Final Report

Team 7 - Media Center

MKT 372 - Fall 2018

Strategic Product Management

Table of Contents

A. Executive Summary

Introduction (Situation Analysis):

As the school environment becomes more technology-focused, we see a shift in users' needs and behaviors for the furniture that they desire. Our area of focus was media centers within McCombs, which includes locations such as NRG Productivity Center and MOD Lab. Media centers attempt to provide a modern twist on the traditional library to better accommodate these needs and facilitate learning, teaching, and socializing. We explored whether the furniture within our media centers were adequately fulfilling the jobs that consumers wanted to be done and found that there were many need gaps that we could tap into.

Data Collection Plan:

Our data collection plan consisted of both interviews and surveys. We hope to interview a total of 20 students and 2 professors. In order to fully immerse ourselves in the consumer's usage context, we approached students and professors who were currently using the media centers. Finally, we created a survey based on the most frequently mentioned needs in interviews. While interviews revealed which needs were important, surveys allowed us to see how much more important needs are compared to one another.

Consumer Insights:

During our interviews, there were four needs that were most frequently mentioned. First, people felt that spaces were too quiet and tense. Second, the inability to move around furniture interfered with the ability to collaborate. Third, technology features within media centers were unreliable, and finally, chairs were uncomfortable and students did not have enough desk space. These needs, however, were inconsistent with our survey findings. Technology needs and open seating ranked among the bottom half in terms of importance when users were forced to prioritize what needs they valued most.

Based on these findings, we separated our needs into three categories: must haves, linear satisfiers, and delighters. Our must haves included the space being good for individual studying and good lighting. Linear satisfiers were chair comfort and open seating. Delighters were the ability to fulfill technology needs and modern design.

Concept Generation:

After analyzing our consumer insights, we found that our needs varied greatly between the MOD Lab and NRG. To better satisfy needs, we decided to narrow our scope to just the NRG Productivity Center. We developed 3 new furniture concepts that we believe would best serve the top needs of consumers of the NRG:

Concept #1: The Modern Cubicle

This concept took inspiration from Steelcase's Brody workstation and the IE desk from one of our competitors, Teknion. The Brody desk was designed to provide more privacy in a high-traffic area such as hallways. Our concept also incorporated IE's more open layout which provided better lighting and open seating. Additionally, the Modern Cubicle featured barriers with adjustable transparency to allow users to adjust how light and how private their workstation is. Each workstation was also fitted with ergonomic chairs to meet the user's demand for comfortable seating.

Concept #2: Malleable Wall Cubicle

In order to better satisfy individual study, we created the Malleable Wall Cubicle so that it would provide privacy and comfort. We innovated our design off with Steelcase's Shortcut With Tripod Base. The main feature in this product was the malleable wall that can be adjusted accordingly based off of if the consumer wants to be more enclosed or more open to the surrounding environment. Additionally, the concept includes a personal lighting fixture, adjustable table, and cushioned chair.

Concept #3: No Cubicles, Big Tables

Our final concept was designed to optimize open seating. A common theme within other study areas that users frequented was that these areas did not even have cubicles. The third concept featured a large table where students could easily arrange themselves as they prefer around the table. Because these tables don't have walls, light can pass through and more people can be seated at a table.

Concept Testing:

We conducted interviews and surveys to test the effectiveness of our proposed concepts at satisfying our six needs. Similar to our approach with finding consumer insights, we first

conducted interviews to get qualitative feedback on our designs. Then, we launched surveys for quantitative results. Our survey was split into two sections. The first section compared each concept's ability to satisfy needs compared to the NRG. The second section compared each concept to each other, allowing us to see a definitive ranking for each need and overall preference.

From our testing results, we clearly saw that Concept 1 best satisfied consumer needs for media centers. In addition, we modified the concept based off of the feedback we received on how well we were fulfilling jobs for end users. This included adding a personal lighting fixture, fixed wall transparency, work spaces on both sides, and the ability for purchasers to adjust the number of workspaces in each unit.

Conclusion:

In both our interviews and surveys from concept testing, we see that there is a general consensus among our end users that Concept #1: The Modern Cubicle best fulfills their various needs. Overall, our revised version of Concept 1 is our proposed solution for the media center, NRG Productivity Center, and we recommend its implementation.

B. Situation Analysis

Furniture sales in the higher education market can be further divided up in terms of the different areas they are used to furnish. These spaces include:

- 50% - Classrooms
- 15% - Administration
- 10% - Social cafes
- 10% - Media centers
- 5% - In-between spaces
- 10% - Other

This situation analysis will take a closer look at the current higher education furniture market and its core stakeholders and major vendors. Our focus is specifically media centers. Considering recent developments in technology, student and professor needs have changed. Media centers attempt to provide a modern twist on the traditional library to better accommodate these needs and facilitate learning, teaching, and socializing. We will look at current trends in the education center as well as current major furniture vendors. We will then focus on Steelcase's current product portfolio and positioning. Finally, we will look at existing media centers and key stakeholders in the Red McCombs School of Business at The University of Texas at Austin.

Trends in Education Center

The top five trends that are currently being observed in the education section are:

1. Flexibility and movability: Allow for a dynamic learning environment
2. Open and organic spaces: Fun shapes of furniture that give off a collaborative and welcoming vibe
3. Soft Spaces: Adding comfortable chairs and sofas to facilitate the sharing of ideas
4. Power Everywhere: Furniture with built-in outlets to appeal to the digital future users
5. Private Stowage Hubs: Spaces are easy to assemble and disassemble to provide privacy in common areas

Major Furniture Vendors

1 Knoll

Strengths	Weaknesses
● Knoll is relatively successful at the execution of new projects which sets them up well for shifting trends in the space. ● Strong distribution network ● Highly successful at go to market strategies	● Gaps in the product range sold by the company ● Limited success outside of the core business ● Not very good at product demand forecasting
Opportunities	**Threats**
● New trends in consumer behavior can open up new market ● New environmental policies create a level field for all the players	● Rising raw material costs are a threat to profitability ● Demand of highly profitable products are seasonal in nature

2 HermanMiller

Strengths	Weaknesses
● Highly skilled workforce through successful training and learning programs ● Successful track record of integrating complementary firms through mergers and acquisitions ● Superb performance in new markets	● The company has not been able to tackle challenges presented by new entrants ● The positioning and unique selling proposition is not clearly defined ● Not very good at product demand forecasting
Opportunities	**Threats**
● Stable free cash flow provides opportunity to invest in adjacent product segments ● Increase in customer spending is an opportunity for Herman Miller to capture new customers and increase market share	● New technologies developed by the competitors ● Demand of highly profitable products are seasonal in nature

3 HNI

Strengths	Weaknesses
- Amazing performance in new markets - Successful track record of developing new products — product innovation - Automation of activities	- There are gaps in the product range - Not highly successful with integrating companies with a different work culture - Financial planning is not done efficiently
Opportunities	**Threats**
- Market development will lead to competitor dilution - Organization's core competencies can be successful in similar product fields	- Rising raw material prices can threaten HNI profitability - Demand of highly profitable products are seasonal in nature

Assessment of Steelcase

Steelcase is a multifunctional furniture brand that promotes education outside the classroom. In other words, Steelcase is helping create a more efficient and optimal learning environment for students in higher education. With the focus in improving media labs, Steelcase has positioned themselves to provide a more innovative and collaborative space for technological resources to the average student.

Steelcase's portfolio can be categorized into four buckets: Public/Together, Private/Together, Public/Alone, and Private/Alone. Each category has specific purposes and products designed to fulfill that purpose.

Private/Alone	**Public/Alone**
Individually dedicated spaces support a range of focus and concentration and should consider appropriate human scale for individuals and their wellbeing. Plan for short- and long-term security of personal items and the accommodation of new worktools.	Individuals want to study in the company of others to stay socially connected while working alone in a variety of open settings. Support the need for co-existing focused work and social interactions, allowing settings to switch from individual to dyads and triads. Offer highly flexible and self-customizable furnishings and tools while supporting postural changes for short- and long-term use.
Public/Together	**Private/Together**
Support the demand for large, scheduled functions with multipurpose, highly adaptable gathering places. Accommodate impromptu teaching and collaborative activities by removing barriers between students and staff. Recognize the increased need for just-in-time technical support for questions, support and maintenance.	Technology-rich library classrooms should accommodate multiple uses such as active learning, computing and distance learning with fluid transitions. Support multiple meeting modes — inform, evaluate and co-create—for small to large groups

Media Centers in McCombs Today

MOD Lab:

The MOD Lab is divided into two rows of PC workstations. The workstations all look forward, facing two motorized projector screens. There are three whiteboards in the front of the room, one on the left, right, and center. There are two computers located in the front of the room for presenters. Each workstation consists of a desktop and a desk chair. The computer monitor is fitted into the desk, such that it can be folded away when not in use. Handicap wheelchair ramps are available on both entrances to the lab.

The MOD Lab is typically used for lectures. During after-hours (5pm - 9pm), however, the lab is open for general student usage. Students are able to use these facilities to complete school work. However, the primary users are McCombs business students. Professors and TAs would be the secondary users of the lab.

NRG Productivity Center:

The NRG is a quiet study room designated specifically for business students -- the door unlocks with a proximity card reader that requires a valid UT student ID. The room is divided into individual study carrels on the one side, and computer stations on the other side. The computer stations are to the other side of the room and are equipped with a desktop and rolling desk chairs. There are also tables with dividers that seat 4-5 people. There are several group study rooms that students can reserve ahead of time along the wall of the NRG. In some of these rooms, students can use the provided HDMI cord to project their screens on to monitors present in the room.

