
INFO 210 - 7 November 2007

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Plan for Today's Lecture

Contrasting Approaches to Service Design
A "Front Stage" Approach: Service Blueprinting
A "Back Stage" Approach: Document Engineering
"Service Operations" Design Process
[Fitzsimmons, Bitner, etc.]


- Full-scale launch
- Post-launch review

**Full Launch**

- Service design and testing
- Process and system design and testing
- Marketing program design and testing
- Personnel training
- Service testing and pilot run
- Test marketing

**Development**

- Formulation of new services objective/strategy
- Idea generation and screening
- Concept development and testing

**Design**

- Business analysis
- Project authorization

**Analysis**
"Information Systems" Design Process
"Document Engineering" Design Process
[Glushko & McGrath]
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.
Service Design Methodology for Service Systems

We are coming to believe 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.

But the methods we use to design services are still strongly biased towards either person-to-person services or toward computational and automated ones.
Methodologies – Disciplines for Design

When we design something we follow – implicitly or explicitly – some steps or techniques for analysis, idea generation, and implementation. This is called the design methodology.

Methodologies can be formal, prescriptive, step-by-step, documented and auditable or they can be the opposite: informal, ad hoc, "seat of the pants" with no trace other than the design artifact itself.
Sequential, Iterative, and Artifact-Centered Methodologies

A methodology's process describes the work to be done and the order in which it is to be done.

Many methodologies prescribe a Sequential process -- the "waterfall" model.

Other methodologies are more iterative or recursive -- like the "spiral" model of progressive refinement or "agile" modeling.

Other methodologies are looser about the modeling activities but emphasize the results that must be obtained at each step or phase.
Methodologies – Disciplines for Modeling

[2]

A methodology can contain or define:

- Meta-models
- Processes / Activities / Steps
- Notations
- Tools

and how these are applied or fit together to produce:

- Artifacts
The Context of Service Design: Front Stage Perspective

"Firms can no longer compete solely on creating superior value through their core products"

"They must move into the realm of customer experience management, creating long-term, emotional bonds with their customers through the co-creation of memorable experiences"

...not only in consumer markets, but also in business-to-business contexts where research shows meaningful customer experiences and the resulting emotional bonds between customers and suppliers are more important than rational motivations for creating customer loyalty"
"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, & Pararsuraman, 1988)

Encounters can take place face-to-face in a "service setting," over the phone, through the mail, or over the Internet
Why Service Encounters Matter

Every encounter is an opportunity for the firm to satisfy the customer, to reinforce the value of its offerings, and to sell the customer on the benefits of a long-term relationship.

Service encounters immediately impact customer satisfaction and also shape longer-term factors like intention to return, likelihood of communicating positively about the service, and customer loyalty.

Customers need to have as many as twelve positive experiences with a service provider in order to overcome the negative effects of one bad experience.

The expense of acquiring customers and their potential lifetime value means that losing a customer because of a negative encounter can have staggering cost.
"Moments of Truth" and Customer Loyalty

Studies at a bank found a 50% difference between best and worst performing branches in terms of "share of wallet" and customer retention.

All of the branches were providing the "same" services, but the differed greatly on how well they took a customer orientation in the moments of truth.

For example, aggressive selling tactics create negative moments of truth.
Moments of Truth for Banks

<table>
<thead>
<tr>
<th>Emotionally charged interactions</th>
<th>Positive</th>
<th>Negative</th>
</tr>
</thead>
<tbody>
<tr>
<td>% of customers experiencing ‘moment of truth’</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Received good financial advice</td>
<td>33</td>
<td>14</td>
</tr>
<tr>
<td>Received proactive proposal appropriate to my needs</td>
<td>13</td>
<td>12</td>
</tr>
<tr>
<td>Frontline staff actively cared, referred to my needs/history</td>
<td>11</td>
<td>11</td>
</tr>
<tr>
<td>Frontline staff performed troubleshooting well, were flexible on rules</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>Opening account was an easy process</td>
<td>9</td>
<td>11</td>
</tr>
<tr>
<td>Negotiated mortgage loan with acceptable conditions</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>Bank was convenient/accessible</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Bank offered good information on changes at bank</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Obtained credit card smoothly</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Bank offered good explanation of price change</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>10</td>
</tr>
</tbody>
</table>
Downside of Aggressive Selling

- 35% of customers receiving a large sum of money would place it in the bank, while 47% are extremely likely to select the bank again as their primary financial services company.
- 17% of customers receiving a large sum of money would place it in the bank.
- 22% of customers are extremely likely to select the bank again as their primary financial services company.

