



Design Thinking: an unexpected path to innovation and problem solving

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Outline

1. MIT SIP Class Context
2. Design Thinking as concept
3. Reframing:
 1. Library as students' client
 2. Questions in users' own words
 3. Contrast with Survey Questions
4. Design thinking in practice
5. Benefits/Outcomes of approach
6. Big ideas uncovered through partnership

Quiz



MIT context

Overall Challenge: How can we [the library] be more responsive to user needs and facilitate interactions between people and content without compromising our traditional role as a quiet space for study and reflection?

➤ 5 teams of 6 students

➤ 2.5 days to:

➤ Reframe problem

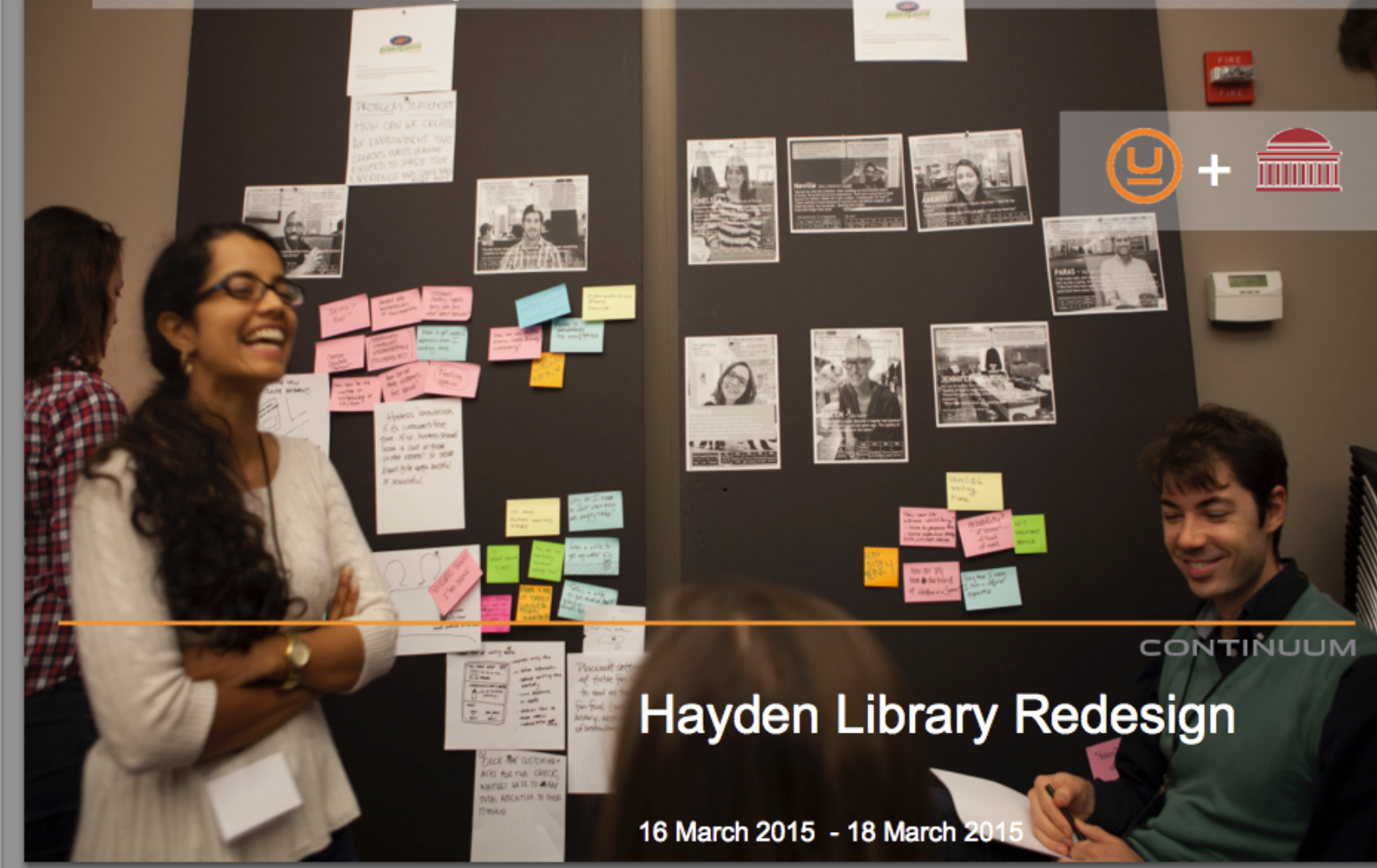
➤ Develop interview script + conduct ~30 interviews

