memento

Service Design, Fall 2016

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The Problem

CMU students don’t always see the value of experiences that help them grow important **communication skills** and **lifelong connections** once they graduate.

Our Solution

Memento helps students see the value of communication skills through a portfolio based mediated alumni meetup, that also helps them build the connections they need to penetrate into mid-level positions at top tier companies.

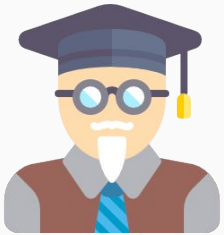
User Research

21 Stakeholder Interviews

3 ALUMNI

9 STUDENTS

1 EMPLOYER



4 FACULTY

gcc

4 PROGRAM AND ADMIN STAFF

We created an Affinity diagram from our interviews, identified key problems, ideas, and questions.

We built our stakeholder models and journey maps based on our affinity diagram

I do not think that communication skills are taught well at CMU.	I think my training in cmomunication skills is limited to certain areas	We have little group project classes in our curriculum	Our group project classes are not popular	I don't value communication skills
S3 doesn't think that she can really improve at networking while here, because it's such a different culture from work culture.	SO1 thinks the curriculum focuses mostly on technical communication, i.e. communicating with engineers of the similar background	F1 There are 3 project-based courses in the Math curriculum: 21-393 Operations Research II, 21-499 Undergraduate Research Topics, 21-320 symbolic programming method	F1 very few students enrolled in 21-320 Symbolic Programming Method	S1 thinks communication skills are important, but less important than actions
S3 says that her curriculum rarely directly addressed communication skills, although she has given many presentations and written papers.	SO1 only took one required communication course: 15221 Technical Communication for Computer Scientists	F1 thinks there are too few project based courses in the Math curriculum		S2 values knowledge the most in college

Insight #1

Many students do not value communication skills and leadership experiences as important as content.

Students do not weight communication as important as technical skills, and faculty do not have incentives to care about communication

“Some faculty from technical backgrounds are also insecure about their own communication”

Insight #2

Students start to see the importance of communication skills through work experiences.

“I did an internship at [company] last summer. I quickly realized there are a lot of important skills I need in the workplace that I am not getting in the classroom.”- S1

“People in my workplace are strong communicators and presenters. I felt totally unprepared.”- S3

Insight #3

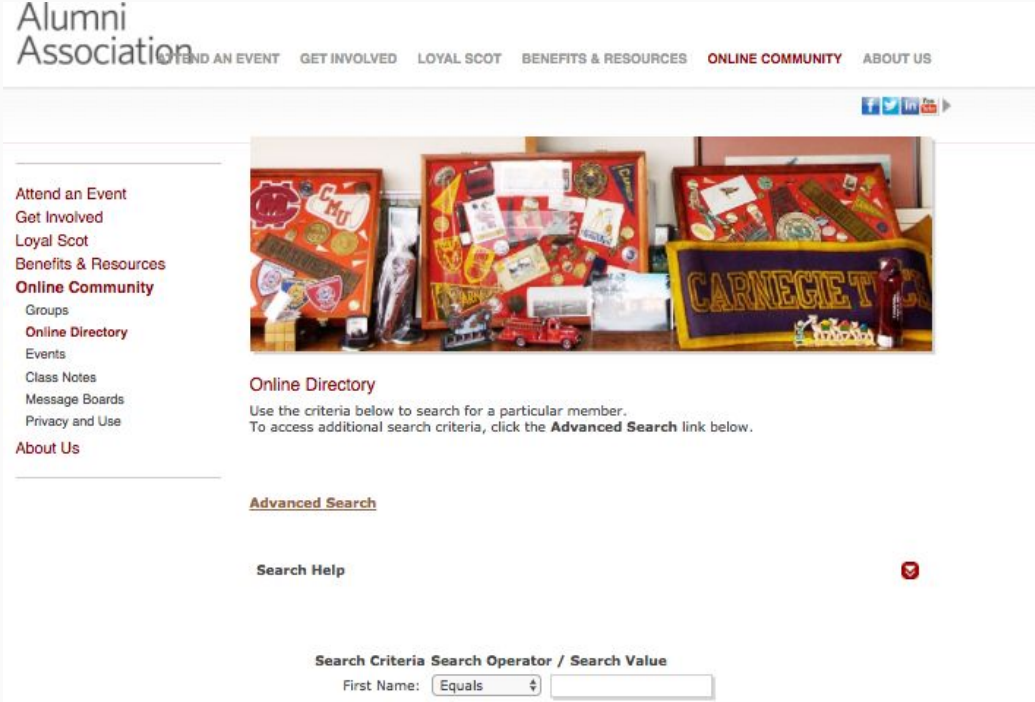
Students can learn from recent alumni, who are an underutilized resource.

