18. Design Patterns for Service Experiences

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Plan for Today's Lecture

"Value Creation" Patterns

Heskett: "The Service Profit Chain"

Frei: "Breaking the Tradeoff Between Efficiency and Service"

General Mechanisms for Dealing with Variable Demand

Queuing Models and Patterns

Design Patterns

Because services are often less tangible or more abstract than products, service descriptions are more amenable to conceptual manipulation

As "service" moves beyond traditional person-to-person services to self-service, web services, computer-to-computer service we are induced to take a more abstract perspective to emphasize what they have in common

This suggests that design patterns or models for services could be exploited systematically to invent new or improved services

Design Patterns for Service Experiences

Many design patterns for service experiences are abstract qualitative depictions of the "value chains" that create positive outcomes for customers or other stakeholders

They provide frameworks for design choices that encourage or constrain the experiences, so they can serve as templates for a set of related service offerings that vary in the number or intensity of encounters or co-production

Traditional service design mechanisms like scheduling and demand management can be used as patterns in this way

Queuing theory is an exception in that it is formal and deterministic in specifying how "back stage" parameters control the "front stage" experience

Service Intensity: Levels / Numbers of Touch Points

The intensity or number of touch points required of a service customer varies between services and between different offerings of the same type of service

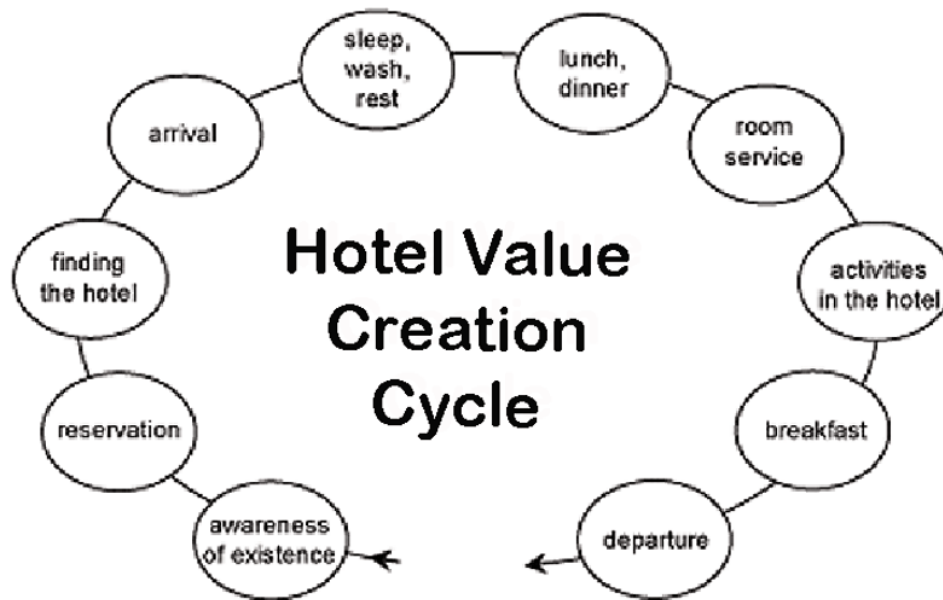Some services are standardized and never customized to specific customer

Others can be adapted if the customer requests and participates in the adaptation by providing information or preferences

Brand Touchpoint Wheel
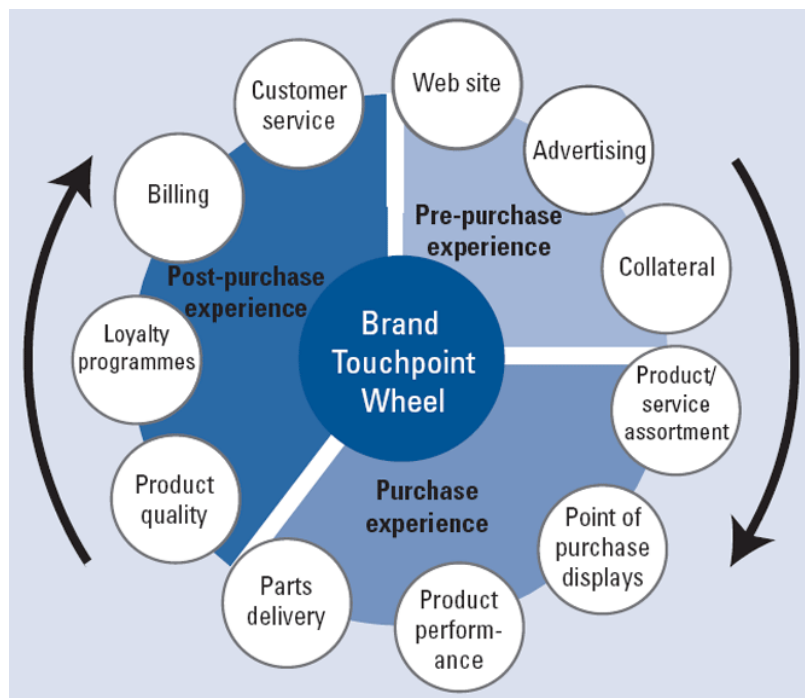
Hotel "Value Creation Cycle"