➤ Synthesize ideas

➤ Create and present story of teams' big ideas

Introduction to Design Thinking

The Unexpected Path to Collaborative Innovation



Hayden Library Redesign

16 March 2015 - 18 March 2015

About Design Thinking

- Delves into the client's "problem"
- Steps back from data and centers on the customer's need
- Uses a strategic approach, to offer a solution based on real-time, real-world input

Class journey through design thinking

1. Reframe
2. Develop interview questions
3. Rapid interviews & debrief
4. Staying in the problem space
5. Starting small to uncover big ideas
6. Big idea storytelling

Reframing

➔ Examining the problem statement through a broader lens:

- Why is this problem important?
- What are we trying to accomplish?
- What is the underlying need behind the problem?
- How have we observed the need?
- Am I making assumptions?

Problem Statement Reframe

Library Voice:

1. How can we increase awareness of what services are available at the library?
2. What partnerships or service capabilities should we provide for a more holistic experience for users?
3. How should we incorporate more collaborative spaces?

Reframed Problem Statements

Student Translation:

1. How can we develop innovative spaces to facilitate interaction?
2. How can the library improve current services?
3. How to foster collaboration without disturbing others?

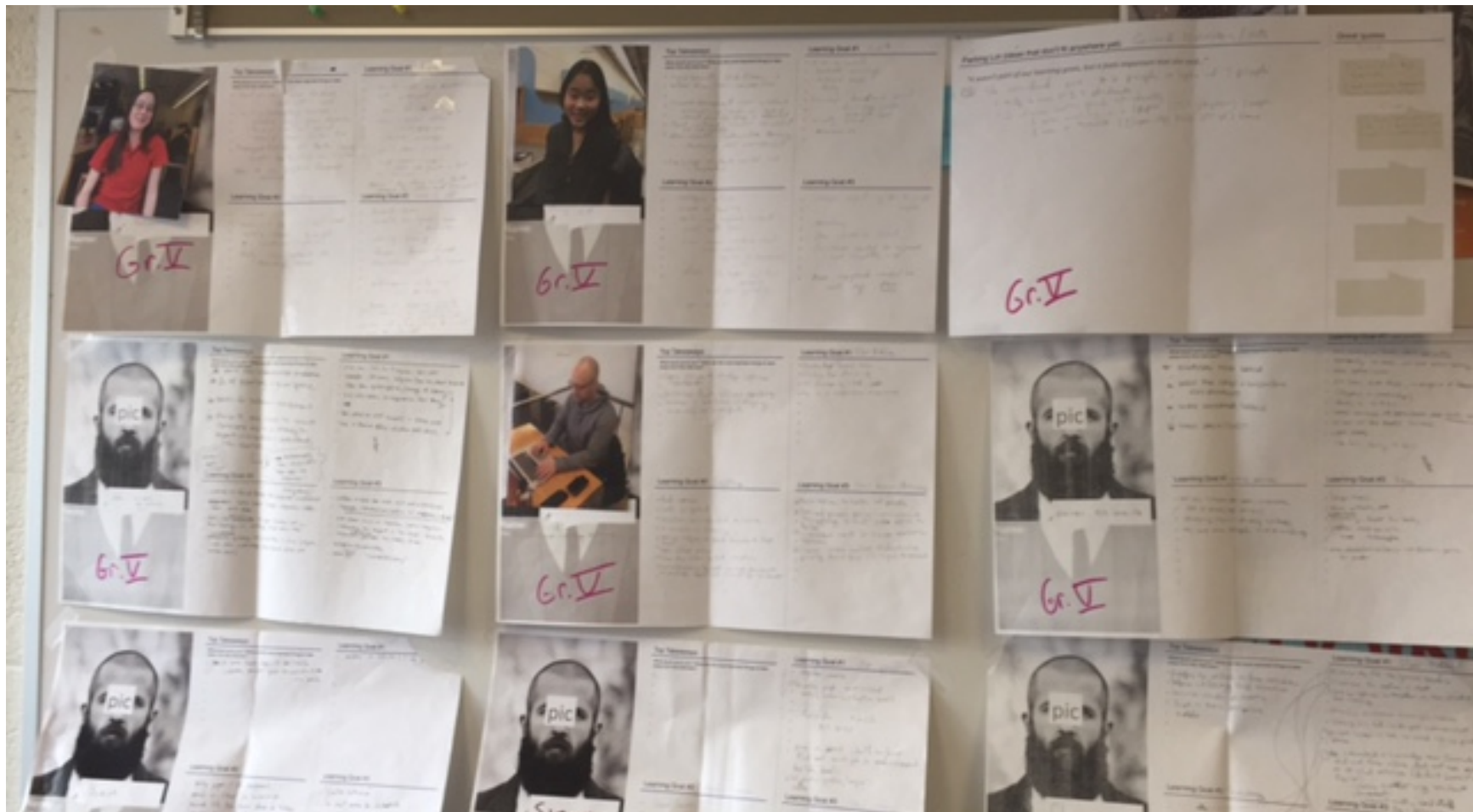
Reframed Problem Statements and Survey Questions