“MCS curriculum is influenced heavily by the placement of successful alumni”

“(Giving back) means everything to me. I want future students here to think that I’ve done a good job.”

Problems with existing alumni network

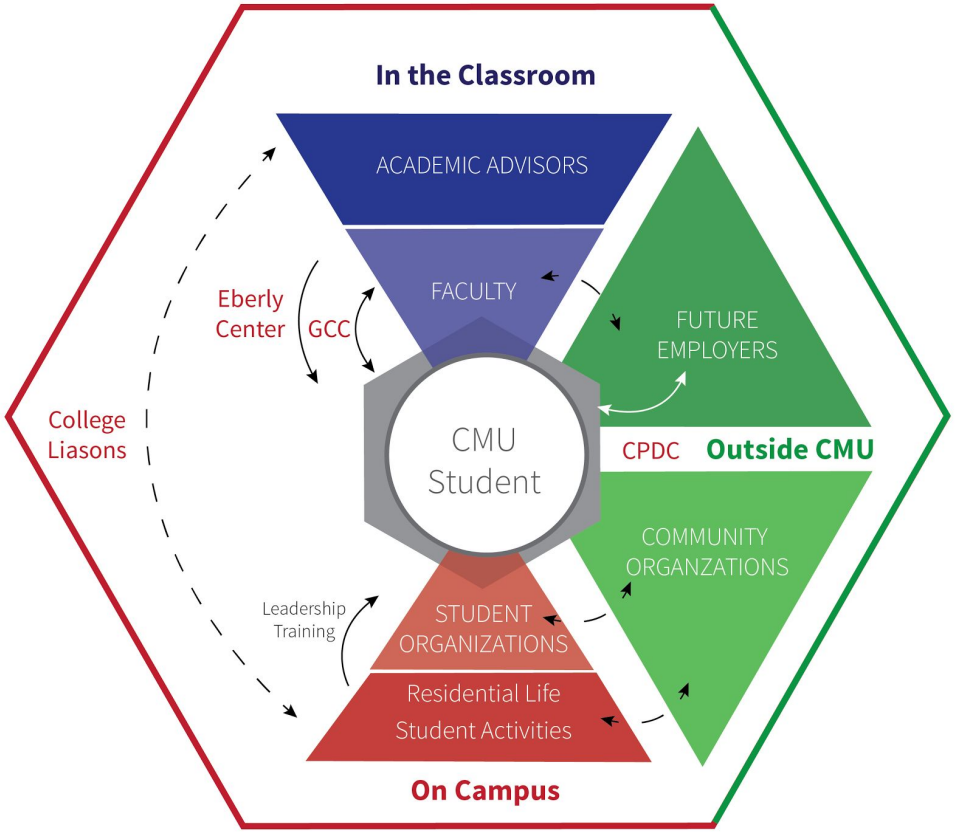
- There is no structured and efficient way for alumni and students to connect.
- Students normally use linkedin, or family and friend sources to find alumni on their own.
- The current official alumni website presents events mostly on alumni-alumni and school-alumni levels. It's directory contains outdated information. The website facilitates no interaction between students and alumni.
- Alumni giving-back culture is weak and students are not incentivized to reach out.



1. Students have few **informal** relationships with stakeholders outside CMU.

2. CMU Students build Communication and Leadership skills **outside the classroom** through leadership, research and clubs.