The primary users of the NRG are business students. In fact, since access requires a business student ID, mostly everyone who studies in this room is a business student. Students typically come into the NRG when they need a quiet spot to study, or if they need access to a computer. Groups study rooms are used to prepare for capstones and presentations.

Financial Education and Research Center Classroom

The Financial Education & Research Center is a trading, research, and teaching facility. This room is used for lectures, video conferences, presentations, workshops, and simulation trading games. The room is equipped with rows of computer stations, each station fitted with a desktop. The room is open to all students of McCombs but is primarily used by students majoring in or interested in finance. Large monitors are available in front of the room that display real-time data feeds of financial information. A portion of the center is home to the MBA Investment Fund, a private investment company managed by students.

The center is primarily used by students, both graduate and undergraduate. The high-tech facilities in this room allow graduate students to gain real-world experience in managing investment portfolios. A secondary user group would be professors as well as various third-party organizations hosting lectures and/or workshops.

Key Stakeholders:

      1. *McCombs Students*:

McCombs Students should be a prioritized stakeholder due to the assumption that they will be the ones utilizing the furniture the most. Some important features for these students include: easy to access outlets under the tables, rooms with projectors to showcase presentations, multiple private rooms for group project meetings, and quiet rooms with computers to prepare for interviews. Ultimately, these students prioritize finding the best furniture with comfort, accessibility, and aesthetics.

      2. *Other University of Texas at Austin Students*:

Although business students should be the main focus, many other majors also study at McCombs. Therefore, an overall collaborative and productive environment for all students would also be optimal. Additionally, research shows that students value furniture that is versatile, such as the exhibiting the trait of being able to to easily shift around into different uses. These students have the responsibility of also indirectly expressing their opinion on the furniture.

      3. *Professors*:

Professors play a big role in this consideration due to the fact that they would want their classroom and office settings to promote the best quality of learning. Some of their priorities may include student engagement, privacy for test-taking, easy-to-use devices that link to the supplements on their laptops, and others. Professors, similarly to students, prioritize furniture based off of comfort, ease of use, and versatility. Additionally, professors also have the responsibility of voicing out their opinions to the higher authorities to give them feedback on how effective the furniture and the room layouts for engaging their students.

      4*. Jay Hartzell (Dean of McCombs School of Business)*:

To change the inner design of the McCombs building, an infrastructure that was established in the 1900s, Jay Hartzell will need to carefully analyze various costs, benefits, timing, and other variables. Jay Hartzell has the responsibility of supervising the plan on what kind of furniture to obtain, how many, for how much, and other factors.

5. *Gregory L. Fenves (President of The University of Texas at Austin)*:
Gregory Fenves' priorities include keeping a balance between what objectives UT campus should invest in at what time with the limited amount of resources that the school has. Additionally, he also needs to consider how the public will react to the news of UT's new layout. Gregory Fenves has the responsibility of giving the ultimate approval of the purchase. Ultimately, he prioritizes finding the best deal that can satisfy those who will be using the furniture while restraining costs as much as possible.

6. *Faculty*:
Faculty includes the essential staff that work behind the scenes at McCombs to help the business school keep its programs running, its students informed, and recruiters involved. This includes counselors, the accounting department, and more. Specifically, the office manager purchases the furniture after receiving an approval. Additionally, they also have the responsibility of directly contacting the external party that will be supplying the furniture and making the financial transaction.

C. Data Collection Plan

Our customers consist of McCombs students and professors that commonly use the media centers. These customers also fall under the category of influencers. The key stakeholders would be faculty and administrative staff in McCombs that take on roles as purchasers and gatekeepers.

In order to immerse ourselves in the organic user environment, we will be interviewing students and professors currently using the media centers. Interviews will allow us to observe both verbal and non-verbal cues. We plan to conduct ten student and two professor interviews.

At least two team members will be involved in each interview to ensure that no information is missed. We will also audio record the interview sessions to make note of the interviewee's statements and emotions without bias.

We hope to uncover needs that are not yet met by existing media centers. Furthermore, we would like gain insight into how customer needs vary depending on their desired outcomes. The overarching issues we are interested in are:
- Customer media center usage
- Other places customers study/work and what they like about those areas
- What media centers are lacking

This is the overall framework of our questioning. We will reconvene after five interviews to adjust and improve our interviewing strategy based on issues that customers bring up as well as the types of responses we receive.

After evaluating the data collected from all interviews, if needed, we will launch surveys with more refined questions addressing specific needs. Surveys will also allow us to reach a larger sample size and thus obtain a more holistic understanding of our target market. Survey questions will be formulated on Qualtrics and distributed on social media. All the tasks stated above will be allocated equally amongst all members.

D. Consumer Insights

We are hoping to uncover needs that are not yet met by existing media centers from our data collection insights. Furthermore, we would like to gain insight into how customer needs vary depending on their desired outcomes. The overarching issues we are interested in are:

- Current customer media center usage
- Other places customers study/work and what they like about those areas
- What media centers are lacking, functionally and preferably

Now that we have gathered 18 student interviews, 2 professor interviews, and 109 student surveys, we will analyze our findings to uncover the underlying needs current media center users are facing.

Data Collection Methods & Techniques

Methods:

To collect our data, we interviewed students and professors about their usage of media centers along with how it differs from their usual place of work or study. Specifically, we asked about the what characteristics of their usual work/study area that they enjoy, what do they think about McCombs media centers or media centers in general, if they feel that things are missing from media centers, and what features would make them want to use media centers more often. We interviewed both students and professors. Then, we released surveys based on the responses received during the interviews.

Techniques:

In order to place ourselves in the user environment organically we mainly interviewed students and professors who were currently using the McCombs media centers, NRG and MOD Labs specifically. For every interview, two members of our team would sit in to ensure accurate data collection. One teammate would interact with the interviewee while the other would act as a scribe. All together, we interviewed 18 students and 2 professors. After conducting the first 10 interviews, we reconvened to adjust and refine our interview questions to address the gaps in our data collection. Based on the 20 interviews, we decided to develop a survey focused on the need statements, extracted from the interviews, to reach a wider audience and establish more comparable data. We launched the survey digitally and received 109 responses.

Data Collection Framework and Implementation:

In collecting data, we utilized the job-to-be-done framework to add structure and guidance to our procedures. We understood that the media centers' current customers are mainly students and professors, but we wanted to find out how and why they were using the spaces. Further, we wanted to explore potential customers who are currently using other spaces on and/or off campus to get similar jobs done. We wanted to find out what different features were being offered in these other spaces that we may potentially incorporate in our solution to better meet users' needs. Finally, we are interested in identifying 'non-consumers', and finding out why they do not consider existing media centers when getting jobs done.

Through our interviews and surveys, we hoped to grasp a multitude of need statements regarding contexts in which customers use media centers. These need statements will give us insight into what functional factors influence a customer's decision to use a particular media center. Furthermore, conducting interviews in media centers served as an opportunity to uncover different compensating behaviors customers engage in by watching how they engage with existing facilities. From here, we will prioritize customer needs based off how highly and how frequently each need was determined by our customers.

Customers may not be too familiar with the term 'media center', however, our objective is to gauge what consumer preferences are for tech-related furniture and features. We would like to obtain an understanding of what furniture traits and room layouts our consumers desire.

Typical Media Center Customer Behavior

Motivations and Desired Outcomes:

By looking at our interview (Exhibit D1) and survey (Exhibit D4) results, we see that there are varied responses in why our customers go to media centers. The table below pulls some of the most notable motivations from the interviews:

Table D1: Customer interview quotes

MOD Lab	
Motivation to go	"I use the computers when I don't have mine or when I need a specific software." "I like that my students have access to the same computers and all the same softwares." "The only times I've been to MOD lab is for class."
Motivation not to go	"Computers in the MOD Lab are awkwardly placed." "There are no windows and the lighting is bad, I feel isolated."
NRG	
Motivation to go	"I go to NRG when I need to work alone because of the cubicles." "NRG is a place I go when I need to focus and be productive." "I go for the private rooms that are sectioned off for groups."
Motivation not to go	"The overall feel of the room needs to be a warmer atmosphere, it makes me tense." "There are not enough outlets and it's hard to find open seating."
PCL Computer Areas	
Motivation to go	"Convenient other usages, such as printing." "PCL is big and has nice Apple computers with programs like Photoshop"
Motivation not to go	"Everyone is always grinding at PCL, too intense"

Note: The Perry-Castaneda Library (PCL) is listed though it is not found in the McCombs School of Business as it was commonly brought up as an alternative media center work/study location.

Here, we see that many of the motivational factors prompting consumers to use a media center are related to the situation -- i.e., when I need to be productive, I go to the NRG. We also found that although different users may have similar need statements (for example, "chairs are not easily moved around"), they have different desired outcomes in mind. Students may want chairs easily moved around to facilitate collaboration on group projects, while professors may be thinking about how they conduct their lectures to ensure all the students can be seen.

Each of these different media centers encourages different jobs-to-be-done, leading us to our next question: what aspects of the space best facilitate the job-to-be-done? From our interviews, we can accurately make the assumption that it is due to the different features that each media center offers, whether it be due to technology or furniture. A junior majoring in accounting says, "I go to the NRG when I need a quiet study spot, but I only go to the MOD lab for classes." A professor, on the other hand, hardly ever finds a need to go to the NRG, but will use the MOD lab to conduct lectures or review sessions.