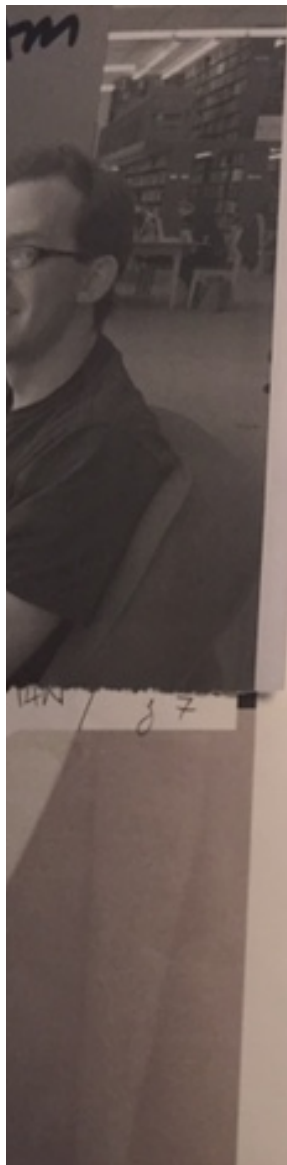
2015 Survey Questions:

- *...Which of the following enhancements to that space would improve your ability to study or do research?*
- *What features would you need in a space designed for collaboration?*

Student version:

- How can the library better align services with user needs for study and research?
- How can the library improve current services?





Top Takeaways

What stuck out to you? What are the most important things to take away from this interview?

- Nathan likes to work by himself
- Doesn't need social spaces
- Wouldn't buy from a cafe.
- He comes every day!
-
-

Learning Goal #2 Social interaction

- He would like big tables, space and power outlets.
- Separations from other groups, whiteboards
- Doesn't talk to anyone in library
- He would like studying spaces for teams
-
-

Learning Goal #1 Libraries to you

- Comes to library Every School Day
- Looking for quiet and luminous space for studying and doing problem sets.
- At home there is more distraction and less focus
- He likes open spaces and windows
- Usually he works individually and prefers it.
- If he needs teamwork he would go to 8th floor in Boston

Learning Goal #3

- He wouldn't change anything to the library except from adding some ~~stud~~ teamwork spaces.
-
-

