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DEPARTMENT OF AEROSPACE ENGINEERING

19MEE304 Total Quality Management

Topic: Dimensions of Product and Service Quality

Introduction to Quality Dimensions

- **Quality dimensions** help in assessing and improving the quality of products and services.
- Proposed by **David A. Garvin (Product Quality)** and **Parasuraman, Zeithaml & Berry (Service Quality - SERVQUAL)**.
- These dimensions help organizations **enhance customer satisfaction, ensure consistency, and maintain competitiveness**.

Dimensions of Product Quality (Garvin's Eight Dimensions)

David Garvin proposed **eight dimensions** to define **product quality**, focusing on tangible and measurable aspects.

Dimension	Description	Example
1. Performance	Primary function of the product	A car's fuel efficiency, smartphone processing speed
2. Features	Additional characteristics that enhance appeal	Touchscreen in laptops, noise-cancellation in headphones
3. Reliability	Probability of failure-free operation over time	A washing machine working consistently for 5 years
4. Conformance	Adherence to specifications and standards	Pharmaceuticals meeting FDA requirements
5. Durability	Expected lifespan of the product	LED bulbs lasting 50,000 hours
6. Serviceability	Ease of maintenance and repair	Modular laptops allowing easy component replacement
7. Aesthetics	Sensory appeal (appearance, feel, design)	Luxury watches with premium finishes
8. Perceived Quality	Customer perception of quality based on reputation	Apple iPhones' perceived reliability and brand trust

Dimensions of Service Quality (SERVQUAL Model)

Service quality is subjective and **depends on customer expectations and experiences**. The **SERVQUAL Model** defines five key dimensions:

Dimension	Description	Example
1. Tangibles	Physical facilities, equipment, and appearance of personnel	Clean hotel rooms, modern banking facilities
2. Reliability	Ability to perform services accurately and dependably	Flight departing on time, accurate billing at hospitals
3. Responsiveness	Willingness to help customers and provide prompt service	Quick response in customer service chat support
4. Assurance	Employees' knowledge, courtesy, and trust-building capabilities	Bank employees explaining financial products confidently
5. Empathy	Individual attention and personalized care	Doctor explaining diagnosis patiently

4. Comparison: Product vs. Service Quality

Aspect	Product Quality	Service Quality
Nature	Tangible	Intangible
Measurement	Objective (specifications, durability, performance)	Subjective (customer perception, experience)
Consistency	Can be standardized	Varies with customer interaction
Customer Involvement	Less	High (services are co-created)

5. Industry Applications

- **Automobile Industry:** Reliability, durability, and performance are key quality dimensions.
- **Healthcare:** Service quality dimensions like empathy and assurance play a critical role.
- **Software Industry:** Reliability and responsiveness in **SaaS (Software as a Service)** products.
- **Hospitality:** Tangibles (clean hotels) and responsiveness (quick check-in services).

6. Case Study: Toyota vs. Ritz Carlton

Aspect	Toyota (Product Quality)	Ritz Carlton (Service Quality)
Key Focus	Performance, reliability, durability	Tangibles, responsiveness, empathy
Methodology	Lean Six Sigma, Kaizen for defect reduction	Personalized customer experiences
Outcome	High customer loyalty due to durable, fuel-efficient cars	Premium reputation for luxury service

Conclusion

Understanding and managing quality dimensions help businesses align with customer expectations, improve **satisfaction**, and **gain a competitive advantage**. While **product quality focuses on tangible attributes**, **service quality is more dynamic and customer-dependent**.