIS OF QUALITY OF ENGINEERING CONSULTANCY SERVICES	31
CHAPTER 7 – APPOINTMENT OF ENGINEERING CONSULTANT UNDER INTERNATIONAL COMPETITIVE BIDDING (ICB).....	33
CHAPTER 8 – DEFINING ENGINEERING CONSULTANCY MARKETING	43
CHAPTER 9 – NEED FOR MARKETING SYSTEM FOR ENGINEERING CONSULTANCY.....	45
CHAPTER 10 – MEMBERS OF ENGINEERING CONSULTANCY MARKETING TEAM	47
CHAPTER 11 – INTERNAL MARKETING IN ENGINEERING CONSULTANCY SERVICES	51
11.1 CLIENT RELATIONSHIP	52
11.2 THE PEOPLE FACTOR	53
11.3 MAKING INTERNAL MARKETING HAPPEN IN ENGINEERING CONSULTANCY	54
11.4 PUTTING INTERNAL MARKETING IN ACTION	59
CHAPTER 12 – MEASURES TO BE ADOPTED FOR INCREASING MARKETING EFFECTIVENESS. 61	
12.1 CLIENT SELECTIVITY.....	61
<i>Preventing Death of the Concept</i>	<i>65</i>
12.2 CLIENT RELATIONSHIP MANAGEMENT (CRM).....	67
12.3 APPOINTING KEY ACCOUNT MANAGER (KAM)	69

12.4 DIFFERENTIATED OFFER	69
12.5 DIFFERENTIATED SERVICE DELIVERY	70
12.6 SOLUTION SELLING / SYSTEM SELLING CONCEPT	70
12.7 INDUSTRY ANALYSIS	71
12.8 COMPETITOR ANALYSIS AND MANAGING COMPETITION	73
<i>Avoiding the Pit falls in Competitor Management</i>	77
CHAPTER 13 – BUSINESS PROCUREMENT APPROACHES.....	79
13.1 ENQUIRY DRIVEN APPROACH.....	79
13.2 SALES DRIVEN APPROACH.....	80
13.3 MARKETING APPROACH	80
CHAPTER 14 – FORMULATING MARKETING MIXES (8Ps) FOR ENGINEERING CONSULTANCY SERVICES	83
14.1 PRODUCT/ SERVICES (P ₁).....	86
14.2 PRICE/ FEES (P ₂).....	88
14.3 PROMOTION (P ₃).....	92
<i>Illustration</i>	93
14.4 PLACEMENT (P ₄).....	98
14.5 PEOPLE (P ₅)	100
14.6 PHYSICAL EVIDENCE (P ₆)	100
14.7 PROCESS (P ₇)	102
14.8 PACE (P ₈)	104
14.9 THE NEED FOR INTEGRATION OF THE 8Ps	105
CHAPTER 15 – ENGINEERING CONSULTANT’S CONTRACTUAL OBLIGATIONS	107
CHAPTER 16 – CONCLUSIONS.....	109
REFERENCES	111

List of Tables

Table 1 – Technical Evaluation Criteria (S_t)	39
Table 2 – Financial Evaluation Criteria (S_f).....	41
Table 3 – Combined Score (Technical and Financial: S).....	41
Table 4 – Client Selection Criteria	63
Table 5 – Client Equity	65
Table 6 – Client Selection Matrix.....	66
Table 7 – Competitive Grid	76

List of Figures

Figure 1 – Co-existence of Engineering Consultant and Client in Project.	17
Figure 2 – Gronross’s Services Marketing Model.	55
Figure 3 – Engineering Consultancy Process (Typical Work Situation).	58
Figure 4 – Porter’s Five Forces Model of Competition	72

Foreword

Marketing of Engineering Consultancy Services has always been a complex and multi-disciplinary subject, more so in a world of interconnected economies. The Service Dominant (S-D) logic argues that all exchanges can be viewed in terms of service-for-service exchange. This in itself embodies the ubiquitousness and importance of service marketing.

