Plan for ISSD Lecture #1

Motivating the Course and Key Concepts
  • "Design"
  • "Information-Intensive"
  • "Front stage" and "Back stage"
  • "Service System"
  • "Context"

A Tour of the Syllabus

Course Administrivia
Introductions

The Instructor

The TAs -- Karen Nomorosa and Hyunwoo Park

The Information & Services Economy

US shift to service jobs

(A) Agriculture: Value from harvesting nature

(G) Goods: Value from making products

(S) Service: Value from enhancing the capabilities of things and their ability to interconnect and create value
Defining "Design"

"Design is the human capacity to shape and make our environment in ways without precedent in nature, to serve our needs, and give meaning to our lives" (John Heskett, author of "Design: A Very Short Introduction")

KEY WORDS HERE:

- Shape
- Make
- Environment
- Serve needs
- Give meaning

The Challenge of Design

The most important word in Heskett's definition is ENVIRONMENT...(for which I use "CONTEXT" as a synonym)

...because it embodies the opportunities and constraints that the designer faces...

...so scoping and defining the context is an essential activity of design

...but the opportunities and constraints depend on how the context is defined

...which implies some inherent circularity and indeterminacy
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.

Dimensions of Design Context

![Diagram](image)
"Information-Intensive" Designs

This course will focus on the design of "information-intensive" systems and services.

Information-intensive systems and services are those in which information processing or information exchange, rather than physical or interpersonal actions, account for the greatest proportion of created value.

This will involve "designing" of information, interactions, experiences, processes, and the "systems" in which these all fit together.

We need a broad and abstract notion of "designing" so we can emphasize what these design problems have in common.

Some Examples of "Information-Intensive" Experiences

Hotel Check-In
Internet Shopping
The Hotel Service Encounter

What's the Quality of the User Experience?

If the reception employee recognizes you as a return visitor and tells you that you've got your favorite room, just the way you want it?

If you use the self-service kiosk and check yourself in?

If the reception employee just asks for your name and hands you a room key?

If the hotel has lost your reservation?
Internet Shopping

What's the Quality of the User Experience?

If the site is too cluttered to read and navigate?

If the product you're looking for is out-of-stock?

If your credit card gets charged twice?

If what you bought arrives late, broken, or not at all?
The Front Stage / Back Stage Distinction

Traditional concepts of user experience design emphasize "person to person" interactions or "end user to system" encounters.

This focus on the "last" encounter implies a sharp distinction between the visible interactions and invisible activities that precede it to make it possible.

The Front and Back Stages

Front Stage: Where interactions with the service customer/consumer happen

Back Stage: Produces information and "stuff" needed in the front stage

Placement of the "Line of Visibility" is a design parameter.
McDonald's Restaurant

The McDonald’s Experience

Front Stage

Back Stage

Gourmet Restaurant

The Gourmet Restaurant Experience

Front Stage

Back Stage
The Front Stage Designer's Mindset

Strive to create service experiences that people find enjoyable, unique, and responsive to their needs and preferences.

Use techniques and tools from the disciplines of human-computer interaction, anthropology, and sociology such as ethnographic research and the user-centered design.

Capture and communicate designs using modeling artifacts that include personas, scenarios, service blueprints, and interactive prototypes.
Usability Engineering

Identify and analyze information requirements, information flows and dependencies, and feedback loops

Use concepts and techniques from document engineering, data and process modeling, industrial engineering, and software development

Typical artifacts include use cases, process models, class diagrams, XML schemas, queuing and simulation models, and working software

The Back Stage Designer's Mindset
Document Engineering

Contrasting Design Goals

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

- Back Stage Designers
  - Efficiency / Productivity
  - Robustness
  - Standardization / Reuse
  - Scaleability
What Determines Quality?

There may be a “moment of truth” in an interaction or experience when quality is apparent, but that quality is enabled or constrained by things that happened before or that will happen later...

...even though many of these events don't involve or are invisible to the customer or user.

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

The Four Service Encounters in the Hotel Service System
Is "Service" A Homonym?

What All Services Have in Common

There are service producers and service consumers

Each service provider has an interface through which the service consumer interacts to request or obtain the service

Value or quality is created/co-created by the interactions and interchanges between the provider and consumer
Service Encounters are Information Exchanges

For many services, especially those with a significant technology / information component, the information exchanged through the service interface is the primary determinant of the value received or experienced by or co-created with the service consumer.