"Putting the Service-Profit Chain to Work" -- Heskett et al

The most successful service organizations recognize that their profitability is largely determined by how their employees interact with their customers

These firms make lots of "intangible investments" in recruiting, training, and compensation of their employees

They measure many aspects of employee and customer behavior and satisfaction

Goal is to calibrate the value of products and services delivered so that the firm can increase customer satisfaction and loyalty and assess the impact on profitability and growth

Principles Governing the Service-Profit Chain

Customer Loyalty Drives Profitability and Growth

Customer Satisfaction Drives Customer Loyalty
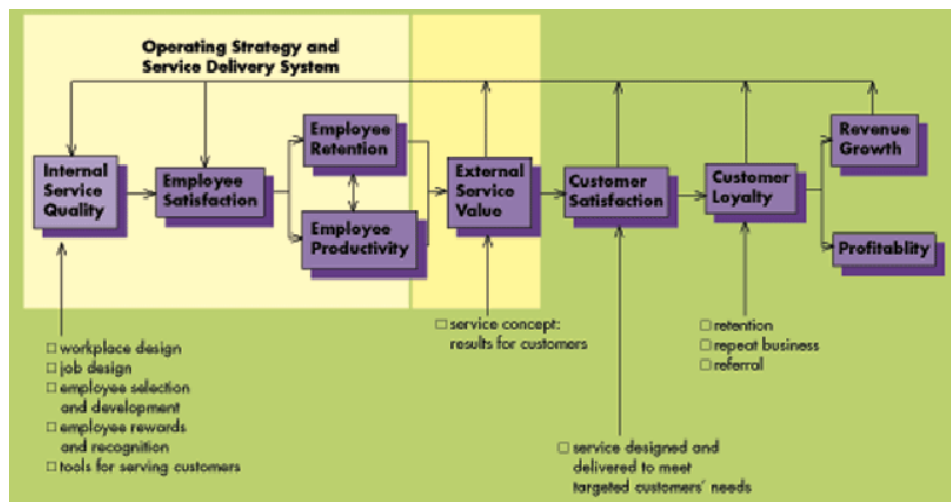
Value Drives Customer Satisfaction

Employee Productivity Drives Value

Employee Loyalty Drives Productivity

Employee Satisfaction Drives Loyalty

Internal Quality Drives Employee Satisfaction

The Service-Profit Chain

Customer Loyalty Drives Profitability and Growth

Loyal customers are the most valuable -- most loyal 20% provide all the profit and cover the costs incurred in dealing with less loyal customers

Loyalty is measured by the duration and the depth of the relationship
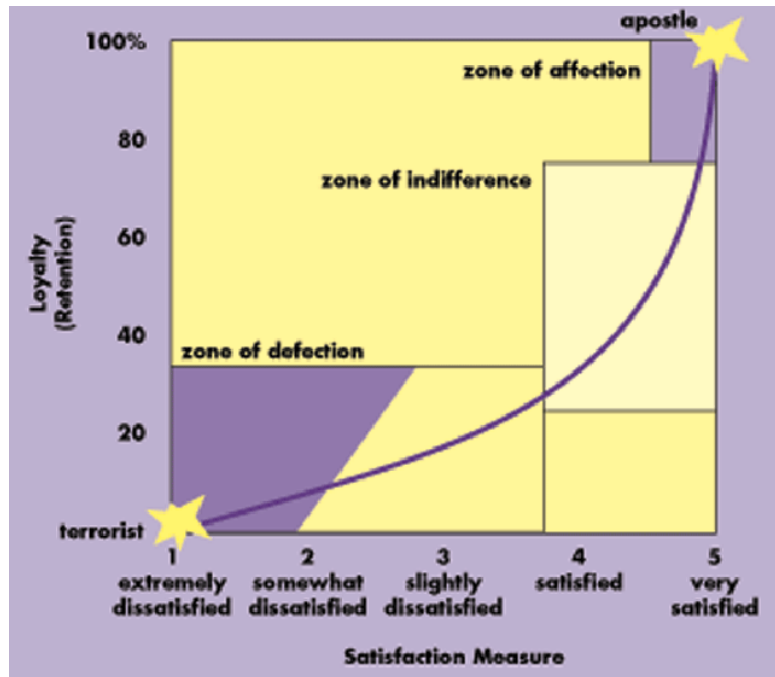
Customer Satisfaction Drives Customer Loyalty

Only the most satisfied customers are truly loyal (on 1-5 satisfaction scale, 5s are substantially more loyal than 4s)

Companies strive to create *apostles* and to avoid creating *terrorists*

Apostles and Terrorists

Value Drives Customer Satisfaction

But value is often tricky to measure, because there are both absolute or objective measures of value and subjective ones based on customer expectations

