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COFFEE SHOP, ENVIRONMENTAL BEHAVIOR, AND DESIGN
HOW DOES SOCIAL BEHAVIOR AND INTERACTION INFLUENCE COFFEE SHOP DESIGN?

BY
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THESIS
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ABSTRACT

Re-thinking the concept of coffee shop as “a third place between home and work (Oldenburg, 1989)” and its conventional seating layout, this thesis studied characteristics that encourage social behaviors and the meaning of coffee shops in modern U.S. society. The study was qualitative that included literature reviews, research techniques of observation documentations, behavior mappings, behavior sketches and interviews. 9 coffee shops were observed and 469 café patrons were analyzed for data conduction, 15 interviews were collected to reveal patron attitudes toward physical and social perspectives of coffee shop.

The research findings showed various social behaviors besides conversation happened in coffee shops that affected to social climate. Mobile workers are becoming the predominating customers, which caused the third place concept in dispute. In response to paradigm shifts of environmental, social and technological culture of coffee shops, new needs merge for creating alternative seating solutions that emphasize flexibility and space versatility.

The design outcome, CaFLEX, is versatile furniture that combines a table, a chair and an outlet. With easy operating mechanism it can be moved or merged to adapt various seating configurations. Two cafés with suggested transformative seating layouts are also designed by utilizing the CaFLEX, which includes a small espresso bar in downtown Chicago, and another big coffee shop located at Urbana.
Dedicated to everyone who helped in this thesis development and to contribute to the role of design in society
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Chapter 1 – Coffee shop as third place

1.1 THE THIRD PLACE

“They are places where people gather primarily to enjoy each other’s company.”

– Ray Oldenburg, The Great Good Place, 1989

The third place (also known as third space) is a term used in the concept of community building to refer to social surroundings (Wikipedia). Oldenburg (1989) described the unique characteristics of third places in greater detail: Third places exist outside the home and beyond the “work lots” of modern economic production. Traditionally, third places such as pubs, cafes, coffee houses, barbershops and beauty salons have functioned as unique public spaces for social interaction. The third place provided a context for sociability, spontaneity, community building and emotional expressiveness. Further, third places serve as a means of “keeping in touch with reality” through intimate personal ties outside the home and workplace (Oldenburg, 280).

Oldenburg outlined some of the specific characteristics of third places:

• They are on neutral ground;
• They are a leveler;
• Conversation is the main activity;
• They are accessible;
• As a home away from home, they have ‘regulars’; and
• The mood is playful.
The Great Good Place, “the first and most important function of third places is that of uniting the neighborhood”. He is not using the term ‘neighborhood’ metaphorically or abstractly (e.g. a “virtual” or “wired” neighborhood) – he literally means the homes and businesses along intersecting city streets (Oldenburg).

As Doheny-Farina stated: A third place cannot exist separate from a locality because it exists only in comparison to its neighborhoods, to local work, play and family life, to the institutions and formal rituals that encompass daily life (Oldenburg, 72).

Oldenburg explained that most third places draw their identity from the beverages serving. Coffee houses have provided places for social intercourse and conversation historically. They also serve the inclusive place that has equality and pure sociability, where people could talk freely and joy. The temper of the coffee houses is upbeat, and cheerful. Oldenburg further discussed patrons’ behaviors vary as the influence of social learning and it is different from one society to the next. Yet there are definite patterns that cut across the world’s cultures. He gave examples by differentiating behaviors associated with caffeine beverages and alcoholic drinks. “Coffee spurs the intellect; alcohol the emotions and the soma. Those drinking coffee are content to listen contemplatively to music, while those drinking alcohol are inclined to make music of their own (Oldenburg, 184). “

In particular, three key characteristics differ dramatically between traditional third places and social interaction online:

- Third places emphasize localized community;
- Third places are social levelers; and
- Third places are accessible.
### 1.2 The Benefits of Third Places

*Between eight in the morning and two at night, the café sees quite a large portion of the life of Vienna. Hither come people in every humor, and for every reason, people in the best of spirits and people in the blues, those that want to kill time because they have cash to spend, and those that need to pass as much time as they possibly can on a minimum expenditure, those that are hungry and those that are more than satisfied. The Vienna coffeehouse is the place for them all, a meeting place for lovers, a club for people of common tasters or interests, an office for the occasional businessman, a resting place for the dreamer, and a home for many a lonely soul.*


The third places like coffee shops serve to expand possibilities by being open to all and not confined to status distinctions. “It is a fortunate aspect of the third place that its capacity to serve the human need for communion does not much depend upon the capacity of a nation to comprehend its virtues (Oldenburg, 11).” Some personal benefits that could be achieved in third places include:

- **Novelty/Stimulation** – patrons get involved in the place as participator rather than spectator; behaviors in a third place stimulate experience and develop the sense of the place that contains positively social bonds;
- **Perspective** – a third place is where people could gather and speak freely; in a coffee shop locals interact with fellow community members for healthy minds and associations;
• Spiritual tonic – as claimed, “where there is no talk, there is no life (Oldenburg, 192)”, a third place actives communication for emotion enhance and vivacity, it also relieves oneself from the mundane stress;
• Friends by the set – it is a place welcomes all for affiliation, it provides freedom to engage friends easily.

According to Christopher Alexander (1977), he revealed that people enjoy mixing in public, doing ritual things like reading newspaper, strolling, playing catch; and they feel safe to relax, nod at each other; he even illustrated a good street café meets these conditions, but has an addition to provide setting for people to sit in long time, being relax and very public (Alexander, 437). A street café is the social glue to help increasing the identity of a neighborhood. Therefore he encouraged local cafés to spring up in each neighborhood and make it open to a busy path, where people can sit with coffee and watch the world go by (Alexander, 439).

However, Oldenburg expressed concern that in the United States many traditional third places are disappearing or becoming distant. He raised the question of how this decrease in the availability of community gathering places impacts the lives of people. He indicated that American life-styles are plagued by boredom, loneliness, alienation, and high price tag (Oldenburg, 13). On the other hand, Americans have been overtaken by the car culture. There are a few stores at crossroads where one can buy groceries, have coffee or sandwich, use the restroom, or arrange to meet stranger to the area (Oldenburg, 155), on contrast to French cafes close to hand.

To sum, the existence of third place finds one’s daily life balance in three realms of experience. One is domestic, a second is productive, and the third is inclusively sociable, for individuals to gather happily beyond the other two realms.
1.3 THE STORY OF COFFEE AND THREE WAVES IN AMERICA

According to the story (International Coffee Organization), coffee trees originated in the Ethiopian province of Kaffa, which what coffee was originally called “Kaffa”. Coffee was being cultivated in Yemen by the 15th century but got restricted by Arabs till in 1616 the Dutch who brought live coffee plants back to the Netherlands to grow. The first coffeehouses opened in Mecca and quickly spread throughout the Arab world, functioning as places where chess was played, gossip was exchanged and singing, dancing to enjoy. Then the Arabian coffeehouse soon became a center of political activity. By the late 1600’s the Dutch were growing coffee in its colony India and later in Java (in what is now Indonesia). After several years the Dutch colonies have become the main suppliers of coffee to Europe. The first European coffeehouse opened in Venice in 1683. Then European coffee culture became established.

Coffee culture in North America dates from 1668. Both the New York Stock Exchange and the Bank of New York started in coffeehouses later on in what is today known as Wall Street. But it was the Dutch who brought the coffee plant to Central and South America, where it became the main coffee supplying lands such as Brazil and Colombia.