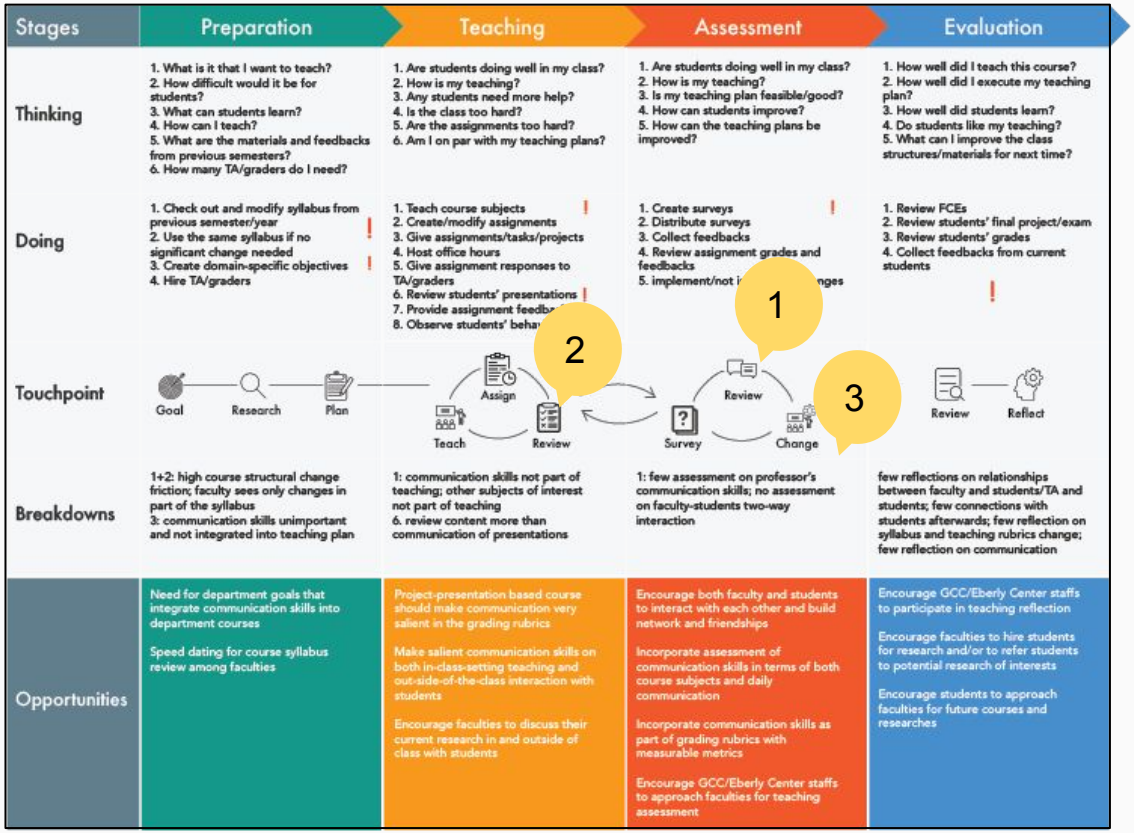
3. Faculty and Advisors lack holistic knowledge of student goals and experience.



1. Faculty do not provide substantial feedback on students' communication skills

2. Communication skills not evaluated or not evaluated significantly as part of rubrics or learning goals

3. Classes with presentation also focus more on the content than on the communication

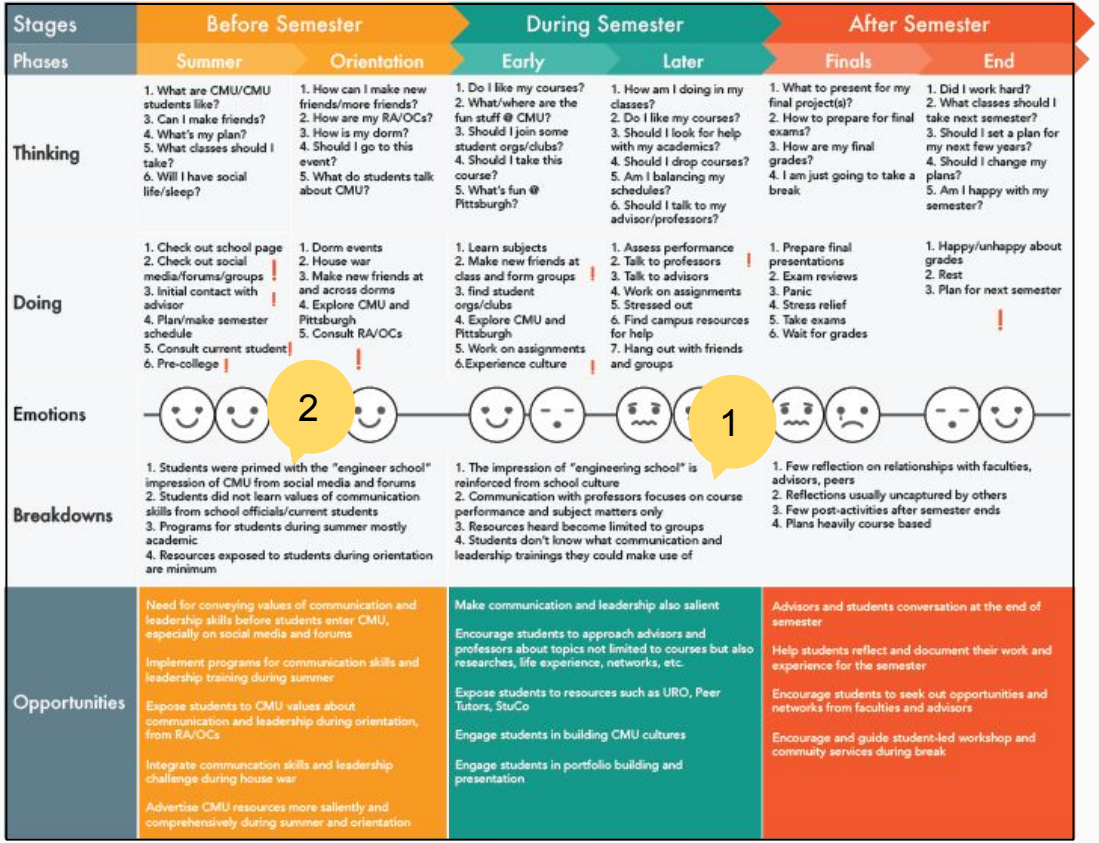


1

Students don't value communication skills as they are usually not part of grading rubrics