Using all this information, we gather that most students will use the NRG when the desired outcome is to be productive for a long period of time. A typical situation would be a few days before a big test or project, meaning they have planned to sit down and study for long hours uninterrupted. Long study hours means they will need a convenient outlet to charge their laptops, sufficient desk space for all their study materials, and comfortable seating. They need to remain focused and motivated for extended periods of time as well, which is where lighting, noise level, and aesthetics come in.

The typical situation that will motivate a student to use the MOD lab, on the other hand, is different. Students typically use the lab for its computers to take exams, follow along during lectures, or to utilize a specific program. They usually do not spend as much time in the MOD lab as others do in the NRG, but because they are staring at a computer screen, they sometimes find their shoulders aching and eyes strained. Which means they will need comfortable seating and better lighting to provide a more productive setting. Furthermore, as the MOD lab is frequently used by professors to conduct lectures, professors need an environment that will keep their students engaged, which calls for dynamic furniture.

Our next step is to analyze customer needs further in order to decide and prioritize which needs our solution will center upon. We want our product to accomplish our customers' jobs-to-be-done to reach their desired outcomes.

Media Center Customer Needs

As was discussed in the previous sections, there were a wide range of jobs customers were trying to get done when a particular media center was hired. Based on our interviews we discovered four needs that were currently not being met by the media centers. First, customers come to media centers looking to be productive but felt spaces were too quiet, which created a tense atmosphere. Second, collaboration in the media centers were lacking because of the inability to freely move furniture. Third, customers today are heavily dependent on their digital devices, but the technology being offered often was not reliable. Finally, students wanted a place where they could sit and do work for hours, but the chairs were uncomfortable and tables did not provide ample space.

Our interviews also shed light on who our current 'non-customers' are. These are people who have never been to the NRG or the MOD lab, and most of them are non-business majors. They prefer to study at home or in other locations on campus. A common theme among non-customers is that they simply are not aware of the media centers available in the business school. When they need a quiet place to study for hours, they think of the quiet floors at the PCL, not the NRG. When they need to collaborate on a group project, non-customers use the Student Activity Center (SAC) or the Flawn Academic Center (FAC). From our non-customers we can learn how other media centers are meeting needs similar to our customers'.

Prioritizing Media Center Customer Needs

We believed a media center's fundamental function is to provide the technological resources for students to complete tasks for classes and supplemental work. However a latent need that was mentioned was the overall build of the space, specifically lighting and aesthetics. In all our interviews, we find that there were three significant needs that were most common (Exhibit D1): "comfortable chairs", "open seating", and "technology needs".

Therefore, when we constructed our survey we based our questions on these high frequency variables. Our survey utilized a constant sum table to see what traits our target market's ideal

study space composed of. Because we limited our customers to weigh how important each trait was in comparison to other attributes through a percentage scale, we not only saw which features had the highest rankings, but also by how much.

Contrary to our interview results, our surveys revealed the three most important needs as: "individual study", "good lighting", and "comfortable chairs" (Exhibit D4). Technology needs and open seating were not found to be as important as the interviews had made it seem. We also noted that during the interview, people were very opinionated about the available technology. However, the survey results revealed that a larger portion of the population was "somewhat satisfied" with the technology features in existing media centers (Exhibit D5). This has important implications for our solution as one of the top features prioritized in the surveys is a latent need (Exhibit D4).

Pain Points

Something we need to consider is that some of our customers pain points exist outside our scope. For example, though our customers view good lighting as the second most important trait (Exhibit D4), we cannot significantly improve consumer satisfaction with lighting by changing the furniture. Similarly, some customers brought up noise level as a complaint, however, there is not much we can do in terms of furniture to adjust the noise level. Attributes such as lighting and noise level are also subjective, which means that it varies from customer to customer, and the best we can do is to find the middle ground.

Another pain point is the customer's desires for more innovative tech-features within furniture such as outlets and updated computers. These tech-features are essentially short-term solutions for customer needs that are at risk of becoming obsolete in the next few years. Therefore, we can utilize what we currently know about the trends in technology to keep our furniture as current as possible.

Implications for strategic planning

Now that we better understand how customers prioritize different needs, we can categorize them as *delighters*, *linear satisfiers*, and *must haves*. Attributes that customers find very important are *must haves*. Attributes that customers require, in order to be satisfied, are *linear*

satisfiers. Finally, attributes that customers do not look for but will increase their satisfaction are *delighters*.

Table D2: Categorization of needs as delighters, linear satisfiers, and must haves

Category	Attribute
Must haves	"The space is good for individual study" (24.88%) "The space has good lighting" (18.54%)
Linear satisfiers	"The space has comfortable chairs" (18.11%) "The space is open and has open seating" (15.7%)
Delighters	"The space fulfills my technology needs" (13.26%) "The space has modern furniture design/look" (9.74%)

We used percentages derived from the survey (*Exhibit D4*) to gauge the relative importance of each attribute.

In order to optimize potential gains for media centers, we should begin by focusing on listed must haves. These are needs that do not create that much satisfaction, but their absence will create exponential dissatisfaction. Next, we should focus on the linear satisfiers, which includes comfortable chairs and open seating. Having more comfortable chairs and open seating will linearly increase customer satisfaction. Finally, we can look at adding delighters into the media centers. Delighters will fulfill needs that customers never even knew they needed. Making sure that each media center is equipped with plenty of outlets and modern furniture will dramatically increase customer satisfaction. These relationships are depicted in *Exhibit D6.*

E. Concept Generation & Testing Plan

Summary of Needs

Within the media center category, there are various kinds of areas and each one serves a different function. By looking at the data collected regarding customer needs, we have uncovered that individual study is the most important attribute that people desire. In McCombs, our media centers are the MOD Lab and the NRG Productivity Center. The NRG Productivity Center is heavily used for individual study, while the MOD Lab is typically used in a directed learning context. We decided to focus only on the NRG in order to prevent from spreading our focus too thin and not fully satisfying needs. We did not focus on the MOD Lab as directed learning is constantly changing and thus more difficult to forecast, as opposed to independent learning which is relatively more stable. We are better able to understand needs in independent learning and provide solutions that will be relevant for longer periods of time.

High-Level and Detailed Needs Overview
The needs we uncovered and classified in our Customer Insights Analysis are summarized in Table D2 (above). We will prioritize high-level needs that are 'must-haves' as these are needs that will significantly dissatisfy customers if not met. These needs are individual study and good lighting.

With regards to individual study, customers are looking for an environment that will allow them to focus. They need an area that limits distractions and provides enough space for all their studying tools. Based on our interviews, some students felt productive in the NRG but did not particularly enjoy studying there as it was too quiet and caused students to feel anxious. Although the available cubicles effectively prevented students from distractions, they made students feel uncomfortable given the nature of space.

Our consumers also repeatedly expressed their desire for good lighting in media centers as lighting heavily impacts people's moods and ability to focus. Consumers voiced that they preferred "bright lighting" or "natural lighting". The available cubicles in the NRG are metal with grey felt and therefore, block out and absorb any natural light. Additionally, the cubicles do not come with any attached, private lighting sources for consumers to use at night.

Secondary to our must haves, we will focus on linear satisfiers which are the 'standard' expectations of a product, and will satisfy and dissatisfy customers on a linear basis. In other words, these attributes are what customers will expect to find in a typical media center. Our linear satisfiers are comfortable chairs and open seating.

For those who study in the NRG, many hours are spent in one area without much movement. Currently, chairs are relatively outdated and do not provide much back support. Several interviewees mentioned that they preferred to study in other areas that have ergonomic chairs such as the Perry-Castaneda Library (PCL) and the McCombs' AIM Reading Room.

Open seating is another linear satisfier. Many of our consumers have a hard time finding available seating for individual study. Most people who go to the NRG are studying on a time-crunch, and so having to fight for a seat potentially deters them from studying in this media center. They would prefer to study somewhere they know they will definitely find a comfortable study spot.

Lastly, we have our delighters. Delighters are attributes that customers may not look for but will greatly impact their level of satisfaction, if provided. Our delighters are technology needs and a modern furniture design.

Currently, the cubicles in NRG already provide a multitude of outlets for their devices so that there isn't a gap of needs unmet. However, the fact that consumers still mentioned technology as a need 13.26% of the time proves that it is an attribute that we should incorporate into our solution. We can also take this a step further by providing for tech needs that aren't currently being provided for - for example, since we know our customers are always on their laptops, we can customize our furniture to facilitate laptop usage.

Furniture design is another attribute that can significantly impact a customer's mood and motivation to work. Although it does not directly affect how productive someone is, colorful and aesthetically pleasing designs can cause users to feel less stressed. An attractive room will also just generally be more inviting to customers.

Based on the needs above, we decided to focus our furniture solution specifically on revamping existing desks and chairs. Desks provide the overall workspace that is needed to accommodate the most essential learning tools in the modern day learning space such as laptops, notebooks, and mobile devices. Chairs, on the other hand, provide the comfort portion of individual study in that it is where students rest for hours at a time.

When a customer uses a media center, they typically use a desk and a chair at the same time. Thus, if we alter one, it makes sense to alter the other -- providing a comfortable chair satisfies a student's comfort needs but is not enough to enhance other aspects of their individual study experience. Furthermore, we are better able to meet our high-level goals by redesigning them, keeping in mind that their functions complement one another.

