



**Team Lift  
Product Scape**

**Innovation  
Proposal**

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## Product Scape

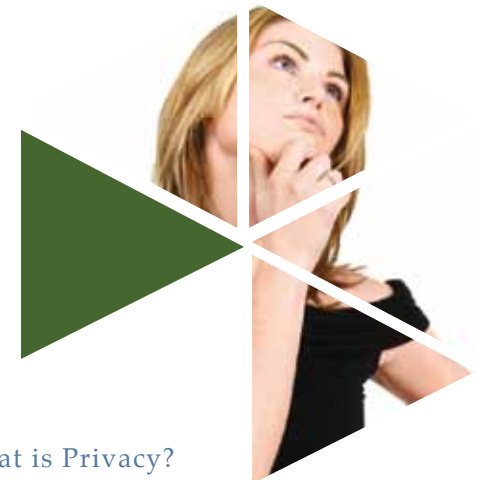
Our Product is a partition meant for patient rooms. These rooms are not limited to just normal hospitals, but also to environments where patients stay for long periods of time. This partition will help with space issues, human interaction issues, guest issues, and will help give the patient a better atmosphere in their healing environment. With the help of our sponsor Herman Miller and others we have developed a product that helps not just the user room, but their healing process as well.



▀ Sponsor- Herman Miller

▀ Team-Lift

▀ Product-Scape



What is Privacy?

## Product Research

### Hospital Room Environment

Before we came up with Scape as a product we first had to narrow it down. We did this by studying the patient room and getting a understanding of what patients need to do to recover correctly.



- Improving the patient room environment
- Improving the multi-patient room environment
- Improving privacy within the multi-patient environment

- The state of being private; the state of not being seen by others
- Privacy/Security provides the user with some storage space that only that user can access which may be used for work in progress.
- The protection of sensitive data and personal information from unintentional and intentional attacks and disclosure.

- Chronos is committed to respecting the privacy of the personal information of the individuals with whom we interact.
- The boundaries and content of what is considered private differ among cultures and individuals, but share basic common themes.

**About the project** This project is structured around two key frameworks--Integrated Innovation and Life's Principles. Integrated Innovation is a model of sustainable innovation.

- Information about consumer demand, branding, technology, market conditions/trends, and social and environmental conditions.
- Principles of natural systems that can inspire more sustainable design solutions.
- Key conclusions and actionable insights and develop a comprehensive Innovation Proposal.
- Product and Brand Design

#### Phase 5 – DEVELOPING THE CONCEPT

In this phase we select one of the three concepts developed last semester and start developing it in detail.

#### Phase 6 – FINALIZING THE CONCEPT

In this phase we finalized details about the product design solution, the business plan, the brand identity as well as the technical specifications.

#### Phase 7 – DOCUMENTATION,PRESENTATION & EXHIBITION

In this phase we document the work done over the semester for a presentation and exhibition in the gallery on May 5, 2010 from 6pm to 8pm.



## Introduction to our team



## Team responsibilities

Each teammate will contribute skill that is involved with their discipline. I including graphic, modules, business plans, and technology function decomposition. They will also contribute ideas and brainstorm as a team to come up with innovative ideas for Herman Miller.

Kilmer, Karah  
Engineer

Busch, Maddy  
Industrial Design

Mellen, Robert  
Business

Colman, Zachary  
Graphic Design

## User Profiles

“ I’m Having problems with mobility ”

Olivia is in the hospital recovering from a stroke, as a result, her mobility has weakened in her left side. She is in the room most of her time in the hospital. So a nice healing environment helps soothe her while she’s recovering.

Age:63

Occupation: retired

Reason to return: Fast recovery

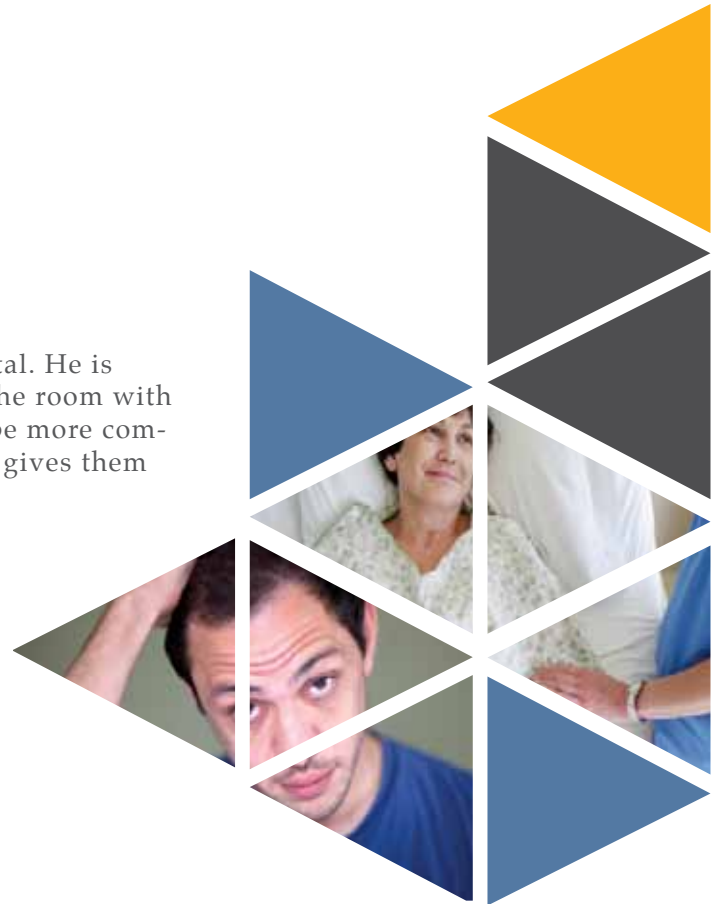
“ Concerned for his father ”

Rick’s father was just emitted into the hospital. He is thankful that his mother and him can be in the room with his father. Scape helps Rick and his mother be more comfortable when staying at the hospital. It also gives them more storage space during their stay.

Age:34

Occupation: Visitor

Reason to return: Comfortable rooms



“ I’m Having problems with mobility ”

Janice has been a registered nurse for 12 years and loves her job. However, she finds her self worn out at the end of the day due to the stress within her work environment. The alarms from the machines and patient pages become so frequent that her and fellow nurses block them out with out realizing it. This has caused her to ignore simple bathroom pages to severe calls for help. This noise also effects the patients in the unit. Our product has helped her get through the days without alarms going off as much.

Age:35

Occupation: nurse

Reason to return: loves her job

“ Trouble with organization “

Dr. Wilson is a high end doctor at your nearest hospital. Dr. Wilson is having trouble with the communication around the patient area. This is effecting his rounds and making it hard for him to find the right patient during the right time. Having Scape around helps him keep organized during rough days.

Age:39

Occupation: Doctor

Reason to return: Loves helping people







## Product Design and Language

## Product Language

- minimal color. shadows and highlights create texture and contrast on object
- repetitive forms + lines, leading eye through product
- variation of form and angles create form
- simple body encasing fluid, organic overlapping forms, giving object movement
- distortion of image, edges of distortion create pattern
- overlapping details contained within a simple form
- patterned elements create product into whole, giving product form and texture

## Character-Chaotic Elegance

high end appeal, energetic, exciting allowing the mind to wonder

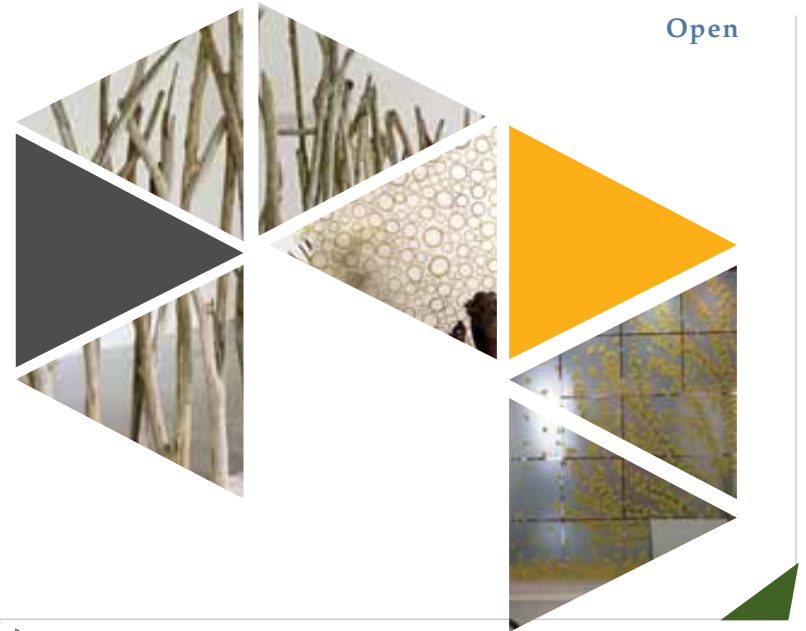
|           |   |
|-----------|---|
| forms     | subtle, modern, elegant                   |
| detail    | chaotic, exaggerated, obtrusive, abstract |
| materials | glass, wood, fabric                       |
| color     | white, black, natural + neutral colors    |