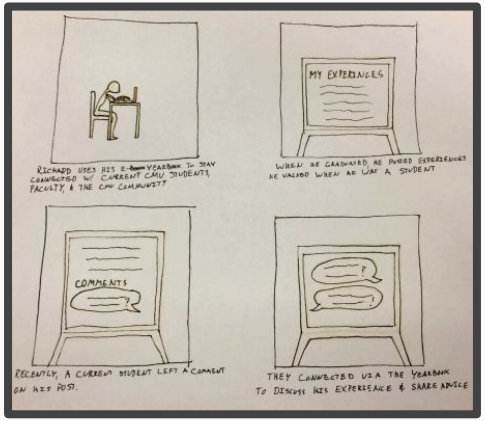
2

Students, especially freshmen, have much willingness and time to socialize before semester starts and during orientation

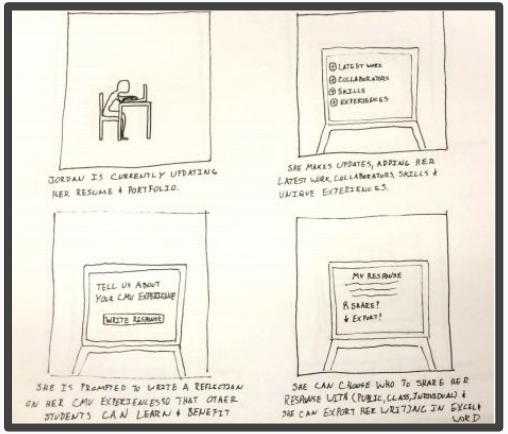


Ideation

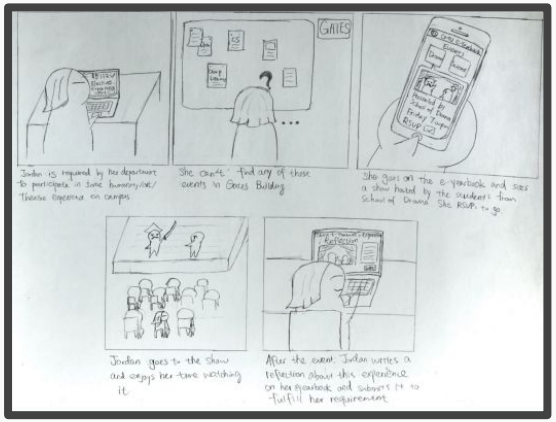
Generated 14 storyboards, with 4 of them focusing on 4 different dimensions of alumni network alternatives