Meeting expectations: % of respondents who answered 7 to the question (on a scale of 1 to 7, where 7 is most positive).

Aggressive selling: Average of responses to following statements (on a scale of 1 to 7, where 7 is most aggressive).
Designing the "Touch Points" and "Moments of Truth"

Every customer-facing business should identify the points where it interacts with customers.

In businesses with complex services (hospitals, airlines, hotels...) there may be dozens of these touch points or service encounters.

The service provider needs to distinguish between ordinary "humdrum" transactions that don't have the potential for creating an emotional bond with the customer and those that do... but "many companies make the mistake of overinvesting in the former and thus don't differentiate themselves on the latter."
Service Blueprinting

Blueprinting is a service design methodology for "systematically managing the customer experience" and "promotes a conscious decision on what consumers see and which employees should be in contact at each moment of truth"

It is a design methodology for services that have an interface with an actual customer through technology or interpersonal interactions, but doesn't seem appropriate for purely computational services

Appropriate for services that are "dynamic, unfolding over time through a sequence or constellation of events and steps"

Allows firms to visualize their service processes, points of customer contact, and the physical evidence associated with their services from their customers' perspective
Service Blueprint for Overnight Hotel Stay
Blueprinting Methodology: "Metamodel"
Blueprinting Methodology: Activities

Identify customer types

For each customer, specify customer actions

Specify the "contact employees" and their activities

Add links that connect the customer to contact employee activities and to needed support functions

(For services that do not have any onstage contact employee activities, replace the employee action row and replace it with an onstage technology row)

Add physical evidence
Blueprinting: Artifacts

Verbal process descriptions are often ambiguous or incomplete, but omissions and conflicts are more obvious in a visual representation.

Centrality of customer in blueprint reinforces customer-focused design.

Two "lines of visibility" highlight the touch points in the front stage and their back stage analogues.

A third line partitions support processes that are invisible to the back stage employees.

Plot the processes on an organizational overlay so that "interfaces across departmental lines" are clarified.

Blueprints can be created to show processes at different levels of abstraction.

Can annotate with the time for various actions.
Tangible Evidence

"For each customer action, and every moment of truth, the physical
evidence that customers come into contact with"

Because many services are intangible, customers look for tangible
evidence of what they are about to experience in a service encounter

This is often physical evidence like environmental design, decor,
signage, business cards, uniforms, etc. that shapes expectations about
the nature and quality of the service

They also look for evidence that the service has been delivered
"As Is" and "To Be" Blueprints

For a new service, the blueprint should specify the desired service.

For an existing service, it is useful to blueprint how the service is currently being offered -- to identify those touch points where service failure can occur.

Also useful to create blueprints for your competitors' services, because this makes it easy to see "service gaps" where your offerings are inferior.
End-to-End Perspective in Blueprints

"All parts of the organization should be focused on the common goal of creating an integrated, memorable, and favorable customer experience"

"The entire sequence of activities should be coordinated and managed as a whole, over time, with emphasis on including the resources and steps that produce value for the customer"
Blueprint Case Study - Lake Powell Houseboat Experience

Compare the blueprint for a quality hotel/resort experience with the Lake Powell As-Is experience.

The Lake Powell experience required the customers to do lots of hard work to secure provisions and get them to the boat and then to handle the boat.

Solution was to offer a range of "concierge" and onboard support services (boat captains, chefs) so that customers could select a high quality experience if they wanted it.
The Context of Service Design: Back Stage Approach

"Describing business processes in terms of the more abstract notion of document exchanges makes it easier to understand the constraints imposed by legacy systems and technologies and to recognize the opportunities created by new ones"

"While many applications begin as user interactions with a form, the business processes that follow might be carried out by computer programs with no human involvement. But it makes sense to generalize the idea of documents as interfaces for people to the idea that documents are interfaces to business services"

"Many dot-coms failed because their flashy websites could take orders from customers but did not implement the “back end” information exchanges required to make reliable delivery promises to customers"
"Document Engineering" - Mostly a "Back Stage" Design Approach