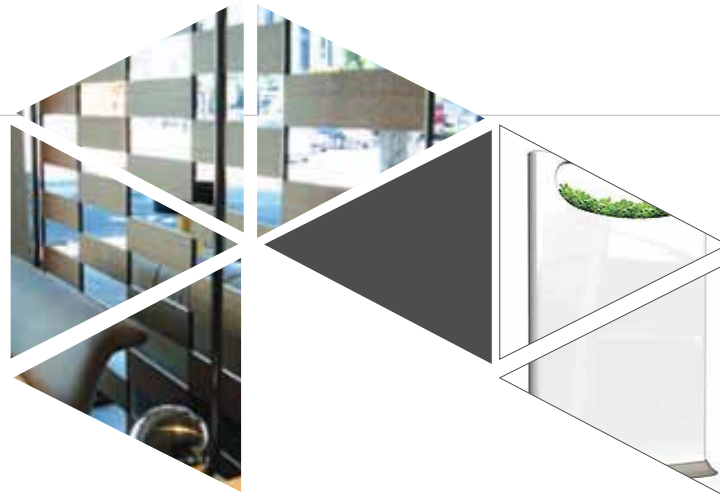
# Product Benchmarking

Branches used to create natural separation, with minimal privacy

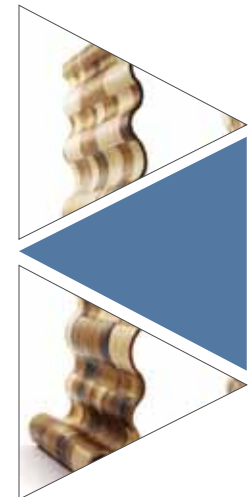
Open



Fixed



offset gaps create space





cut outs create openness and barrier



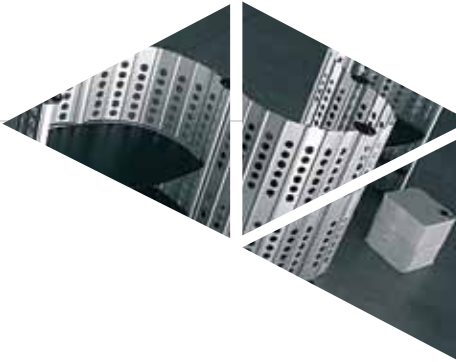
modular structure



slits and straps allow user to interact with wall



Personalized



modular plug in's for personalization

Enclosed



## Design Language    Positioning Statement

Scape provides a solution for multi patient rooms. The current practice of using curtains and panels to create privacy in multi patient rooms does not address some of the fundamental needs of the patients and their guests. These needs include communication, comfort, entertainment, and privacy. By utilizing a strategy of purpose built design, Scape addresses each of these needs.

### Key Markets

We will focus more on markets that are looking for privacy. Not just that but also high end companies that deal with healing.

### Signature Elements

- Multiple-designs
- Portable/multi pieces
- Innovative item placement
- Multi-item usage
- Multi-user design



## Mission Statement

Scape is a modular room partition concept intended to bring a new level of utility into the patient care environment. Scape incorporates elements of water, sunlight emulation, natural plant life, and organic patterns to provide an atmosphere that promotes healing and rehabilitation. It also provides storage, seating and other functions for patient and nurse use. Health care applications include patient rooms, waiting rooms, lobbies. The concept can easily be expanded to include commercial, residential, and corporate applications.

The modular design allows for customizing to multiple venues, budgets, and applications. Specialty modules can be developed as additional needs are identified. The ability to scale up the system allows the client to fit to requirements.

Additional functions include storage compartments, sound dampening, guest seating, soothing water effects, and sunlight emulation. Storage compartments would provide guests and patients with private storage in patient rooms. Seating equipped modules would provide convenient temporary seating without disrupting the flow of the room. Water effects provide a calming and soothing effect as well as providing a source of white noise in the room, an attribute proven to aid in relaxation and sleep.

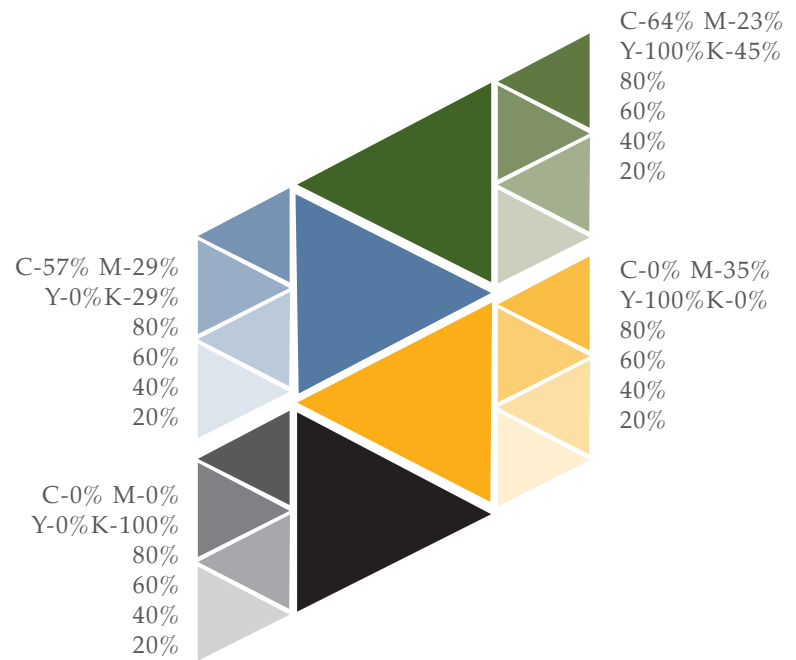
### Tone/Voice

- Innovative
- Green
- Personal
- Cultured
- Cost-effective



## Descriptor

The Scape product and brand have been designed to appeal to more discerning hospitals and users.







## Brand Guidelines Visual Communication

Our logo--the combination of two rectangles separated by a diamond shape. This form is meant to show separation between to people by a partition. The visual essence of our brand is meant to bring chaotic elements and elegant elements and combine them to make a unique pair.

### Logo Clear Space

Clear space is an area around the logo that is free of graphics, photos and text. The area in grey is the area mean to be free of these elements. (shown above) Clear space will vary depending on logo size.



## Correct Logo Usage

These are the primary ways the logo should be used.



Advertising usage



Logo usage  
without name



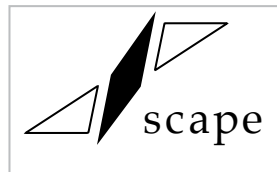
Product usage



Grey scale logo



Advertising/product  
usage with tag line



One Color logo

## Corporate Fonts/Web Fonts

### Palatino

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz1234567890&!?

### Palatino Bold

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz1234567890&!?

### Arial

ABCDEFGHIJKLMNOPQRSTUVWXYZ  
abcdefghijklmnopqrstuvwxyz1234567890&!?



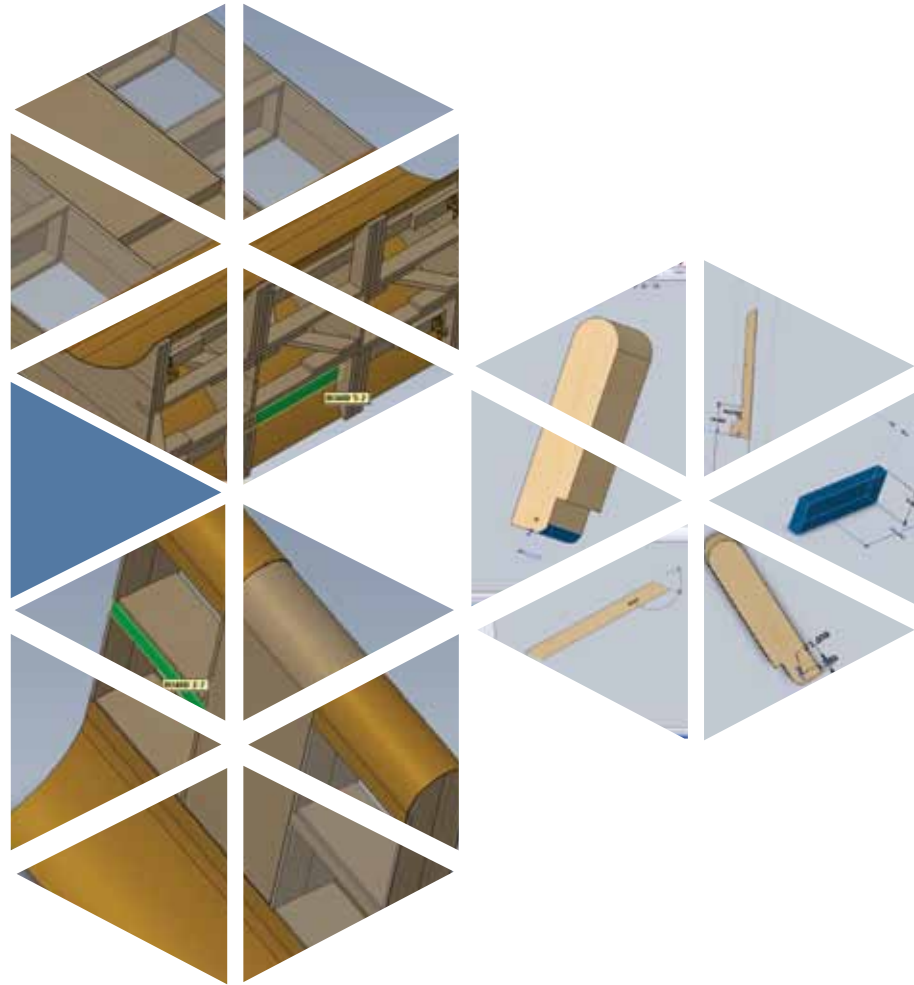
## Product Engineering and Design

## Proof-of-product Prototype

## Product Abilities

Before the product is produced, a version needs to be made that makes sure that it is designed properly. Measurements of the product are designed and tested properly to make sure the design is fine.

- Wheels are created and designed to come out and in of the product properly.
- Parts of the product are made to be a precise shape to work with the product correctly.
- Shelves and chairs will be designed within the product for total user design.



# Product Renderings



## Product Renderings

During our process of designing our product, we have decided to make individual partitions that link. This is due to the user needs and what they prefer in their environment.