The cross-border sourcing of services as an integral part of the global value chain gained momentum with enhanced economic globalization. This in turn gained strength from increasingly diminishing relevance of geographical location and distance brought about by technology revolution. We are in the cusp of the creative disruption of Industrial Revolution 4.0 (IR 4.0) where technology is set to change the way we live and work. This technology disruption is spearheaded by Artificial Intelligence (AI), Internet of Things (IoT) and Machine Learning. As the global economy and society are witnessing a tectonic shift to post- industrial information society with knowledge capital as its new resource, marketing of services is concurrently witnessing a paradigm shift. To reiterate in Philip Kotler's own words, "Markets are changing faster than Marketing."

The pace and scale of engineering innovation that mankind has witnessed in last two decades is unprecedented in history. Marketing strategies of engineering consultancy services in this backdrop has seen many new normals, but none being enduring. Mostly so because marketing itself is embedded in a particular time, space and culture and evolving a Universalist strategy has remained elusive.

To keep pace with the global giants in a hypercompetitive engineering consultancy service domain is both challenging and rewarding. We at MECON have developed a unique way of working by harnessing our cultural capital, legacy, tradition and an underlying *gemeinschaft*. This personalized and informal way of working, which permeates the ostensible bureaucratic structure, has been our biggest asset which can be aptly epitomized as the "MECON way" which forms the bedrock of our soft branding.

This book is a unique blend of Dr. P.K. Chatterjee's three decades of illustrious career in engineering service industry, dovetailed with his scholastic academic excellence. It is my firm conviction that this book will surely outlive the present challenges and address the future complexities associated with marketing of engineering consultancy services and cater to the much needed industry-academia linkage.

Dated : 06th July, 2018

Goutam Chatterjee
Director (Commercial)
MECON Limited, Ranchi, India

Preface

My exposure to the engineering consultancy services sector began when I joined MECON Limited as Management Trainee Technical (MTT) in the beginning of the year 1984, an amateur fresh from engineering college posted at Steel Authority of India Limited/ Rourkela Steel Plant, Rourkela, India. MECON Limited [erstwhile Metallurgical and Engineering Consultant (India) Limited] is a public sector engineering and consultancy organization under administrative control of Ministry of Steel, Government of India. During the training period, in a class room session, we were made cognizant of the more than a century old valuable saying of our great leader and Father of the Indian nation Mahatama Gandhi about the customer.

Quote

A customer is the most important visitor in our premises. He is not dependent on us, we are dependent on him. He is not an interruption in our work, he is the purpose of it. He is not an outsider in our business, he is an integral part of it. We are not doing him a favor by serving him, he is doing us a favor by giving us an opportunity to do so

Unquote

Today, when I recollect, I realize that even at that time in an engineering consultancy service organization there was great concern for customers and the critical role the front end employees (engineers), who are the real service providers, play in delighting them. It does not matter that the practice was not documented in Apex Quality Manual (AQM). About the same time, I came across an article titled "Breaking Free from Product Marketing" published in the *Journal of Marketing* (Vol. 41, No. 2, 1977) authored by G. L. Shostack which initiated a discussion on the marketing approach to services. Later Christopher Lovelock, Christian Gronross, A. J. Magrath, A. Parsuraman, Valarie A Zeithaml, Leonard L. Berry, B. H. Booms, M. J. Bitner, Donald Cowell, Adrian Payne, Tatsuya Kimura, Les Carlson, Florian Kraus,

Tillmann Wagner and others carried out a series of research studies in services marketing. These research findings proposed that for marketing services, 4Ps are not enough. Internal marketing, managing quality, client perception, people factor, physical evidence, process of rendering services, pace, customer delight, customer orientation, etc. are very indispensable for service success.