Treating ALL service encounters abstractly as information exchanges highlights the inputs and outputs and the choreography with which the provider and consumer exchange information to initiate and deliver the service.

This perspective de-emphasizes the obvious differences between person-to-person services and computational or automated ones.

From "Service" to "Service Systems"

This unifying abstraction of service encounters as information exchanges gets us to the SERVICE SYSTEM as the appropriate framework or perspective for understanding how services work.

It also makes it much easier to consider alternative service system designs:

- replacing or augmenting a person-to-person service with self-service
- substituting one service provider for another in the same role (e.g., through outsourcing)
- eliminating a person-to-person interaction with automation
The Hotel Service System

Drop Shipment in Internet Retail
Bridging the Back Stage and Front Stage and Designing the Service System

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.

So instead of learning "one true way" methodology, students should learn to "design the design methodology" from a portfolio of techniques.

Different design contexts are characterized by their design issues and questions and the techniques best suited for answering them.

The Design Method Portfolio

Portfolio of Methods
Seven Design Contexts

- Person-to-person
- Technology-enhanced P2P
- Multi-channel
- Multiple Devices
- Self-service
- Location-based and Context-aware
- Computational or Backstage-intensive

Seven Contexts as Design Building Blocks

- A framework for designing service systems from “building blocks”
- Each context has characteristic design concerns and methods
- Derivational and compositional relationships among the contexts define design patterns
- These patterns enable the incremental design of service systems
A Tour of the Syllabus: Topics and Readings

Roughly follows the design life cycle from end-to-end and covers the most important design methods

But while there is a strong thread of design methods, there is a complementary thread that discusses the seven design contexts so that you understand the characteristic design challenges and methods for each context

Not just "do this, do that" -- we'll discuss "method theory" about why and when methods work, and when they don't

A Tour of the Syllabus: Textbooks


- Discusses the organizational context of design and the business, product management and ecosystem considerations that are completely missing from most curricula
- Focuses on the idea that there are always multiple stakeholders with different goals and constraints -- and the essence of good design is making tradeoffs to find the compromises among them


- Bad title - should have been called "Designing Information-Intensive Services" or "Semantics of Service Design"
- Argues that document exchange is the foundation of 21st century business models
Course Project and Assignments

Most important work for the course is your participation on a team project.

You'll develop a project idea that starts simple with a few design contexts and then adds to it to create a more complex and realistic service system.

Numerous interleaved individual and team assignments -- milestones and modeling artifacts in the end-to-end design process.

Grading

Team Project 60%

Individual Assignments 25%

Participation in Class and Online 15%
List Serve

Sign up for "issd" class list serve

- e-mail to majordomo@ischool.berkeley.edu
- Subject: Leave blank
- Body of message: subscribe issd

Class Policies and Expectations

My office hours are M 4-5 and W 11-12 or by appt

My lecture notes will be posted by 1:45 pm the day of the lecture

You should do the assigned reading before each class so that you can participate

You and I will monitor and manage your signal/noise and that of others
Today's Assigned Readings

Chase and Apte, "History of Research in Service Operations"

Kessler and Sweitzer, Chapter 1 of "Outside-in Software Development"

Glushko and McGrath, parts of Chapter 1 (4-17) of "Document Engineering"

Meyer and Schwager, "Understanding Customer Experience"

Readings for Monday 31 August

Robert J. Glushko, "Seven Contexts for Service System Design"

Uday M. Apte & Richard O. Mason, "Global Disaggregation of Information-Intensive Services"


Robert J. Glushko & Tim McGrath, Chapter 4, "Document Engineering" (123-128)
Student Introductions

Front stage or back stage experience?
Brand new vs legacy/product family experience
For profit vs nonprofit, commercial vs public sector experience

Assignment 1 - Personal Background

1. Briefly describe experiences you have had involving information systems and service design. Indicate the domains / industries you have worked in, type of organization (corporation, startup, nonprofit, government, etc), type of project (new development or existing project), and what roles you have played in the project team.

2. Rate yourself from 1 to 7 (1 being pure front-ender and 7 being pure back-ender) indicating which aspect of systems development you have accumulated more expertise in.

3. If you have particular expertise or interest in any of the lecture topics in the syllabus, tell us
Summary: Things to Do This Week

- Course Reader(s) at Copy Central, 2560 Bancroft
- Sign up for course list serve
- Post "Assignment 1" as your "Public Profile" in the SMC (need help: talk to karen@ischool or hwpark@ischool)