### Partition Types

- ▶ Visitor
- ▶ Nature
- ▶ Patient
- ▶ Interactive
- ▶ Nurse

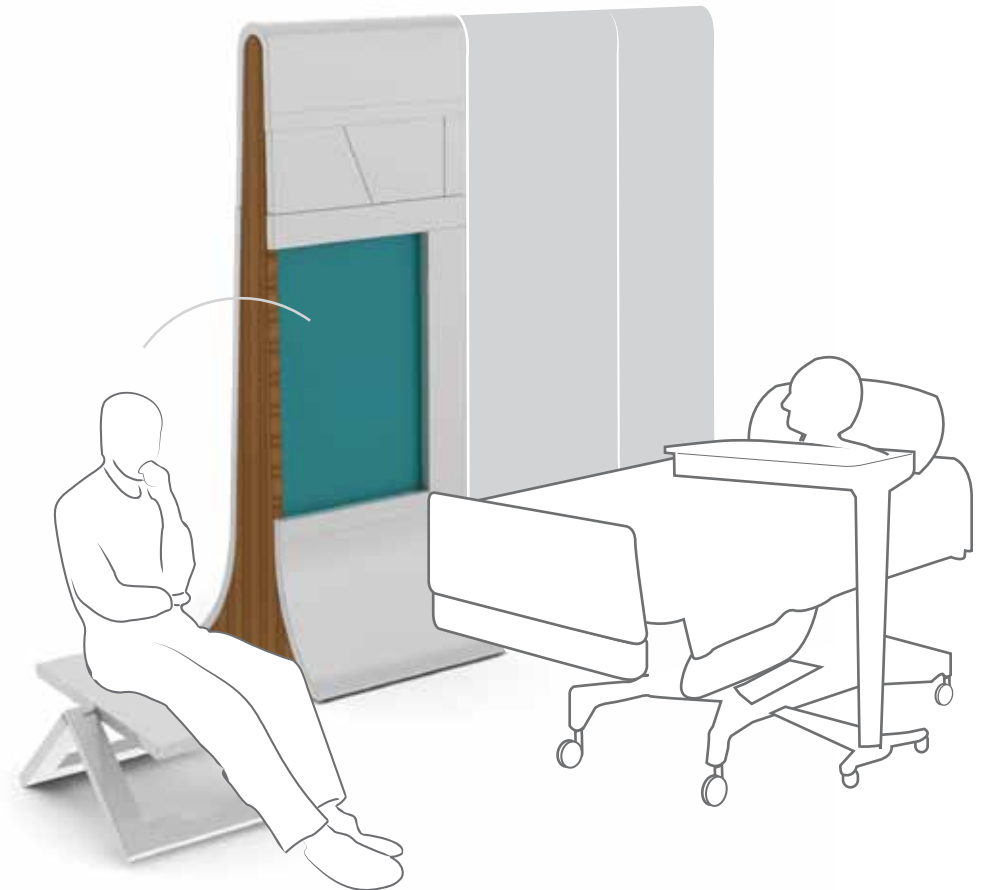
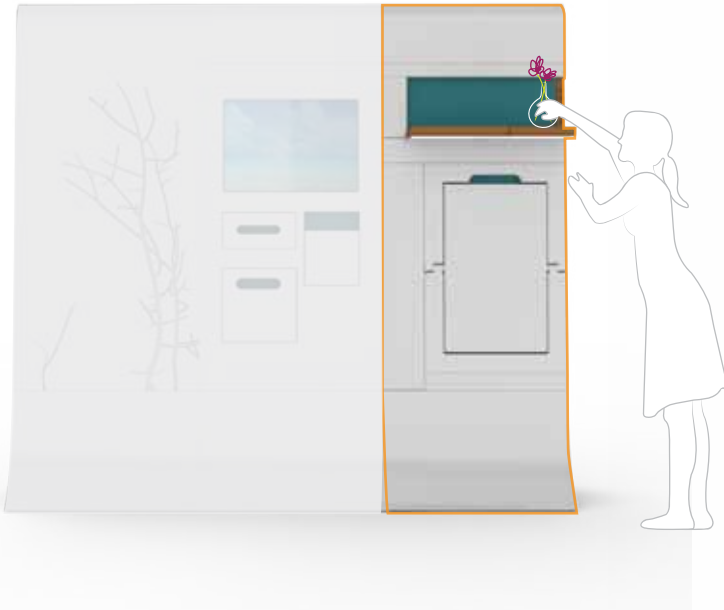


## User Experience/ Human Interaction

### Visitor partition

This Partition is meant to comfort the guest as well as the patient. With the guest more happy the patient wont stress as much. This will help with the patient room being more comfortable, as well as productive.

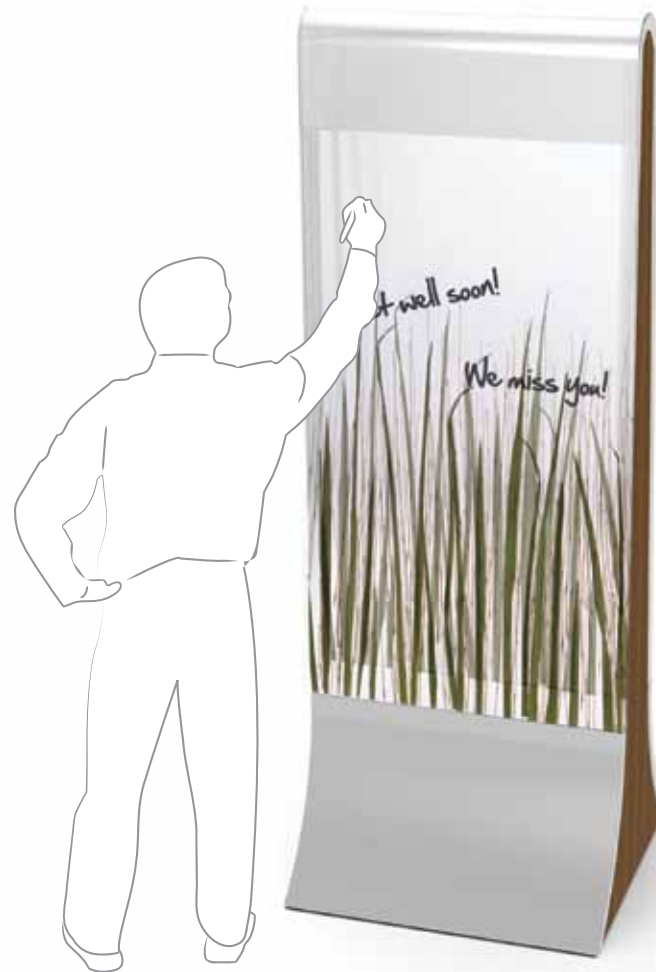
- Shelf for user items
- Detachable chair for guest use
- Provides more room for guest/  
nurse movability.



## Nature Partition

This partition is used to give the patient a soothing feel. This partition can also be used for patient guest' to write on it for the patient. Giving the user complete control.

- Nature scene
- Wall that can be written on
- Creative form for patient healing process
- Nature scene can also be different for different users.