Great quotes

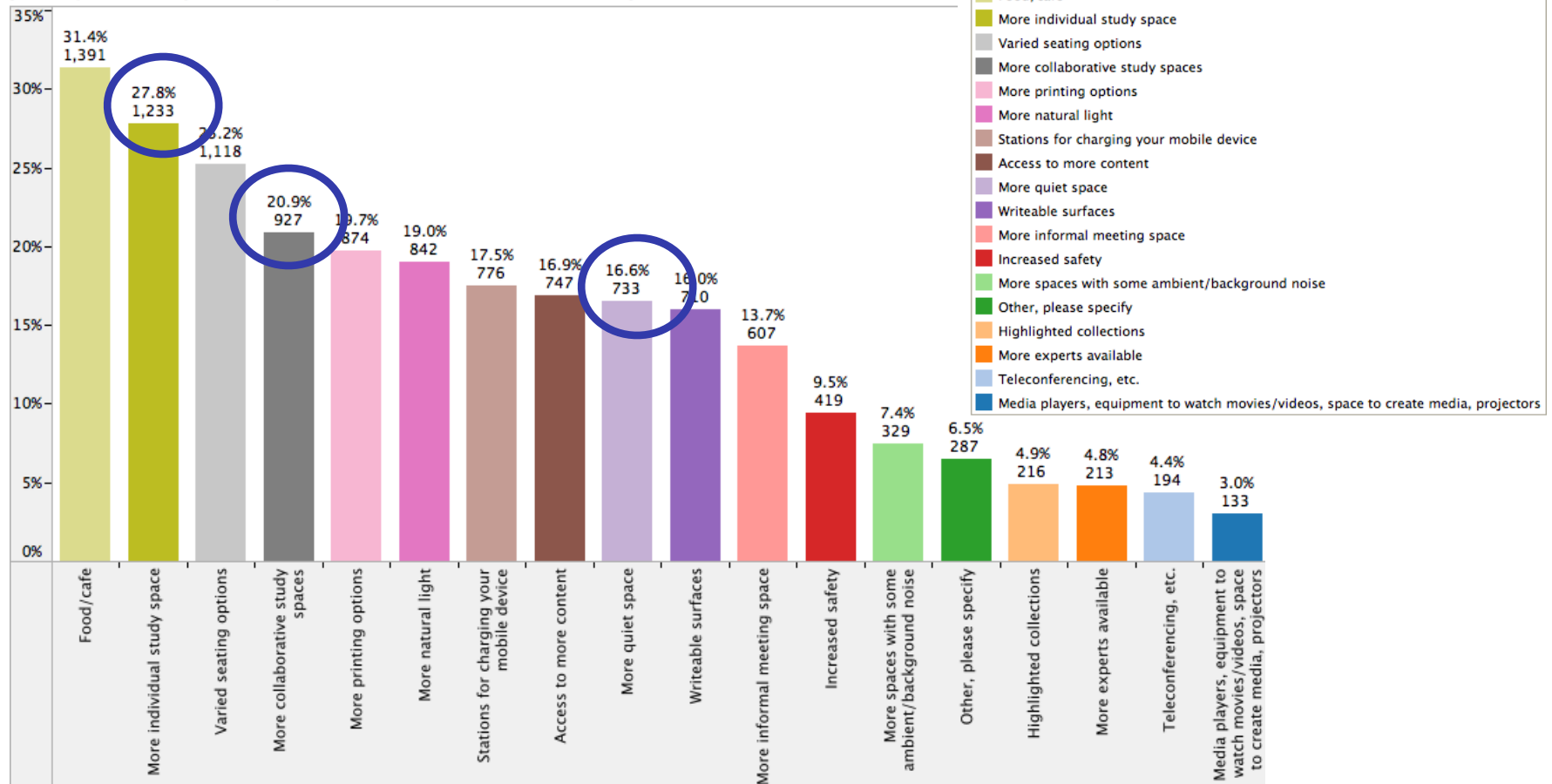
student center is great to work in groups

I like quiet places to study by myself



2015 Survey Responses: Desired Features

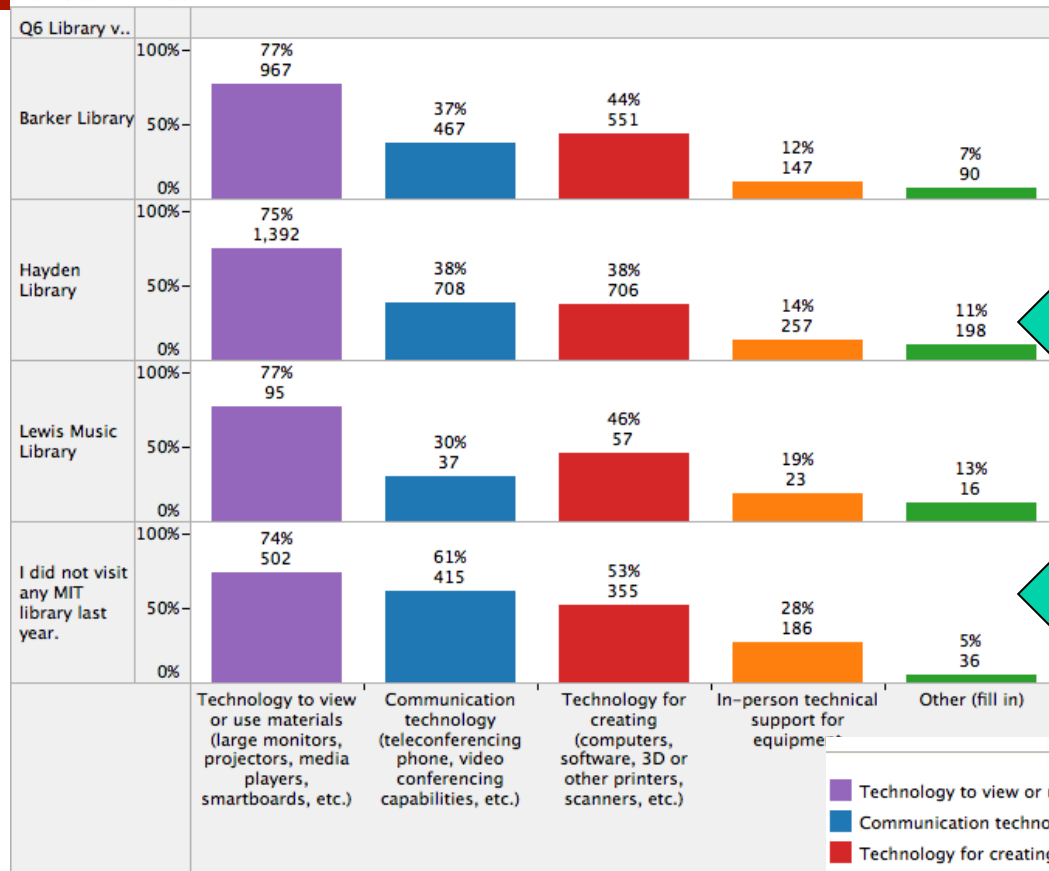
7. In thinking about your time in [space indicated in Q6], which of the following enhancers prove your ability to study or do research? Please choose up to three.



