5. Service Systems [1]

INFO 210 - 12 September 2007

Bob Glushko
Plan for Today's Lecture

From "Service" to "Service Systems"

Service System Definitions & Concepts
  - Front Stage and Back Stage
  - Line(s) / Zone(s) of Visibility
  - Service Intensity

From "Manufacturing Systems" to "Service Systems"

Plans for upcoming lectures on Service Systems
The Traditional View of Services

Traditional concepts of service management and design emphasize person to person interactions

This approach focuses on the "touch points" or "encounters" where the service is delivered

It emphasizes non-technological principles like empowering the employee, knowing the customer
"Service encounters are critical moments of truth in which customers often develop indelible impressions of a firm... From the customer's point of view, these encounters ARE the service" (Bitner, Brown & Meuter, 2000)

"In most services, quality occurs during service delivery, usually in an interaction between the customer and contact personnel of the service firm" (Zeithaml, Berry, & Parasuraman, 1988)
The Hotel Service Encounter
What's the Quality of this Service Encounter?

HOTEL RECEPTION EMPLOYEE: Welcome, Dr. Glushko, it is good to see you again. We know you like room 321, the corner room with the bridge view, so we’ve reserved it for you. And last fall when you were here you had us get some baseball game tickets because the Red Sox were in town, and it just happens that they’re playing again tomorrow night so we got some good seats for you.
CUSTOMER: Thanks.
What's the Quality of this Service Encounter?

HOTEL RECEPTION EMPLOYEE: Last name?
CUSTOMER: Glushko
HOTEL RECEPTION EMPLOYEE: You're in room 321. Here's your key.
CUSTOMER: Thanks.
Simplistic View of Service Quality

INTENSITY OF SERVICE INTERACTION
(Process and People)

High

Ritz Carlton

Marriott

Residence Inn

Motel 6

Low
An Intense but Low Quality Encounter

HOTEL RECEPTION EMPLOYEE: Your name, sir?
CUSTOMER: Glushko
HOTEL RECEPTION EMPLOYEE: I'm sorry, sir. We have no reservation under that name, and we're completely booked tonight.
CUSTOMER: That's ridiculous. Here's my web confirmation page.
HOTEL RECEPTION EMPLOYEE: I'm sorry, sir. We have no reservation for you. We are profoundly sorry. Why don't you wait in the lounge while we call one of our partner hotels and get a room for you...
CUSTOMER: This is completely incompetent. I'm tired...
HOTEL RECEPTION EMPLOYEE: I'm sorry, sir. We will pay for your room tonight at our partner hotel or give you a voucher for a free night here on your next stay.
Self-Service Hotel Check-In
What's the Quality of this Service Encounter?

AUTOMATED CHECK-IN SERVICE: Please insert your credit card

CUSTOMER: (Inserts credit card)

AUTOMATED CHECK-IN SERVICE: (issues digital key card) Room 321. Here's your key.
What Determines the Quality of the "Check-In" Service?

Your interaction with the person at the reception desk - *Employee to Customer*

Or, alternatively, your interaction with a "self-service" check-in application - *Business to Customer Self-Service*

The reception person's interaction with the hotel's information systems - *Business to Employee*

Interactions between the hotel's information systems and other information systems - *Business to Business*
Quality and the Service System

There may be a “moment of truth” in which the quality of the service experience becomes apparent to the customer, but that quality is enabled or constrained by many interrelated sub-systems or services.

So we need to take a comprehensive and "end-to-end" view of how a service is defined and delivered.

This end-to-end view shows that many of the key determinants of quality are invisible to the customer, and some of them are even invisible to the hotel employees.
The Hotel Service System - Interconnected Interactions
From "Service" to "Service Systems"

An emerging view in "service science" is that the SERVICE SYSTEM is the correct framework or perspective for understanding how services work (rather than people, enterprises, or technological implementation).

A service system takes a more abstract view that de-emphasizes the obvious differences between person-to-person services and computational or automated ones.

A service provider's interaction with a service consumer transforms it or something else (information, artifacts, organizations) to create or "co-create" value.

The system of relationships among the participants in a service system follows patterns of value creation and business architecture.

Service systems can be composed from other service systems.
"Service System" Definition (Glushko)

A set of interconnected provider-consumer relationships and the flow of information through them

Every service has at least one service producer and one service consumer

A set of related services can define a SERVICE CHAIN or SERVICE NETWORK or VALUE CHAIN

Designating the last consumer in a service chain as the POINT OF VIEW establishes a perspective or context in the service system
Visualizing a Service System
Point of View in a Service System
Narrow Scope in a Service System
Wide Scope in a Service System
Different Point of View in a Service System
Service as a System of Relationships

A. Service Provider
- individual
- organization
- technology owned or operated by A

B. Service Client
- individual
- organization
- public or private

C. Service Target: The reality to be transformed or operated on by A, for the sake of B
- people, dimensions of
- business, dimensions of
- products, tech. artifacts, and env.
- information, codified knowledge

Forms of Service relationship (A with B)
Forms of value coproduction (A with B)
Forms of Service Interventions (A on C, B on C)
Forms of Ownership relationship (B for C)
"Forms of Relationship"

Is the relationship between Provider A and Client B:

- Ad hoc or contractual
- Static or dynamic
- Transactional or "relational"
- Symmetric or asymmetric
- Governed by a "service level agreement" between them
- Governed by some broader authority
"Service System" Definition (Spohrer, Maglio, et al)

A value co-production configuration of people, technology, internal and external service systems, connected to other systems by value propositions and shared information.