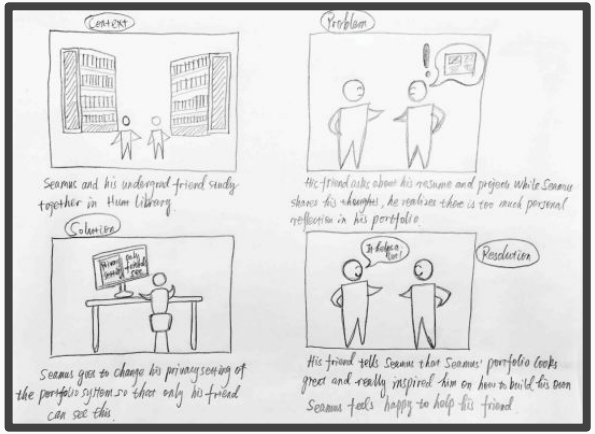
Value



Efforts



Incentive



Privacy

Storyboards: test four dimensions -- Incentive, Value, Effort, Privacy

Findings of the four tested dimensions

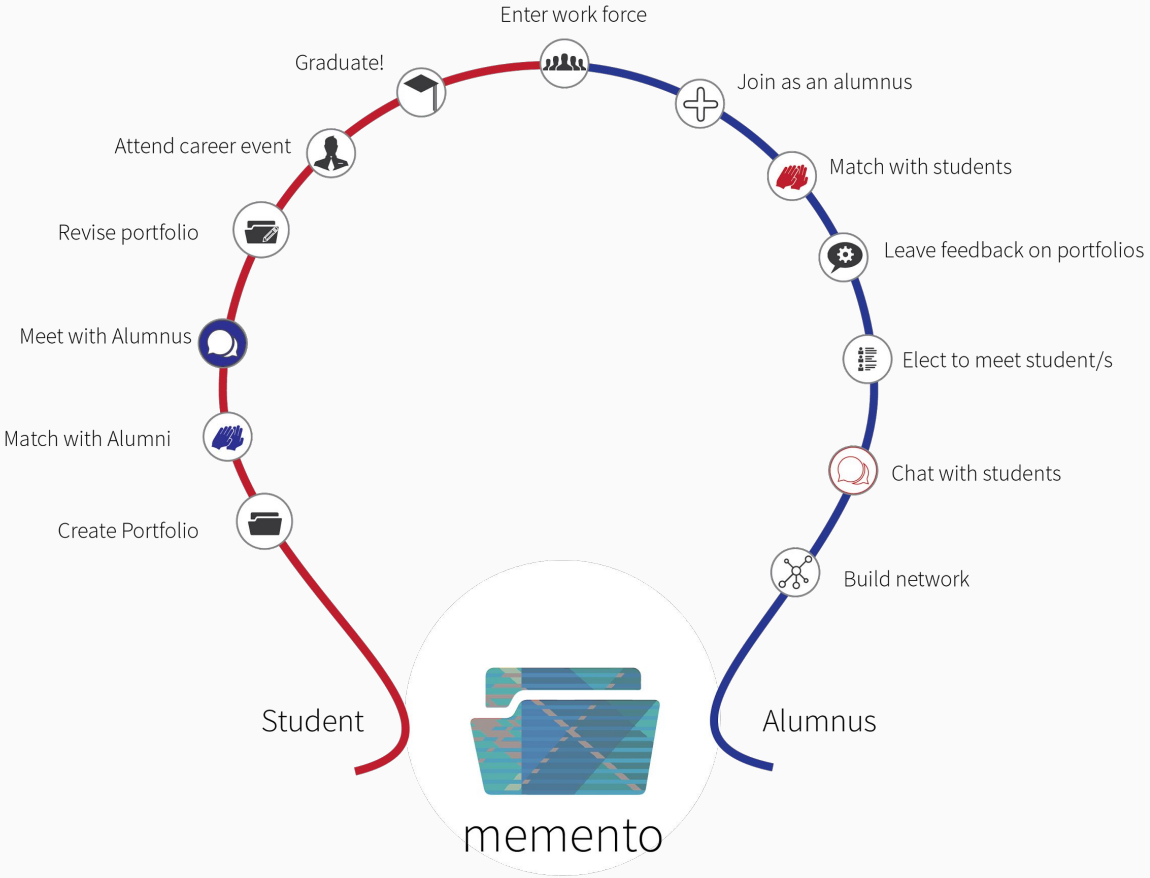
- **Incentive:** Discomfort crossing student-faculty boundaries; Cheating on experience is the main concern
- **Value:** Overlap with normal advising roles
- **Effort:** Documenting experience requires significant amount of work which is not enjoyable
- **Privacy:** Students have mixed feeling about privacy issue primarily about sharing with advisors and faculties

Memento

Video

Provides semi-structured opportunities to engage with matched alumni.

Supports long term interaction as users develop from Students into Alumni, continuing to give back and build their network.