Studies show that people will sometimes rate a service experience more highly if they had to wait

Employee Productivity Drives Value

Example in paper is Southwest Airlines, where positions are designed so that employees can do several jobs if necessary

The faster turnaround time for planes increases their utilization

Southwest was the most profitable airline at the time this paper was written and remains highly profitable today

Employee Loyalty Drives Productivity

The cost of employee turnover is usually measured in terms of the costs of recruiting, hiring, and training replacements

But in most service jobs, the real cost of turnover is the loss of productivity, which in turn results in lower customer satisfaction

Employee Satisfaction Drives Loyalty

This may be the most obvious principle... that if you like your job you probably want to keep it for a long time

Too often firms don't bother to measure whether their employees are satisfied, especially when they don't perceive that employees have many options to leave

Internal Quality Drives Employee Satisfaction

Internal quality is a measurement of the attitudes that employees have toward their jobs, colleagues, and the firm as a whole

A key contributor to internal quality is whether employees feel empowered to meet customer needs
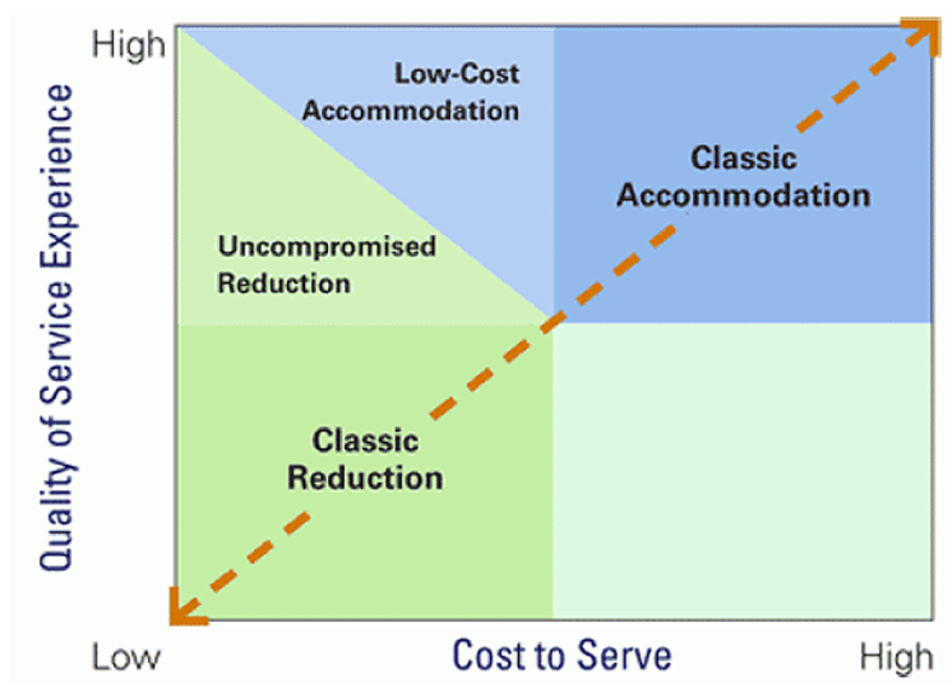
Frei: "Breaking the Tradeoff"

A service system embodies some particular value chain structure

But the idealized view of how experience is created is tempered by variability in customers:

- Arrival
- Request
- Capability
- Effort
- Subjective Preference

Accommodating Customer Variability

General Mechanisms for Dealing with Variable Demand

Value chain models are open ended and industry-specific ones can have many different causal or explanatory constructs or "points for creating value"

There are some more general and robust mechanisms that are important to know because they use a smaller number of factors to explain how the service system works:

- Capacity Management and Scheduling
- Influencing and Managing Demand
- Managing Demand in Queues

Demand Vs Capacity - 4 Scenarios
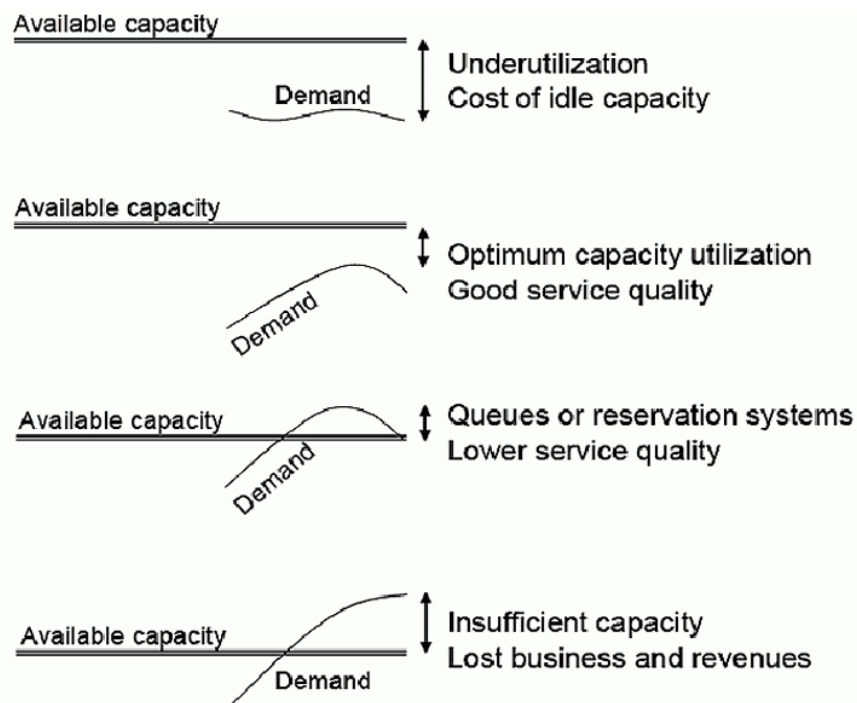
Capacity