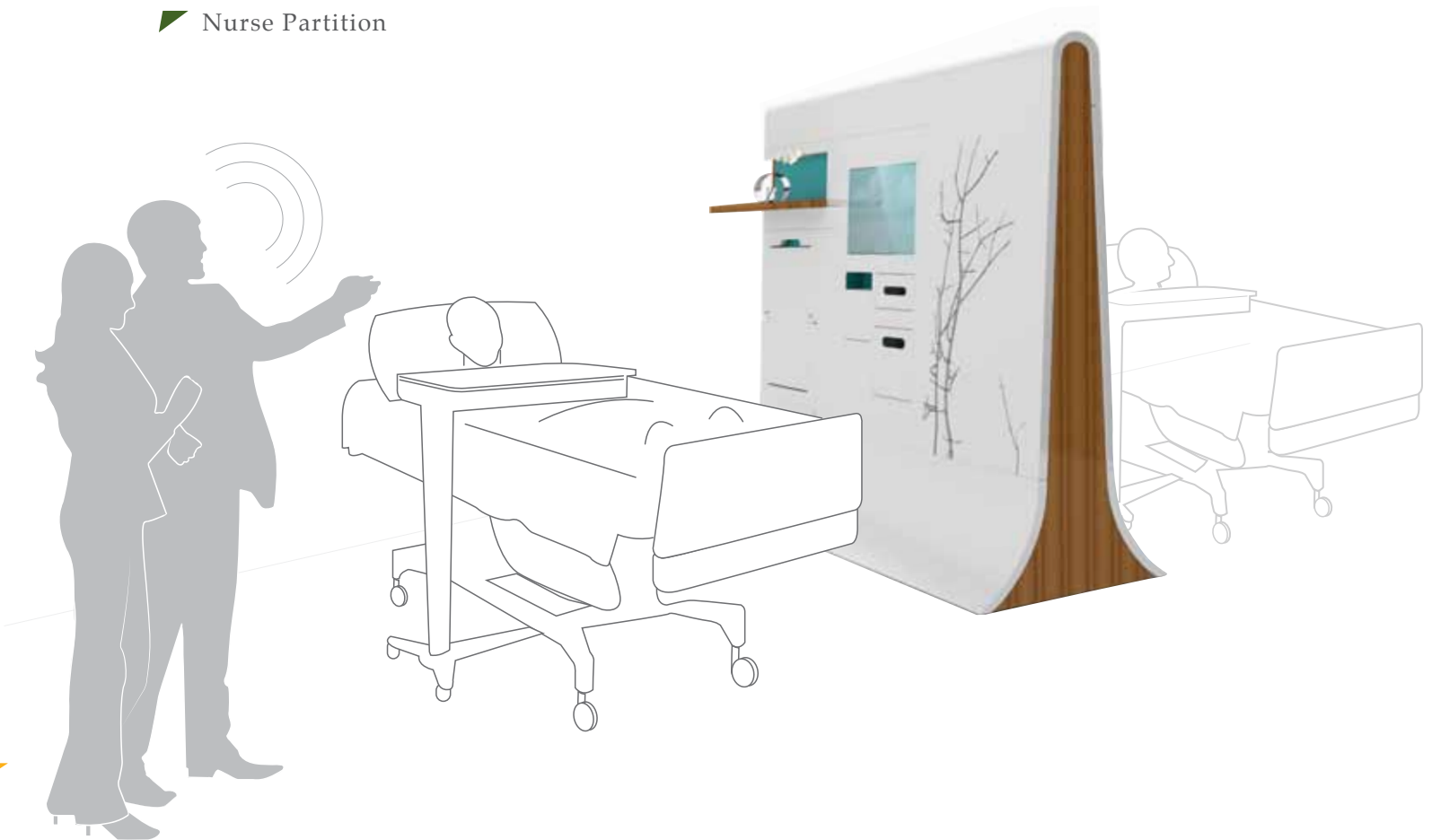




## Partition Capabilities

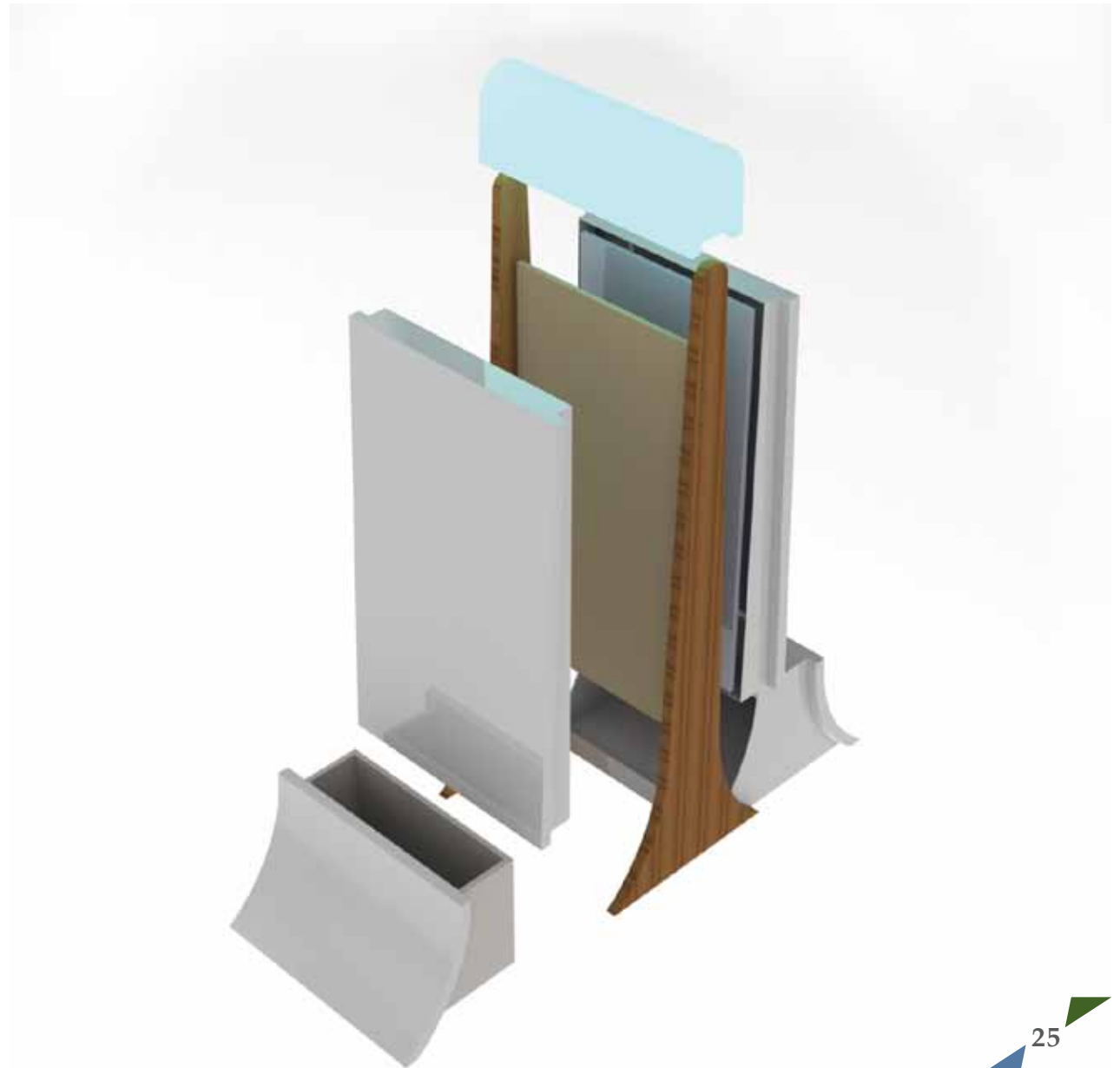
The partition can be ordered in five different categories.

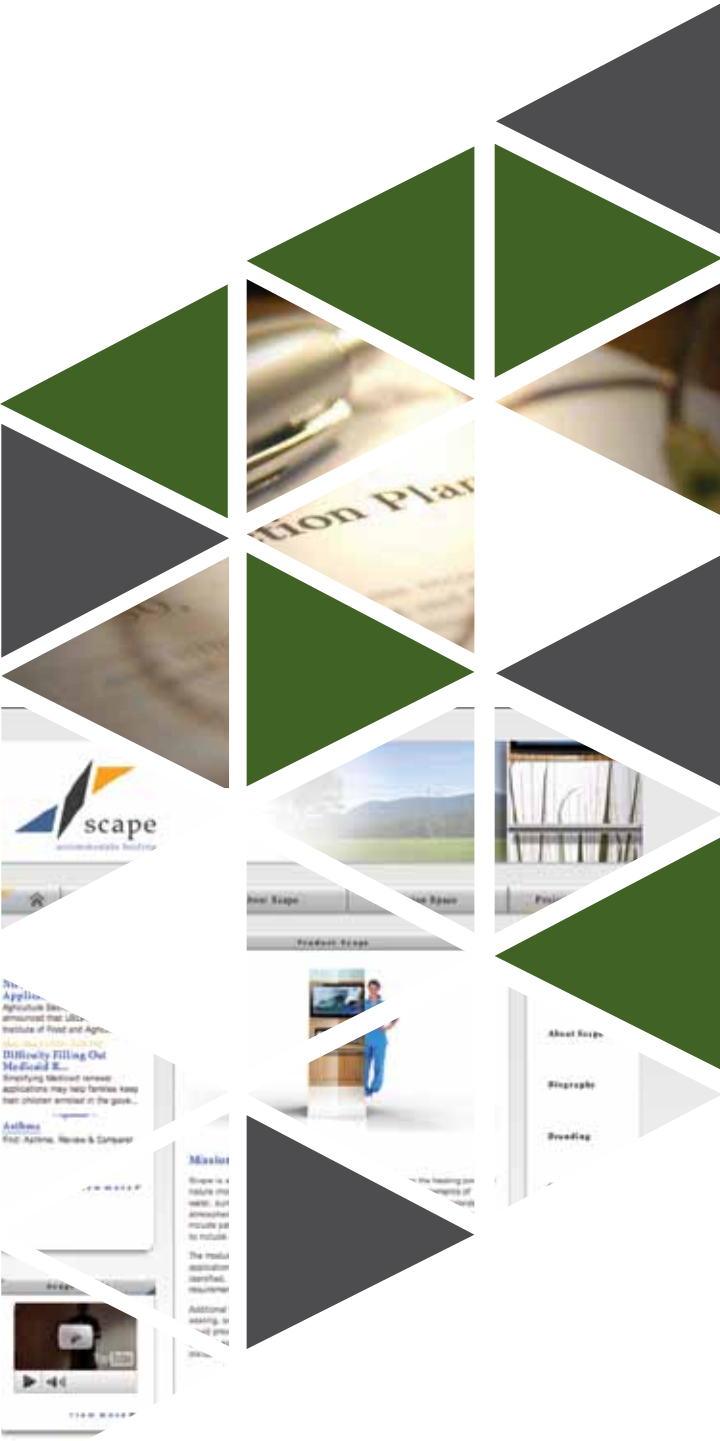
- Visitor Partition
- Guest Partition
- Interactive Partition
- Nature Partiton
- Nurse Partition
- Sound damper
- Be Collection capability
- Children interactivity
- Interactive nurse board



## Exploded View

- ▶ Sound Damper
- ▶ LED lighting
- ▶ Storage Drawer/unit
- ▶ Shell-Polyethelene
- ▶ Wood side Panels
- ▶ Multi panel designs
- ▶ Chair
- ▶ Plug function





## Business and Branding Plan

## Market Opportunity

### Potential Customers

- What industries might offer opportunities?

The health care industry would be the prime target for our product concept. However, there are alternative markets for Scape. Scape can be utilized in commercial and residential décor and architecture. It can be marketed for private in home use.

- Who are some of the key players (potential accounts) in these markets?

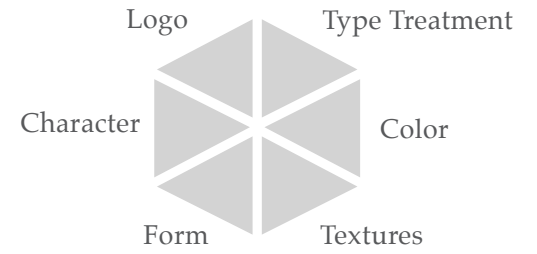
Hospitals and Health care Networks, mobility specialty stores, high-end furniture stores, direct marketing.



## Brand Benchmarking

To develop Scape and its branding, we have to study other companies. By studying these brands and how they developed their product, helped us try and make our brand that much better.





## External Environment

### Political/Legal

#### What is happening?

Most relevant factors subject to the new health care reform policies proposed by President Obama and the Democratic Party. If enacted these policies would require all citizens to carry some form of health insurance and insurance companies would be forbidden from denying coverage for preexisting conditions. Citizens currently receiving their insurance coverage through their employers would continue. The government would create a public option for those seeking coverage. If single payer plan adopted, focus will shift to higher cost/benefit measures. Medicare and Medicaid will not cover costs associated with hospital acquired diseases or afflictions, this includes but is not limited to falls, infections, bed sores, pneumonia, ect.

#### What does it mean for this product design concept?

Government pressure could pressure hospitals to reverse the current trend towards single patient rooms. This would shift the market from a dwindling number of legacy multi-patient room hospitals to newer hospitals trying to create multi-patient rooms while maintaining as many of the benefits single-patient rooms provide. Marketing should research these opportunities and be ready to capitalize on them should they arise.



## Economic

### What is happening?

The current health care system is standing at a fork in the road. On one path is the current trend towards lower provider/patient ratios, single patient rooms, and boutique style hospitals aimed at maximizing patient care. On the other path lies a system designed to maximize benefit to cost ratios. This trend is illustrated in countries utilizing a socialized medicine system in which costs are managed by pursuing treatments and spending which aims to get the most “bang for the buck”. Both paths are entailing a trend to reduce inpatient treatments in favor of outpatient treatments.