Value to Students

Connections, Experience, better advising

Value to Alumni

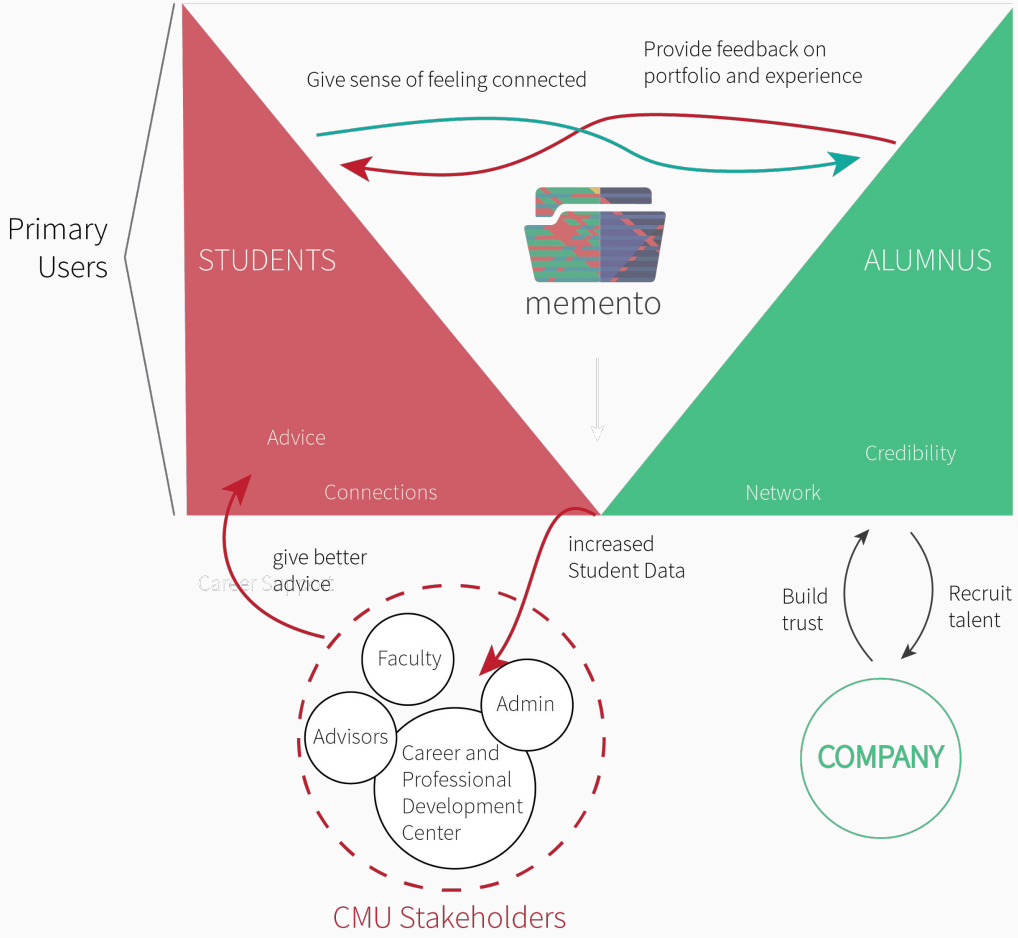
Network, Credibility