Later, I observed that Management Schools had started responding to the need of industry by offering courses on services marketing not as a choice but as the need of the hour. However, they had no option but to rely on very few books, and that there were practically none in the area of marketing of intellect services like engineering consultancy, management consultancy, etc. This paucity of a proper text book continued to elude the academic/industrial community, was perturbing and that became the driving force to initiate the work on *"Marketing of Engineering Consultancy Services: A Global Perspective."* Though, sufficient time has elapsed and the wait for a proper text book in this area continues to be present and in demand, this proposed text book is a humble and sincere effort from an engineering consultancy practicing professional cum teacher preaching business to business (B2B) marketing like me to bridge this void.

The marketing of engineering consultancy services in the domain of B2B industrial marketing has become more exciting and continues to be challenging for several reasons. The predominant reasons are: intensified competition with wafer thin margin, expanding markets with ongoing globalization, demanding and discerning clients looking for global quality service, fast growing e-commerce applications, rising importance of high-tech businesses, customer-centric and ethical marketing philosophies and increasing emphasis on knowledge and innovation, etc.

There are text books (though few) on engineering consultancy, but this one is different. This book seeks to serve the knowledge needs of both practitioners as well as management students. To be cynosure to both the groups, the book is designed with several relevant contemporary examples. The main strength of this book is its comprehensive coverage at the micro level. Along with the conventional marketing themes like marketing philosophy, marketing strategies and programs etc., it discusses contemporary issues pertaining to engineering consultancy. All the contemporary issues are discussed with an orientation towards decision making well supported by illustrations.

Organization

The book delineates the salient aspects of engineering consultancy and its marketing in chapters 1 to 17. The chapters have been systematically arranged and presented. An attempt has been made to agglomerate engineering consultancy marketing practices encompassing all major issues commencing with established service practices and graduating to the not-so- established practices.

Chapter 1 is historical, wherein it is established that engineering consultancy, and construction activities have been in existence since the dawn of civilization or time immemorial. It is one of the oldest *knowledge-based* professions in the world. Ever since the human race started harnessing natural resources for benefit of the mankind, the significance of this profession is being increasingly realized. Chapter 2 deals with basic understanding of engineering consultancy services, the scope of services, the advisory role an engineering consultant plays during project formulation stage as owner's design engineer and the participatory role during project execution stage as owner's site engineer, etc. Chapter 3 discusses the market paradigms, and the capricious changing buying behavior of clients. Chapter 4 describes the salient/ important features of engineering consultancy and its implication for marketing. Features like , knowledge and expertise based profession, inseparability, co-existence of service provider (Consultant) and service receiver (Client), variability /heterogeneity, intangibility, perishability, client's participation; co-operation and role contribution, low entry barriers and environmental influences have been discussed in the perspective of engineering consultancy. Chapter 5 covers ten quality elements of engineering consultancy services. Quality elements like tangibility, reliability, responsiveness, competence, courtesy, credibility, security, access, communication and understanding the client and knowledge about the project have been dealt. Chapter 6 describes the concern for quality and cost-benefit analysis of the quality of engineering consultancy services. Chapter 7 details the appointment of engineering consultants using quality and cost based selection philosophies under international competitive bidding (ICB). Chapter 8 defines engineering consultancy marketing. Chapter 9 describes the need for marketing system for engineering consultancy. Chapter 10 discusses about members of engineering consultancy marketing team. Chapter 11 analyzes internal marketing in engineering consultancy services and making

it happen. Chapter 12 covers measure to be adopted for increasing marketing effectiveness. Chapter 13 covers business procurement approaches usually followed by engineering consultants for procuring jobs. Chapter 14 deals with formulating marketing mixes (8Ps) for engineering consultancy services. Chapter 15 describes an engineering consultant's contractual obligations followed by a clear conclusion in Chapter 16. Chapter 17 contains references. To make the book interesting, even to an average reader, we have made the narration terse, simple, lucid, objective, and focused. Nowhere there is a beating around the bush. Clarity in explanation is achieved by providing suitable illustrations.