Proposed Concepts

Concept 1: The Modern Cubicle

Our first concept is the Modern Cubicle, derived from an existing Steelcase product, the Brody Desk (Image E1). This product was designed to optimize private working in high-traffic settings, such as in-between spaces in corporate and education environments ("Brody WorkLounge Modular Workstations - Steelcase", 2018).

Image E1: Steelcase's Brody Desk

The desk provides features that increase privacy to reduce distractions from people passing by. These features, however, are not needed in a quiet media center such as the NRG, where the main purpose of the room is to encourage productivity. Our students noted that the NRG felt too intimidating and isolated, therefore we would like to take Steelcase's Brody and transform it and conform it to an inclusive media center that encourages individual study but in an open environment.

The Modern Cubicle utilizes features focusing on individual study, good lighting, comfortable chairs, and modern furniture design in the context of a media center (Exhibit E1). Chairs provide ample back support for users, and can be adjusted to accommodate the user's height. There are also plenty of outlets available at each workstation so that users do not have to worry about running out of battery.

Image E2: Teknion's IE

Our Modern Cubicle concept will also draw inspiration from the IE (Image E2), designed by one of Steelcase's competitors, Teknion. Teknion's version of the cubicle is more suitable for a media center as each individual workspace is not too closed off. Based on the attribute, dependency creativity template, we would alter the dividers to allow users to adjust how transparent or opaque they want them to be. Clear dividers allow sunlight to pass through while providing enough isolation to facilitate individual study. Because dividers are clear and

workstations are connected to one another, students may be prevented from feeling too claustrophobic.

The Modern Cubicle will also include an increased desk space, as people are typically more productive in clean, organized workspaces ("10 Ways To Improve Your Study Habits", 2018).

Concept 2: Malleable Wall Cubicle
Our second concept idea is built off of Steelcase's Brody Worklounge (Image E3). This product was designed for individual study, comfort, lighting, and modern aesthetic needs.

Image E3: Steelcase's Brody Worklounge

Features of this product idealize the importance of independent study in the comfort of one's space. Semi-opaque extendable walls provide privacy and space to include additional complement furniture such as a footrest. The main desk can be pulled in front of the user and has the ability be inclined for optimal usage. Seating can be placed in a couch setting so that consumers do not have to sacrifice good posture. Extra desk space and storage space are provided on the side so that users don't feel compacted in their work area. Finally light fixtures allow consumers to utilize open light in every cubicle.

This was designed to encourage individual study, through its ability to customize its functionalities to the user with the utmost level of comfort. However there are additional areas of concerns that limit this product to fully maximize an independent space to satisfy all user needs. We would therefore like to alter the design to incorporate four additional functions to satisfy customer needs that weren't met before. We are also assuming that in the next 5-10 years, the idea of desktop computers as a technological resource will become obsolete. Workspaces should take this into consideration as technology is being driven towards more personal, more compact laptops.

The first attribute we would like to alter is to provide customizability with the walls in terms of malleability and flexibility around the desk. The walls encompassing this workspace would feature a curved structure and would have four set positions of enclosement to promote openness or closeness. This provides users with the most optimal level of flexibility to maximize comfort that is tailored to open or independent study. The second change is to extend the length of the attached table and add the ability to adjust its height so that users would be able to maximize the comfort in regards to the figure and shape of every individual. Thirdly, we would like to substitute the wall's material into padded acoustic filters. This touches on our must-have attribute of independent study because it allows users to make the space their own without any other noise distractions. Finally, we would like to add a flexible stem to the light fixture. Given that the new wall material limits the ability to amplify natural light, a light fixture mitigates the limitations of natural lighting as a must-have.

Concept 3: No Cubicles, Big Tables

Image E4.1: Steelcase's Shortcut With Tripod Base

Image E4.2: Steelcase's Shortcut With Tripod Base Table-top Attached

Aside from the media centers in McCombs, some popular study areas interviewees frequently brought up were the PCL and the Fifth Floor in-between area in McCombs. A common theme in these spaces is that these areas do not have cubicles at all. Our third concept is inspired by these more open study areas, which encourage individual study with a less rigid floor plan.

Instead of isolating study areas into cubicles, our third concept includes a large table with special chairs that are similar to Steelcase's existing collaborative chair, *Shortcut* (Image E4.1). Because it is simply a large desk area without boundaries, users can take up as much or as little deskspace as they need. Furthermore, students have the ability to just pull up a chair and not be limited by cubicle walls. The number of people who can study in the NRG today is limited to the number of cubicles available. This concept means we can fit more people to a room, which addresses the need for open seating and open spaces while promoting individual study. Tables also do not have walls, which allow light to pass through. There will be plenty of outlets under the table to prevent cluttering the tabletop with charging cables. This concept is illustrated in *Exhibit E3* in the Appendix.

The main selling point of this concept is that it is completely customizable depending on student's needs. Since people are prohibited from talking in the NRG, having multiple people to a table will not be distracting and will instead allow people to feel less isolated and claustrophobic.

There is a risk that is associated with long tables into a media center because it potentially opens up the opportunity to allow group work in a quiet setting. A consistent availability of space that allows collaborative group work would remove the standard of the media center as a quiet independent study lounge and may result in a less productive environment. However, there are several ways to mitigate this risk on an administrative level such as enforcing a quiet study lounge policy, and is not a considerable concern of this concept.

The Steelcase chairs currently are designed for the classroom, which mean they are not designed for long-term study. The Shortcut chair features a 360° rotating work surface which we would like to subtract, as students need a bolted and stationary surface to study for extended periods of time. If students ever run out of space on tables or would prefer to work in an isolated space, they can study on these attachable work surfaces that come with the chairs

(Image E4.2). The backs of the chairs will also be altered with padding to provide more support and cushioning.

Concept Testing

Because we are focusing on the NRG as a media center, our concept testing sample will consist of only students - the NRG's main customers. We hope to reach students who both currently do and do not use the NRG as a media center. We are interested in approaching students who currently study in other areas in McCombs as well in order to see if these new concepts will encourage them to use the NRG more.

Since we are no longer trying to uncover needs, our main data collection method will be surveys. Our survey will consist of two portions - the first portion will compare our proposed concepts to the NRG, and the second portion compares our concepts to one another to see which concept best satisfies a customer's needs. We will create the survey using Qualtrics and distribute the link in various student groups on Facebook. We are hoping to reach around 110 survey responses. To ensure that customers understand our concept correctly, we will include a blurb describing features of the concept in addition to the illustration.

The purpose of the first portion is to ensure that renovating the NRG is worthwhile - i.e., making sure that our concepts are, in fact, improving how a customer gets their job done in the media center. We will present a picture of our concept against a picture of the NRG, and ask customers to rank how well the concept satisfies each of the six high-level needs compared to the NRG on a Likert scale (Exhibit E4 in Appendix).

The second portion of the survey compares our three concepts to each other. We will ask customers to rank which concept best satisfies each of the high-level needs. Using this information, we will choose the concept that ultimately satisfies must haves, while also keeping linear satisfiers and delighters in mind.

F. Concept Test Results

Concept Testing Goals & Methodology

The purpose of our concept test is to find out which concept users prefer based on the needs they face when studying in the NRG media center. Our concepts were derived and inspired by our target customers' need statements, and thus concept testing is our way of ensuring that these needs were appropriately translated and addressed.

In our concept testing, we want to collect information regarding how well each concept satisfies the six key need statements discovered during the customer insights report (Table D2). Furthermore, we want to compare concepts against the current furniture in the NRG to ensure that changes are, in fact, improving how customers get their jobs done. Finally, we want to compare concepts against one another to find the solution that best satisfies customer needs.

Our concepts provide three different value propositions (Figure F3) in solving a problem. As customers provide their feedback to the three different value propositions, we gain insight into which combination of features provides the best overall solution. We can then use customer comments and reactions to each concept to guide us in improving our final solution.

In order to best measure a customer's initial reaction to each concept, we first conducted interviews with 10 people. Like our approach in uncovering customer needs, we approached people leaving the NRG, and people studying in other areas in McCombs -- such as the third-floor atrium and the fifth-floor study lounge. Also, similar to our previous interview method, we recorded interviews with two interviewers present in order to ensure accurate scribing of our interviewees' reactions. Interviews gave us the opportunity to explain concepts thoroughly to ensure interviewees could understand what each concept offered. Customers were also able to provide qualitative feedback while explaining how the solution could work into their typical consumption cycle. Additionally, interviews also allowed us to see which features were confusing and hard to understand.

Customers were presented with drawings of each concept as well as pictures of the existing furniture in the NRG. We asked customers to respond to these concepts and used four general questions to guide the conversation. These questions were:

1. *What do you think of this concept?*
2. *Does it satisfy needs that need to be met? If yes, how so? If not, why?*
3. *Do you have any additional feedback that could be of concern?*
4. *Would you prefer this solution over the NRG? Why or why not?*

After completing five interviews, we reconvened to adjust and refine our interview questions to address the gaps in our data collection. We adjusted our positioning statements to make it easier for customers to understand the solution being presented (Figure F3).

We created our survey questions on Qualtrics based on the interview results and distributed the survey on social media. After 48 responses, we could see that responses converged to prefer Concept 1. Interviews showed how customers qualitatively felt about the concept, but our surveys will be able to capture which needs were met by each concept. This gives us insight into what changes should be made to the final concept to better serve our customers.

