11. Self-Service

6 October 2010

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Plan for ISSD Lecture #11

Motivating Self-Service

"Technology Infusion" in Service Encounters

A Survey of Self-Service Technology and Platforms

"Cost Structure, Profitability and Retention..."

Employee Self-Service ("Taking Information Into Your Own Hands" paper)

"The Contribution Revolution"
Self-Service

"Self-service" isn't the same as "Do it yourself"

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.

Three Views of Self Service

PUSHING BACK THE LINE OF VISIBILITY: Eliminating the frontline employee moves back the LOV because the customer now has access to information that was previously visible only to the frontline employee.

SUBSTITUTION OF INFORMATION EXCHANGES FOR PHYSICAL AND INTERPERSONAL ACTIONS: these proportions are design parameters that can be systematically adjusted by introducing technology.

INTENSITY REDUCTION: Reducing the number of employee-to-customer touch points, inevitably reducing the quality of the service experience compared to P2P encounters.
Preferences for Self-Service (or not)

Who prefers self-service? (or avoids face-to-face encounters)
Who prefers face-to-face encounters? (or avoids self-service)

Expectations About Self-Service

In self-service the user assumes more responsibility for the quality of the experience... and this may not be what they want or expect

Is self-service an attractive experience or alternative?

Or am I being forced to use it to benefit the service provider?

My experience will be more predictable than a face-to-face encounter...

But my experience might be more limited than a face-to-face encounter

And of course, the provider and consumer can have widely differing expectations about the same encounter
Self-Service From the Provider's Perspective

- Primary or initial goal is generally to increase delivery efficiency and productivity and thus reduce operational costs
- Increase reach of service, improve market share
- Differentiate through a technology leader reputation
- Reduce undesirable variability and increased desirable personalization

The Provider's Dilemma

- Customer preferences for face to face service, or aversion to self-service prevent the provider from getting these benefits
- So how does a provider induce customers to adopt self-service?
Toward "Customer-Centered" Self-Service

Technology Infusion Framework (from Bitner et al)

Drivers of Service Encounter Satisfaction

<table>
<thead>
<tr>
<th>Technology as Enabler for</th>
<th>Customization / Flexibility</th>
<th>Effective Service Recovery</th>
<th>Spontaneous Delight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Employees</td>
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<td></td>
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<tr>
<td>AT&amp;T</td>
<td></td>
<td>General Electric</td>
<td>Progressive Corp.</td>
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<tr>
<td>Streamline</td>
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<td>USAA</td>
<td>Ritz Carlton</td>
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<tr>
<td>individual Inc.</td>
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<tr>
<td>Customers</td>
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<tr>
<td>Amazon.com</td>
<td></td>
<td>Harness Intl.</td>
<td>Cisco</td>
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<tr>
<td>Wells Fargo</td>
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<tr>
<td>Federal Express</td>
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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.

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.
Technology Used by Contact Employees

- Customer databases
- Sales force automation
- Call center management
- Product information; help desk applications
- Product and price configurators
"Technology as Enabler for Employees"

Almost always involves information capture, management, integration, and retrieval

This information comes from and is used by all frontline employees and is thus more accurate, complete, consistent and accessible than the personal memories of any of them taken individually

This information is most often the "transactional" records from customer encounters but can also include semistructured information about preferences or problems, often implicitly rather than explicitly communicated to the service provider

Technology and Personalization in Service Encounters

Personalization requires information about a customer's requirements and preferences

The degree to which a person-to-person service can be personalized is limited by the extent to which the frontline employee is motivated and able to interact with or observe the customer to obtain this information

So personalization depends on the customer's willingness or ability to provide the information, which is often limited by privacy and trust concerns

Even if the customer provides the information, personalization is constrained by how much of it is maintained by the service provider in an accessible and technology-supported format
Evolution of the Point of Sale "Services Platform"

The first cash register, invented in 1879, had one core function...

By the early 1900s National Cash Register had a comprehensive line of machines for different industries and retail situations

Barcode scanners were first integrated in 1974

The first computerized and connected systems appeared in the 1980s, speeding the transformation of a standalone device with limited functionality into a multi-tasking real-time applications platform with numerous peripheral devices

Today's POS systems perform credit card authorizations, update inventories, calculate bills with discounts, dispense cash, print personalized receipts and coupons, etc.