The 20th century saw an essentially continuous rise in demand for coffee. U.S. consumption kept growing and reaching a peak in 1946, when annual per capita consumption was 19.8 pounds, twice as in 1900. Seattle has become the localization of a new type of café cultural form where was born in the 1970s. Coffee is one of the most valuable primary products in world trade now, which is crucial to global economics and politics (see Figure 1.1).
In American coffee culture there are three main waves (Figure 1.2). The first wave was in the 19th century where Folgers was on every table, for the idea of “coffee to consume”, and the second was the proliferation, starting in the 1960s at Peet’s and Starbucks to promote the enjoyment of coffee drinking. We are now in the third wave with the idea “coffee to appreciate”, where beans are sourced from farms instead of countries, and the flavor is clean and pure (Wikipedia).
Chapter 2 – Toward new times: coffee shops in 21\textsuperscript{st} century

2.1 AMERICAN’S COFFEE LIFE

According to the National Coffee Association (2012), 40\% of 18 – 24 year olds are drinking coffee each day, which has risen from the 31\% of this age group in 2010. Among adults aging 25 – 39, 54\% of them reported drinking coffee daily in the same study. Accordingly over 75\% of U.S. adults drink coffee and 58\% of them drink coffee every day. It is also reported that 54\% said they began drinking coffee between 13 and 19. Another 22\% reported they started craving coffee in the age of 20 – 24, which means that 76\% of adult coffee drinkers began drinking coffee by the time they were 24. Furthermore, the National Coffee Drinking Study suggested consumers were set on drinking good coffee and visiting their local coffee shop even in the face of an uncertain economy.

Based on the U.S. Coffee Consumption Trends published in 2013 (Daily Coffee News), 63\% of American workers drink at least 2 cups of coffee on workdays, among which 43\% expose they cannot get as much work done without drinking coffee. Women (47\%) are slightly more caffeine needed than men (40\%) for productive work. And the majority of the coffee generation is in the age group between 18 and 34. The top 5 coffee drinking professions include food preparation/service workers, scientists, sales representatives, marketing PR professionals and Nurses. As the report also revealed, 64\% of Northeasterners drink at least one cup a day, following with 54\% of Southerners. Both Midwesterners and Westerners have 51\% of daily coffee drinker.
2.2 THE NEW COFFEE SHOPS

As the coffee consumption keeps growing, tremendous coffee shops have been starting business across the world. It is becoming a fashion in coffee business that to serves differently and being locally unique for consumer experience. In Amsterdam the recent-opened Starbucks specializes in “slow-brew” and brings fresh air to Dutch customers in terms of their future vision. The store is decorated with bicycle tires and original Delft tiles to reflect Dutch history (Figure 2.1).

![Figure 2.1: Starbucks in Amsterdam](http://blog.amsterdamcitytours.com/on-the-town/starbucks-experiment-launches-in-amsterdam)

Same done by Starbucks but this one is a drive-thru and walk-up experimental store (Figure 2.2) with no where to walk in at Colorado, U.S.. It reimagines the coffee shop as “modern modular” and the high-end façade is constructed out of local materials as a LEED-certification point.
In Tokyo, Japan, a new popular theme café - the Fab Café (Figure 2.3) serves coffee and laser-cut designs while customers wait.

Other cool multi-functional coffee shops (Figure 2.4) are Wash & Coffee in Munich, Germany, one could sip coffee when the laundry is on; whereas in South Korea they combine the idea of Spa and Coffee; in Japan there are coffee shops you can rent cats
to pet; and also bikers’ café pops in London where you can park your two-wheeler and take a coffee break.

![Figure 2.4: Fab Café](http://weburbanist.com/2011/02/07/fresh-blends-12-cool-multi-functional-coffee-shops/)

A coffee shop that is staffed by robots came out last year designed by Yves Behar as a new coffee consuming concept, for the use in public spaces like hospitals, universities (Figure 2.5). One can customize your own coffee via web, built-in touch screen, or smartphone app and pick it up at a certain time, which seems critical for to-go coffee experience.
On the other hand, a new strategy Starbucks applied in their recent opening U.S. retails is to “make it slightly uncomfortable (Walton)”. By removing comfortable chairs, putting high bench on which ones can’t sit for long, lighting is also changed to cold. It is clear that the message they want to deliver is it is no longer a comfortable place for long time sitting, in order to reduce the “foot traffic”. This method, however, towards opposite to the initial idea when Starbucks started their business in 1981 and defined their coffee shops as “a third place” (Starbucks).
2.3 THE CONNECTION BETWEEN COFFEE SHOPS AND CREATIVITY

To think about why Starbucks changed their retail design, one cause would be the phenomenon of people work in coffee shops for hours. How come? Most people get inspiration by coming across new people, passing conversations, sights, and sounds other than those they face/hear in their daily life. As Oldenburg described earlier, during its region, the coffeehouse was the center of business and cultural life as well as a political arena (Oldenburg, 189). Many of the nations’ largest trading companies were headquartered in the coffeehouses, and London’s stockbrokers operated within them for over a hundred years. At the coffeehouse, literary men found their inspiration, themes, and audiences. To continue, Steven Johnson, the author of Where Ideas Come From, observed meetings happened in coffeehouses in 17th-century England were crucial to the development and spread of the great intellectual flowering called the Enlightenment, switching from the alcohol drinking habit. He also pointed out that the architecture of the space makes coffeehouses important. It was a space where people would get together from different backgrounds, different fields of expertise, and share. That is where stimulates ideas (Johnson).

A research at University of Illinois found that the level of noise that matches a busy coffee shop - around 70 decibels - spurs more creative performance than the level of 50 decibels like home, library, or the distracting volume of 85 decibels (Baer) from blenders. As Times reported, a moderate, café-size amount of noise gives your thinking what’s called processing disfluency, which is a slight difficulty in your experience of processing information that will make you think on a more abstract level, unlike the fluent processing that they glide through your perception. Based on this finding, there is an app called “coffitivity” created simulating the vibe of a coffee shop, to help office workers being concentrate and creative.

However, a different theory study on Wi-Fi workers from MIT (Purdy) said:
...When we are alone in a public place, we have a fear of "having no purpose". If we are in a public place and it looks like that we have no business there, it may not seem socially appropriate. In coffee shops it is okay to be there to drink coffee but loitering is definitely not allowed by coffee-shop owners, so coffee-shops patrons deploy different methods to look "busy". Being disengaged is our big social fear, especially in public spaces, and people try to cover their "being there" with an acceptable visible activity.

According to this, one might rely upon the other coffee drinkers to keep on-task for a motivational boost. Perhaps this psychological subtlety helps explaining the out-of-house productivity.
Chapter 3 – Research and Process

From literature review, this thesis transited to the phase of first-hand research. The research aimed to analysis physical characteristics of place, to explore the social behaviors happening in coffee shops and generate behavior patterns for design opportunity. The researching guides were mainly advised from two books - *Inquiry by Design* (Zeisel), *Environmental Psychology for Design* (Kopec). Also some of the methodologies were inspired from the *IDEO 51 Design Methods.*

3.1 RESEARCH QUESTIONS AND METHODOLOGIES

Several supporting research questions were:

- Do coffee shops still succeed as a third place nowadays? Who are café patrons? What kind of social interactions happen in coffee shops?
- What characteristics and design features attract people and cause the feeling of attachment to space?
- How different the future coffee shops would be from the traditional ones?

Zeisel (2006) introduced tools and methods in details for design research such as observing physical traces, observing environmental behavior, focused interviews, questionnaires and more. Systematically he divided those methods into unobtrusive research and obtrusive research for getting valuable data and insights. He emphasized the importance of collecting elements in a cultural context that involves actors and the situations.