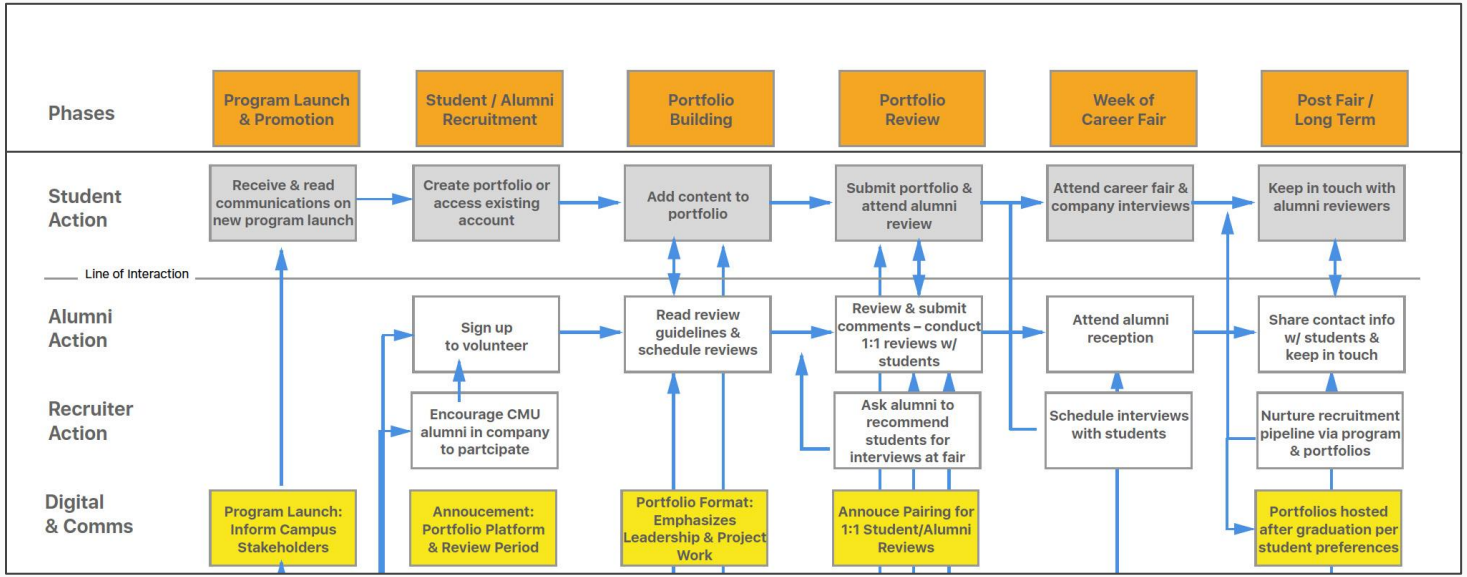
Value to CMU Stakeholders

Increased Student Data

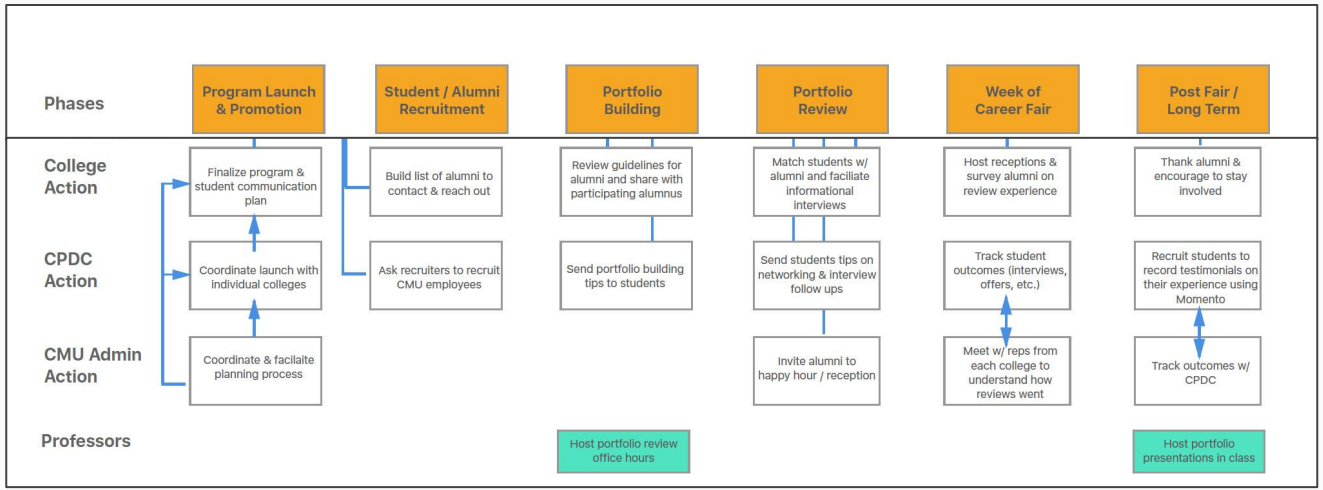
Value to External Stakeholder (Company)