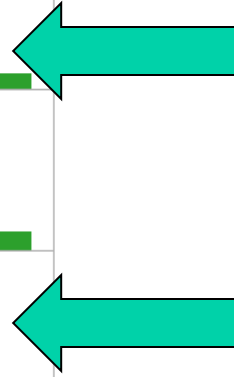
Options were randomized. Calc for each Question. Color shows details about Question. The data is filtered on Question (group) and Response. The Question (group) filter keeps Q7 space enhancements. The Response filter keeps Unselected and Selected.

2015 Survey Responses: Collaboration

8. What features would you need in a space designed for collaboration? Check all that apply. (By library)



Q6 Library visit most: **Hayden Library**
 Response Label: **Technology to view or use materials (large monitors, projectors, media players, smartboards, etc.)**
 calc numbers: **1,392**
 calc: **75%**



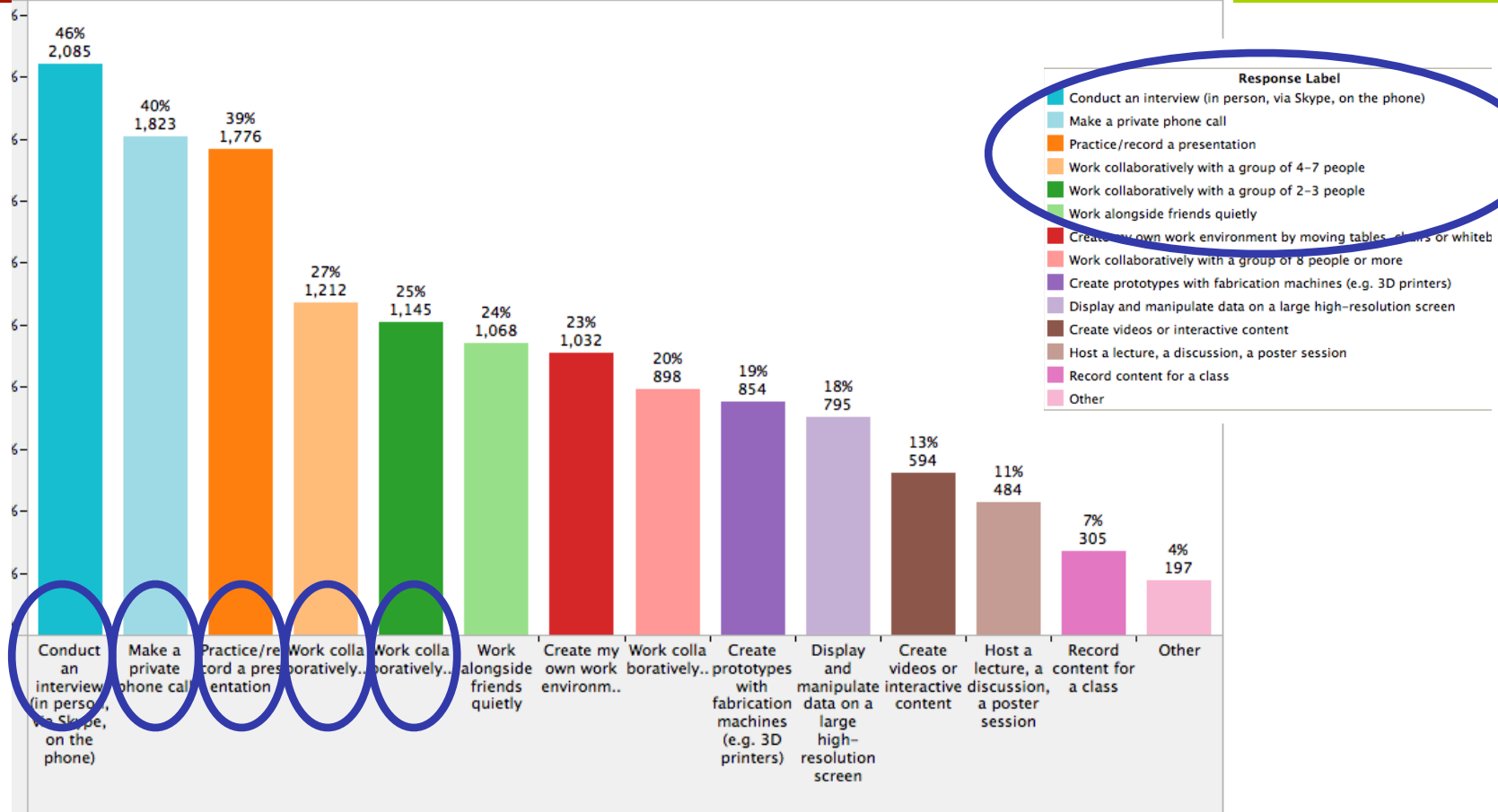
Response Label

- Technology to view or use materials (large monitors, projectors, media players, smartboards, etc.)
- Communication technology (teleconferencing phone, video conferencing capabilities, etc.)
- Technology for creating (computers, software, 3D or other printers, scanners, etc.)
- In-person technical support for equipment
- Other (fill in)

Calc for each Response Label broken down by Q6 Library visit most (MIT_Libraries_2015_Tableau_... Color shows details about Response Label. The marks are labeled by calc and calc numbers. The dimensions, Response, Department (group), MIT Status and School. The Enhancements filter keeps Q8 for space. The Response filter keeps Unselected and