Capacity in service operations is generally divided into FIXED (long-term) and VARIABLE (short-term) components

Capacity is also categorized in terms of facilities, equipment, and labor

Fixed Capacity

Fixed capacity is determined by physical resources like facilities, airplanes, beds, computers, classrooms...

These usually represent significant strategy choices and investments and take time to acquire and deploy

The fixed capacity investments largely determine the MAXIMUM CAPACITY of the service (hotel rooms, seats on airplane flights, checkout stations, call center telephone lines)

The OPTIMAL CAPACITY, the number of customers that can be served at a desired level of service, is always less than the MAXIMUM CAPACITY

Strategy Considerations for Fixed Capacity Investments

Fixed capacity investments are often significant and irreversible

Fixed capacity is often added in large discrete units (airplanes, buildings,...) so it is impossible to match capacity with demand exactly

When to invest is a critical decision

Is it useful to distinguish fixed capacity for "back stage" operations from that for "front stage" operations?

Variable Capacity for Fixed Investments?

Scheduling of equipment (airplanes, trains, buses) and deliveries (sequence, routing) is a critical issue in service design

If facilities and equipment can easily be reallocated, rescheduled, or reconfigured for different tasks or functions they can be viewed as variable capacity

Sharing of facilities or equipment increases the overall capacity of the service providers doing the sharing

Facilities, equipment, computing capacity can be rented/leased or obtained "on demand" from a service provider

Labor Capacity

Labor is obviously the most variable resource of a service firm

Labor capacity is managed in many ways depending on the time horizon:

- Education, immigration policy, and other long-term factors shape labor capacity in the economy
- Hiring and internal training affect the long-term labor capacity of a firm
- Scheduling of service workers is the primary mechanism for adjusting variable capacity to address short-term variations in demand
- Queuing and routing of customers are mechanisms for managing capacity in real time

Scheduling

Short-term demand variability can be addressed via cross-training of workers

And by the use of part-time or temp workers

Seasonable variation in demand for services that use low-skill / low-paid workers can also be met by hiring more of them

Influencing or Shifting Demand [1]

The most fundamental approach in managing demand is to shift it from periods when it exceeds service capacity (and quality is impaired) to periods of underutilized capacity (when quality can be much better)

PRICE DISCOUNTS for services provided at off-peak times or surcharges for peak times can significantly shift demand

Demand can also be shifted by offering a comparatively less attractive service package at peak times

BUNDLING -- offering a combination of several services at a reduced rate -- is another technique for increasing demand at off-peak times

Influencing or Shifting Demand [2]

PROMOTION AND ADVERTISING can help by branding the idea that services at off-peak times are convenient and desirable (7/11 stores, 24-hour fitness, etc.)

RESERVATIONS enable a service provider to schedule or shift demand, and coupled with YIELD MANAGEMENT pricing mechanisms can either increase revenue or increase effective capacity

Influencing or Shifting Demand [3]

SMOOTHING of demand is accomplished by moving any discretionary or schedulable services away from periods of high variable demand and toward periods of low variable demand

- Emergency calls and preventive action have different origins. Emergency calls are often highly uncertain and random, whereas preventive action can be planned
- But some "emergencies" are highly predictable

Demand can also be smoothed by RESOURCE POOLING, as in the case of a typing pool or a centralized call center that handles calls for numerous time zones or companies

LOYALTY PROGRAMS smooth demand by offering customers free or upgraded services that would otherwise go unused to increase their likelihood of buying services at other times

Yield Management

For firms that provide services with high fixed costs and low variable costs (airlines, cruise ships, hotels, rental cars,amusement parks...) profitability is directly tied to their overall sales

So the firm wants to maximize its capacity utilization, even if it requires selling (or pre-selling) some of that capacity at reduced prices, as long as those prices exceed its variable costs