Concept Test Results

Concept 1 Results: *The Modern Cubicle*

After conducting our interviews and surveys, it is clear that the majority of our consumers prefer Concept 1. 100% of our interviewees reacted positively to the concept (Figure F1). Customers particularly liked this design as its elements best promoted the main functionality of the NRG today. A major reason why a large number of students go to the NRG is for a study space that separates them from others to improve productivity. Students favor cubicles, but the existing cubicles in the NRG are unfulfilling. The Modern Cubicle highlights the NRG's best features, while filling in areas where the NRG currently lacks.

First, our cubicle provides translucent glass walls that still allow privacy without sacrificing natural lighting. Natural light is a delighter that creates a more comfortable workspace. Furthermore, we extended the desk space in terms of width and length in order to touch on the need for additional desk space.

Respondents were very satisfied with this design and its purpose, stating that it is everything the NRG is, but with a new and modern feel to the environment. However, there is negative feedback that we must consider. Because each workspace is larger, students were worried that there would be less seating available. Students also commented that transparent barriers will only significantly improve lighting when the room is already well lit to begin with -- i.e., the barriers would not do much at night.

Concept 2 Results: *Malleable Wall Cubicle*
We received mixed reactions to our second concept. However, the results from our interviews and surveys show us that more people like the idea than dislike it. There are multiple promising features in this concept that we can incorporate into our final solution.

Customers liked that the cubicle offered more privacy which eliminated distractions. Our customers go to the NRG in search of a quiet place to study, and the noise cancellation feature of this concept helped with that.

Respondents typically liked the idea of a "softer, more comforting cubicle" than those that currently reside in the NRG, however, many also worried that because the setup was too comfortable, they may fall asleep and end up not being productive. Customers were also concerned that the size of the table was too small -- the Malleable Wall Cubicle desk provided only just enough space for a laptop, which is not enough for users intending to conduct serious studying. Since the NRG is already a designated quiet area, some interviewees mentioned that the additional noise cancelling feature might make the study space too quiet. Customers were also not a fan of the positioning of the lighting fixture. Some felt the light was too close, reminding them of being at the dentist. The circular shape of the cubicle and the ability to adjust the walls mean that each individual unit will take up more space. This may mean less units will be able to fit into the NRG, which means less students can use the room at a time.

Ultimately, although customers did not particularly dislike the concept, they felt Concept 2 was not the best solution for the problems being considered. Many individuals expressed how they would actually like to use the cubicle, just not for the kind of intense studying they typically use the NRG for. Customers remarked how they would probably use this kind of study area to read or to work on their laptops.

Concept 3 Results: *No Cubicles, Big Tables*

After analyzing our survey and interview results, we found that Concept 3 was the most disliked. Students did not mind the furniture outside of the context of the NRG and even noted that it would be perfect for group studying. Unfortunately, the NRG is not associated with group study but rather individual study.

As someone stated in an interview since people utilize the NRG to focus and concentrate for a long period of time, separation is necessary. Without any barriers it would be hard to differentiate whose space is whose. The long wide table would be a great addition to an area dedicated to collaboration, but people worry about disturbing others when trying to find a personal space to spread out study materials in the NRG. Even though this concept was created to provide more open space seating, a few interviewees pointed out that there is more of a chance for students to sit every other chair to avoid bothering one another which would leave a lot of unused space, defeating our original purpose.

Additionally, many of the interviewees noted that they did not find purpose in the pull-out tables attached to the chairs. Users would choose the large table over a tiny pull out desk even when space is limited. The pull-out desks do not provide enough space for students to effectively study. Many people noted that when they study in the NRG they tend to sprawl out with notes, textbooks, and their laptop and a pull-out desk would not satisfy their need.

Although Concept 3 seemed like an optimal way of bringing back the simple offering of a large table and chair to encourage open space and open seating, the resulting responses have shown us otherwise.

Major Conclusion:

In our interviews and survey responses, there was a general consensus that Concept 1 was best suited for the NRG media center. Although the other two concepts had positive features, they simply did not match user's expectations when studying in the NRG. This is especially true with Concept 3.

It is important to note that although Concept 3 received the most votes in open seating (Table F3), this turned out to be a disadvantage because it came at the expense of other, more important needs. For example, Concept 3 prioritized open seating to the point of hurting individual study, which is the must-have need. Similarly, *Table F3* shows us that Concept 2 was most popular in terms of comfort, but this also became a disadvantage as people said the concept was too comfortable and did not allow for productive studying in the NRG. With Concept 2 and 3, we focused too much on accommodating linear satisfiers, which is why, ultimately, consumers still preferred Concept 1.

Additionally, even though Concept 2 won in individual seating when the concepts are compared to NRG in *Table F2*, we see that end users still chose Concept 1 over the other two concepts in *Table F3*. This illustrates to us that when our target consumers are forced to decide which concept that best satisfies each of their needs, Concept 1 is chosen the majority of the time, showing us what our end users truly value.

Although Concept 1 was the favorite, there were still certain features that consumers did not like. Based on respondents' feedback, we have come up with suggested changes to Concept 1 to better meet customer needs.

Recommendation

From our overall test results, we see that consumers on both the survey and interview state that Concept 1, The Modern Cubicle, best meets their needs for a media center like the NRG Productivity Center. As shown in *Table F2*, when customers are asked to rank how well each concept meets each need, the highest possible score for each concept is 42, which occurs when the concept perfectly meets the needs of our target consumers. However, we see that even though Concept 1 beats out the other two concepts, it has an overall score of only 31.75. This conveys to us that although Concept 1 is the most satisfying solution for our consumers, there is still a gap for improvement and areas that we can still add value to. Using insights from interviews and surveys, we decided to adjust our Modern Cubicle concept accordingly.

We included the feature of having adjustable translucent walls to satisfy the must-have need for better lighting. However, our interview responses pointed out how these translucent walls

will only enhance lighting in a room that is already well-lit. The fact that NRG itself doesn't have many windows does not support the lighting overall. Therefore, we decided to add a lighting fixture to Concept 1 while still keeping the translucent walls. Adding a lighting fixture with warm lighting will not only help improve lighting for cloudy days, but more importantly, will improve lighting at nighttime. This is critical because most of our consumers study intensely in the NRG until very late at night, so there is no natural lighting during this time.

In addition, consumers voiced out to us that our concepts may be a bit too complex. We have decided to eliminate the ability for consumers to adjust the transparency of the walls as it increased complexity without increasing significant value. It will be a set translucent color in order to still allow in natural lighting while blurring out the environment around the user. This will make our concept simpler and easier to use.

In order to optimize space, the Modern Cubicle will have work spaces on both sides of the walls, which is shown on the top view of *Image F2.* Purchasers of this product will be able to choose and customize how many work spaces they want in each row in order to complement the shape of the room.

This concept may not be perfect, so we will further anticipate problems that our users may encounter and monitor our target market's responses to our product. For example, the solution we recommend provides the customer with more personal space, however, this came at the expense of having more seats available in the NRG. This comes as a necessary tradeoff as no solution can perfectly meet all needs. Overall, this revised version of Concept 1 is currently our best solution for the media center, NRG Productivity Center, and therefore, recommend its implementation.
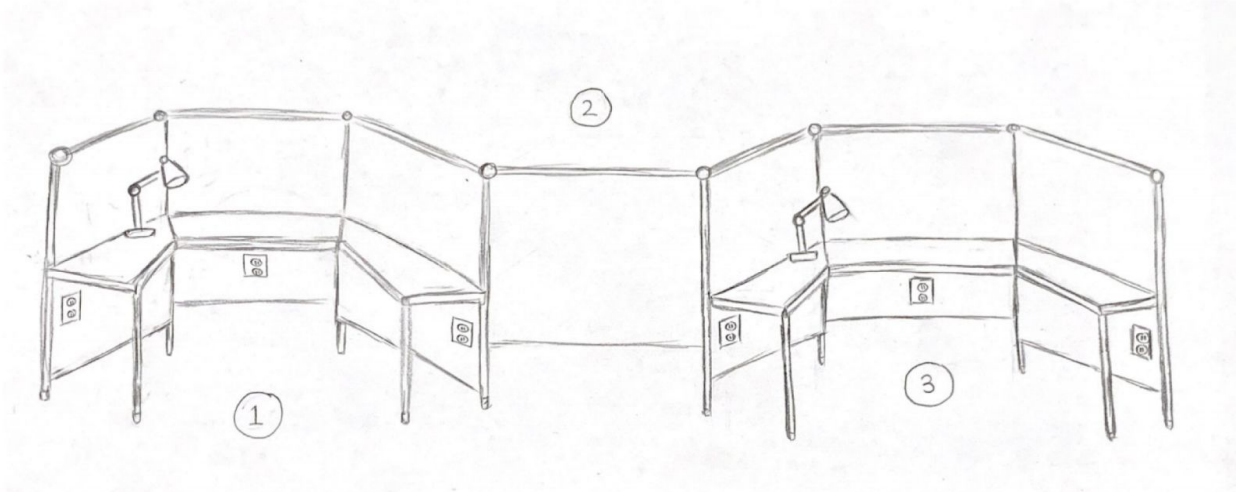
Image F1: Front View of Modern Cubicle

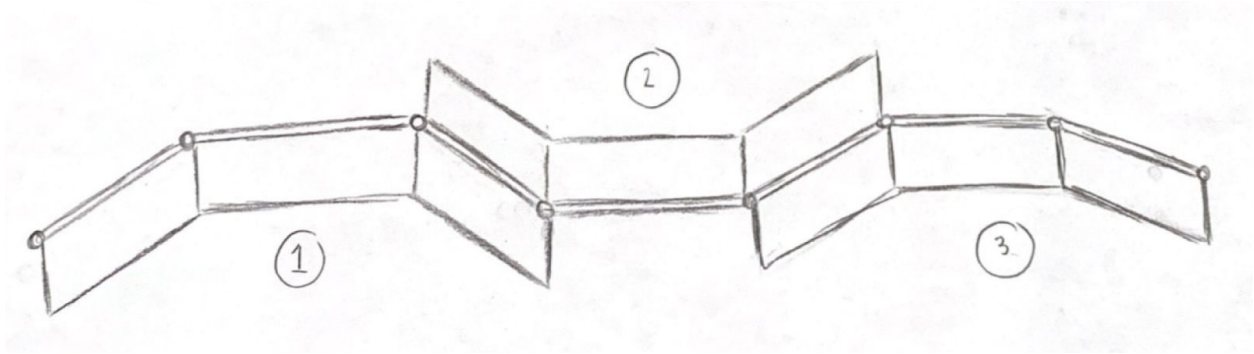*Circled numbers represent each individual workspace.