And as Kopec (2012) supposed, in the 1990s, third places were replaced with coffee shops for a sharing environment among men and women (Kopec, 311). The applicability of third place theory to the design of interior spaces is that they serve as gathering places, particularly when they include:
• Convenience
• Human scale
• Functional design to support human interaction
• A pleasing aesthetic design
• A way to communicate diversity and accessibility
• Internet accessibility

The IDEO design methods that were applied in this study were –
• **Learn**: flow analysis, activity analysis, character profiles,  
• **Look**: rapid ethnography, behavioral mapping  
• **Ask**: draw the experience, five whys?  
• **Try**: scenarios, paper prototyping, quick-and-dirty prototype

In the end, the study was implemented with unobtrusive methodologies include:  
• Observation chart of store analysis & visitors analysis; medium: paper  
• Behavior mapping; medium: I Pad  
• Functional areas diagrams; medium: I Pad  
• Behavior sequences maps; medium: I Pad  
• Photos; medium: I Phone 4  
• Furniture drawings and coffee shop scenes drawings; medium: I Pad  
• 3-minute general sound record of coffee shop; medium: I Phone 4

Interviews with café patrons were also conducted directly.
3.2 FIELD TRIP (ONSITE COFFEE SHOP OBSERVATIONS)

In March 2013 the researcher took a field trip to Seattle, to explore and observe the most representative coffee culture of America. She spent one week there, visited more than 10 coffee shops, and analyzed 6 of them in detail (Appendix). Besides, 3 more detailed observations in Champaign-Urbana, Illinois have also been done (Figure 3.1). Each coffee shop observation took about 2 to 3 hours.

Figure 3.1: Coffee Shop Observation List
Doodling diary of the research trip

The researcher sketched out the routine and plans daily to keep tracks of trip agenda (Figure 3.2).

Figure 3.2: Doodling Diary of Research Trip
Description of each coffee shop (in visiting time order)

3.2.1 Cafe 1 - Starbucks, 400 Pine St, Seattle, WA 98101

Open time: 5:00 am - 12:00 am
4.0/5 reviews
Date: 3/18/2013
Start time: 9:11 am
End time: 10:54 am
Weather: Cloudy
Internet: Yes

Figure 3.3: Google Map Pin
Figure 3.4: Snapshots of the Store

Figure 3.5: Rapid Sketch of store design and human behaviors
Initial Impression:
This Starbucks is so-called “No. 1 selling Starbucks” in Seattle. It is located at the intersection of two main busy streets in Central Business District. The entire store is almost transparent, framed with black steel structure, which brings adequate natural light inside in daytime. Its distinctive modern design makes it outstanding and eye-catching. There are many visitors sitting by the window and watching outside from observation. It also has take-out window on the north side of the store, which fewer customers purchase from during the period. The store in general is clean, smelling like bitter coffee bean and it plays country, jazz types of music. It is a full store with around 20 seating units. The servers are very enthusiastic and friendly, greeting and reacting in a good manner; whereas customers are pretty quiet or talking seriously by looking.

Additional notes:

• Visitors seat with distances purposely
• Staffs clean the shop frequently while not busy
• There are more single/individual visitors
• Pets-allowed
• Sausage sandwich breakfast is popular
• Busy coffee shop filled with diverse customers
• More To-Go orders than For-Here
• Only one customer works with laptop during observation

3.2.2 Cafe 2 - Espresso Vivace Roasteria, 523 Broadway E, Seattle, WA 98101

Open time: 7:00 am - 11:00 pm
4.7/5 reviews
Date: 3/19/2013
Start time: 10:26 am
End time: 12:50 pm
Weather: Cloudy
Internet: Yes
Figure 3.8: Rapid Sketch of store design and human behaviors

Initial Impression:
This Coffee Shop is a local community café holds its own “folk” style. It is a well-known coffee shop in Seattle, which always filled up with coffee enthusiasts. One most impressive point of the experience is the barista makes the latte pattern in front of customers to please them. Children’s tables are available here, with a few kids’ books lying on. The dominated interior color is buttercup, along with dark wooden as accent. Once enter, the good coffee smell catches the nose and the Latin-style folk music attracts the ears. The store can fit 40 – 50 people, with 80% of occupancy when in observation.

Additional notes:
- 4 teenagers sit outside and chat
- Has an independent conference room, needs reservation
- Awesome coffee
- Continuous business, more than 10 people waiting in line when busy
3.2.3 Cafe 3 - Bauhaus Book & Coffee, 301 E Pine, Seattle, WA 98122

Open time: 6:00 am - 1:00 am
4.0/5 reviews
Date: 3/19/2013
Start time: 1:43 pm
End time: 4:20 pm
Weather: Cloudy
Internet: Yes, with password "blueberry468"

Figure 3.9: Google Map Pin
Figure 3.10: Snapshots of the Store

Figure 3.11: Rapid Sketch of store design and human behaviors
Initial impression:
Bauhaus is a two story community-based coffee shop. The concept of this coffee shop is "book & coffee"; accordingly the store is decorated by huge wall-tall vintage bookshelf. However, none of visitors read the book from the shelf, which only stays as ornament. There is bread smell and the rock music is playing at the background. Around 3:20 pm the shop gets crowded, including two groups of moms with kids.

3.2.4 Cafe 4 - Top Pot Doughnuts, 2124 5th Ave, Seattle WA 98121

Open time: 6:00 am - 7:00 pm
4.3/5 reviews
Date: 3/20/2013
Start time: 10:35 am
End time: 12:24 pm
Weather: Sunny
Internet: Yes

Figure 3.12: Google Map Pin
Initial impression:
Top Pot is famous for doughnuts and coffee. It is a spacious two-story store, decorating with bright yellow wood shelves as the main color along with light sky blue as accent. Overall the shop is clean, the glass-material façade brings in sunlight, with delightful pop songs playing in the day. There are approximately 30 seating units, half of them are occupied. The servers are friendly and patient, customers look like in good mood.

Additional notes:
- (Looks like) a professor is discussing with a student
• Young girls’ hangout
• Senior customers come
• Several construction workers come
• No one is reading the book from the shelf, only one girl skims through the book wall

3.2.5 Cafe 5 - Street Bean Espresso, 2702 3rd Ave, Seattle WA 98121

Open time: 6:00 am - 6:00 pm
4.6/5 reviews
Date: 3/20/2013
Start time: 3:09 pm
End time: 4:28 pm
Weather: Sunny, windy
Internet: Yes, with password "streetbean000"

Figure 3.15: Google Map Pin
Figure 3.16: Snapshots of the Store

Figure 3.17: Rapid Sketch of store design and human behaviors
Initial impression:
Street Bean is a Non-profit coffee shop, the interior design looks clean with white as the main decorating color. There are mainly wood tables, aluminum chairs, but also a few cozy sofas appeal to people to relax on. The store plays classical pop songs like “Let it be”. It does not have many customers on the visiting duration. The baristas look punk and hippie.

Additional notes:
• Coffee shop encounter happens between two women friends
• People bring pets
• It has a simple-constructed conference room with sliding frames

### 3.2.6 Cafe 6 - Fonte Coffee Roaster and Wine Bar, 1321 1st Ave, Seattle, WA

Open time: 6:00 am - 9:00 pm
4.0/5 reviews
Date: 3/21/2013
Start time: 2:10 pm
End time: 3:34 pm
Weather: Windy, small rain
Internet: Yes
Figure 3.18: Google Map Pin

Figure 3.19: Snapshots of the Store
Initial impression:
Fonte is a fancy French-style coffee shop and wine bar, locating in downtown Seattle. It keeps French delicate design and well-dressed people come to visit most likely. The interior is planed with fancy furniture, including high leather chairs and fluffy sofas. The servers are all nice looking girls in unified uniforms.

Additional notes:
- One man orders wine and salad, sitting alone watching people
- Two ladies order pizza for sharing
- The corner seats are popular
- Visitors shift quickly, in comparison to community coffee shops

After observing coffee shops in Seattle, the researcher also visited three local cafes in Champaign-Urbana, in order to compare city coffee shops with those in a town.
Since Champaign-Urbana is a university town, predictably the majority of café patrons are college people and residents of the community.