### What does it mean for this product design concept?

Health care systems aiming for the most “bang for the buck” could have a hard time seeing a favorable cost to benefit ratio in the Scape. It will be necessary to highlight that the Scape’s intention is provide an additional passive healing element with a single depreciable spend and little to no maintenance costs.





## Sociocultural

### What is happening?

- Longer life expectancies creates new medical problems
- Medical bills are leading cause of bankruptcy
- Consumer demand for better health care
- Health insurance systems encourage medical advances
- Direct providers want to offer the "latest and the best"
- Life expectancy increased 7 years from 1960-2000, 3.5 years attributed to advancements in health care
- 60 million Americans are obese, obese pay 42% more on health care

### What does it mean for this product design concept?

As the baby boomer population moves into maturity the health care system will face greater pressures to reduce costs and provide better treatments. At some point there will be pressure to shift spending from the highest cost treatments. This will result in these patients not getting treatments or not getting the most effective treatments due to their cost. Our product holds a common theme of reducing total costs.

**Baby Boom Generation is a term that portrays the cohorts born during the middle part of the 20th Century.**

## Industry / Competitive

### What is happening in all relevant industries?

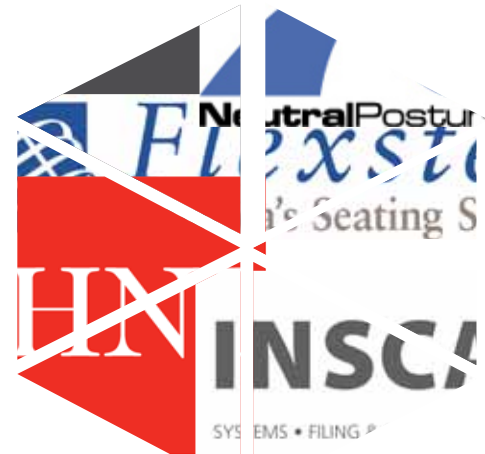
- Many nurses and physicians are among the baby boomers who will start to retire in the next three to five years.
- The federal government is predicting that by 2020, nurse and physician retirements will contribute to a shortage of approximately 24,000 doctors and nearly 1 million nurses.
- While hospital leaders voice much of the concern over possible shortages, the implications extend throughout the labor-intensive, trillion-dollar United States health system.
- It's expensive to educate new nurses and doctors.
- Taxpayer-funded Medicare spends \$8 billion a year for residence training of physicians alone.
- US Hospitals are moving towards single patient rooms as the benefits are becoming more apparent. Strong push to convert or overhaul multi-patient rooms. However, movements towards socialized medicine and the drive to lower costs could swing this the other way.

### What does it mean for this product design concept?

Scape could be a pivotal element in overhauling multi-patient rooms.

### Who are the key competitors already in the market?

CFGGroup  
FlexSteel  
Global Furniture  
Haworth, Inc.  
HighPoint Furniture  
HMU, LLC  
HNI  
Inscape corp  
Kewaunee Scientific  
KI  
Kimball International  
Knoll, Inc.  
MITY  
Neutral Posture  
Reconditioned Systems  
Shelby Williams  
Steelcase  
TAB Products



➤ What are the barriers to entry for other potential competitors?

- Establishing distribution channels
- Developing economies of scale
- Developing appealing designs
- Patent protection

➤ What does it mean for these product design concepts?

Concepts need to have very pervasive market share early on. Scape's design concepts are hard to protect under intellectual property laws so they need to be protected by developing hard to emulate manufacturing techniques and a solid brand. They need to become the standard for their purpose.



## Suppliers

### Identify all potential suppliers upstream

Herman-Miller has approximately 280 suppliers, all of which must give full vertical visibility of processes, operations and financial. This can be as specific as the chemical composition of the plastics used. Potential suppliers are limitless, from injection mold facilities to fabric manufacturers, machine shops,

### What does it mean for this product design concept?

Design must aim to utilize the maximum number of recyclable or biodegradable materials. For example, the Mirra chair is composed of 96% recyclable materials. These products must be “designed for disassembly” to ease the journey from the cradle to the cradle.

### Identify all potential distributors and retailers downstream

Distribution will be through Herman-Millers existing logistics channels.

### What is happening in their business?

Herman-Miller is working on "greening up" its entire supply chain, challenging suppliers to find solutions to recycling and sustainability issues. Herman-Miller is also trying to reduce the amount of formaldehyde used in wood based products

### What is happening in their business?

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➤ GPO's dominate hospital spending.

➤ Shift in decision making power shifting from GPO's to manufacturers as vendor fees begin to account for more of GPO's revenues.

➤ GPO's try to balance best product with best price.

➤ Largest factor on hospital spending is government pressure to lower costs.

➤ Government is single largest payer through Medicare and Medicaid

## Internal Environment

### Mission

Lift designs solutions to organizational and furnishing issues in health care, commercial, and industrial industries. Scape is Lift's newest design for the health care industry.

Scape provides a solution for the problem of providing the benefits of single patient rooms to multi patient rooms. The current practice of using curtains and panels to create privacy in multi patient rooms does not address some of the fundamental needs of the patients and their guests. These needs include communication, comfort, entertainment, and privacy. By utilizing a strategy of purpose built design, Scape addresses each of these needs.



## Financial condition

Lift Design consists of all college students who are financial supported by various means.

Setting up compensation model for Lift to disperse profits from design royalties based on income for the company. Base salaries are kept to minimal amount needed to support basic requirements of the team. All additional compensation will be in the form of dividends paid from profits. Preliminary pro forma financial indicate that with the single source of revenue break even could be achieved sometime in the 14th fiscal quarter.



## Scape Finance Plan

### Months 2010

|                                 | 1     | 2     | 3     | 4     | 5     | 6     | 7      |
|---------------------------------|-------|-------|-------|-------|-------|-------|--------|
| Royalty Advances                | 98900 |       |       |       |       |       |        |
| Sales (Royalty Payment)         | 0     | 0     | 0     | 0     | 0     | 0     | 0      |
| <b>Total Income</b>             | 98900 | 0     | 0     | 0     | 0     | 0     | 0      |
| <b>Cost of Sales</b>            |       |       |       |       |       |       |        |
| Direct Labor                    | 0     | 0     | 0     | 0     | 0     | 0     | 0      |
| Marketing                       | 0     | 0     | 0     | 0     | 0     | 0     | 5000   |
| Royalty Repayment               | 0     | 0     | 0     | 0     | 0     | 0     | 0      |
| <b>Direct Variable Expenses</b> | 0     | 0     | 0     | 0     | 0     | 0     | 5000   |
| <b>Gross Profit</b>             | 98900 | 0     | 0     | 0     | 0     | 0     | -5000  |
| <b>Operating Expenses</b>       |       |       |       |       |       |       |        |
| Team Salaries                   | 8000  | 8000  | 8000  | 8000  | 8000  | 8000  | 8000   |
| Rent and Utilities              | 1500  | 1500  | 1500  | 1500  | 1500  | 1500  | 1500   |
| <b>Total Operating Expenses</b> | 9500  | 9500  | 9500  | 9500  | 9500  | 9500  | 9500   |
| <b>Earnings from Operations</b> | 89400 | -9500 | -9500 | -9500 | -9500 | -9500 | -14500 |
| <b>Net Income</b>               | 89400 | -9500 | -9500 | -9500 | -9500 | -9500 | -14500 |
| <br>                            |       |       |       |       |       |       |        |
| <b>Cash Position (Start)</b>    |       | 89400 | 79900 | 70400 | 60900 | 51400 | 41900  |
| <b>Cash Position (End)</b>      | 89400 | 79900 | 70400 | 60900 | 51400 | 41900 | 27400  |
| <br>                            |       |       |       |       |       |       |        |
| Sales Forecast(units)           | 0     | 0     | 0     | 0     | 0     | 0     | 0      |
| Price per unit                  | 5500  | 5500  | 5500  | 5500  | 5500  | 5500  | 5500   |
| Total Sales                     | 0     | 0     | 0     | 0     | 0     | 0     | 0      |

| 8      | 9      | 10     | 11     | 12     | Total Year               |
|--------|--------|--------|--------|--------|--------------------------|
|        |        |        |        |        | 98900                    |
| 0      | 4400   | 4400   | 4400   | 11000  | 24200                    |
| 0      | 4400   | 4400   | 4400   | 11000  | 123100                   |
|        |        |        |        |        | 0                        |
| 0      | 0      | 0      | 0      | 0      | 0                        |
| 5000   | 5000   | 5000   | 5000   | 5000   | 123100                   |
| 0      | 0      | 4400   | 4400   | 4400   | 24200                    |
| 5000   | 5000   | 9400   | 9400   | 16000  | 54200                    |
| -5000  | -5000  | -5000  | -5000  | -5000  | 68900                    |
|        |        |        |        |        | 0                        |
| 8000   | 8000   | 8000   | 8000   | 8000   | 96000                    |
| 1500   | 1500   | 1500   | 1500   | 1500   | 18000                    |
| 9500   | 9500   | 9500   | 9500   | 9500   | 114000                   |
| -14500 | -14500 | -14500 | -14500 | -14500 | -45100                   |
| -14500 | -14500 | -14500 | -14500 | -14500 | -45100                   |
| 27400  | 12900  | -1600  | 16100  | -30600 | Artificial Cash Position |
| 12900  | -1600  | 16100  | -30600 | -45100 |                          |
| 0      | 20     | 20     | 20     | 50     | 110                      |
| 5500   | 5500   | 5500   | 5500   | 5500   | 66000                    |
| 0      | 110000 | 110000 | 110000 | 110000 | 605000                   |