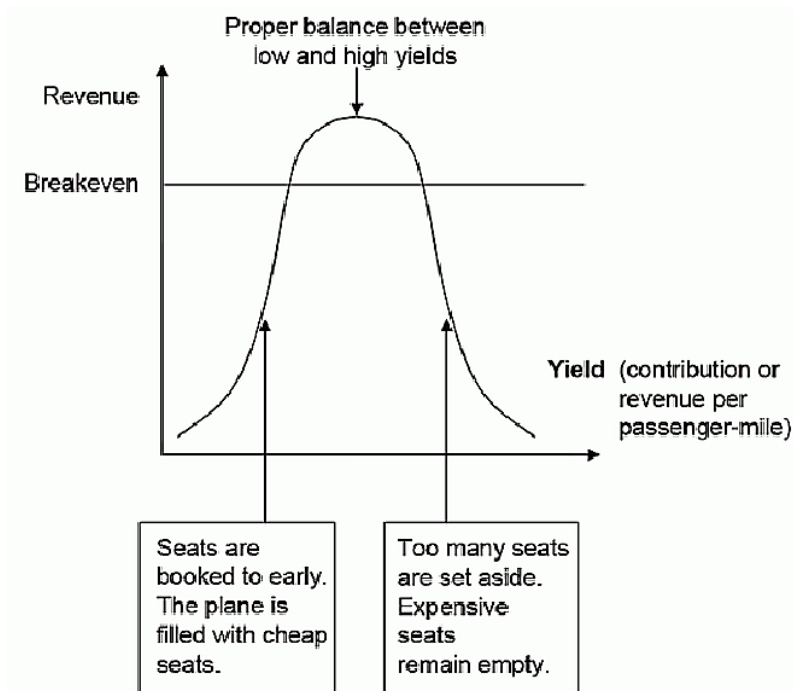The essence of yield management is CUSTOMER SEGMENTATION

Yield management is simple in principle but requires substantial computing in practice

Yield Management: Modeling the Customer
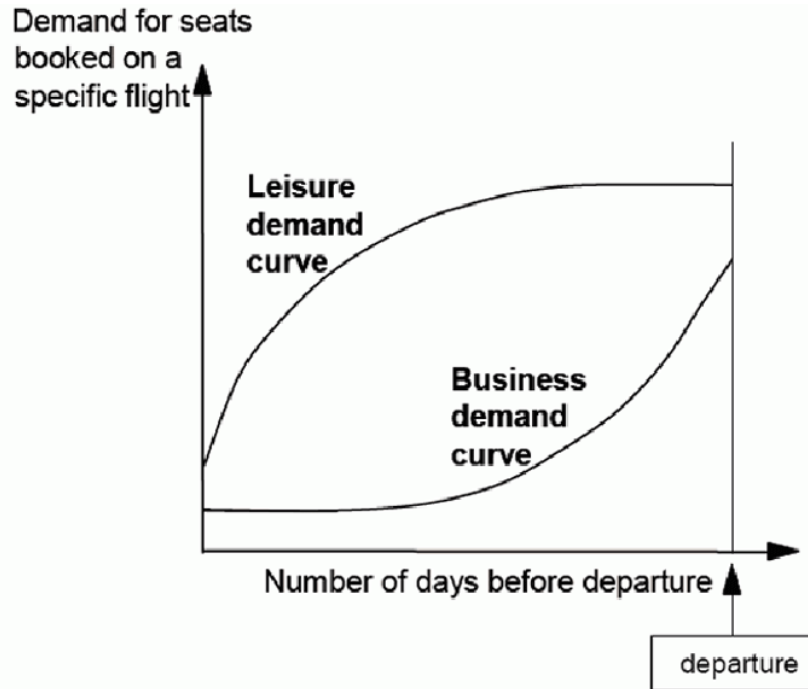
Yield Management: Maximizing Profits

Managing Demand in Queues

If demand and supply are still out of balance and there is no option to reserve in advance, customers have to wait in line, at the risk that some may leave and switch.

The advantage of queues for the service provider is that they keep personnel busy and facilities and equipment fully utilized.

As the rate of arrivals nears the service rate, the average length of the queue will quickly increase.

An imbalance of supply and demand has different impact on the front and back stages of a service system