3.2.7 Cafe 7 - Cafe Paradiso, 801 S Lincoln Ave, Urbana, IL 61801

Open time: 7:00 am - 11:00 pm
4.0/5 reviews
Date: 3/14/2013
Start time: 12:18 pm
End time: 2:35 pm
Weather: Sunny
Internet: Yes (with password “OrganicTea”)

Figure 3.21: Google Map Pin
Initial impression:
Paradiso is a big independent coffee shop in Urbana. It is located at the main avenue that functions as the boundary between the university district and the residential houses. Urbana residents and campus students are the main guests. The style of this café is neutral, casual, and feels hospitality – the wall is painted with sage and sky
blue colors, with rose accent. It serves Intelligentsia coffee (originally from Chicago), tea, sandwich meals and soups. The café servers bring orders to customers, which build good customer experience and establish the friendly atmosphere.

Additional notes:

- Individual visitors tend to sit at the corner, such as seats against the wall, or by the window.
- The intensity of the space is affected by the seating arrangement, not from customer numbers.

3.2.8 Cafe 8 - Cafe Kopi, 109 N Walnut St, Champaign, IL 61820

Open time: 7:00 am - 12:00 am
4.3/5 reviews
Date: 3/30/2013
Start time: 1:20 pm
End time: 3:20 pm
Weather: Sunny
Internet: Yes
Figure 3.24: Google Map Pin

Figure 3.25: Snapshots of the Store
Initial impression:
Kopi is a local coffee shop locating at downtown Champaign, which is popular in Champaign community. The dominated color of the store is grass green and light orange, with the accent of brown wood. It is very crowded with mobile workers in the weekend afternoon. The background music is 80’s/90’s pop songs.

Additional notes:

- There are paintings on wall for sale
- Customers can drop notes in their comment box
- The store decoration feels South American style
- Some people sit outside to enjoy the sun while chatting

3.2.9 Cafe 9 - Starbucks, 503 E Green St, Champaign, IL 61820

Open time: 6:30 am - 9:00 pm
3.6/5 reviews
Date: 4/1/2013
Start time: 10:52 am
End time: 12:03 pm
Weather: Sunny
Internet: Yes

Figure 3.27: Google Map Pin

Figure 3.28: Snapshots of the Store
Initial impression:
This is a typical small-scale Starbucks, locating on the business street in U of I campus with many restaurants and commercial departments. It is fast paced with quick shifting customers who like to get To-Go coffee. The seats are limited so the store feels congested. When in busy time, the waiting line extends till the entry door and causes circulation issues.
Chapter 4 – Data Analysis

In this chapter, the author will discuss data analyses from two sides – one is the analysis of each coffee shop based on chapter 3, including store analysis and visitor analysis; the other is the comparing result of 9 coffee shops. At the end the author will reveal conclusion of research findings and design guidelines.

4.1 ANALYSIS OF EACH OBSERVED COFFEE SHOP

4.1.1 Cafe 1 - Starbucks, 400 Pine St, Seattle, WA

Characteristics of the Coffee Shop

The design (Figure 4.1) of the coffee shop has been utilized well at this special intersection location. The glass wall and black steel frame construct up the entire building that creates openness of the store and strengthens modern feeling. The flooring is made from marble; the ceiling is black steel as to keep consistent from the wall frame. There are about 20 seats in the store, a line of black aluminum table attach to the glass wall that shows special customization, which serves 14 seats. There are also two units of tall round table with couple seats in the center and one standard round table by the end of the wall. It is a good place to sit in and view outdoor urban fabrics.
Characteristics of the Coffee Shop Visitors

As Behavior Mapping in figure 4.2 indicates, the coffee shop is pretty full during observation period. There are customers waiting in line to order and another line for pick-ups. The Functional Area Diagram shows half of the seated customers are individuals. Also the service flow and customer circulation seem fluent and well guided as shows at the Behavior Sequence Map. Visitor Data Chart (Figure 4.3) illustrates demographic characteristics of 63 café visitors observed. The majority of visitors (67%) are young adults; following with 22% of middle-aged people. There are almost equal numbers from both genders (51% women, 49% men), 48% of them order drinks to take out. Looking at those seated people, 56% are individuals with various behaviors such as enjoying a morning coffee by watching outside
world, reading newspapers, or working with laptop. Besides, there are 33% of visitors in groups (more than two people), including parents with children who come for breakfast. Since Seattle is a big city with complex residents, the pie chart of visitors’ ethnic origins shows its diversity, from which Caucasians count 40%, as the major group. In addition, the average seating time is less than one hour that reflects the coffee shop is relatively fast paced.

Figure 4.2

Behavior Mapping
Functional Area Diagram
Behavior Sequence Map

(1 Red Dot represents 1 person)

Figure 4.3: Visitor Data Chart
4.1.2 Cafe 2 - Espresso Vivace Roasteria, 523 Broadway E, Seattle, WA

Characteristics of the Coffee Shop

Vivace is a locally owned coffee shop located in capital hill district in Seattle and frequented by neighborhood residents who walk to the coffee shop, but also by many community members who drive to the coffee shop. The walls are color painted with buttercup dominated, floors are polished clay. Seating area and service counter are divided into two sides (Figure 4.4). There are also window seats near the front door and a separate conference room at the end of public seating area. The seats fit about 50 people in total, including groups of wooden tables, four long bar seats, one dark-red leather sofa, and one children’s table.

Figure 4.4: Floor Plan
Characteristics of the Coffee Shop Visitors

As Behavior Mapping (Figure 4.5) shows, 80% of the space is occupied with visitors; mainly individuals who work with laptops (Figure 4.5: Functional Area Diagram). The conference room seems popular among working people. Despite, when the store gets crowded with people it becomes chaotic and noisy because of the gathering seating arrangement. Visitor Data Chart (Figure 4.6) exposes the characteristics of the 50 coffee shop patrons in this observation. There are exact same numbers of female visitors and male visitors. 28% order To-Go drinks, 65% are young adults, and 67% are white people, following with Hispanics (18%) and Asians (13%). The majority 44% of customers are individual consumers with diverse in-store activities. But working with laptop is the most common behavior. The next 38% is group (more than 2) customers, with two typical behaviors – chatting or working together on laptops. Group visitors tend to seat longer (one and a half hour in average) than individuals or couple visitors.

Behavior Mapping

Functional Area Diagram

Behavior Sequence Map

Figure 4.5
4.1.3 Cafe 3 - Bauhaus Books & Coffee, 301 E Pine, Seattle, WA

Characteristics of the Coffee Shop

This is a two-story locally owned coffee shop near a high way, with the theme “book & coffee”. Flooring is polished clay; the walls are made from dark bricks. Inside the store a wall-tall wooden bookshelf catches eyes, it is filled up with uniform-covered books, which contribute to the characteristics of the space. The serving counter is located at the ground level, at its back there are two hidden square tables that seat two to four and a long window bar seats opposite to. There is a line of wooden chairs in front of the bookshelf on a raising wood floor, on purpose to provide seats
for readers. On the second floor there are 15 units of rectangular wood tables and they are joinable when needed.

![Figure 4.7: Floor Plan](image)

**Characteristics of the Coffee Shop Visitors**

In observation there are 42 visitors in total purchasing drinks at this coffee shop, with 19 females and 23 males respectively. 24% of them take drinks out. As showed in Behavior Mapping (Figure 4.8), the waiting line in front of the counter causes a cluttered situation when many people come for drinks. The maximum occupancy is 49 and all of the tables are taken on both floors, while 68% are individual visitors (Figure 4.8: Functional Area Diagram). For those customers, mainly they are working on laptops, or doing readings, there are also people checking their
smartphones, as showed in Figure 4.9. The amount of couple visitors and group ones are the same – 16% of each, including two pairs of moms with their kids, and co-workers come to work together. 90% of the total coffee shop patrons are young people, and 77% are Caucasians, followed by 20% of Asians. In this coffee shop people tend to sit along, the average seating time is above one hour.