POS systems are highly modular; self-service configurations like self check-in, self check-out, information kiosks, are often running mostly the same software
The first self-service technologies were bank ATMs, which began to dispense cash roughly forty years ago. Kiosks that print coupons or provide product information first appeared in stores about ten years later.

About the same time the “touch tone” keypad turned the telephone into the user interface device for self-service information and transactional services.

A decade later, interactive voice recognition (IVR) technology would substantially expand the functionality of telephone information services while making the interactive dialog more flexible.

The ergonomics of keyboards, buttons, and other hardware interaction mechanisms were the foremost design concerns of self-service technology until personal computers emerged around 1980.

We are seeing rapid innovation and convergence in kiosks and digital signs, with bi-directional information exchange with the "co-creating" user.

Today's most important self-service platform is the web browser.
"Intelligent Design" Guide from "Kiosk Marketplace"

"Kiosk" no longer means just information display or simple transactions; high-end ones engage in interactive dialogs with the customer, and kiosks and digital signs are converging.

"There's more to designing a kiosk than throwing a keyboard, box, and touchscreen together"

Knowing what you want the kiosk to do is critical; selecting the "configuration of applications" pre-requisite to selecting technology.

Kiosks are product offerings, not facilities; their placement is a key design decision.

Usability is critical because if the first encounter isn't successful, there won't be a second one.

Hotel Self Service Check-in
Self-Service Technology Convergence: "Gas Station TV"

Red Box DVD Rentals
BART Kiosk UI Redesign

ISchool 2010ers Ljuba Miljkovic and Ben Cohen redesigned the touch screen user interface to the BART ticket kiosk for their INFO 213 course project in spring 2009.

Legacy interface too hard to figure out for first timers and requires too many button presses to buy ticket.

Key design insight is to combine separate steps for "look up ticket cost" and "adjust entered price" into a single "select destination" step.

See old and try out new at http://www.bartkiosk.com/

Open Table -- Self-Service Restaurant Reservations

![Image of OpenTable website](image)
Open Table Restaurant Management Interface

Home Depot Self-Service Checkout
"Cost Structure, Profitability, and Retention"

If you believe this paper, a lot of self-service (and multichannel) designs are implemented with the hope that they will pay off rather than with careful cost-benefit analyses

- "many firms have pursued strategies aimed at simultaneously reducing costs, increasing revenue, and increasing customer retention with little or no recognition that tradeoffs might exist" (Campbell & Frei, p. 5)

- i.e., the firms "allocate resources to actively migrate customers to online banking"

The payoffs and tradeoffs:

- Lower costs come from the "substitution effect" if customers move to the online banking channel

- Easier to cross-sell customers in the online channel

- But if the online channel enables customers to become better "money managers" they might make increased use of the expensive F2F channel ("augmentation effect")

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Transaction Types x Channel

| Table 1 | Distribution of Transactions by Channel During June 2006 |
| --- | --- | --- |
| | Transactions (%) | Cumulative (%) |
| **Branch** | | |
| Deposit | 58.80 | 58.80 |
| Cash check | 27.25 | 86.05 |
| Verify funds | 6.71 | 92.76 |
| Payment | 4.24 | 97.01 |
| Purchase | 2.85 | 99.85 |
| Withdrawal | 0.12 | 99.97 |
| Miscellaneous | 0.03 | 100.00 |
| **ATM** | | |
| Withdrawal | 65.21 | 65.21 |
| Inquiry | 18.04 | 83.25 |
| Deposit | 14.80 | 98.04 |
| Transfer | 1.30 | 99.34 |
| Purchase | 0.88 | 99.92 |
| Payment | 0.08 | 100.00 |
| **Online** | | |
| Query history | 51.03 | 51.03 |
| View basic account information | 38.83 | 89.85 |
| Payment | 5.48 | 95.33 |
| Transfer | 4.96 | 99.40 |
| Download financial information | 0.60 | 100.00 |
Some Other Issues in Understanding Self-Service

How does a shift to self-service affect organizational and job design for the service provider?

How do online channels affect "switching costs" for online and F2F channels?

Employee Self-Service

Economic and competitive pressures are making most companies adopt some form of employee self-service (usually web-based) to reduce operating costs.

24 x 7 access can be viewed as service enhancements compared to P2P services, but employees might feel that the company is outsourcing its work to them.

