Design thinking for innovative healthcare service

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Overview

What is design thinking?
Two case studies
• intel research technology
• University of Pittsburgh Medical Center (UPMC) patient needs
Underlying methods
3 Big needs
what is design thinking?

“a discipline that uses the designer’s sensibility and methods to match people’s needs with what is technologically feasible and what a viable business strategy can convert into customer value and market opportunity.”

Designing a business from a technology

intel research+

Carnegie Mellon

Simon King I Casey Helfrich I Anu Melville I Adil Wali
Mentors: David Westfall I Art Boni I Laurie Weingart I Shelley Evenson
The project began with giving the team a choice of open-source algorithms from intel research.
They selected the Diamond algorithm for interactive search through non-indexed data.

Traditional exhaustive search—the burden of discarding is on the person.

With Diamond—discarding happens in the background relieving the burden on the person.
They looked with fresh eyes at what the technology had to offer...
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The team then looked at social, economic, and technical trends and applied other business analysis methods.

They saw Diamond-enabled medical imaging as having the greatest potential value—financially as well as socially.
They focused down even more, concentrating on melanoma because it is a leading cause of death, but early detection dramatically increases survival rates...

One person dies of melanoma every hour.

One in every 62 Americans will die of melanoma.

Incidence of melanoma has more than doubled since 1973.

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Melanoma Basics, 2005, Melanoma Center (http://www.melanomacenter.org/basics/statistics.html)
The team then conducted interviews and observational research in dermapathology services. They discovered the current workflow often fails for difficult cases...
They designed a new workflow and interface, “onPath”
They evaluated it with real users

“You can actually compare apples to apples and not just apples to oranges. This is really great!”
A Director of Dermatopathology, University of Pittsburgh Medical Center
The team then designed the business for building and delivering onPath (including designing the company’s organization)

- produced a marketing strategy
- developed a financial strategy
- crafted a business pitch to interest investors in making onPath a reality
the result? 3 months, 3 students, and a viable new business that has the potential to transform practice and improve patient outcomes.
Designing more participatory solutions for healthcare services

UPMC + Carnegie Mellon
In a recent McKinsey survey of 2000+ patients with commercial insurance, 75% would consider switching hospitals to become better informed about treatments or if appointments were kept on time. If forced to choose between information and timeliness, 3 times as many patients said they valued information more...

A collaborative project to improve experience while seeing as many patients as possible.

UPMC

Dr. Kassam
Neurosurgery clinic staff
Center for Quality Improvement and Innovation

Carnegie Mellon Students

Kip Lee | Kara Tennant | Leanne Libert | Jamin Hegeman | Melissa Cliver
Exploratory: Observe with designer’s eyes
what’s being communicated here?
Exploratory: Observe with designer’s eyes
what’s the patient experience?
is that your foot or mine?
Exploratory: Observe with designer’s eyes
what’s the staff experience?
Students combined observations and interviews with quantitative research

“My first visit took over four hours.”
They created a model of the patient’s journey...
Generative: interactive experience research
and produced a summary of needs

**Patient**
- Feeling welcome
- Actual wait time
- Respect
- Space and comfort
- Distractions

**Staff**
- Better workflow
- Locating Dr. Kassam and each other
- Communication
- Making a difference

**Dr. Kassam**
- Spend quality time with patients
- See everyone
- Support staff
- Manage time
Opportunities for all constituents

Embrace Wait Time
Inform, engage, and comfort patients

Improve Workflow
Fewer tasks, less distraction, and better communication

Balance Kassam
Support his efforts to help patients, but also find time for himself and to support his staff.
Evaluative: concept validation with patients
Dr. Kassam fact sheet to inform, engage, and comfort patients, and provide a model for their experience

I know you don’t want to be here. I know you don’t want to know me. But the best thing that could happen is to know me.

I’ve performed more than 3,000 neurosurgical procedures. More than 800 are what’s called minimally invasive endoscopic procedures. And it’s asuper fun. If I don’t laugh, you have a problem. Occasionally, I may even make you laugh.

Detection
Pre-op visit
Surgery
Follow-up visit
Follow-up visit
Post-op visit
Primary care visit
Diagnosis/first visit

I work with a great team, and could not do my job without them. They can answer a lot of your questions. Trust them as you trust me. We’re here for you the whole way through.

My staff and I see a lot of patients, and provide attention and care to all. We know this sometimes leads to backups. But I hope you’ll understand and trust I’ll see you as soon as I can.

A welcome booklet that embodies the spirit of the physician, previews the experience for the patient of the Neurosurgery Clinic, and at the same time positions the staff to help with broader delivery role.
Embrace wait times with a clinic chat system to provide information updates even when the patient isn’t being touched.
patients have the information to understand their journey and build communities, so they can become more active in codesigning their care.
Our projects lead to innovative results.

Three things drive the way we work that we believe can continuously lead to innovation in healthcare services:

- simultaneous interdisciplinarity
- modeling-based process
- user-centered methods throughout
Most innovation starts with a technology . . .
Better companies start from people...
We believe in simultaneous interdisciplinarity
We use a modeling-based process.
...and we focus on user-centered methods throughout the design process

project research

exploratory

design process

discuss
form the framework and strategy
create | express
socialize
implement

refine

evaluative
but there is more to design thinking...
design thinking requires design and six types of thinking...

understanding
integration
openness
attention
exploration
envisioning
understanding (in the small and large)

a focus on deeply understanding people’s expressed and latent needs viewed in the context of broader social, economic, and technical trends
integration

the ability to organize and integrate disparate information into something many stakeholders—with different viewpoints—believe is better
openness

fearlessness with regard to listening to another person or learning from another discipline or division’s perspective
attention

respect for emotion and its importance in driving rational choice and satisfaction
exploration

letting creative extremes take you into ever-richer solution spaces
envisioning

leaps of faith as to what might work and creating quick, tangible, examples of it,

while being unafraid to discard design options along the way
Bringing design thinking to healthcare services will enable the creation of customer-centered innovations for healthcare and provide the skills needed to explore new organizations, business models, and healthcare service delivery.
3 big needs

New methods for modeling patient experience

New models for skilling everyday people to become more active participants in their care

Innovative prototyping for exploring new healthcare service delivery systems
thank you