Selected. The Department (group) filter keeps 63 of 63 members. The MIT Status filter keeps Undergraduates, Graduate students, Faculty, Postdocs and Other academic & research staff. The School filter keeps 8 of 8 members. The view is filtered on Q6 Library visit most (MIT_Libraries_2015_Tableau_031915 Extract Extract) and Response Label. The Q6 Library visit most (MIT_Libraries_2015_Tableau_031915 Extract Extract) filter keeps Barker Library, Hayden Library, Lewis Music Library and I did not visit any MIT library last year.. The Response Label filter has multiple members selected.

2015 Survey Responses: Unmet needs

Which of the following types of spaces do you need but cannot find readily on campus? Space that allows me to:

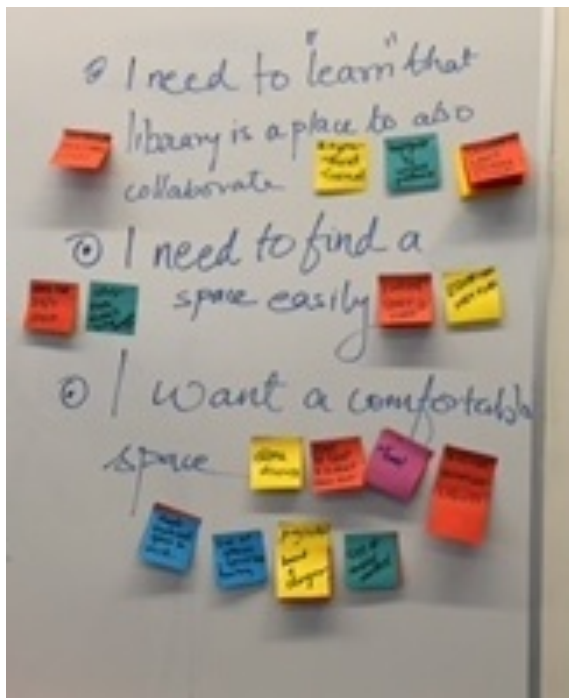


For each Response Label. Color shows details about Response Label. The marks are labeled by calc and calc numbers. The data is filtered on Enhancements, Response Label, MIT Status, Department (group) and School. The Enhancements filter keeps Q9 spaces needed but not found. The Response filter keeps Unselected and Selected. The MIT Status filter keeps Undergraduates, Graduate students, Faculty, Postdocs and Other academic & research staff. The Department (group) filter keeps 63 of 63 members. The School filter keeps 8 of 8 members. The view is filtered on Response Label, which keeps 93 of 93 members.