This perception threatens the employee satisfaction and loyalty components of the "Service-Profit Chain" and might impair the services that they provide to customers.
### Employee Self-Service Examples

<table>
<thead>
<tr>
<th>Employee self-service capability</th>
<th>Description</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtain forms</td>
<td>Enable employees to order or print their own forms</td>
<td>Obtain a Leave of Absence form from the organization’s intranet</td>
</tr>
<tr>
<td>Obtain personal information</td>
<td>Allow individuals to obtain employee-specific information</td>
<td>Check vacation days by calling a voice response unit</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Obtain a balance from a retirement account using an employee portal</td>
</tr>
<tr>
<td>Conduct transactions</td>
<td>Enable employees to initiate or make changes to individual accounts and profiles or to conduct internal transactions</td>
<td>Enter and track time billed to a specific project</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change the number of employee dependants</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Change surname due to life event</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enroll in an employee share purchase plan</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Record travel expenses</td>
</tr>
<tr>
<td>Obtain advice and decision support</td>
<td>Allow employees to engage with a knowledge base to improve personal decision-making</td>
<td>Develop potential retirement scenarios using pension and other sources of retirement income</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Take an online wellness survey to determine potential health risks</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Identify individual career development gaps and opportunities</td>
</tr>
</tbody>
</table>

### Employee Types and Self-Service Designs

<table>
<thead>
<tr>
<th>Device availability</th>
<th>Employee mobility</th>
<th>Primary physical environment</th>
<th>Level of computer literacy</th>
<th>Alternative self-service channels</th>
</tr>
</thead>
<tbody>
<tr>
<td>Desktop connected employees</td>
<td>At desktop</td>
<td>Low</td>
<td>Conducive to computer-related work</td>
<td>High</td>
</tr>
<tr>
<td>Dispersed employees (e.g., convenience store)</td>
<td>Limited to point-of-sale (POS) systems or manager</td>
<td>Low</td>
<td>Shared space with customers</td>
<td>Varied</td>
</tr>
<tr>
<td>Mobile employees (e.g., delivery personnel)</td>
<td>Personal computer usage limited to visits to home office/depot; access to mobile phones as part of the job</td>
<td>Constant movement between locations</td>
<td>Primarily in vehicle</td>
<td>Varied</td>
</tr>
<tr>
<td>Shop floor employees (e.g., assembly workers)</td>
<td>Personal computers may be available in home or break room; potential kiosk availability</td>
<td>Low</td>
<td>Production materials, noise and privacy issues may impact usage</td>
<td>Varied</td>
</tr>
</tbody>
</table>
"The Contribution Revolution"

Most thinking about the design of service systems and service experiences focuses on individual customers or users treated as independent actors or whose interactions with each other are not viewed as important.

More recently, service providers have started to notice and exploit the collective actions of people who implicitly or explicitly contribute content or preference information (rating of service providers or product/service offerings, customer support answers...)

- "Community content"
- "Crowdsourcing"
- "Collective intelligence"

Putting a "user contribution system" (Cook, 2008) into place to encourage and exploit this work is challenging (hard to get incentives right)

It can be viewed as a kind of deferred self-service because contributions will enhance the quality of future service experiences.

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Cook's Taxonomy of User Contribution Systems

User Contribution Systems

**Active**
- Aggregates content
  - Opinion & ratings: Zagat guides
  - Expertise: Wikipedia encyclopedia
  - Software code: Firefox web browser
  - Creative expression: YouTube video-sharing site
  - Social connections & personal information: Facebook social networking site

- Aggregates stuff for sale
  - Goods: eBay online marketplace
  - Advertising: Google’s AdWords advertising placement system
  - Services (and goods): Craigslist online marketplace

**Passive**
- Aggregates behavioral data
  - Buying behaviors: Amazon’s product recommendations
  - Web-linking behavior: Google’s search engine algorithm
  - Company behavior: Westlaw’s PeerMonitor law firm database

- Aggregates resources
  - Computing capacity: Skype internet-based phone system
  - Computer sensing capabilities: Honda’s InterNavi traffic information service
Readings for 11 October

Nicolai M. Josuttis, "SOA In Practice" 1st Edition, Chapters 2 and 3, O'Reilly, 2007

Cherbakov et al, "Impact of Service Orientation at the Business Level" 2005

Henry Chesbrough, & Andrew Davies, "Advancing Services Innovation: Five Key Concepts", Handbook of Service Science, 2010

McGrath & Murray, "Principles of Service Oriented Integration", 2003