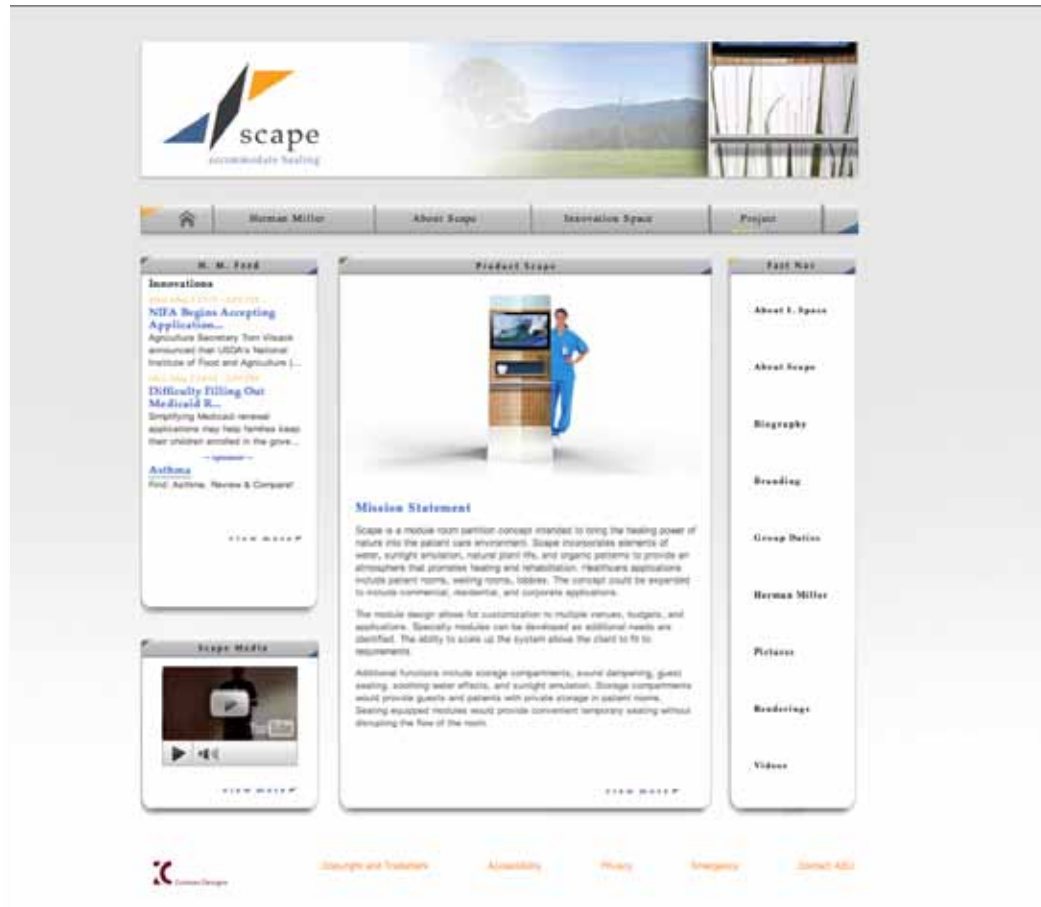
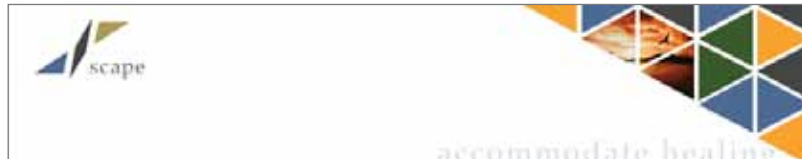


## Media Options

These media options are meant to spread the word of Scape. Doing so by print material, but also Interactive material as well.



- Print
- Posters
- Brochures
- Magazine advertisement
- Interactive
- Web Banner
- Iphone App
- Web site
- Interactive Kiosk



**Brand Timeline**

Through the time process of developing Scape. I will be setting a plan on the campaign. This timeline will help Herman Miller as well as our group have a good idea of how the product will be placed in the market.

Establish tradeshow advertising



1 week

Trade Journals



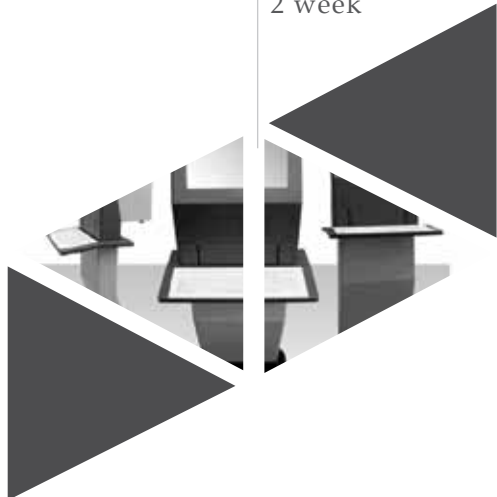
3 week

Website development



2 week

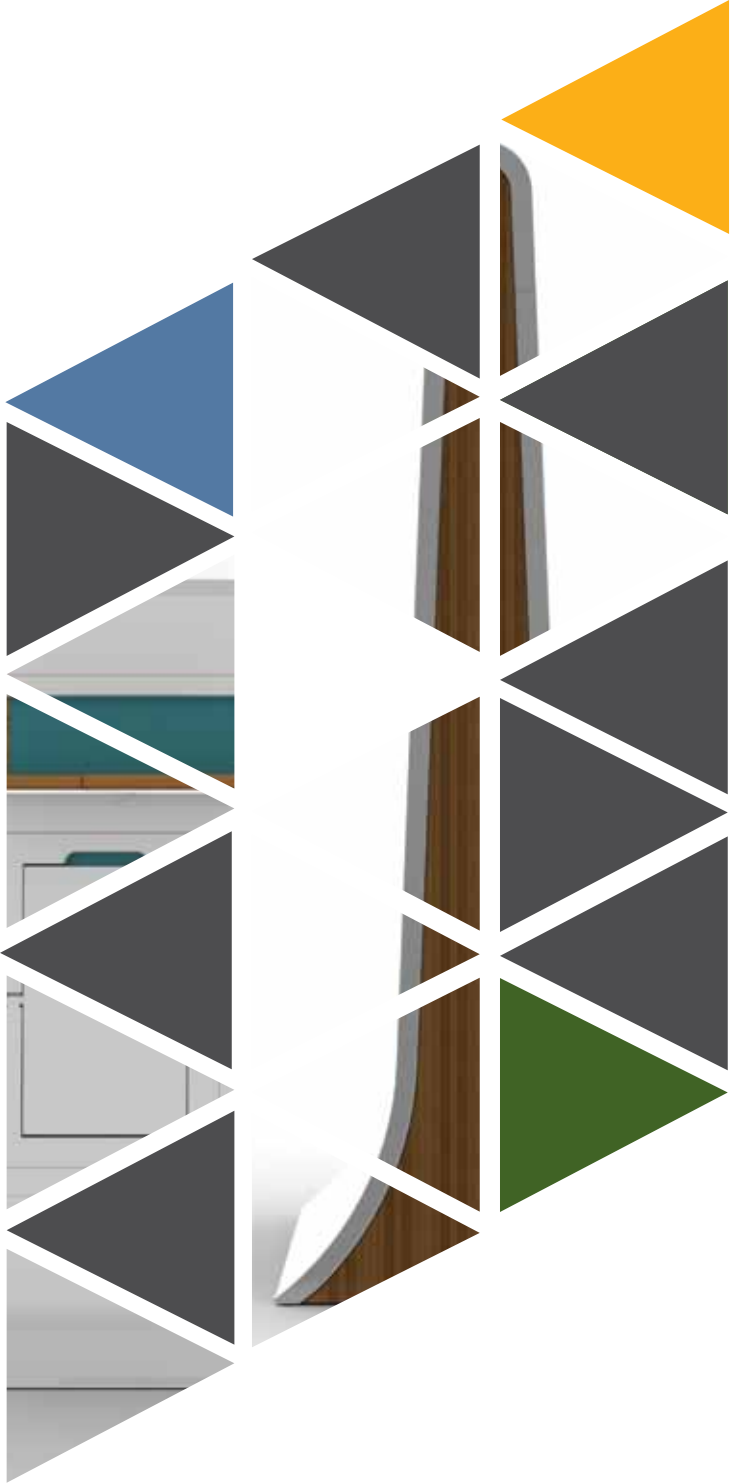
Produce a Kiosk for product



2 week

Beginning of Production





## Final Product Plans

# Final Product Architecture

Enclosed Scape



Provides Structural support

Allow Movement



Panel Base



Store Light Source

Nature Element

Store Electric Cords

Sound Damper

Inner Panel

Interactive System  
Light Source



User Interactive Mechanisms



Switch Board



Power Supply



User Settings

- Shelving
- Seating
- Nurse Board
- Small and Large Storage
- Herman Miller Be Collection
- Nature Wall Elements
- Interactive Unit

## Bill of Materials

### Category ▼

Ace Hardware

| Quantity      | Part Number | Description                        | Est \$/Part | Comments                                |
|---------------|-------------|------------------------------------|-------------|---|
| 1             | 51321       | clear, 4" x 100'                   | \$21.99     | film-gard<br>polyethylene sheeting      |
| Home Depot    |             |                                    |             |   |
| 10            | 848856      | 3/4' t x 15-3/4"<br>W x 96"L       | \$11.41     | weather shield<br>particle board        |
| 4             | 164704      | 1" t x 3" W x 10' L                | \$1.58      | furring strip                           |
| 2             | 805130      | 3/4 t x 11-1/4" W<br>x 97" L       | \$13.64     | weather shield white<br>redi-shelf      |
| 1             | 107209      | 16oz                               | \$4.98      | wood glue                               |
| 1             | 437318      | variety of sizes                   | \$6.24      | crown bolt wood<br>screw assortment kit |
| 2             | 693594      | 3/8"                               | \$2.79      | nickel self-closing<br>insert hinge     |
| 1             | 610949      | 1"                                 | \$5.48      | zinc plated corner<br>braces 20-pack    |
| McMaster-Carr |             |                                    |             |   |
| 1             | 6597k21     | 2.56 W x 0.39" H,<br>square insert | \$19.40     | square insert<br>opening                |
| 1             | 90075k213   | 7/8" D, 36" L,<br>60,000 psi       | \$13.64     | carbon steel rod                        |
| 12            | 78155T62    | 2" Dw, 3/4"<br>Ww, 2-9/16" Lp      | \$5.50      | steel frame plate                       |
| Southco       |             |                                    |             |   |
| 1             |             |                                    |             | seat locking<br>mechanism               |

## Technical Specifications

- interact w/ scape while in hospital
- feel at home / ease / peace
- use scape for personal small storage items
- feel as though scape is a comfort zone
- must be self-explanatory and easy to use
- must be easy to clean
- must be easy to move if necessary
- must provide a sound damper for privacy
- must provide shelving

## Scape Needs

General user needs throughout the products usage.