Image F2: Top View of Modern Cubicle

Image F3: Ergonomic Chair of Modern Cubicle

G. Appendix
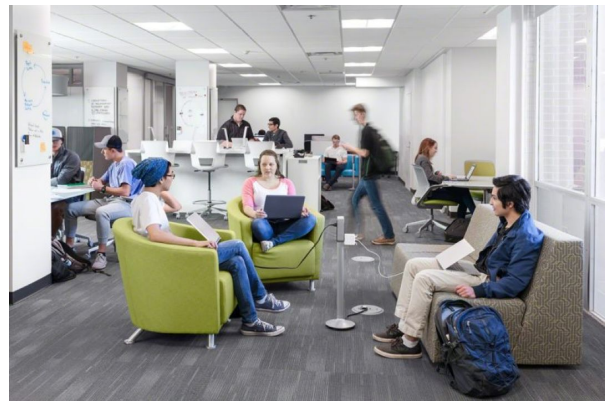
Table B1: Trends in Education Center

Private storage hubs

Power everywhere

Open and organic spaces

Soft spaces

Flexibility and movability

Table B2: Media Centers in McCombs Today - MOD Lab

Table B3: Media Centers in McCombs Today - NRG Productivity Center

Individual computer workstations

Group presentation rooms

Table B3: Media Centers in McCombs Today - Financial Education & Research Center

Exhibit C1: Frequency of mentions in interviews

Ideal Study Space	Frequency (n = 20)
Space has comfortable chairs	13
Space is open and has open seating	13
Space fulfills my technology needs	13
Space is good for individual study	9
Space available for group projects/collaboration	9
Space has modern furniture design/look	8
Space has good lighting	7
Space has big tables	5

Example quotes:

Junior, Accounting major: "I prefer studying at not an exclusively quiet spot -- somewhere I can easily talk to anyone if I need to… social interaction makes studying less tense."

Senior, Finance major: "I wouldn't study somewhere too quiet. I like open spaces. The AIM room in McCombs has the best swivel chairs because I can move around so easily."

Junior, Finance major: "Some of the outlets on the tables don't work...I have to think about which outlets work, which is annoying. I have to go around trying them before actually getting things done."

Marketing Professor: "I want to engage with my students. I used to ask my students to help me move around the furniture, but who wants to do that? It's loud, it's disruptive -- it's mayhem in the beginnings and ends of class!"

Exhibit C2: Sentiments towards aspects of the NRG in interviews

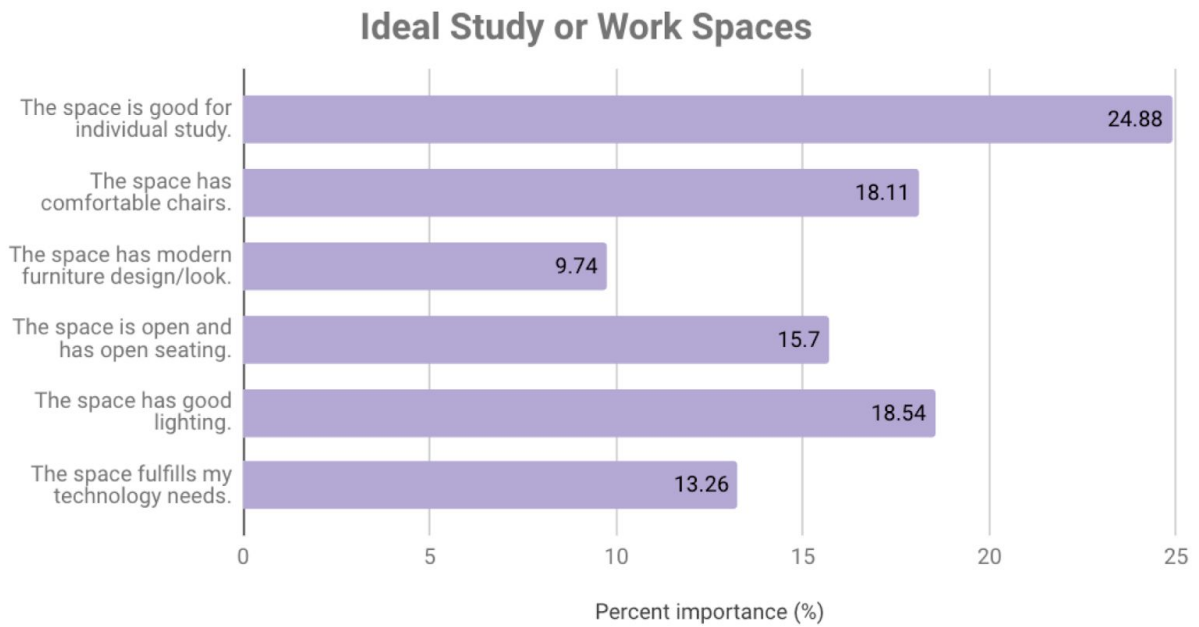|	Positive	Negative	Total responses
Chair comfort	0	100.00%	1
Furniture design	37.50%	62.50%	8
Lighting	0	100.00%	1
Seating arrangement	33.33%	66.67%	3
Technology features/capabilities	0	100.00%	1

To be read: Among the 8 people who commented on the NRG's furniture design, 62.50% of respondents had negative sentiments, while 37.50% had positive sentiments.

Exhibit C3: Sentiments towards aspects of the MOD Lab in interviews

	Positive	Negative	Total responses
Chair comfort	25.00%	75.00%	4
Furniture design	25.00%	75.00%	4
Lighting	0	100.00%	2
Seating arrangement	0	100.00%	3
Technology features/capabilities	42.86%	57.14%	7

To be read: Among the 4 people who commented about the MOD lab's chair comfort, 75% of respondents had negative sentiments, while 25% had positive sentiments.

Exhibit C4: Consumers' perceived importance of study and work space attributes

Ideal Study or Work Spaces

Attribute	Percent importance (%)
The space is good for individual study.	24.88
The space has comfortable chairs.	18.11
The space has modern furniture design/look.	9.74
The space is open and has open seating.	15.7
The space has good lighting.	18.54
The space fulfills my technology needs.	13.26

Consumers were asked to weigh importance of features of their ideal study and work space on a constant sum table. The graph above represents the average percent importance for each of the qualities.

Exhibit C5: Consumer satisfaction with current media center features

	NRG Productivity Center	MOD Lab
Chair Comfort	4.56 (Somewhat Satisfied)	4.96 (Somewhat Satisfied)
Furniture Design	3.59 (Neutral)	4.05 (Neutral)
Lighting	3.94 (Neutral)	4.10 (Neutral)
Seating Arrangement	4.33 (Neutral)	4.30 (Neutral)
Technology Features/Capabilities	5.25 (Somewhat Satisfied)	5.42 (Somewhat Satisfied)

Consumers were asked to provide their satisfactory level of each feature of the media centers. Consumers were given 7 choices from "Very Unsatisfied," "Unsatisfied," "Somewhat Unsatisfied," "Neutral," "Somewhat Satisfied," "Satisfied," and "Very Satisfied." The choices corresponded with a score, with "Very Unsatisfied" being a 1, and "Very Satisfied" being a 7. The scores were then averaged and matched with the corresponding satisfactory level.