Acknowledgement

At the outset, I would like to express my deep sense of gratitude to my organization MECON Limited for giving opportunities to discharge my duties and responsibilities with full freedom, leverage and liberty at various capacities in different functional areas, both at the engineering office as well as at the sites during the last 34 years of my service. The functional areas include design and engineering, inspection of plant and equipment, management advisory services, marketing and sales, consultancy; procurement engineering, contract engineering, project management consultancy (PMC), etc. This extensive and expanded engineering and project execution exposure has proved to be a source of immense knowledge, inspiration and techno-commercial professionalism for me. I owe a deep sense of obligation to my organization MECON Limited and its management. This book is a tribute to my organization MECON Limited and all the stake holders for being at this place.

During the last 34 years, I worked in close synchronization with capital goods manufacturing firms of national and international repute from across the globe, in the capacity of engineering consultant/client's engineer. The marketing, contracting, and project executives of these firms truly shared their practical wisdom during across the table discussions at pre and post contracting stages which helped in honing the subtle concepts of engineering consultancy, marketing, contracting, and project execution. I have made use of the same adequately in the book. I gratefully appreciate the insights I assimilated from them.

I also duly venerate engineers, contract personnel and project personnel of the various corporate houses/clients for their perseverance during official engineering meetings and site progress review meetings. A detailed work of this kind encompassing the myriad practices of engineering consultancy and project execution would have remained virtual without their cooperation and contribution.

Carrying out a work of this nature is an intricate task. However, I got full support from my colleagues working in various engineering departments and offices of MECON Limited. My sincere exalts are due to them for numerous discussions, both formal and informal; I had with them during the last 34 years. The fine aspects elaborated and pin pointed by them during discussions, video

conferencing, kick-off meetings, project progress review meetings, at construction and erection site, etc. immensely benefited in augmenting engineering and commercial-contracting acumen. I would be failing in my duty, if I do not mention the sagacity I have gained from them.

Mere academic activity is not enough for the successful completion of a research work. It is desired that the researcher should be encouraged by the ambience around. This is what provides the strength to proceed patiently. In this respect I had received constant buttress from my peers in the Commercial Directorate and Procurement Services Section of MECON Limited. I am thankful to them for the constant buttress.

Words are not sufficient to express my heartfelt gratitude towards Sri Goutam Chatterjee, Director (Commercial), MECON Limited for forewording the book. Sri Chatterjee, in spite of his busy schedule, spared his valuable time to go through the manuscript with all zeal. I am intellectually indebted to him for forewording the book and grateful to him for the stanchion provided zealously.

Also, my association with executives of many organizations while engaging MDP sessions in the area of B2B industrial marketing, engineering consultancy marketing, contracting, project management, etc. has been especially rewarding. They not only provided me with an opportunity to share my conviction but also helped me sharpen my thought process. Indeed, their willingness to share ground veritable with a person plethora of times junior to them has been very efficacious. I have agglomerated their ideas in this book. I thank this group of practicing executives for their altruism in sharing their thoughts and experience.

My intellectual indebtedness is also to those academicians and practitioners who have contributed significantly to the emerging field of services marketing, Customer/ Client Relationship Marketing (CRM), Internal Marketing (IM), Key Account Management (KAM), Project Management (PM), etc. and whose ideas have been harnessed by me as lead in this book. It is my pleasure and privilege to hat tip their contribution, though it is a trivial appreciation of their contribution. I owe a deep sense of gratitude to all those who made these philosophies such an enchanting discipline.

No work worth its name can proceed without published literature of the highest grade. In this regard, I wish to express my heartfelt and ardent gratitude to the publishers of many technical, engineering and management journals for extracting the facts, figures

and the opinions published therein. However the interpretations are solely mine, and I take responsibility for the divergence.

I am also grateful to my PG students of management programs for their curiosity, inquisitiveness, in-depth analysis, proactive and heretical questioning and diligence in class room lectures during the last two and half decades which proved pivotal for me to explore the unexplored realms which I had not been cognizant of.

