Plan for Today's Lecture

Contrasting Approaches to Service Design

A Design Methodology "Metamodel" that Bridges the Front and Back Stage

"Technology Infusion in Service Encounters"

Personalization {and, or, vs} Customization
The Context of Design

The design of any service -- whether it will be performed by people or by information systems -- takes place in a context of:

- Current and potential customers
- Current and potential technologies
- Current and potential competitors
- Existing services or systems
- Existing user or application interfaces
- Legal, regulatory, cultural systems and constraints

These factors or constraints can never be equally important; how they are weighted determines the appropriate design methodology and the key characteristics of the design.
Blueprinting {and, or, vs} Document Engineering

Agreement:

- Important to depict a service at multiple levels of analysis
- Need an end-to-end process description
- ...

Disagreement:

- DE treats documents and processes as "yin" and "yang" and designs the reusable information components that documents use to "glue" processes together
- Not much focus on customer experience in DE, and no customer segmentation
- ...


Contrasting Design Goals for Methodologies

- Front Stage Designers
  - Usability
  - Responsiveness
  - Flexibility / Customization / Uniqueness
  - Transparency
  - Enjoyment

- Back Stage Designers
  - Efficiency / Productivity
  - Robustness
  - Standardization / Reuse
  - Scaleability
Resolving the Tension: Bridging the Back Stage and Front Stage

These tensions between the back stage front stage are not intrinsic and unavoidable; they are just a consequence of too narrow a design perspective.

"Merging the mindsets" with multidisciplinary design teams is an obvious and necessary correction, but it is not sufficient.

We need a methodology for designing service systems that cuts through these mindsets; i.e., we need to design an appropriate methodology based on the design context, drawing on activities from various approaches.
A Design Methodology "Metamodel" that Bridges the Front and Back Stage

- Develop the service concept(s)
- Scope the service system
- Analyze current, competitive, and potential service systems
- Identify and apply best practices and design patterns
- Prototype and evaluate the service
- Deploy the service
Example "Bridging" Methodology Activities for Information-Intensive Services

Design services to be modular and configurable

- ... to enable them to be easily substituted for (from one provider to another, from a human provider to a technology-based one, and vice versa)

- ... to enable them to be easily made visible or invisible to other parts of the service system

Create information flow and process models that span both the back and front stages, exploiting the appropriate design patterns

Implement "model-based user interfaces"
Information Flow and Process Models that Span the Service System

We have many useful modeling methods and frameworks for designing service systems: supply chains, marketplaces, demand management, queuing theory, etc.

Many of these can be used to ensure some level of service quality and customer experience by balancing capacity and demand in a coarse or aggregate manner.

Other modeling approaches (e.g. data mining, business intelligence, intelligent dispatch) can shape service quality or experience for specific customers (e.g., personalization systems, customer selection for service).
Who "Drives the Model" as a Service System Design Choice

The same model can often be driven or exploited by either the service provider or the service consumer; this is a design choice in the service system.

(a) Provider-centric  (b) Consumer-centric  (c) Market-centric
Classical View: The Service Marketing Triangle

- Internal marketing
- Service marketing
  - Service features and outcome
  - Positioning and pricing
  - Mass communication and branding
- Frontline employee
- Customer
- Sales and relationship marketing
Service Encounters and Technology

The traditional approach to understanding a service encounter was through interpersonal dynamics (the relationships at the base of the service marketing triangle)

But technology can radically alter or eliminate the interpersonal relationships

Technology can also dramatically increase the number of encounters (24 x 7)

And technology can dramatically increase the extent to which information can contribute to services
The Service Marketing Pyramid
The Technology Infusion Framework

<table>
<thead>
<tr>
<th>Technology as Enabler for</th>
<th>Customization / Flexibility</th>
<th>Effective Service Recovery</th>
<th>Spontaneous Delight</th>
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</thead>
<tbody>
<tr>
<td>Employees</td>
<td>Technology can be used by contact employees to improve the efficiency and effectiveness of service encounters by enabling customization, improving service recovery and spontaneously delighting customers.</td>
<td>Industry Examples: • AT&amp;T • Streamline • Individual Inc.</td>
<td>Industry Examples: • General Electric • USAA</td>
</tr>
<tr>
<td>Customers</td>
<td>Technology can be used independently by customers to improve the efficiency and effectiveness of their own service encounter experience by enabling customization, improving service recovery and providing spontaneous delight.</td>
<td>Industry Examples: • Amazon.com • Wells Fargo • Federal Express</td>
<td>Industry Examples: • Hartness Intl.</td>
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</tbody>
</table>
Technology Used by Contact Employees

- Customer databases
- Sales force automation
- Call center management
- Product information; help desk applications
- Product and price configurators
"Customization" = "Personalization" in Bitner et al. (p. 142)

"Customers want services that fit their individual needs"

"The ability to adapt in real time is a distinct advantage for providers who wish to be responsive to customer desires for individualized services"

"This type of customization is also referred to as 'discretion,' 'PERSONALIZATION,' and 'adaptation'"
Distinguishing "Customization" and "Personalization"

Some people reserve "customization" for activities initiated by the customer to tailor a product / service / experience; this is sometimes called "adaptable" customization.