Is the library a place to collaborate?



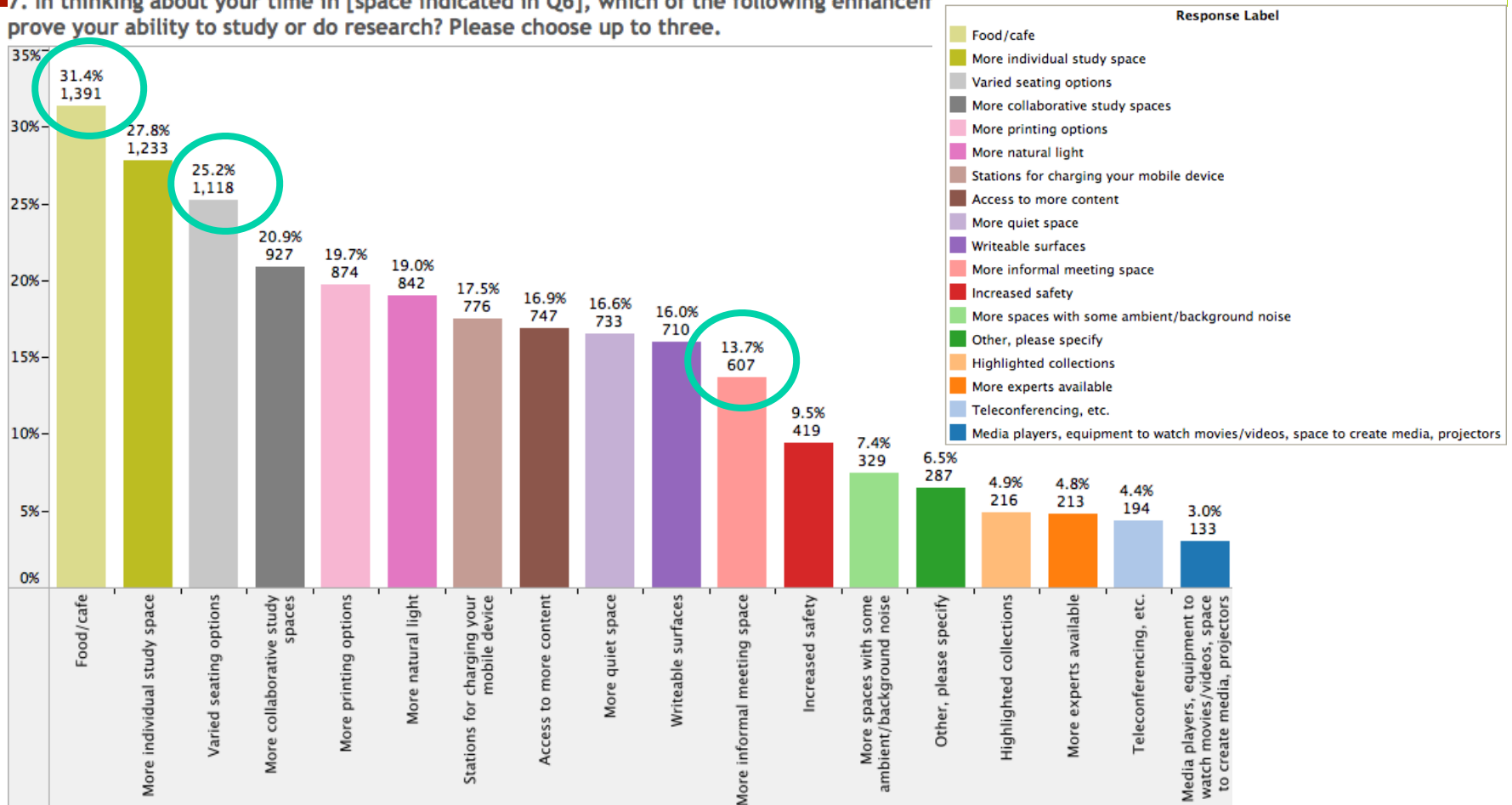
"A Quiet Presence"



- Critical mass: more group space
- Distinct zones for quiet and collaboration
- Convenience: outlets, food, restroom access, screen, writable surfaces
- Reservations + availability
- *"Collaboration helps students learn"*
- *"The variety of people in the library is unlike other spaces on campus"*