Figure 4.8

Figure 4.9: Visitor Data Chart
4.1.4 Cafe 4 - Top Pot Doughnuts, 2124 5th Ave, Seattle WA

Characteristics of the Coffee Shop

This is another two-story coffee shop that observed. It is in downtown area of Seattle, famous for doughnuts and coffee. The style of this retail is modern, specifically the tall glass façade, wooden furniture, and the aluminum spiral stairs linking to the second floor. Natural light comes in via the glass façade and makes the space bright and warm in the sunny day. The serving counter is located at an obvious spot facing to the front gate, two huge bookshelves at sidewalls make people impressive, and the flooring is polished clay. There are about 30 units of seating; all the tables are the same type - square wooden table with two wooden chairs at sides.

Figure 4.10: Floor Plan
Characteristics of the Coffee Shop Visitors

Half of the store is dominated with seated visitors from observation (Figure 4.12: Visitor Data Chat). There are 43 people (17 female and 26 male) in total being observed, 26% order To-Go beverages. Young adults count 58% and another 31% of middle-aged people, 80% of them are Caucasians. For those seated people, they spread out through both floors (Figure 4.11: Behavior Mapping & Functional Area Diagram), with 50% of couple visitors and 38% of group visitors as majority. All of them order drinks and doughnuts, eating while chatting seems the main behavior. Among those there are a few pairs of moms and kids come for food. As for single customers, they are playing with smartphones while eating, working on laptops, or just purely enjoying the food. Customers in groups tend to sit shorter than individuals and couples.

Figure 4.11
4.1.5 Cafe 5 - Street Bean Espresso, 2702 3rd Ave, Seattle WA

Characteristics of the Coffee Shop

Street Bean Espresso is located on one of the main streets in downtown area of Seattle, with cozy interior design. Beyond the entrance there is a raised wooden floor on the right side with two dark brown leather sofas and three big yellow wooden tables that seat four to six (Figure 4.13). Across this area there is the serving counter, with its own style made from wood boards. On the opposite, a bar table with three seats located by the window, and a series of square wooden tables aligned against the wall, with one side booth seating against the wall and wooden chairs on the other side. Besides, there is a small conference room with a big table.
for 10 or 12, which could transform to an independent room by two sliding doors. At the west side of the conference room that is the social area with a big coffee table and two couches, also a unique lighting installation coming down from the ceiling.

![Figure 4.13: Floor Plan](image)

**Characteristics of the Coffee Shop Visitors**

In one and a half hour’s observation there are 14 female visitors and 11 males come to this Non-profit coffee shop, in which 60% are young adults and 36% are middle-aged, according to Figure 4.15, the Visitor Data Chart. The main origin of ethnicity is Caucasian, following with 24% of Hispanics. 76% of 25 visitors sit in the store, with 46% couple visitors either working on laptops or social interacting (Figure 4.14:
Functional Area Diagram). There are also 31% of single visitors, concentrating on their own, a few of them are having meals. To compare, couple visitors sit for the longest among three types of seated customers.

**Behavior Mapping**  
**Functional Area Diagram**  
**Behavior Sequence Map**

*Figure 4.14*

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*Figure 4.15: Visitor Data Chart*
4.1.6 Cafe 6 - Fonte Coffee Roaster and Wine Bar, 1321 1st Ave, Seattle, WA

Characteristics of the Coffee Shop

Fonte is located opposite to Seattle Art Museum in downtown Seattle. It puts efforts on façade design integrating French gardening style in. The entrance door is indented around 4 to 5 feet from the façade symmetrically. Inside, white is the dominated color of this cafe, the accent colors are dark brown wood and grey of the marble walls. The west-side wall is covered with wallpaper of an image of an African kid holding coffee beans. The flooring is polished clay in dark color. There are two main types of seating furniture – vanilla leather bar chairs and sofas. One big wooden table by one side near the window is arranged for 10 seats, and in the middle of the space there is a U-shape booth and two single leather sofas surrounding the rectangular table for six. Two lines of booth are customized to fit in the east sidewall, all the tables are in the same shape together with two chairs.

Figure 4.16: Floor Plan
Characteristics of the Coffee Shop Visitors

Visitor Data Chart (Figure 4.18) indicates the demographic features of the 27 coffee shop visitors observed in this study. There are 52% of female customers and 48% of males, 70% of young adults, and 68% of Caucasians, 15% of them come for To-Go drinks. Wall seats are popular for individual visitors (Figure 4.17: Behavior Mapping & Functional Area Diagram), one of three are drinking wine. The predominant visitor behaviors include chatting and dining at that time period.
4.1.7 Cafe 7 - Cafe Paradiso, 801 S Lincoln Ave, Urbana, IL

Characteristics of the Coffee Shop

Paradiso is a big local coffee shop at the intersection of two main streets in Urbana community. The style of the interior is neutral colored (sage, olive green) that contributes to the casual atmosphere with its free-formed seating arrangement of wooden furniture. There is also a photo wall next to the bar, which increases the characteristics of hospitality. Two entrances are available from both street sides, which helps traffic flow when congested. Walls are color paint concrete and flooring is made from marble and bricks as a combination. There are 30 seating units and a line of bar seats (Figure 4.19), they are mostly rectangular wooden tables but round conference ones are available as well. Besides wooden tables and chairs, sofas and babies’ high chairs are also provided.

Figure 4.19: Floor Plan
Characteristics of the Coffee Shop Visitors

Students and community residents like to visit this coffee shop. A big window on the west side facing Lincoln Avenue, it brings in natural light so that seats near by are popular (Figure 4.20: Behavior Mapping), in comparison to the central seats. A large amount of mobile workers are the regular guests of this coffee shop throughout the day (Figure 4.20: Functional Area Diagram). Based on Visitor Data Chart (Figure 4.21), there are 64 visitors observed in this study with even numbers from both genders. Among them 95% stay and 5% order To-Go drinks, 66% are young adults, Caucasians count 73%. The majority are single visitors (43%) who come to work or read, following with 41% of couple visitors either work with laptops together, or have social communications. There are also some people dining in the café.


4.1.8 Cafe 8 - Cafe Kopi, 109 N Walnut St, Champaign, IL

Characteristics of the Coffee Shop

This coffee shop has two parts with two separate doors based on the original building structure. One part is the serving area with some rectangular wooden tables for sitting and another side is the seating area arranged with different shapes of tables, including square, rhombus, round and ellipse. Each table fits 2 to 4 people. In total there are 35 tables at this coffee shop (Figure 4.22). The downtown location appeals to people living nearby and some university students drive here to work.
late as it opens till midnight in weekdays. Wood is the main material for furniture but a few steel tables exist as well. The seats are in clear orders, but many charging cords lie randomly on the ground due to the lack of outlets for working customers.

![Figure 4.22: Floor Plan](image_url)

**Characteristics of the Coffee Shop Visitors**

As Behavior Mapping (Figure 4.23) shows the store is 98% occupied with customers. Among them 32 tables are mobile workers facing computer screens whereas only two tables are chatting and one table of two is playing cards (Figure 4.23: Functional Area Diagram). The two doors are usually functioned as one entrance and another one for leaving among regular customers. It alleviates the traffic flow and keeps the store in a good condition (Figure 4.23: Behavior Sequence Map). By observation, there are 93 customers with 51 females and 42 males visiting (Figure 4.24). 95% of
them are young adults, Caucasians count 89%, 82% customers choose to stay. Among those seated visitors, half of them (52%) come in by two, for working or chatting, whereas single visitors and groups visitors count 24% of each with diverse behaviors such as working, reading, chatting via Skype, even napping. There are also families come for a brief rest. Comparatively single visitors stay the longest, with an average of one hour.