"Personalization" is initiated by the provider, and is sometimes called "adaptive" customization; one important difference is that not all provider-driven personalization is desired by the customer.

In either case, a service designer needs to determine:

- What information is required to modify the service?
- Where can this information come from?
What Information is Needed to Personalize?

"Who the customers are and how they behave"

"Demographic and psychographic information"

"Comprehensive information... converted into actionable knowledge"
Where Does the Information Required for Personalization Come From?

From the consumer:
- Surveys and forms
- Transactional records
- Behavioral records, navigation history

From data brokers, using keys obtained from the consumer

From other consumers who are similar to the target consumer

From descriptive or predictive models built using all of the above
Asking a Personalization Design Question in a "Service System Way"

Is it more intense to ask the customer questions in a person-to-person encounter, or to fill out a self-service form?

It is more intense to ask the customer to complete one complicated form or several simple ones over time?

Instead of either of these explicit customer interactions, can we use information we already have (from previous encounters, from other contexts, from aggregated business intelligence) to make it unnecessary to collect information from the customer?
Descriptive Customer Models -- Identify Relations

Use: Find the relationships between customers

Example: Sort customers into groups with different buying profiles.

Operation: Analysis is generally done offline, but the results can be used in automated decisions – such as offering a given product to a specific customer.

Descriptive models can be used to categorize customers into different categories – which can be useful in setting strategies and targeting treatment.
Predictive Customer Models -- Calculate Risk / Opportunity

Predictive models often rank-order individuals. For example, credit scores rank-order borrowers by their credit risk – the higher the score, the more “good” borrowers for every “bad” one.

**Use:** Identify the odds that a customer will take a specified action

**Example:** Will the customer pay me back on time? Will the customer respond to this offer?

**Operation:** Models are called by a business rules engine to “score” an individual or transaction, often in real time.
Building Customer Loyalty by Bridging the Front and Back Stages

Programs to encourage customers to voluntarily repurchase and recommend a product or service have been around for nearly 100 years.

Before "technology infusion," loyalty programs were embodied in "tangible evidence" like stamps or coupons.

Today, loyalty programs require sophisticated technology for collecting, mining, and operationalizing customer data.
Loyalty Framework

Figure 1: Loyalty Framework

Core Rewardable Behaviors
- Product Purchase
- Customer Referrals
- Value Added Service Enrollment
- Tenure
- Total Balances
- Usage
- Relationship Depth

Reward Types
- Points and Cashback
- Discounted Services / Fee Elimination
- Merchant / Partner Discounts
- Financial Credit
- Preferential Treatment / Recognition
- Personalization

Tangible Outcomes
- Increased Revenue
- Reduced Attrition
- Increased Profit per Customer
- Increased Product Sales
- Increased Customers

Intangible Outcomes
- Favorable References
- Higher Placement in Consideration Set / Reduction of Competitor Influence in Consideration
- Improved Brand Perception
- Improved Likelihood of Repurchase
Increasing Complexity of Loyalty Programs

- Single Product
- Co-brand Partnerships
- Multi-Product Rewards
- Relationship Rewards
- Communities / Networks
- Customer Experience

- Connectivity
- Real-Time Transactions
- Reliability
- Responsiveness
- Security

Technical Complexity
The New Loyalty "Service System"
The Customer Data Lifecycle

<table>
<thead>
<tr>
<th>Stage 1: Collecting data</th>
<th>Stage 2: Mining data</th>
<th>Stage 3: Operationalizing data</th>
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<tbody>
<tr>
<td><strong>Objectives:</strong></td>
<td><strong>Objective:</strong></td>
<td><strong>Objective:</strong></td>
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<tr>
<td>• Collect, validate and</td>
<td>• Develop customer</td>
<td>• Use these insights to</td>
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<tr>
<td>refresh data in a</td>
<td>behavior information</td>
<td>deliver a personalized</td>
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<tr>
<td>customer-centric</td>
<td>and insights which</td>
<td>customer experience at</td>
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<td>manner</td>
<td>can be used to</td>
<td>each touch point in real</td>
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<tr>
<td>• Gather this data in</td>
<td>create initiatives</td>
<td>time</td>
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<tr>
<td>real time</td>
<td>or promotions that</td>
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<tr>
<td><strong>Key Challenges:</strong></td>
<td>will generate a</td>
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<tr>
<td>• Data warehouse project</td>
<td>positive financial</td>
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<tr>
<td>that becomes too</td>
<td>return</td>
<td><strong>Key Challenges:</strong></td>
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<tr>
<td>complex and/or too</td>
<td><strong>Key Challenge:</strong></td>
<td>• Change front-line staff,</td>
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<tr>
<td>expensive</td>
<td>• Become overwhelmed</td>
<td>processes and systems</td>
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<tr>
<td>• Real-time connectivity</td>
<td>by the amount of</td>
<td>to use insights</td>
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<tr>
<td>to customer behavior</td>
<td>data or by data</td>
<td>• Real-time connectivity</td>
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<tr>
<td>at the point-of-sale</td>
<td>quality issues</td>
<td>and reliability</td>
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Frequent Flyer Profitability