Exhibit C6: Customer Satisfaction vs Degree of Achievement
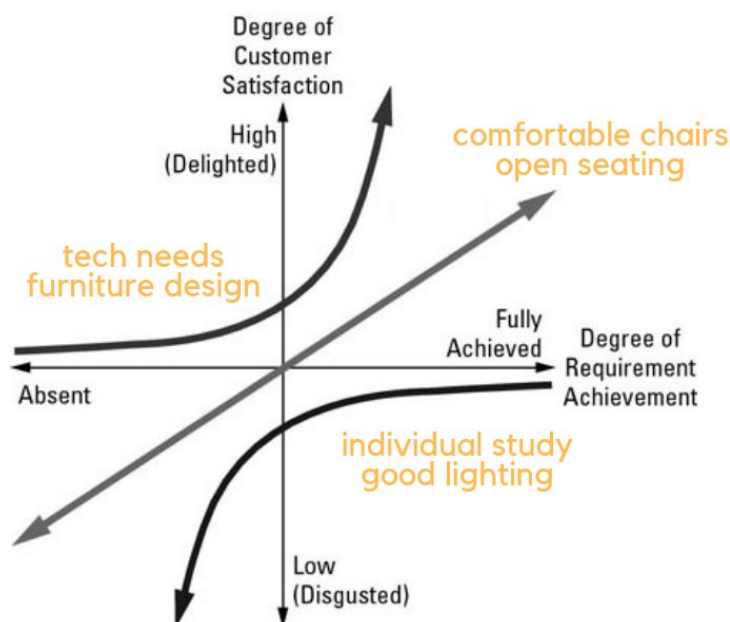
Exhibit E1: Sketch of Concept 1

Ergonomic chair
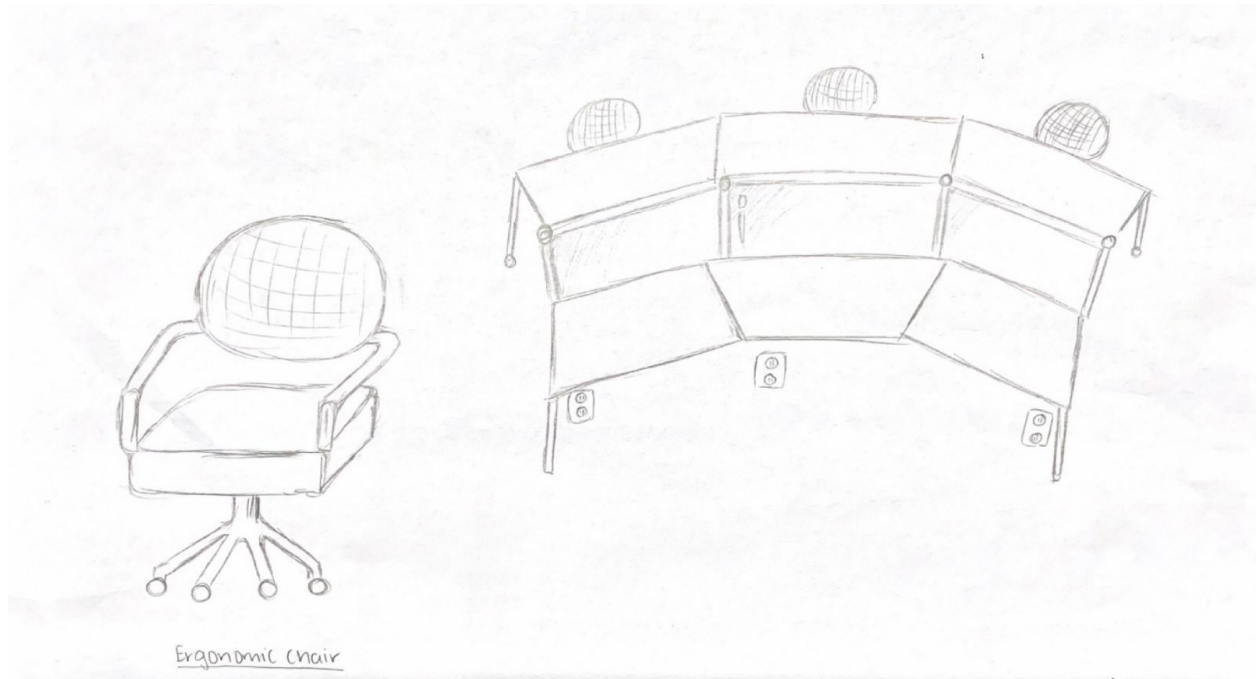
Exhibit E2.1: Sketch of Concept 2 - Bird Eye View
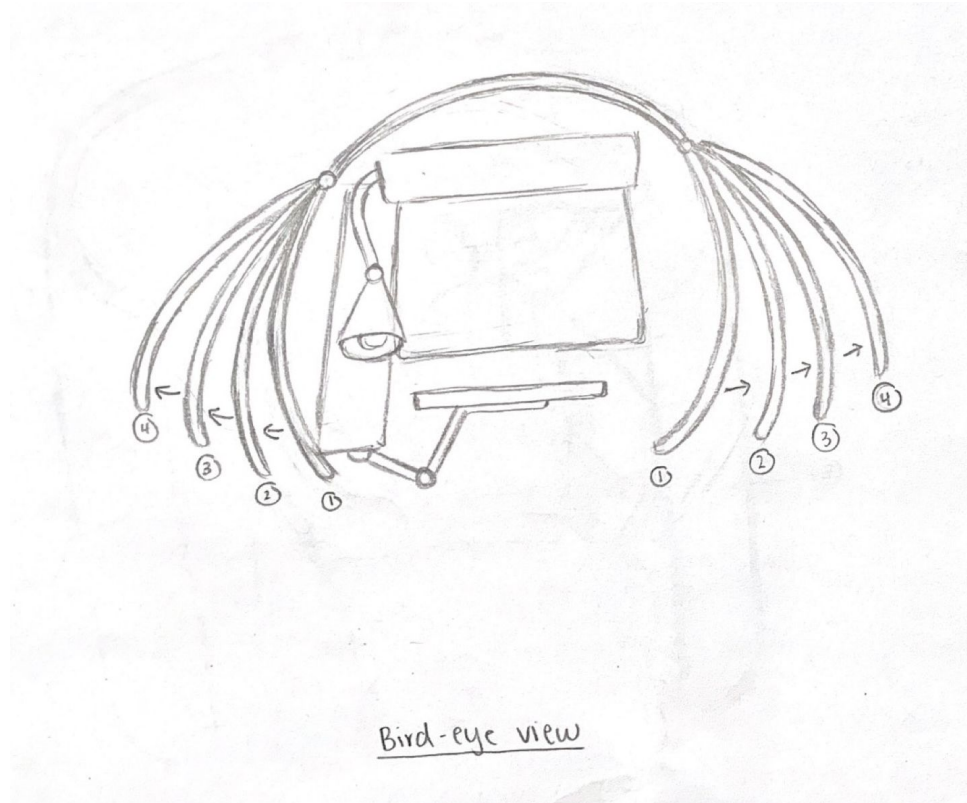

Bird-eye view

Exhibit E2.2: Sketch of Concept 2 - Inner and Outer Views
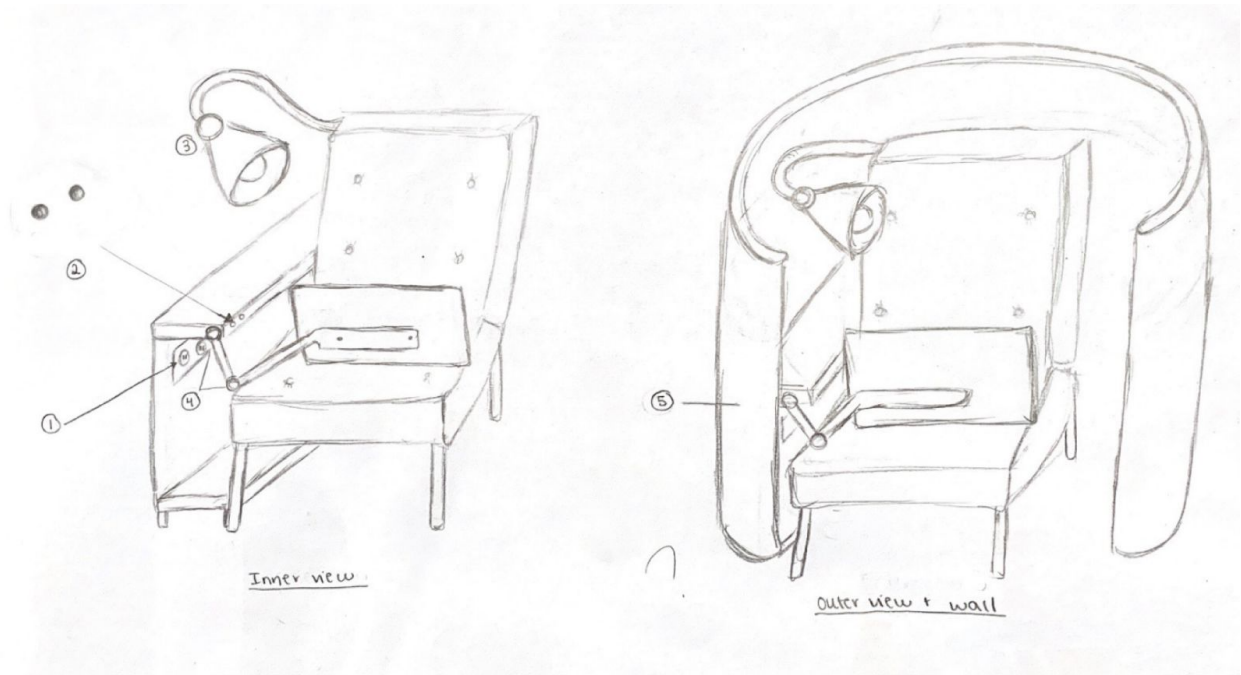