*Behavior Mapping*  
*Functional Area Diagram*  
*Behavior Sequence Map*  
*Figure 4.23*

![Visitor Data Chart](image)

*Figure 4.24: Visitor Data Chart*
4.1.9 Cafe 9 - Starbucks, 503 E Green St, Champaign, IL

Characteristics of the Coffee Shop

This Starbucks is a small café on the U of I campus. The ceiling is grey metal, flooring is marble in grey scheme and the wall is concrete with some parts of wood as a style. There are three bar tables by the window facing Green Street, which could fit 9 people. 5 square wooden tables are arranged throughout the space; by the wall 6 tables are in a row with one side of 6 corresponding chairs and a long booth on the other side. At the back a big table for 10 is shared by individuals, and there are three bar seats next to the counter (Figure 4.25).
Characteristics of the Coffee Shop Visitors

As the Behavior Mapping (Figure 4.26) shows, there is a big waiting line during the period, and the seats are almost all taken. Among seated visitors the majority is working people, with a few groups talking (Figure 4.26: Functional Area Diagram). In this store it is always congested as there is only one small door available, especially when lots of To-Go customers come in and out (Figure 4.26: Behavior Sequence Map). There are 62 visitors observed (Figure 4.27), with 68% of females and 32% of males. As expected, 88% are young adults (campus students) and 69% are Caucasians; up to 48% among those 62 order drinks to go. As the majority, 73% of seated customers are individuals who come to work, with the average time between 30 minutes and one hour. Single visitors like to sit by the wall side and work, sometimes they look up and watch others.
4.2 INTEGRATED ANALYSIS OF NINE COFFEE SHOPS

After viewing data of each coffee shop, we could see each coffee shop has its own store culture with diverse behaviors. Branded cafes seem to have more To-Go orders and visitors tend to sit for less time compared to community cafés. In order to generate more insights, the author compiled all the data of 9 cafes into analyses.

i. Color Study
In Figure 4.28, the big square box represents the dominant color of each coffee shop, while small ones mean accent colors used in the interior design. As it shows, neutral colors like green, white, grey, wooden yellow, coffee brown is prevalently applied in
coffee shop design, those colors are also common to see in nature, which for some extents explains the nature of coffee shop – neutral ground, accessible, and homely feel.

Further more, colors used in coffee shops in city (Seattle) are simpler than those used in town (Champaign-Urbana). Café Kopi in Champaign uses 2 complementary dominant colors with another 2 different accent colors, and café Paradiso from Urbana uses the most complex colors (7 in total). On the other hand, there is one exception that barely use any color in its café design –Starbucks in Seattle. The building is mainly built of glass, for the purpose of viewing outside due to the good location in a bustling downtown area. According to William Whyte (1980), in his book *The Social Life of Small Urban Space*, he explored and revealed the key elements that make successful urban spaces for socializing, which included sitting space, food, the street, indoor space and triangulation. These elements suit the nature of the coffee shop. Whyte concluded that people are more likely to congregate where there are places to sit and watch. And surprisingly, the freedom to choose where to sit in a space is more important to an individual than the comfort or aesthetics of a seat, which he called it “social comfort”. Apparently this Starbucks accomplished the value of a social space to sit and watch at a triangulation by its well-done design at this specific location.
ii. Material Study
Since coffee shop is usually part of a building or as an attachment, they keep the original materials based on the original construction. As a result concrete is most commonly used for walls, sometimes also combined with another ones like wood for store decoration. Brick is the second common wall material from observation as it also has been used in constructions widely. For the flooring, the cheap clay tile is a good option, you would also see marble been used in some coffee shops. Ceilings are usually simple. It is high in regular so one might purposely to keep the loft style by using paint metal tiles or keep the initial concrete. In café Fonte and Street Bean Espresso, wooden boards have been integrated coming down from the ceiling to change the visual perception (Figure 4.29).
iii. Visitor Gender Statistics
There are 469 visitors have been observed in total. Numbers of female visitors and male customers are even in general (Figure 4.30), which proves the indication from Kopec as mentioned earlier in this place - the third place has shifted to coffee shop as a shared environment for men and women. In Starbucks of Champaign the female numbers are two times more than male’s, whereas Top Pot has more male customers visiting in the time period. In one word there is no universal gender bias in coffee shop space.
iv. Customer Age Trends
Looking at Figure 4.31, it is obvious young adults are the main customers for coffee shops. Cafes like Kopi, Starbucks of Champaign and Bauhaus have almost 90% of young adult visitors. Middle-aged are the second majority customer group, in Top Pot, Fonte, Streetbean and Paradiso they are half the size of young adults’ group. Seniors rarely go to coffee shop but they sometimes come for social gathering. Children usually visit with parents/guardians for food and activities.
v. Origins of Ethnicity

Caucasian is the largest number among all of the coffee shop visitors, following with Asian and Hispanic (Figure 4.32). 8 out of 9 coffee shops have more than 68% of Caucasian customers during the time. It reflects the coffee drinking culture for white people and the likeness of them spending time there. But in Starbucks of Seattle, the races of customers vary. It is a mix of Caucasian, African American, Hispanic, Asian and people from other origins, which might reveal the fact that Seattle’s foreign-born population is increasing.
vi. To-Go

Figure 4.33 illustrates there are more customers (close to 50%) come for To-Go coffee in Starbucks than any other local cafes. As a big coffee chain, Starbucks definitely is well known and has pop-up stores crossing the country. Many reasons have been discussed why people like going to this brand for coffee take-away. Some like the customizing experience for their own flavors and they can get the drink quickly; enthusiasts enjoy holding Starbucks logo paper cups as a self-identity. On the other hand, when people travel around it is always safe to go for Starbucks coffee rather than taking the risk for unknown ones.
vii. Seating Configurations

Seating types in coffee shop are diverse but basically in three types: Single (individual), couple (two people sitting together) and group (more than two). Starbucks (both Champaign and Seattle), Bauhaus and Vivace has single visitors as the majority of customers; while Top Pot, Fonte, Street Bean and Kopi has couple visitors as the domination. In Paradiso, the number of single customers and couples are close (Figure 4.34). One would draw an insight that more single coffee shop patrons appear in city than in a town; from another aspect cafes serving meals attract more people in companion to visit.
viii. Behavior Types

As the pie chart indicates (Figure 4.35), chatting is the main activity among all behavior types, which keeps its initial idea as a third place – a place for conversations. However, the numbers of people working with laptop is appreciably increasing, including some whom come to coffee shop for business meetings, which runs counter to playful and happy business conversation as it was highly valued in third place concept. Reading and writing seems always a good activity in coffee shop, accompanied with caffeine. Different cafes offer different services, which affect people’s visits. For instance, some visitors come to Fonte espresso and wine bar for a cold drink. Café Vivace provides kids’ table as in consideration of families. There are two people observed were painting in two different coffee shops as they have big tables. If a coffee shop has window seats, it is very likely people will sit in, having a coffee break and watching outside. On the other hand, some come for free wi-fi or battery charging in emergency, simply by purchasing a cup of coffee as the means of access.
ix. Average Seating Time

In average, each unit of seated visitors sit more or less than one hour, in which group customers sit slightly longer than single ones (Figure 4.36). However, seating time fluctuates with individuals according to different activities. Those who come to work sit much longer than whom taking a short coffee break.
x. **Single Visitors’ Behavior Types**
Among single visitors, working with laptop, reading, watching while eating are the top three behaviors. It is common they work (with laptops) in coffee shops, especially in Starbucks of Champaign, Vivace, Bauhaus, and Paradiso, at where half of single customers are typing. Coincidently, those four coffee shops are all neighborhood cafes with easy accessibility. Besides, reading is also common with individuals, it is the NO. 1 activity at Starbucks of Seattle in the morning time (Figure 4.37).
xi. Couple Visitors’ Behavior Types
Chatting, working together (on laptops) and dining are the main behaviors for couple visitors. In Starbucks of Seattle and Café Vivace, all the couple visitors are having conversations, while in Bauhaus, Fonte, Streetbean and TopPot chatting groups are the majority, following with eating and working people. Comparatively, there are more couples working together in Kopi and Paradiso as they are in a university town (Figure 4.38).
xii. Coffee Shop in a Day

