

Engineers in Marketing and Service Activities

Chapter Objectives

- Describe the need for engineers in marketing
- Describe the various ways engineers work in the service industry

Chapter Outline

Marketing & Engineers

- Types of Marketing Relationships
 - Engineering Involvement in Marketing
 - After Sales Service Engineers in Service Organizations
 - Importance of Service Industries
- Characteristics

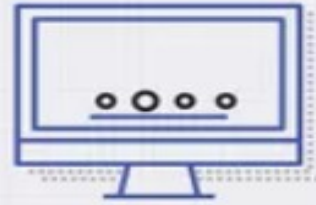
What Is Marketing?



Product



Price



Place



Promotion

1. Identifying customers
2. Studying customer's needs
3. Obtaining opportunity to make an offer
4. Closing a deal

Types of Marketing Relationships

Generally by

1. Length of Relationship

2. Commitment

A. Transaction-based Relationships

B. More Sustained Relationships

C. Highly Committed Relationships

Marketing Functions

1. Consumer products

- I. Mass production
- II. Major purpose of purchase: Consumption
- III. Uniform requirements (high substitutability)
- IV. Small quantity

2. Industrial products

Engineering Involvement (Industrial products)

1. Installation
 1. Large, durable custom construction
 2. Selling/design/cost estimation/supervision
2. Accessories
 1. Short-lived capital goods (equipment)
 2. Designing for general customer (S)
3. Raw materials
 1. Extractive & agricultural products
 2. Assessment of quality (B)
4. Process materials
 1. Goods that change form in production
 2. Specifications (B)

Engineering Involvement (Industrial products)

5. Component parts

1. Goods that do not lose identity in production
2. Eng. Design (S) / Introduction to Users

6. Fabricated items

1. Custom-made items
2. Eng. Design/ Specifications (B)
3. Bids (S)

7. Maintenance/Repair/Operating

1. Consumed in process of production or use
2. Parts/Schedule/Procedure/Methods (S)

8. Services

1. Incidental use
2. Sell / Perform

After-Sales Service

1. Installation
2. Warranty
3. Field service
4. Documentation
5. Training
6. Provisioning & providing repair facilities
7. Providing retrofit, rebuild, & overhaul
8. Supplying spares & supplies



The Fundamental Laws of Marketing

- | | | | |
|----------------------------|---|--|---------------------------------|
| 1. The Law of Leadership |  |  | 12. The Law of Line Extensions |
| 2. The Law of the Category |  |  | 13. The Law of Sacrifice |
| 3. The Law of the Mind |  |  | 14. The Law of Attributes |
| 4. The Law of Perception |  |  | 15. The Law of Candor |
| 5. The Law of Focus |  |  | 16. The Law of Singularity |
| 6. The Law of Exclusivity |  |  | 17. The Law of Unpredictability |
| 7. The Law of the Ladder |  |  | 18. The Law of Success |
| 8. The Law of Duality |  |  | 19. The Law of Failure |
| 9. The Law of the Opposite |  |  | 20. The Law of Hype |
| 10. The Law of Division |  |  | 21. The Law of Acceleration |
| 11. The Law of Perspective |  |  | 22. The Law of Resources |

Engineers in Service Organizations

1. Employment in “Goods producing” sector remain basically the same level (total #) from ‘ 86 to ‘ 96, and 2006 (projected), which represents 22. 0%, 18. 5% and 16. 2% respectively
2. Employment in “Service producing” sector increased from 74 M (‘ 86) to 94 M (‘ 96), and 112 M (2006, projected), which represents 66. 6%, 71. 2% and 74. 1% respectively

Top 10 Industries in Projected Employment Growth

1. Computer & data processing services (7.6%)
2. Health services (5.3%)
3. Management & public relations (4.8%)
4. Misc. transportation services (4.8%)
5. Residential care (4.8%)
6. Personnel supply services (4.3%)
7. Water & sanitation (4.2%)
8. Individual & misc. social services (4.1%)
9. Offices of health practitioners (3.9%)
10. Amusement & recreation services (3.5%)

Top 10 Industries in Projected Employment Declining

1. Coal mining (-6.0%)
2. Watches, clocks, and parts (-4.0%)
3. Footwear, except rubber and plastic (-4.0%)
4. Search & navigation equipment (-3.8%)
5. Crude petroleum, natural gas (-3.7%)
6. Luggage, handbags, & leather products (-3.6%)
7. Tobacco products (-3.1%)
8. Metal cans & shipping containers (-3.1%)
9. Tires & inner tubes (-2.9%)
10. Photographic equipment & supplies (-2.6%)

Technical Employment in Service Sector

1. About 22% of engineers worked in service producing industries (educational, research, consulting, hospitals & computing)]
2. About 14% of engineers worked for government (highway & other public works, DOD, DOE, NIST)
3. About 6% of engineers worked in transportation, communication, & public utilities
4. About 5% of engineers worked in wholesale, retail trade, & FIRE (finance, insurance, & real estate)

Characteristics of Service Sector

1. More intangible
2. Performed in real-time (scheduling)
3. Most professional & consulting services are customized, personalized, & labor intensive
4. Infrastructure (electricity, transportation, communication, etc.) providers are capital intensive