Exhibit E3: Sketch of Concept 3
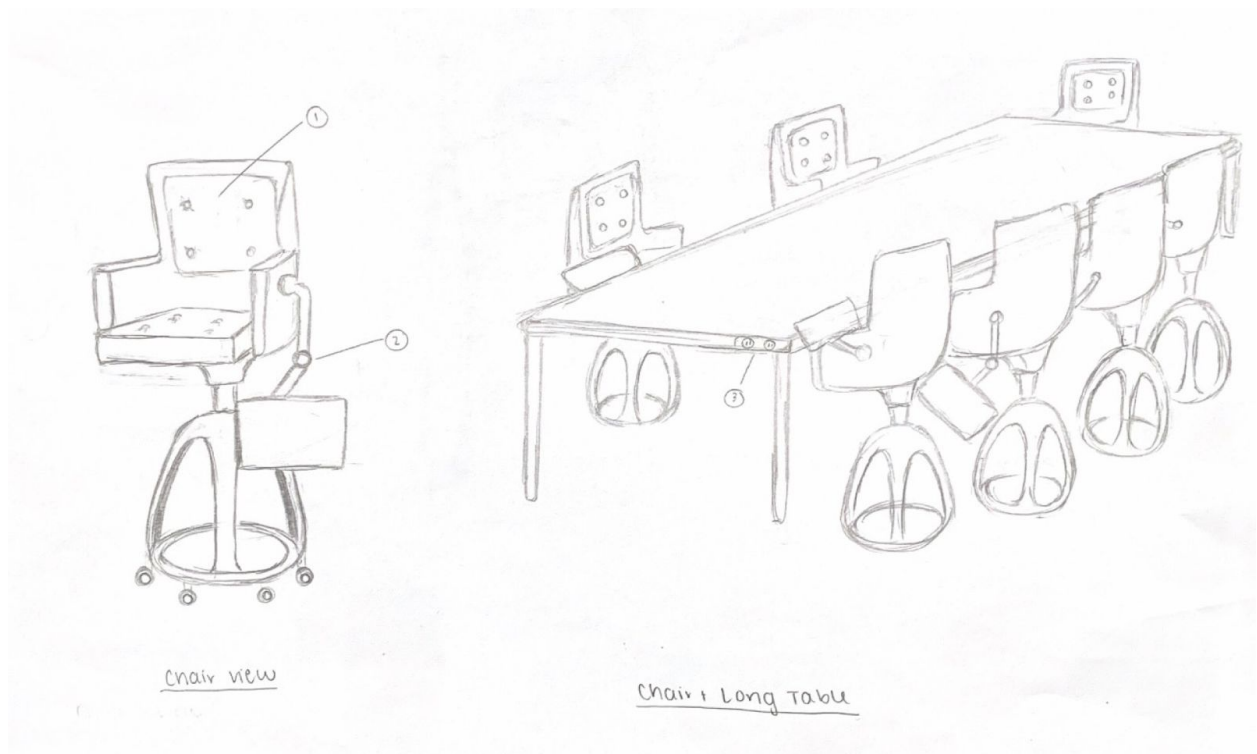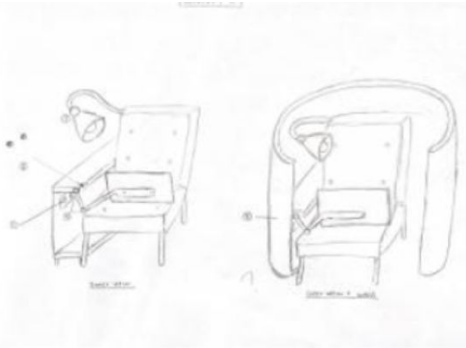
Exhibit E4: Screenshot of first portion of concept testing survey

The NRG Productivity Center   Concept 2

Refer to the two images above to answer the following statements.

Compared to the NRG Productivity Center, the concept presented:

	Strongly disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Strongly agree
improves upon my ability to study individually.	○	○	○	○	○	○
looks more comfortable.	○	○	○	○	○	○
looks more modern.	○	○	○	○	○	○
allows for more open seating and better arrangement of furniture.	○	○	○	○	○	○
allows for better lighting.	○	○	○	○	○	○
better fulfills my technology needs.	○	○	○	○	○	○

Table F1: Customer interview quotes

Concept 1	
Likes	"It's important to have enough space for yourself, to block distractions, and a quiet environment, and this design fulfills all those needs." "I like that the NRG has cubicles, but I think it's badly executed. I like this modern design a lot better."
Dislikes	"It will take up a lot of space, so I don't know how many you could fit into the NRG." "I feel like this design would only work if the rest of the room that is already well lit."
Concept 2	
Likes	"The sound proof is nice, and it gives me privacy." "The chair seems really comfortable and I like that I am able to adjust the table."
Dislikes	"I don't really like the table, it doesn't meet my needs of being able to spread my stuff out." "NRG is already a quiet space, so having a noise-cancelling screen doesn't seem necessary." "Seems perfect for a non-productive space. I would do casual work here instead of intense individual studying."
Concept 3	
Likes	"I like the chairs, arm rests, and mini table."
Dislikes	"Wouldn't meet my needs, big tables are associated with group work vs individual studying." "I would get anxiety trying to find space for myself without disrupting others." "Why would you want to sit at a table with people and then not say anything?"

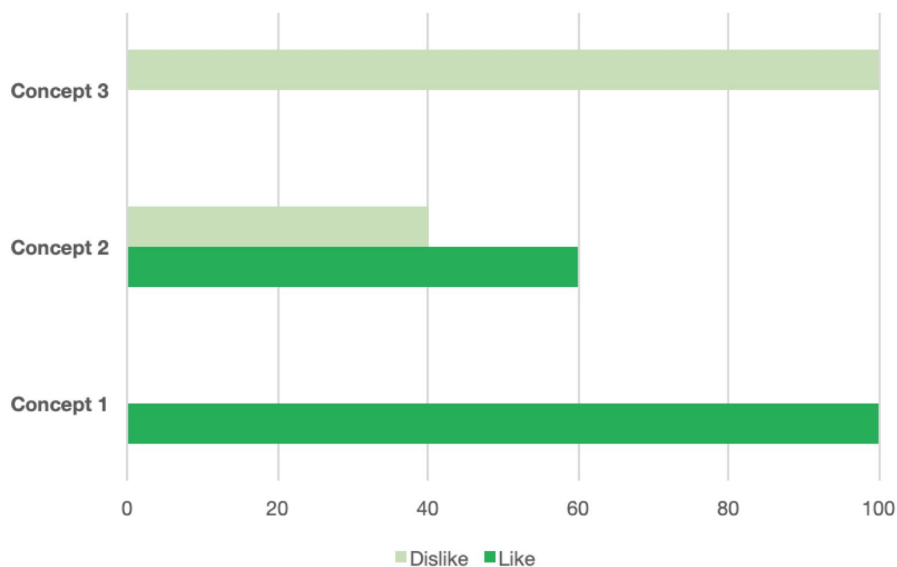*Figure F1: Percentage of interviewees who like and dislike each concept*

Table F2: Survey responses in comparing concepts to the NRG

	Concept 1	Concept 2	Concept 3
Individual Study	5.00	5.17	3.00
Comfort	5.33	4.83	4.25
Furniture Design	5.75	5.33	4.79
Open Seating	5.21	4.50	5.00
Lighting	5.46	4.63	4.67
Tech Needs	5.00	4.38	4.54
Total Score (out of 42 possible points)	**31.75**	**28.83**	**26.25**

*Respondents were asked to compare images of each concept to the NRG Productivity Center along each of the six categories. An example survey question is: "Compared to the NRG Productivity Center, the concept presented looks more comfortable." They were asked to rank to what extent they agreed with the statement on a scale of 7 choices: "Very Unsatisfied (1)," "Unsatisfied (2)," "Somewhat Unsatisfied (3)," "Neutral (4)," "Somewhat Satisfied (5)," "Satisfied (6)," and "Very Satisfied (7)."

Table F3: Survey responses in comparing concepts against each other

	Individual study	Comfort	Furniture Design	Open Seating	Lighting	Tech Needs
Concept 1	51.85%	27.59%	64.52%	32.14%	53.57%	45.71%
Concept 2	48.15%	58.62%	25.81%	14.29%	28.57%	28.57%
Concept 3	0%	13.79%	9.68%	53.57%	17.86%	25.71%

*Respondents were asked to compare images of each concept to each other. They were asked to select the concept that best satisfies each of the six needs. For example, customers felt that Concept 1 best satisfied individual study compared to the other two concepts.

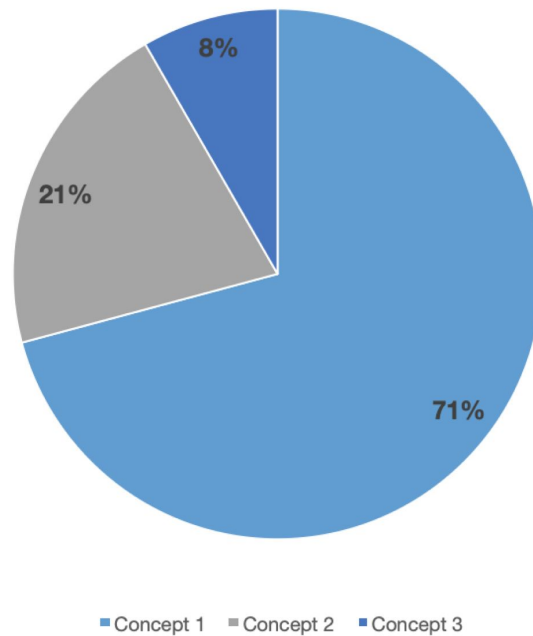*Figure F2: Pie chart representing customer concept choice based on survey results*

Figure F3: Positioning statement for proposed concepts

The Modern Cubicle looks to enhance the workspace by improving natural lighting with translucent barriers without sacrificing the privacy and functionality of a cubicle.
The Malleable Wall Cubicle focused on eliminating distractions with adjustable, soundproof walls, providing the user with an optimal isolated workspace.
The Big Table focused on open seating, allowing users to choose how to arrange themselves in the room, whether it is along the table or separate from the table altogether.

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