Managing the Front Stage Queue: Configuration

The QUEUE CONFIGURATION refers to the number of queues, their locations and their layout (if spatial)
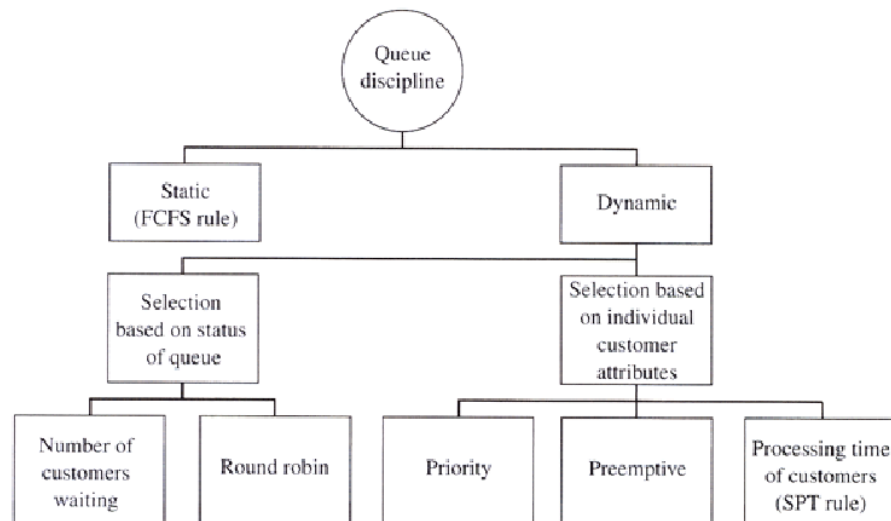
The customer might have a choice of queue, and this choice may be irrevocable... but sometimes it isn't and people engage in *jockeying*
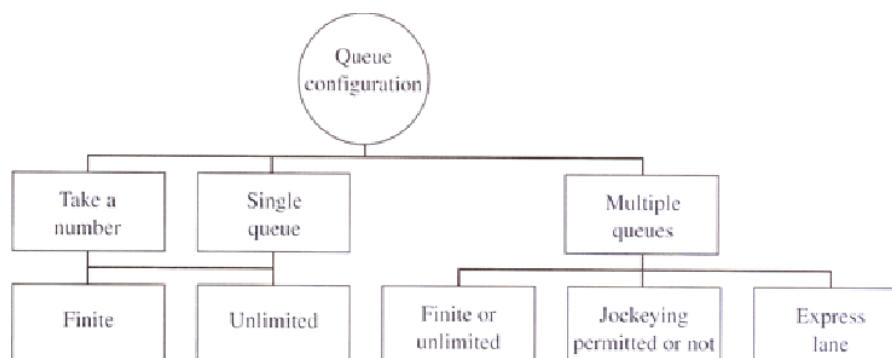
Managing the Front Stage Queue: Discipline

The QUEUE DISCIPLINE is the policy for selecting the next customer from the queue

The Call/Contact Center

The call/contact center is classic example of a service system, where formal models and data collection dominate (queuing theory)

It is essential to model it as a service system because the quality of the "customer service" experience is not just determined when you talk to a person, but also whether you get through at all, wait times, and so on

Customers express preferences and opinions about a service by their waiting, abandonment, interactions and subsequent interactions

Most of the measures are also unbiased and quantitative, which are hard to come by in services

Call Center Service System

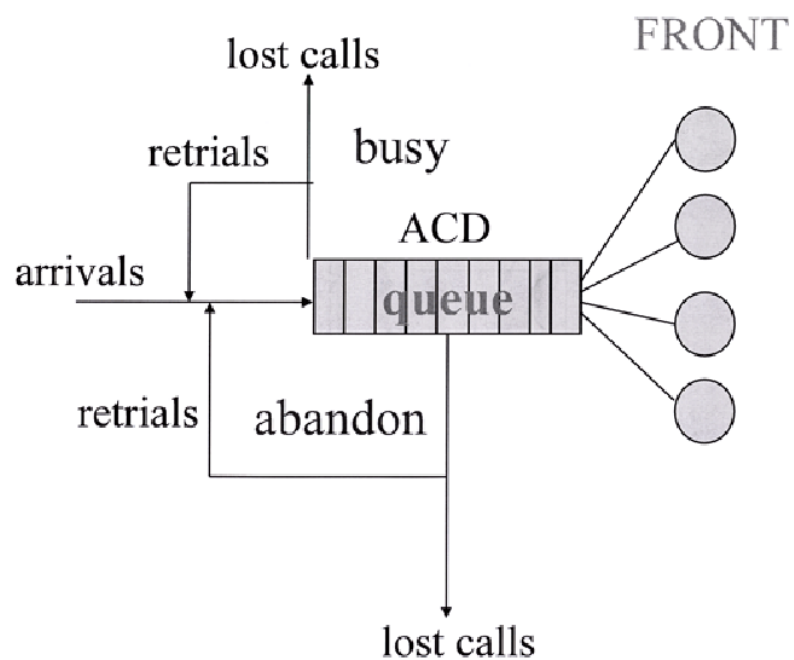The service provider -- the company running the call center

The agents/call takers

The schedulers / account managers

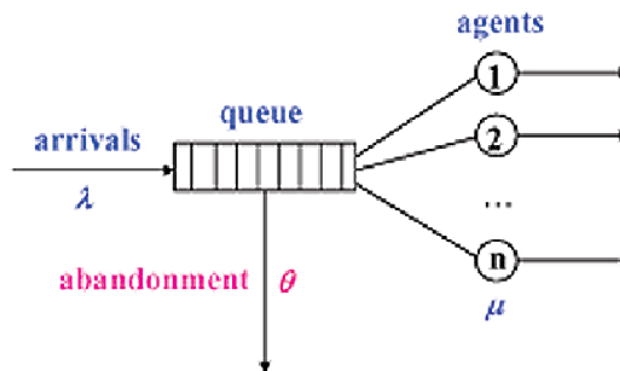Company that has outsourced its customer service