I am indebted to my parents, other members of my family and in-laws for their inspiration, blessings and encouragement. I express my deep sense of adulation to my mother, Late Mrs. S. Chatterjee, a retired school teacher, for being the main spring of inspiration for enrichment and whose influence on my academic, professional and personal life has been profound, prolific, and indelible. I express my deep sense of gratitude to them for their constant inspiration, support, good wishes and blessings.

In my endeavor, I received tremendous academic and engineering prop from Mr. Partho Pratim Chatterjee, the co-author of this book, who converted the thought process to action by injecting and blending the hardware, the ground realities, minutiae, punctilios and nuances being a vocational trainee in MECON Limited. Mr. Partho often went beyond the scope of the book in analyzing the concepts and formulated pertinent mathematical equations to precisely quantify the concepts. The book would not have taken this fine shape without the industrious, untiring, thoughtful and dedicated effort put forth by him from engineering and management angle. This helped in value addition and right sizing of the book. Otherwise, it would have merely remained at the fluid state rather than a cast and machined product.

In writing this book, our ideas have been shaped by several persons. Each interaction enriched our experience and added a new dimension to the work. We put on record our indebtedness to all those persons who helped directly or indirectly at different points of time to carry out the work.

We also thank Ms. Mary Grace Stefanchik, Manager, Publication Development, ASME Press and Ms. Tara Collins Smith, Production Manager, ASME Press, for excellent management, whole-hearted cooperation and abet in shaping the book to its present mould and making it available to the prospective readers.

Last but not least, I express my sincere thanks to my wife Sandipa who has been a great source of strength through her affection, tender care and through the candid expression of her insights into real-life situations. Her constant inspiration, cooperation, motivation,

unstinted support, bearing the tribulations, sacrifices and unflagging assistance extended ardently at every stage has helped keep going in onerous times and in sustaining the pace of the work. She deserves special acknowledgement for the same. My debt to her is prodigious and there cannot be any recompense for the same.

The words he, him, himself or man have been used in this book while referring to people in a strictly gender neutral sense. We apologize to those who find this usage objectionable. We have used it only where such usage is unavoidable or inevitable.

Further, in spite of the help and cooperation received from various quarters and despite our earnest efforts for obliteration, certain shortcomings, peccadilloes, errors, variance might have inadvertently crept in for which we humbly apologize.

Before we conclude, we would like to divulge that we would be elated to receive the invaluable opinions and suggestions on the book from the students, academia and the professional fraternity for further enrichment of the book.

MARKETING OF ENGINEERING CONSULTANCY SERVICES: A GLOBAL PERSPECTIVE

Pradeep Kumar Chatterjee and Partho Pratim Chatterjee

Marketing of Engineering Consultancy Services has always been a complex and multi-disciplinary subject, more so in a world of interconnected economies. The cross-border sourcing of services as an integral part of the global value chain gained momentum with enhanced economic globalization. We are in the cusp of the creative disruption of Industrial Revolution 4.0 (IR 4.0), where technology is set to change the way we live and work. This technology disruption is spearheaded by Artificial Intelligence (AI), Internet of Things (IoT), and Machine Learning.

As the global economy and society undergoes a tectonic shift to post-industrial information society with knowledge capital as its new resource, marketing of services is concurrently experiencing a paradigm shift. This book is a unique blend of the authors' decades of experience in the engineering consultancy service industry, combined with scholarly and academic excellence.

With this book, readers should be able to:

- Understand engineering consultancy services and the market paradigms from a global perspective.
- Understand the unique features of engineering consultancy services and their implications for marketing.
- Explain the quality elements of engineering consultancy services.
- Understand the issues concerning the quality, cost-benefit analysis of quality of engineering consultancy services.
- Understand how engineering consultants are appointed by clients under international competitive bidding (ICB).
- Define marketing of engineering consultancy services and explain why scientific marketing is essential for engineering consultancy firms.
- Understand the client relationship, the people (engineer) factor, Internal marketing.
- Formulate marketing mixes (8Ps) for engineering consultancy services
- And much more!



Two Park Avenue
New York, NY 10016, USA
www.asme.org