Recruiting high quality talent

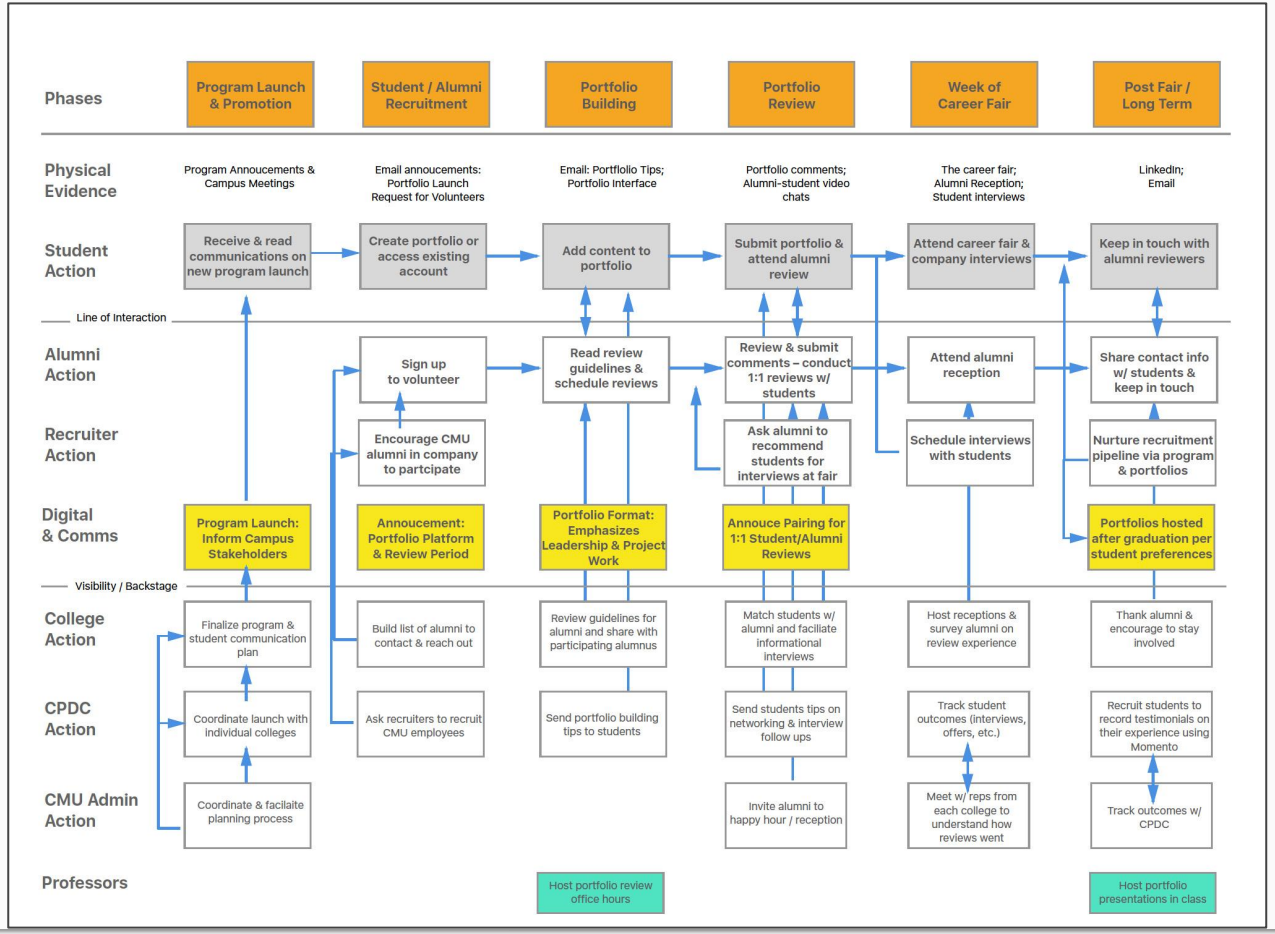




- Students: After creating portfolios, they are paired with alumni and, later put in touch with recruiters.
- Alumni: Sign up to volunteer, review portfolios and meet with students while helping recruiters target promising students.
- Recruiter: Work with alumni to target recruitment toward recommended students participating in portfolio review--enables students to have deeper connection with companies during the career fair.



- **College**: Each college recruits alumni to participate in the program, creates guidelines to help them have successful meetings with students and hosts an alumni networking reception to thank them for helping.
- **CPDC**: Manages the coordination of the colleges and recruitment touchpoints--nurtures students through the process with a “tips” driven email campaign on preparing for each step of the process.
- **CMU Admin**: Plays largely supervisory role, also assisting in coordination and alumni connection. Work with CPDC to track outcomes of Memento and optimize for future years.



All together, the backstage plays a significant role supporting the seamless experience and various levels of interactions between the stakeholders in the front stage.

Throughout, physical evidence supports each step and the entire blueprint is anchored around driving interactions with and support for the students--the user Memento is centered around.

Service Blueprint - Consolidated

Matching students with alumni

- Year-based
  - matching freshman, sophomores by college and major.
  - Matching junior, senior and grad student by occupation of interest.
- One-to-many
  - One student can be matched with multiple alumni, depending on the available resources
  - One alumni can be matched with multiple students.
- System-monitored
  - Students and alumni need not participate in the process of matching. Instead, we run matching algorithm on two stakeholder groups.
- Similarity matching
  - A student, Si, will be matched with alumni that have been previously matched with students who have high similarity with Si.

Data Model - what data should we collect?

- Student demographics
  - year, gender, race, department, major
- Student preferences
  - occupation of interest, career fields of interest, company fields of interest, location of interest)
- Student experience
  - internship, projects, portfolio, research and teaching
- Alumni demographics
  - occupation, company, company type, year of experience
- Student/alumni academic and extracurricular contexts
  - classes taken, student groups

Important (highly-weighted) data features

- Students’ occupation of interest & Alumni’s occupation
- If no clear occupation preference is provided, students’ major could be a substitute of their occupation preference

Feasibility of Data Collection

- What we already have:
  - Student demographics
  - Alumni demographics
  - Student/alumni academic and extracurricular contexts (may be partial)
- What we can get easily:
  - Students' preference (multiple choices and check boxes)
- What we can get, but requires much effort for quality data:
  - Students' experience (using TOC/Confluence as incentives)

Feasibility of Matching Model

- Small-to-medium-size student data set (13,961 enrolled students as of 2016)
- Medium-size alumni data set (~1500 every year for the past three years, accumulated from the past 30 years)
- Existing algorithms: clustering models, collaborative filtering (since it’s non-reciprocal), etc.

Design considerations for matching

- Reduce manual input, especially from alumni
  - Alumni may act as helpers in this process, and should be asked to reflect on existing data (their experience and opinion) rather than generating new data (state their preference)
- Motivate data entry, especially for new users
  - Memento uses TOC/Confluence as momentum to drive students to input data
  - Even students who may not go TOC/Confluence could use this opportunity to meet alumni in Memento
- Feedback and rewards
  - Make explicit how alumni's actions may benefit students
  - Reward alumni who contribute

Design considerations for matching

- Limit user control
  - To prevent malicious competition or ensure fairness, Memento may be ambiguous about the matching algorithm. Students and alumni may only benefit from the result rather “controlling” the matching outcome
- Privacy
  - We need to make sure students and alumni’s data and information used cannot be exposed to other unintended students, alumni, or third parties
- Encourage future actions
  - For students and alumni, the matching framework introduces a point of contact for both to initiate conversation and future actions. Memento should prompt students and alumni to make deeper connection when they want to.

The Simon Initiative asked us to seek ways to build student communication skills in an effort to prepare future alumni for leadership in industry.

Memento advances this mission through:

1. The act of personal storytelling

2. The strengthening of student-alumni connections

3. The structuring of meaningful long-term interaction with the CMU University Community

References

- Sarwar, Badrul, et al. "Item-based collaborative filtering recommendation algorithms." *Proceedings of the 10th international conference on World Wide Web*. ACM, 2001.
- L. Ungar and D. Foster, “Clustering Methods for Collaborative Filtering,” Proc. Workshop on Recommendation Systems, AAAI Press, 1998.