The Call Center State Model

The Call Center System Conceptual Model - Queuing Theory

Simple Model: Palm/Erlang-A

Erlang-A Parameters (Math. Assumptions):

- ► λ – **Arrival** rate (Poisson)
- ► μ – **Service** rate (Exponential)
- ► θ – **Impatience** rate (Exponential)
- ► n – Number of **Service-Agents**.

Call Center Call Log - Raw Data

vru+line	call_id	customer_id	priority	type	date	vru_entry	vru_exit	vru_time	q_start	q_exit	q_time	outcome	ser_start	ser_exit	ser_time	server
AA0101	44749	27644400	2	PS	990901	11:45:33	11:45:39	6	11:45:39	11:46:58	79	AGENT	11:46:57	11:51:00	243	DORIT
AA0101	44750	12887816	1	PS	990905	14:49:00	14:49:06	6	14:49:06	14:53:00	234	AGENT	14:52:59	14:54:29	90	ROTH
AA0101	44967	58660291	2	PS	990905	14:58:42	14:58:48	6	14:58:48	15:02:31	223	AGENT	15:02:31	15:04:10	99	ROTH
AA0101	44968	0	0	NW	990905	15:10:17	15:10:26	9	15:10:26	15:13:19	173	HANG	00:00:00	00:00:00	0	NO_SERVER
AA0101	44969	63193346	2	PS	990905	15:22:07	15:22:13	6	15:22:13	15:23:21	68	AGENT	15:23:20	15:25:25	125	STEREN
AA0101	44970	0	0	NW	990905	15:31:33	15:31:47	14	00:00:00	00:00:00	0	AGENT	15:31:45	15:34:16	151	STEREN
AA0101	44971	41630443	2	PS	990905	15:37:29	15:37:34	5	15:37:34	15:38:20	46	AGENT	15:38:18	15:40:56	158	TOVA
AA0101	44972	64185333	2	PS	990905	15:44:32	15:44:37	5	15:44:37	15:47:57	200	AGENT	15:47:56	15:49:02	66	TOVA
AA0101	44973	3.06E+08	1	PS	990905	15:53:05	15:53:11	6	15:53:11	15:56:39	208	AGENT	15:56:38	15:56:47	9	MORIAH
AA0101	44974	74780917	2	NE	990905	15:59:34	15:59:40	6	15:59:40	16:02:33	173	AGENT	16:02:33	16:26:04	1411	ELI
AA0101	44975	55920755	2	PS	990905	16:07:46	16:07:51	5	16:07:51	16:08:01	10	HANG	00:00:00	00:00:00	0	NO_SERVER
AA0101	44976	0	0	NW	990905	16:11:38	16:11:48	10	16:11:48	16:11:50	2	HANG	00:00:00	00:00:00	0	NO_SERVER
AA0101	44977	33689787	2	PS	990905	16:14:27	16:14:33	6	16:14:33	16:14:54	21	HANG	00:00:00	00:00:00	0	NO_SERVER
AA0101	44978	23817067	2	PS	990905	16:19:11	16:19:17	6	16:19:17	16:19:39	22	AGENT	16:19:38	16:21:57	139	TOVA
AA0101	44764	0	0	PS	990901	15:03:26	15:03:36	10	00:00:00	00:00:00	0	AGENT	15:03:35	15:06:36	181	ZOHARI
AA0101	44765	25219700	2	PS	990901	15:14:46	15:14:51	5	15:14:51	15:15:10	19	AGENT	15:15:09	15:17:00	111	SHARON
AA0101	44766	0	0	PS	990901	15:25:48	15:26:00	12	00:00:00	00:00:00	0	AGENT	15:25:59	15:28:15	136	ANAT
AA0101	44767	58859752	2	PS	990901	15:34:57	15:35:03	6	15:35:03	15:35:14	11	AGENT	15:35:13	15:35:15	2	MORIAH
AA0101	44768	0	0	PS	990901	15:46:30	15:46:39	9	00:00:00	00:00:00	0	AGENT	15:46:38	15:51:51	313	ANAT