This shared information also includes language, laws, metrics, culture...

This is a recursive definition because service systems have both internal and external structure and their compositions follow patterns.
Examples of Service Systems (IBM Definition)

- People
- Families
- Businesses
- Cities
- Nations
- Hospitals
- Universities
- Call Centers
- Data Centers

- Professional Associations
- Disciplinary Associations
- Government Agencies
- PACs
- NGOs
- Non-Profits
- Foundations
- On-line Communities, MMORPGs, Virtual Worlds
Visualizing Service Systems (IBM)

Progression of phenomena: Emergence of Complex Systems

People with World Models

Culture

Language

Tools

Trust

Organizations And Institutions

Value Coproduction (Service)

Physical Systems

Chemical Systems

Biological Systems

Human Systems

Service Systems
The Front Stage and Back Stage of a Service System

Any business is made of two parts:

- **Back stage**: design, manufacturing
- **Front stage**

**Industry Sector**

**Service Sector**

Front stage

Back stage
Service Is Front Stage (Not!)
The Front Stage

The front stage represents the interaction the customer or service consumer has with the service.

The front stage service interface can be an employee, in a high-contact service, or a user interface, as in a self-service encounter with a computer or machine application.
The Back Stage

The back stage is the foundation for the front stage

The back stage operates on raw materials or information to create the finished products or processed information needed by the front stage

"Industrialization" of the back stage to achieve efficiencies and economies of scale inevitably simplifies the front stage services
Different "Lines of Visibility" -- Front / Back Stage Boundaries in Restaurants
Teboul's Two Dimensions of Service Intensity

Teboul factors the one dimension of "intensity of service interaction" into two components:

- The amount or duration of interaction
- The extent of standardization

The front/back stage distinction intersects with service intensity here, because one way to adjust service intensity is by moving some front stage activity to the back stage, or vice versa.

These two dimensions are usually correlated.
Teboul's Service Intensity Matrix

![Teboul's Service Intensity Matrix Diagram]
Front/Back Stage Interrelationships and Service Intensity

Front stage
Service-intensity matrix

Back stage
Product-process matrix

Variety, customization

Standard product

Gourmet restaurant

Fast food

Flexible functional organization

Rigid sequence of operations

High intensity

Low intensity

Job shop

Production line
Service Intensity - Correlation with Price

- Sofitel: €130
- Novotel: €80
- Ibis: €50
- Etap: €32
- Formule 1: €25
Service Intensity - Correlation with Employee #'s
Beating the Correlation with Automation

![Diagram showing the trade-off between face-to-face interaction and online processing, with axes for variety, customization, richness of interaction and standard transaction, indicating reduced reach for greater richness of relationship and sacrifice richness for greater reach.]
The Service Systems of the University

Who are the participants?

What are their relationships to each other?

What are the primary services offered?

Where are the front and back stages?

What are the ranges of "service intensity" for the primary services?

How does this alter the ways in which value is (co-)produced?

How can the tradeoffs in service intensity be altered by the introduction of technology?
From Physical to Information to Service Systems

<table>
<thead>
<tr>
<th></th>
<th>1800s</th>
<th>(late 1900s)</th>
<th>2000s</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Notion of Work</strong></td>
<td>Physical System</td>
<td>Information System</td>
<td>Service System</td>
</tr>
<tr>
<td><strong>What is Transformed</strong></td>
<td>Matter and Energy</td>
<td>Information</td>
<td>People, Technologies, Organizations, Information</td>
</tr>
<tr>
<td><strong>Example (Measurement)</strong></td>
<td>Steam engine (Mass, Distance, Time)</td>
<td>Search engine (Computational Complexity)</td>
<td>Offshore call center (Time, Cost, Skill Level)</td>
</tr>
<tr>
<td><strong>Compliance Laws</strong></td>
<td>Physical</td>
<td>Logical and Mathematical</td>
<td>Legal, Cultural, and Contractual</td>
</tr>
</tbody>
</table>
The "Bow Tie" Relationship in Manufacturing Systems [or, G-D-L] (Teboul)
The "Diamond" Relationship for Services [or, S-D-L] (Teboul)
Models of Service Systems

Because of the great range and diversity of domains we want to describe as service systems, no single modeling approach or formalism is adequate.

Today we looked at service systems in terms of descriptive qualitative properties of connectivity and intensity.

The interactions among the entities in the service system can be described in more formal and quantitative ways.

Modeling approaches also differ in whether they describe static or dynamic aspects of the service system.
Upcoming Lectures

17 September - Value Chain Models
19 September - Demand / Capacity Management Models
24 September - Information Flow / Process Models
Readings for 17 September