I've been teaching (and wrote a book about) "Document Engineering" - "A new discipline for specifying, designing, and implementing the electronic documents that request or provide interfaces to business processes, often via Web-based services"

"A synthesis of information and systems analysis, data and business process modeling, content management, and distributed computing"
Motivating "Document Engineering"

Scenario:

- Customer selects book from catalog on an online bookstore
- Customer pays with credit card
- Book arrives via express shipper two days later

From the customer's perspective there is only one "transaction" -- the "front stage" one

But the bookstore is a "virtual enterprise" or "composite application" with 4 different service providers transacting with each other -- all in the "back stage"

The bookstore's business model is embodied as a network of document exchanges that choreograph the flow of information and materials/products between the service providers
Drop Shipment
Overlapping Information Models in the Virtual Bookstore
The Design Steps in Document Engineering

Determining the "context of use" to define the scope and stakeholders around some business problem or opportunity

Determining what information must be exchanged to carry out one or more business services that address the problem or opportunity

Determining the "service choreography" that interconnects the services to carry out more complex processes and business models

Encoding the information / document / process models in a format that can easily be "computed with" -- usually XML

Using design patterns at different levels of abstraction and granularity to ensure that the document/process models are made up of good parts and that they make good parts of broader patterns
1. CUSTOMER registers with TRAVEL SERVICE by providing information about name, credit card, and some travel preferences and constraints.

- The credit card information includes a card number, a billing address, and an expiration date.
- Travel preferences should handle dietary preferences or restrictions adequate for airline meals and restaurants, quality rating thresholds for air (class of service), hotel (rating) and restaurants (rating), and some notion of convenience based on the distance between the hotel and restaurant.
2. CUSTOMER interacts with TRAVEL SERVICE to request a flight and a hotel, providing information about departure and arrival location and the desired departure time or arrival time for the outbound and return trip.

- The CUSTOMER also requests a restaurant reservation that meets his dietary preferences at a restaurant that is convenient to the hotel at a time between two and three hours after the flight arrives
- Assume round trip travel only, no airline preference, and no cost restrictions
Composite Travel Reservation Service Scenario [3]

3. TRAVEL SERVICE composes the appropriate message to the relevant service providers.

  - At some appropriate point the TRAVEL SERVICE proposes a list of feasible flight and hotel combinations to the CUSTOMER.

4. CUSTOMER selects one of the flight and hotel combinations.
Composite Travel Reservation Service Scenario [4]

5. TRAVEL SERVICE composes the appropriate message to the relevant service providers.
   - At some appropriate point the TRAVEL SERVICE proposes a list of feasible restaurants to the CUSTOMER that meet the distance constraints between the selected hotel and the candidate restaurants.

6. CUSTOMER selects a restaurant.
Composite Travel Reservation Service
Scenario [5]

7. TRAVEL SERVICE composes the appropriate message to the relevant service providers to confirm the CUSTOMER's reservations
   • Provides the CUSTOMER's credit card information to the services that need it.

8. At the appropriate time the TRAVEL SERVICE sends a single message to the CUSTOMER confirming all the parts of the composite reservation.
Collaborations and Transaction Diagrams

Sequence Diagram for Composite Travel Service

- {collaborations for customer}^1
  - registration
    - profile information [request]
    - registration confirmation [confirmation]
  - search for flight, hotel and restaurant
    - request for flight, hotel and restaurant [request]^2
      - query for flight schedule [query]
      - response for flight schedule [response]
    - query for hotels [query]
      - response for hotels [response]
      - flight and hotel combinations [request]
        - flight and hotel selection [response]
      - query for restaurants [query]
        - query for distance to hotel [query]
        - response for distance to hotel [response]
      - response for restaurants [response]
  - {collaborations for travel service}^2
    - flight enquiry
    - hotel enquiry
    - restaurant enquiry
  - {collaborations for map service}^3
    - map service
## Consolidating Candidate Components

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<th>D2</th>
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<td>Departure airport/city</td>
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</tbody>
</table>
Document Model Assembly
Blueprinting {and, or, vs} Document Engineering

How do they agree, and how do they differ?
Contrasting Design Goals for Methodologies

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

- Back Stage Designers
  - Efficiency / Productivity
  - Robustness
  - Standardization / Reuse
  - Scaleability
Readings for November 14

R. Glushko & L. Tabas, “Bridging the ‘Front Stage’ and ‘Back Stage’ in Service System Design