- must provide acoustic privacy
- must provide visual privacy
- use interactive touch screen for personal use and to track health progress
- must provide large storage
- must provide a lighting source
- must have nature elements involved
- must provide seating
- can be used in hospitals, homes, retirement communities, and rehabilitation centers
- must provide entertainment system for users for both education and pleasure





## Needs-Metric Matrix

| Needs                          | Metric                      | Values  |
|--------------------------------|-----------------------------|---|
| Should fit in the hospital     | size of wall                | 6' wide x 6' x 8" deep                        |
| Should move easily             | total weight                | between 50-70 pounds                          |
| easy to store                  | stack size                  | 2' wide x 6' tall x 2' deep                   |
| easy to clean                  | material                    | plastic composites / glass / wood / imitation |
| out-chair                      | size to fit panel           | 1'6" wide x 1'4" tall x 2" deep               |
| in-chair                       | size to fit panel           | 1'6" wide x 1'4" tall x 6.5" deep             |
| both in and out chair          | must support people         | 500 pounds                                    |
| Flextural strength of material |                             | 9,000 psi                                     |
| out-shelf                      | size to fit panel           | 1'8" wide x 9' tall x 1.5" deep               |
| in-shelf                       | size to fit panel           | 1'8" wide x 9' tall x 6.5" deep               |
| both in and out shelf          | must support personal items | between 25-35 pounds                          |
| Flextural strength of material |                             | 700 psi                                       |
| easy to fold up                | time to contact             | less then 20 seconds                          |
| storage                        | size to fit panel           | 1'8" wide X 2'6" tall x 6.5" deep             |
| light                          | low wattage                 | between 15-25 watts                           |
| pump                           | size pump to fit panel      | 1'6" wide x 1' tall x 5.5 " deep              |

## Competitive Benchmarking

- **Light source** – provides natural soothing light at night and in the room – sunlight emulator – solar panel – fade light – LED lights – light-emitting wallpaper – Adobe interactive billboard
- **Seating section** – provides comfortable seating for patient and guests – folds out of wall partition – reclines back into wall – egg shape for comfort – storage can be located under seat cushion – underside must be well supported in structural sense
- **Shelving section** – provides area for patients personal items or gifts for storage – shelves fold up and out of wall – provided inside wall partition (flush with outside)
- **Nature elements** – imitate bamboo – water setting – simulate water sounds – provides soothing sounds for patients to relax – water pump system – waterfall style wall

## Needs Based on Parts/Components

- **Sound damper** – provides patients with more privacy – Herman Miller sound boards – insulation material – sound glass – noise absorber – foam – board insulation
- **Nurse board** – provides nurse with writing area – located on side of partition – must extend outwards and turn in slanted position comfortable for writing
- **Storage section** – provides patient with space for personal item storage – can be located beneath inward chair design – can pop out of bottom of partition – shallow closet type design
- **Caster wheels at panel bases** – provides Scape easy movement in any direction – will be located at bottom of each panel – four wheels per panel – will be retractable so they can be hidden once wall is positioned and fully extended – wall could essentially cover them by being lowered to the floor – will also provide a better sound damper for noise from within and outside of room



## Reasonable Just Claims

### Social Equity

- Will this product enhance the health of not just individuals but families or communities?

Yes, Scape has the potential to enhance the health of any of its users. Though it was originally designed specifically for hospital intent, the ending result was a product far more multi-functional than originally intended. Due to the fact that Scape provides interactive features in a variety of panel options, it can be a helpful tool for lots of places including retirement communities, waiting rooms, offices, rehabilitation centers, and of course hospital rooms.

- Will this product aid in better communication between family or community members?

Yes, we believe scape is capable of aiding in the communication process between family both literally and figuratively. In the literal sense, Scape is a 7' wall designed to make a double patient room feel like one. In addition, there are also built-in sound dampers within the wall panels that evoke a strong feeling of privacy for its users. Scape betters communication is a figurative sense, in that it was designed for making hospital patients feel more at home and safe, and in turn more at ease and comfortable within a hospital setting.

- Are the benefits of this product available not only to the affluent but to lower income groups as well?

Yes, Scape is designed to be beneficial to anyone who is using it. In fact, the product opportunity gap it was designed to fill was to bring older hospitals that come with double patient rooms up to the standard of newly built hospitals, which are now single patient rooms. With this in mind, multiple panel options were created including one for children, adults, nurses, visitors, and many with nature design that incorporate natural elements within the wall itself. Scapes' design is intended to act as a personalized interactive healing tool for any user, regardless of income.

- Will the product be manufactured under fair labor practices thereby making sure that there is not exploitation of workers?

Yes, Scapes manufacturing will likely go directly through Herman Miller. However, Herman Miller actually does not manufacture their parts in house. Instead, they have vendor-developing programs, and dealers including business, healthcare, and U.S government.

## Design for Environment

### Will the product minimize waste?

Yes, Scape essentially produces no physical waste. It is comprised of almost all recyclable and reusable products. Herman Miller has a long-term commitment to make all of its products environmentally safe and essentially zero impact. This includes a list long term goals they would like to accomplish over the next ten years including zero landfill, zero hazardous waste generation, zero air emissions, and zero process water use. Lastly, Herman Miller employs multiple Environmental Low Impact Processing groups whose responsibility is to reduce overall impact of manufacturing waste in their designated area.

### Will this product be durable?

Yes, Scape is designed to be quite durable. In fact, multiple analyses has been performed to ensure Scape's internal stability as well as its external stability for when outside forces on acting on it. Additionally, all the components and functions that have been designed for Scape were tested to be sure there will be no outside damage will be the cause of a shorter life expectancy.

### Will this product assist in reducing carbon dioxide production (global warming)?

Yes, both Scape itself and its manufacturing are designed in order to produce no environmentally toxic waste. To ensure this Herman Millers' indoor Air Team monitors all off-gassing of their products, while the Energy Reduction Team continues to reduce the energy needed to manufacture products. Lastly, the Design for the Environment Team will be responsible for generating new environmentally sensitive design standards.

### If there is packaging involved, will it be reused or recycled?

Yes, this product will employ the use of biomimicry to ensure that packaging material is reduced to a minimum, reusable. In addition, there is a specific group that Herman Miller, the Packaging/Transportation Team, whose job is to find ways to reduce the amount of necessary packing for all incoming and outgoing products.





**Biomimicry**

## What is Biomimicry?

Biomimicry or biomimetics is the examination of nature, its models, systems, processes, and elements to emulate or take inspiration from in order to solve human problems. The term biomimicry and biomimetics come from the Greek words bios, meaning life, and mimesis, meaning to imitate. Other terms often used are bionics, bio-inspiration, and biognosis. With these four steps we will develop biomimicry into our product and its packaging.

### List of functions

By listing functions you are able to see which functions will work best with biomimicry and your product.

### Biologize the function by asking nature

Listing the function into a reasonable question will help you further your research on the biomimicry solution.

### Describe the method used then generate your nature-inspired solutions or life principles

Once we had our questions laid out on the table, we then asked nature or went into life principles to see what biomimicry could do with our questions. This helped us narrow down our functions to a few good ones that would work best with our product.

### Illustrate the solution Inspired by nature

After we came up with good biomimicry problems, we then came up with good solutions that would serve a purpose.

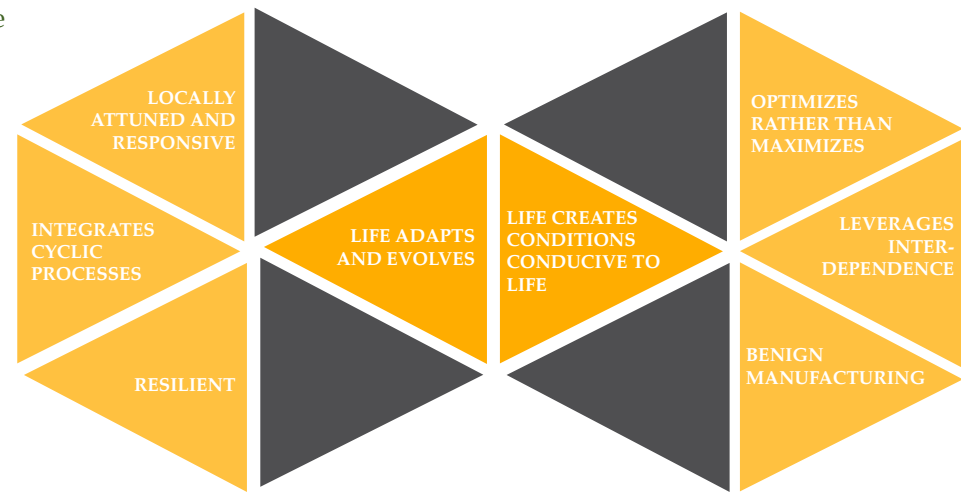
## LIFE'S PRINCIPLES

OPERATING CONDITIONS:

EARTH IS SUBJECT TO LIMITS AND BOUNDARIES

EARTH IS IN A STATE OF DYNAMIC NON-EQUILIBRIUM

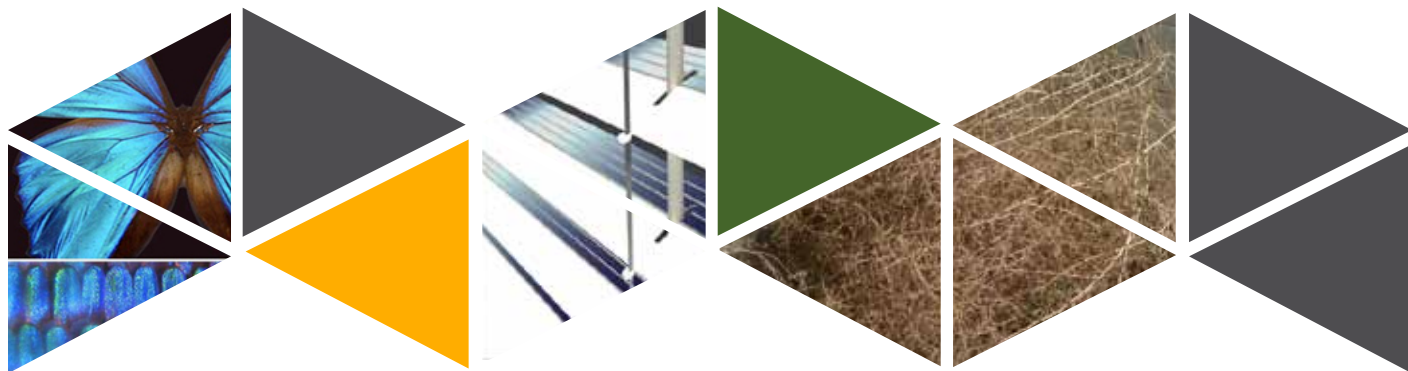
EARTH IS WATER-BASED



## Engineer Solutions

- Function  
Lighting
- Function as a question  
How does nature utilize natural light?
- Model Organism/Life Principle  
Wings of Morpho butterflies create color by diffracting and scattering light.
- Biomimicry answer  
I think it would be really fun and an interactive element to incorporate into our lighting design for Scape. My hope is that we can imitate what it looks like when light is streaming through stained glass. Though I see this as a bit of a challenge, it has the potential to be another aesthetically pleasing feature as well as a good way to incorporate more natural elements into our final design

- Function  
Structurally supportive and protected
- Function as a question  
How does nature provide natural structural support and protection for itself?
- Model Organism/Life Principle  
Intertwining and interconnected branches of Russian thistle tumbleweeds provide structural support through trussing.
- Biomimicry answer  
That they utilize shape over material choice. This can be seen in the interior and exterior bodies of these organisms as well. I would like to utilize this idea in our hospital room nature wall partition. Using these structural concepts I would like to build an imitation tree for the interior of Scape. It would be aesthetically pleasing, add to the wall as a support structure, and show users how nature its engineering.



## Business Solutions

- Function Packaging
- Function as a question  
How does nature reuse materials?
- Model Organism/Life Principle  
Recycled Materials
- Biomimicry answer  
Trees use their leaves to insulate the forest floor, preventing roots from freezing. Doing so by materials that can be re-used with the product insulation.

- Function Packaging
- Function as a question  
How does nature absorb sound?
- Model Organism/Life Principle  
Multi-function Design
- Biomimicry answer  
Sound cannot travel through a vacuum. If the packaging also has sound protection, this could help the packaging to be reused.

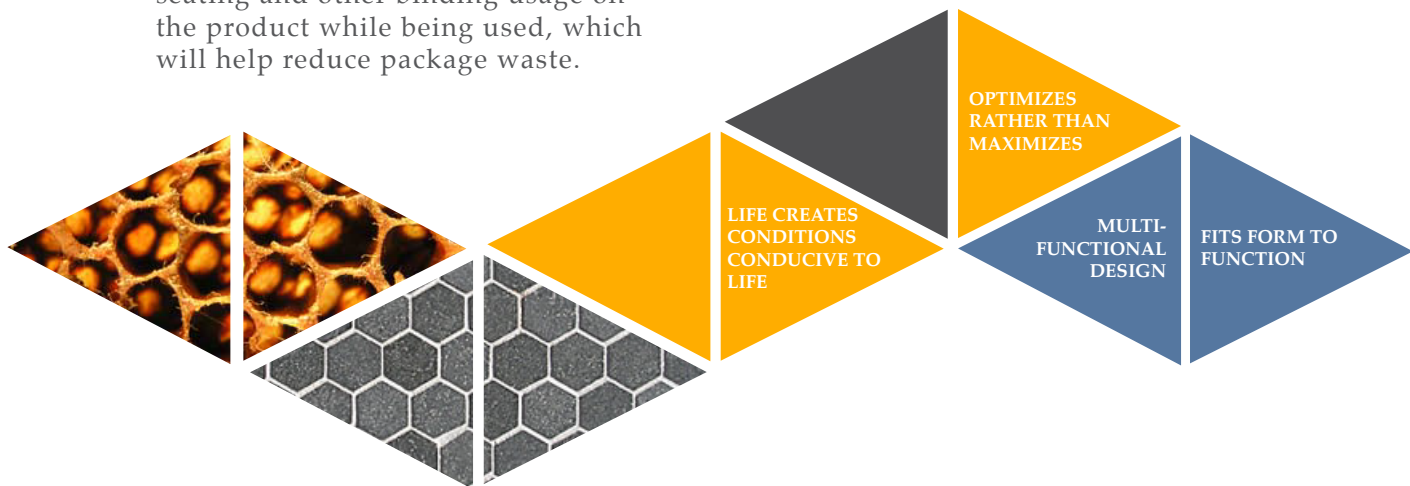




## Graphic Designer Solutions

- **Function**  
 Shape/size for easy shipping
- **Function as a question**  
 How does nature utilize shape for strength?
- **Model Organism/Life Principle**  
 Bees use hexagon shape to help strengthen and create structure in hive.
- **Biomimicry answer**  
 Through a hexagon shaped structure we will develop a packaging material that will hold the padding of the product. This will be done through a fabric that holds the padding in the delivery process. This hexagon shape will help reduce fabric usage and strengthen it. This fabric will then be used to hold the padding in place for seating and other binding usage on the product while being used, which will help reduce package waste.

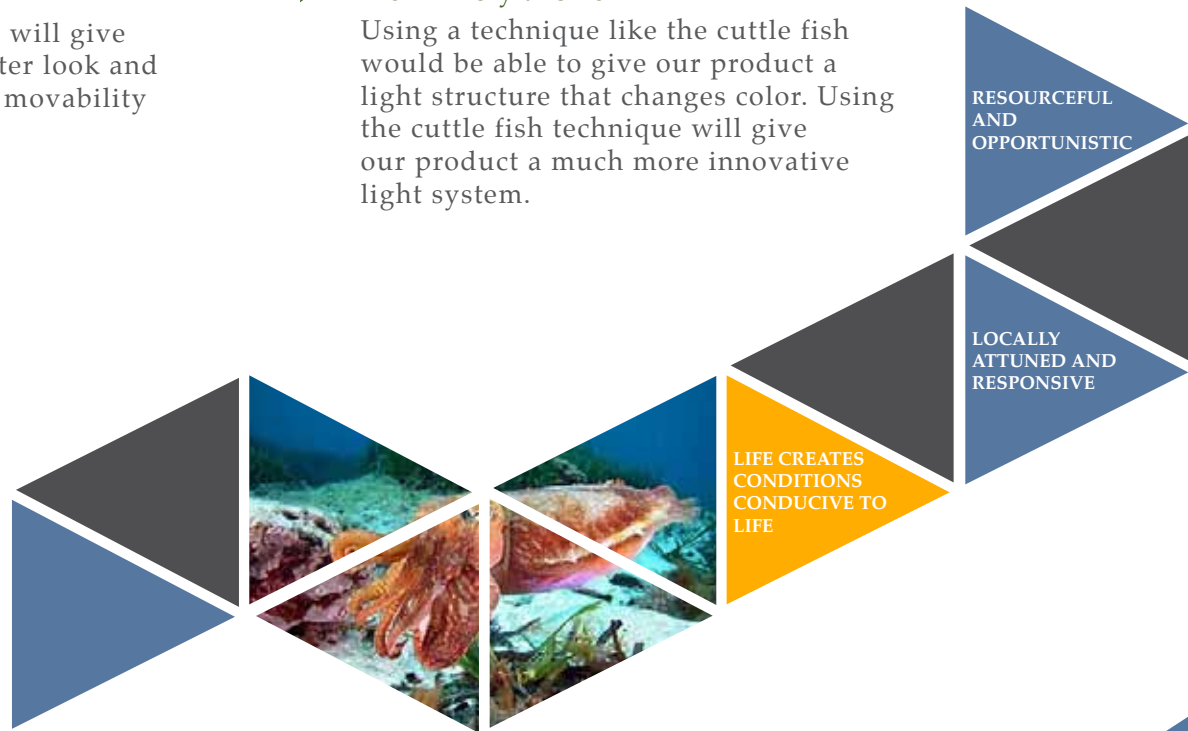
- **Function**  
 Stronger packaging
- **Function as a question**  
 How does nature use less materials for stronger structural support?
- **Model Organism/Life Principle**  
 Fits Form to Function/ Optimizing Rather than Maximizing
- **Biomimicry answer**  
 Our product has a wheel function built into the bottom of it. These wheels will be able to be hidden or shown as the user needs them. Our final packaging will optimize space through having the package connect to the bottom of the product. Using the wheels of the product for shipping as well as commercial usage.



## Industrial Designer Solutions

- Function  
Modify / transform to fit environment needs
- Function as a question  
How does nature modify itself to its environmental surroundings?
- Model Organism / Life Principle  
Life Adapts and Evolves – Locally attuned and responsive – Resourceful and opportunistic – Simple and Common building blocks
- Biomimicry answer  
Using this life principle will give our product a much better look and feel. This will also help movability and structure.

- Function  
Change from clear to opaque for privacy
- Function as a question  
How does nature use its surroundings to blend in?
- Model Organism / Life Principle  
The skin of cuttlefish changes color rapidly, in order to evade predators, using elastic pigment sacs called chromatophores.
- Biomimicry answer  
Using a technique like the cuttle fish would be able to give our product a light structure that changes color. Using the cuttle fish technique will give our product a much more innovative light system.



## Colophon

- Book Designed by  
Zachary Colman
- Paper Staples  
Double Sided Matte 61 lb
- Font
- Palatino 16pt Title  
Leading 14.4, Tracking 60
- 10pt paragraph  
Leading 12.3 Tracking 60

### Special Thanks to..

- Herman Miller
- Arizona State University
- Innovation Space
- Team Lift