Call Center Daily Summary
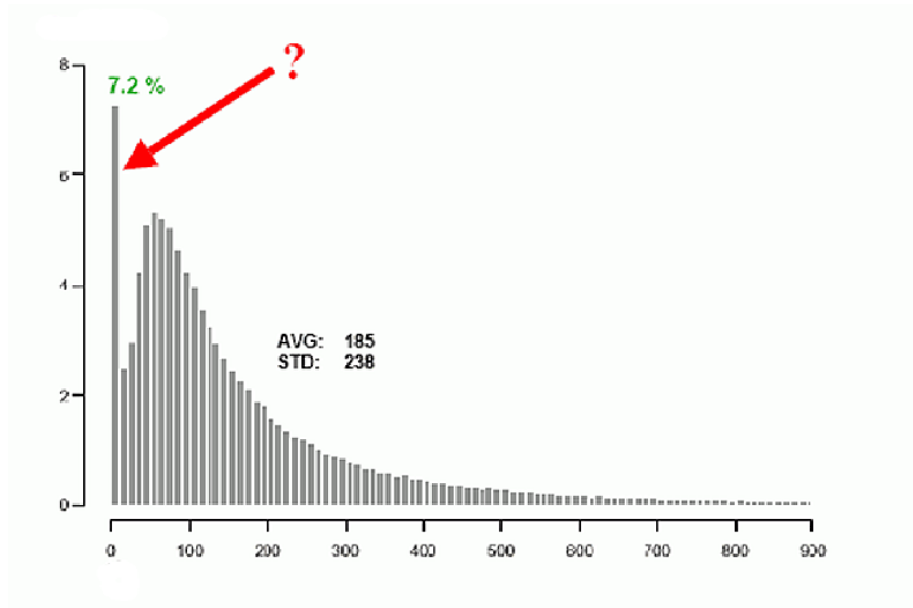

Daily Report of April 20, 2004 – Heavily Loaded Day
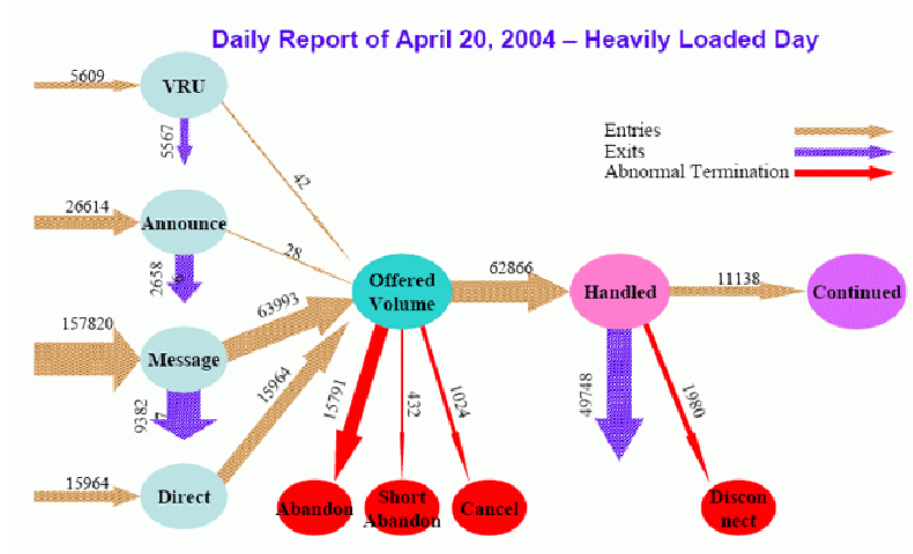
Call Center Data Regularity

Arrival Rates on Tuesdays in a September – U.S. Bank
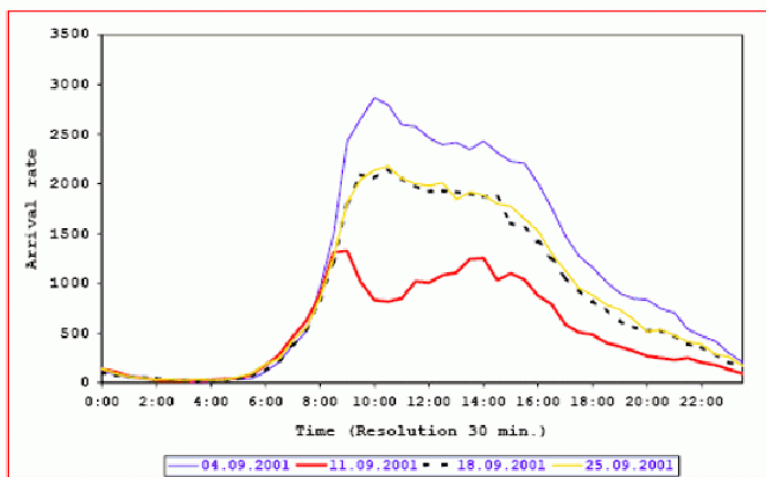
Call Center -- Never Look at Average Service Time

Readings for "Component and Composite Services" on 3 November

L. Cherbakov, G. Galambos, R. Harishankar, S. Kalyana, and G. Rackham "Impact of service orientation at the business level"

Ulrich Homann, Michael Rill, and Andreas Wimmer, "Flexible Value Structures in Banking"

Robert Schneider, "SOA and composite applications"