60% of the highest-status frequent flyers were in the "least profitable" segment

* Decile 1 = most profitable FFP members; Decile 10 = least profitable

Avg fully loaded profit per FFP member
Microsegmentation to Prevent "Adverse Selection"
"Pay As You Drive" Insurance

Most insurance is sold using customer segmentation based on historical data.

The cost of PAYD insurance reflects actual risk, and thus incents drivers to adopt safer habits.

<table>
<thead>
<tr>
<th>Current Pricing</th>
<th>Efficient Pricing</th>
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<tbody>
<tr>
<td>Motorist Reduces Vehicle Trips</td>
<td>Motorist Reduces Vehicle Trips</td>
</tr>
<tr>
<td>Reduced Crashes and Claim Costs</td>
<td>Reduced Crashes and Claim Costs</td>
</tr>
<tr>
<td>Cost Savings</td>
<td>Cost Savings</td>
</tr>
<tr>
<td>(Dispersed to all motorists within the rate class)</td>
<td>(Returned to the individual motorist)</td>
</tr>
</tbody>
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With current insurance pricing, crash cost savings from reduced driving are dispersed to all motorists in their rate class. PAYD pricing returns more savings to individuals who reduce their driving. This rewards motorists for reducing mileage and makes premiums more accurately reflect the insurance costs of each individual vehicle.
"the use of flexible processes and organizational structures to produce varied and often individually customized products and services at the price of standardized, mass-produced alternatives"

The key to mass customization for products is a configurable architecture and design based on a set of pre-designed components or modules that can be combined into a variety of products with different capabilities

These underlying architectures and combination rules for configurable products are often complex and difficult for customers to understand, so a configurator application supports the customer in building the appropriately customized product

We are just beginning to learn how these ideas apply to services
"Do it yourself" isn't the same as "Self-service"

In "Self-service" a service provider takes an activity formerly performed by an employee and allows/requires the customer to do it, generally to reduce costs.

The customer might do the same work done previously by the employee, using the same facilities or equipment (e.g., laundromat, cafeteria).

But more often the employee has been replaced with an automated system involving software and/or equipment (e.g., ATMs, kiosks, touch tones -> IVR, web sites for commerce, tracking, etc.).

Self-service allows for 7-day, 24-hour services and this flexibility and convenience is valuable to customers.

But many people can't or won't use self-service.
Model-Based UI and UX

It comes naturally to back stage designers to explicitly use models represented as UML class or sequence diagrams, database schemas, or XML schemas models as specifications for generating code or configuring an application.

In contrast, methods used by front stage designers to design and implement user interfaces are dominated by iterative and heuristic techniques that are not explicitly model-based.

Model-based implementation isn’t appropriate for all user interfaces, but seems especially promising for multichannel services that are offered across a range of contexts or devices.

Model-based techniques would make it possible to generate a consistent set of self-service user interfaces for web browsers, cell phones, and voice systems with little of the ‘hand-crafting’ usually employed by front stage designers.
Model-based UIs Personalized at Run Time

Fresh Direct (http://www.freshdirect.com) is an intensely automated online grocery service; uses "bto" pattern to optimize and speed order fulfillment

Customer-specific user interfaces mean that a vegetarian customer never sees the virtual meat aisle, and should only see recipes that call for the products he buys

Using historical transaction information, in 2006, during the California spinach E. coli contamination, FreshDirect's systems used customer transaction history to alert those who had ordered the affected spinach and reassure those who had ordered unaffected spinach
Personalized Banking... (More or less)
Truly Personalized Banking

The website doesn't just show me my accounts:

- It stops asking me to open accounts or get other services I already have
- It recommends a credit card based on my spending habits rather than listing them all
- The user interface makes it easy to do my regular interactions

Personalization makes use of all of my interactions - in the bank, with the ATM, the IVR, and online

The ATM and IVR user interfaces and interactions are also reconfigured

My monthly statement highlights any "out of pattern" transactions (that were not so "out of pattern" that the fraud detection system wouldn't authorize them)
Summary

Traditional concepts in service design -- the moment of truth, the front stage / back stage distinction -- don't always help us understand today's more complex service systems.

We need a methodology for designing service systems that takes a more horizontal or "end-to-end" view.

The idea that all services can be viewed abstractly as information exchanges is a key part of this new approach.
For November 19


Denish Shah, Roland T. Rust, A. Parasuraman, Richard Staelin & George S. Day. The Path to Customer Centricity. Journal of Service Research 2006; 9; 113