2015 Survey Responses: Desired Features

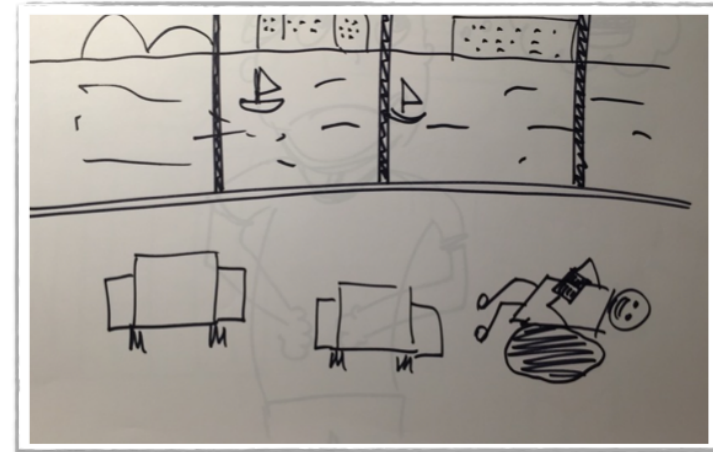
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When he gets to the library, he immediately looks to see if anyone is sitting in his favorite spot but fortunately, no one is there



He finds his favorite chair and sits at his favorite spot. There, he can concentrate while gazing at the Charles River and plus in his computer



After a couple of hours of very productive studying, he is hungry and needs a break



When he gets there he heads straight to get something to eat. He decides he can get some great food as he notices his friend Maggie sitting at one of the tables outside

"Continuous Peace of Mind"



"To See, Not to Ask"



"Library Plus"

HOW CAN WE BETTER
PRESENT DIGITAL INFO
FOR CONSUMPTION?

catalogue
sucks
?

I don't know
there are other
service ...

Library



I hate the physical
discovery & browsing
of books.

books

oh! is there
a basement?
with computer?

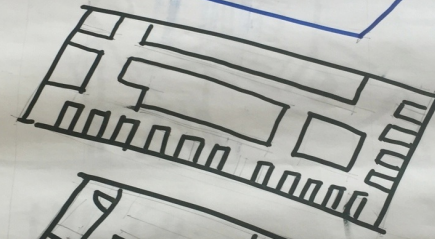
LIBRARY +

PUBLISHING
SUPPORT

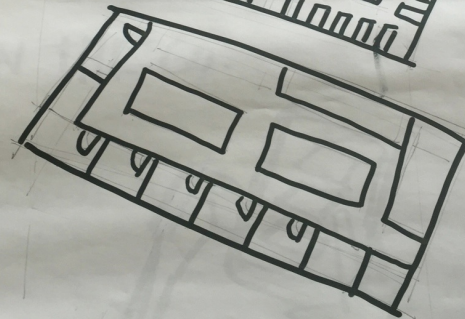
DIGITAL
2

FINANCE
RESOURCES

DIGITAL
1



HAV



HA

Complimentary data

- Survey has wide reach:
 - 4,500 responses, users, non-users
 - Correlations among questions and groups
- Through Design Thinking class, 30 students reached 30 users within 2.5 days
 - Limitations: one day, one place, current users
 - Dynamic flows and interaction
 - Features work together to create holistic experience
 - *“To see, not to ask,” “Magical Place”*

Lasting impacts on our work

- Empathy drives ideation and story telling
- Reframe:
 - Let students take the lead
 - Speak our users' language
 - Partner with students and faculty
- Students have a lot to teach us:
 - About other students, culture of solving MIT's problems
 - Student skills in journey mapping, personas, UI design
 - Work intensely, for short periods of time, iterate
 - Stay in the problem space before leaping to solution

Questions for discussion??

- *Have you utilized students or other community members to reframe the library?*
- *Are you thinking of involving students in a user research project?*
- *Do you see any risks to this approach?*
- *Have you had success engaging students who aren't regular library users in space planning activities?*

Sites for Suggested Readings

- Stanford d.school
 - [Recommended Reading](#)
 - [A Designer's Reading List](#) (Twitter crowd sourced)
- Tim Brown
 - [IDEO Design Thinking blog](#)
- Design Thinker's Blog
 - [A Design Thinker's Reading List](#)

Thank you!

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➤ MIT Libraries Assessment Information, surveys and user studies
<http://libguides.mit.edu/assessment/mitlibrarysurveys>

➤ *MIT Libraries News*: “Sloan Class Selects Libraries Project”
<http://libraries.mit.edu/news/sloan-class-selects/19103/>

➤ MIT Sloan Design Club: <http://www.mitsloandesignclub.com>