Combining all Coffee shop visits, in comparison early morning and lunch time period are the busiest time commonly (Figure 4.39). It is not hard to understand that on those times people are eager to take caffeine throughout the day.
4.3 INTERVIEWS

In the summer of 2013, the researcher conducted 15 qualitative interviews with café patrons. The goal was to discover the meaning of the space for the participants. The study took place in 5 different coffee shops, 1 workplace, and 2 restaurants, with an average time of 1.5 hour. The interview consists with what, why, where, how questions:

- What is your definition of a coffee shop?
- What time and where do you usually go? In average how long do you stay?
- What kind of activities do you do in a coffee shop?
- What is the role coffee shop plays in your daily life?
- Why do you like spending time in coffee shops? What are the attractions? What do you want the coffee shop to improve?
- What do you usually order? And where do you prefer to sit?
- Can you recall the sequence after you enter a certain café?
As the interviews find, there are common mentalities/behaviors among coffee shop patrons include:

- For most of them coffee shop means a place selling coffee but also offering free sharing space;
- The staying time varies from the shortest as within 2 hours to the longest up to 7 hours in a day;
- All of them has experience working and social in a coffee shop;
- A good drink, the open space, surrounding strangers, the background noise, and casual atmosphere are mostly attractive features;
- Some pointed out they enjoyed the satisfaction of purchasing things (caffeine related drinks) with low prices as a ticket to use the space;
- Window seats and corner seats are popular;
- Some appreciate coffee shop encounters;
- When they bring laptops or papers, looking for a desirable table is the first step in their sequence; having an outlet nearby or not is another critical element.
To conclude the analysis from both observations and interviews, all the data and notes were moved to the process of integrating and refining patterns that eventually result in design process. From this process, three categories of findings emerged. These include findings related to the physical characteristics of the spaces, the social behaviors people who patronized the spaces, and the feelings and attitudes of the patrons regarding the coffee shop.

**Physical characteristics of the space**

Waxman (2006) explored the top five design considerations included: cleanliness, appealing aroma, adequate lighting, comfortable furniture, and a view to the outside.
In this research, most coffee shops keep the table surface clean and staffs clean the space during the transition of customer shifts. The smell of warm aroma of coffee is always spreading throughout the room. Warm white and soft white are popular lighting choices among coffee shops for the inviting atmosphere. The layout of any coffee shop is influenced by many things such as the original purpose of the building, size and shape of the space, architectural features, locations, the locations of service areas and the availability of window locations (Waxman). Branded coffee shops are visually more organized than local owned cafes. The data shows that seats near windows and walls are most frequently selected. Interviews reveal that seats by the edges of “white noise” are ideal for mobile workers as the level of noisiness could help working flow; those seats provide good views and help increasing the sense of belonging of the place. For wi-fi workers, comfortable seats are not the important decisive factor but a decent size table with the power accessibility seem to be the key.

**The social behaviors of people who patronized the space**

In addition to the physical characteristics of the coffee shop, each coffee shop has a social climate and culture as well (Waxman). The physical characteristics of the space, the attitude of the staffs, the personalities of visitors all influenced in the café culture. Coffee shops are neutral grounds with low profile that welcome everyone for various behaviors. The philosophy of café management affects customer profiles and influence customer behaviors. There are coffee shops offering extending cords for laptop charging, to encourage customers to bring work and spend time there, whereas some others block the Internet access after some time on periods of high volume, to control customer seating time. Apart, interviewees prefer to be surrounded by friendly strangers when they come by themselves. A few enjoy the regular encounters in the place. In cities it is more likely to have single visitors rather than couples or groups, and the city coffee drinkers sit for shorter times in
comparison to town coffee patrons. Another interesting finding is that people sit longer in local-owned coffee shops than branded ones like Starbucks.

**The feeling and attitudes of coffee shop regulars**

One key element in the social atmosphere is the opportunity to linger (Waxman). Patrons are typically welcome to stay as long as they like. And the regulars in community cafes, come in daily that influences the social climate. The physical characteristics also contribute to lingering behaviors. Café visitors participated in this study reveal strong preference of their chosen shop; some are sensitive about their favorite seats being taken. This shows the sense of ownership of the space. From interviews some like being surrounded in a coffee shop to build the feeling of being connected with the society, it also helps alleviating loneliness. Some spend times in coffee shop as the transition between home and work; mobile workers like the easy accessibility of caffeine to keep alert and the casual lively atmosphere helps them finishing works.

**Design Guidelines**

Four aspects are defined as design guidelines including:

- **Seating Arrangement** – *Flexibility* to meet different behavior types (people come to work; couples come for short talks; a casual conference meeting)
- **Space Attributes** – *Privacy V.S. Public*, to build a sharing space with needs in consideration of visitor types.
- **UX** – *Distinctive user experience* by offering the right service via Utility, Usability, and Pleasurability.
- **Welcoming/ Comfortable Ambience** – a good coffee shop opens to *diverse user groups* (a neutral ground)
Chapter 5 – Design Process

In this chapter the designer will explain the design process including early stage concepts; design strategy and philosophy that have applied; each brainstorming ideas with drawings and relevant analysis; at the end she will discuss the final chosen idea and its development.

Initial hypothesis:
Multi-purpose space will be in increasing demand as communication tools allow easy coordination of spontaneous events.

5.1 WHAT IF - EARLY STAGE IDEAS

From research study results it is obvious people in the modern society have diverse needs with coffee shop space. Here the designer proposes early stage design abstracts.

- **THE CAFÉ THAT DON'T SELL COFFEE**
  Research shows that many people go to the desired coffee shops simply not just to pursue good coffee, but physical characteristics of the space affect their decisions. For instance mobile workers are looking for spaces whether offering big table, wi-fi, outlet or not; while convenient geographical locations and comfortable seats may attract customers who come to socialize. According to the environmental demands, the designer puts forward a concept of “the café that don’t sell coffee”, to only provide good layout and seating in the space, but not serving coffees. Customers can either bring their own coffee, or the store will help ordering from other cafes if customers require. It brings new experience as well as to satisfy customer needs in a maximum.

- **THE CAFÉ THAT OPTIMIZES TO-GO EXPERIENCE**
This idea came from the situation in cities when office workers rush to coffee shops in the morning for quick to-go coffee but there is always a long waiting line. They know their wants, but being anxious about taking long time to get the coffee. The time they have to wait makes unpleasant experience. On purpose, this idea tries to solve the problem. There may be a special fast channel opens up for morning to-go coffee, customers can order through mobile phones and pick up the coffee at specific times on their way to office.

• THE CAFÉ * FACEBOOK
People expect social interactions in coffee shops. This concept fulfills those who come for social encounters. Based on virtual social networking system, each guest will need to log in personal basic information for sharing; they may also bring up request such as seeking for advice on health insurance, looking for start-up partners. Through the information sharing it increases communications in the coffee shop, to stimulate creative juices and collaborations in the community.

• THE CAFÉ THAT’S FOR LAPTOP USERS
Obviously this idea is for mobile workers who bring laptops and work in coffee shops. By providing enough space for laptop use, giving relative privacy, wi-fi access as well as abundant outlets, this coffee shop specifically offer services for working environment. Conference rooms may also be built in the store, for group meetings.

• THE CAFÉ THAT PROVIDES/PROTECTS PRIVACY
Different from the open space, this idea is to protect customer privacy by dividing space into sections. Similar to Japanese teahouse layouts, the café has many sliding doors for users to change space attributes for different purposes.
There are people like to spend time in coffee shop alone to be in their own shelters. Like those who come to work, who come for client meeting, who want to make a phone interview, all those will concern about their privacy.

To reflect the fundamental seating needs based on those early stage concepts, it could be essentialized as – a flexible arrangement transforms between big group seats and small independent ones. What if making the space attributes changeable and transformative during time periods? For example, the morning arrangement is for breakfast user (30%) + fast to-go group (50%) + early bird mobile worker (20%); while in the afternoon it transits to caffeine scavenger (30%) + social people (40%) + group mobile workers (30%), so that it matches better with the user needs and wants, the user experience will also be improved.

The design strategy that has been applied is: zooming out to look at the space flexibility, at the same time zooming in to craft functional details of the furniture.

As a design principle, the design philosophy “half design” has been guiding the process of ideation. It is inspired by Japanese Lunchbox (Figure 5.1), “The joys of the lunchbox are limitless in terms of the various levels of arrangement and juxtaposition it affords”, says by Kenji Ekuon in his book The Aesthetics of the Japanese Lunchbox (2000). In Japan, it is quite common for the person to remain in one spot while the activities change; the Chinese provides with further opportunities to observe the diversity of human treatment of space (Hall).
To give an explanation, one interesting example is the modular furniture “T-Box” (Figure 5.2) designed by Jamy Yang. It is a multi-functional home system design that can be combined and disassembled conveniently, which consists of modular boxes that could be stacked and arranged in various combinations for a bookshelf, TV cabinet, footrest and more. The value of this design is to give a “half design” and leaves another half of freedom for users in term of different functions and configurations.

(Photo Source: http://www.idsa.org/category/reserved-tags/jamy-yang)
5.2 WALL-FURNITURE

The first design concept is furniture integrated in movable walls (Figure 5.3). The design brief is by shaping walls to make up diverse space attributes in different situations in order to satisfy seating arrangement needs. The furniture is foldable and versatile.

![Figure 5.3: Wall-Furniture](image)

As a further development (Figure 5.4), there are four types of wall-furniture. A is a door wall that is rotatable; B is a single seat with folding down table and chair with an open window; C is a bigger wall-furniture for two people; and D provides seats for group of four to six. Figure 5.5 indicates two possible seating circumstances as pattern 1 could be happened in the morning with more single/couple seats and fluent traffic flow for To-Go customers, while pattern 2 is more complex for a social situation with diverse ranges of seats.
To design the folding/moving system, there was a folding exercise (Figure 5.6) done with cardboard. The goal of this exercise is to explore possibilities of folding mechanics for different usability of furniture.
There is also a storyboard drew on I Pad (Figure 5.7) for this idea –

*In a city downtown there is a brand-new coffee shop opened at the street corner, a person walks by and gets curious so he goes in for a new adventure. He sees the entire store is built with movable walls with furniture attached, a few walls line up to separate the ordering area and the seating space. When he waits in the line he can watch through the wall window to get the view of the store. The style of this shop feels clean and moderate. After ordering at the counter, he follows the sign and gets to the waiting area, here are some walls with arm holders where you can lean on and chat with people, one of the walls is pined up with customer snapshots and advertising flyers. A second later he gets his coffee and decides to take a tour in this café. When he*
is walking, he sees various behaviors among visitors – a guy sitting at the bar reading a book; two people sit at two sides of the wall working on computers; a girl and a man is chatting with smiley faces; a family is having a coffee break; one senior aged man sits by the window watching outside; there is a group of college students debating with each other; as he keeps going the wall always guide him till he steps out. Those scenes make him feel being connected with this city, he likes this feeling and plans to visit on another time.

Figure 5.7: Storyboard
**Pros of the idea:** this concept fits the design initiative in terms of space flexibility, the wall-furniture idea is unique that functions as a frame for various usability such as seating furniture, information wall, door, ornament platform, etc. One could imagine all the walls can be stacked together after the business time. This idea also suits the fast moving speed characteristic of urban fabric in a big city.

**Cons of the idea:** It is very ideal, there are many realistic mechanical problems need to resolve to achieve the goal, like how to design the wall stand by its own without the danger of falling down; another flaw from the user perspective is walls might block the space openness and confuse visitors.

### 5.3 TRACK

Track (Figure 5.8) is the second idea of a store system design that consists of moving furniture connecting to electric hardwire from the ceiling and tracks on the floor. It is structurally similar like the bumper cars. The furniture is made up of one table and one chair connected, they can be pushed or pulled to join or separate with 360 degree of spin.
Pros of the idea: the idea contains a sense of playfulness as well as flexibility. Starting with one unit table-chair makes it easier for diverse seating configurations. The electric hardwire could also be the power supply for laptop outlets.

Cons of the idea: it is farfetched with the semantic of coffee shop and the construction will be high cost. On the other hand, there is a similar concept called “Work Car” designed by Antenna Design based on NYC (Figure 5.9).
Figure 5.9: Work Car by Antenna Design

(Photo Source: http://www.antennadesign.com)
5.4 ZIP

Zip (Figure 5.10) is another space system idea that addresses the reconfiguration of seating arrangement. As the name means, the seats could be “zipped up” or “unzipped” for different layouts, based on the tracks on the floor.

![Figure 5.10: Zip](image)

**Pros of the idea:** the idea is simple and reliable, tracks will make the space well organized and easy to arrange.

**Cons of the idea:** the tracks may constrain the flexibility of seats as there are only two directions to move. Tracks on the floor will cause cleaning issue and could get stuck with dust or any unexpectedness easily in a public area.
5.5 CUBICLE

As the name means, cubicle contributes to space privacy (Figure 5.11). Each cubicle has half openness and half closeness, with seats for one person, two or people in-group, just like combing a lot of frames with behaviors, to build up the story of the coffee shop.

![Figure 5.11: Cubicle](image)

**Pros of the idea:** the idea of “framing” is interesting, people would like sitting in with a little bit privacy. There are also many possibilities to design the cubicle according to common coffee shop behaviors. It could have comfortable sofa for relaxation or a focused interpersonal communication between two or four.

**Cons of the idea:** there is a doubt of making coffee shop like a “private club”, since one important of café characteristics is people enjoying watching others and they like the open space.
5.6 FALLING POWER

Inspired by the colorful installation (Figure 5.12), the idea is to integrate power supply for electrical devices based on the current urgent need in cafes found from research. There will be groups of outlets falling down from the ceiling within certain distances based on seating layout. The outlet is contractive that could be pulled long as wanted. With nice material choose and color match it could become the café installation for a theme.

![Figure 5.12: Falling Power](image)

**Pros of the idea:** this concept solves the power issue with special store installation, which meets the mobile workers’ need of device charging. It could be combined with light tracks on the ceiling that commonly constructed in coffee shops.

**Cons of the idea:** there is a debate whether having many cables coming down would be good for interior design, as for some people it blocks the vision and may
cause clutter. On another point of view it has hidden danger since people move around in the space.

**5.7 TABLE-CHAIR**

Thinking from a “zoom-in” aspect, table-chair (Figure 5.13) is the concept that combines a table and a chair with certain movements as the space component for simple and convenient arrangement. The idea also takes storage into consideration as well as easy usage.

*Figure 5.13: Table-Chair*
Pros of the idea: a new way of thinking with easy usage and storage, which are critical issues in retail design. By forming small components (furniture) to the big system (the seating configuration) it seems a better solution in terms of feasibility and usability for users.

Cons of the idea: it might be less comfortable to sit in as the table and chair are joint; one may also argue it is less flexible as furniture per se.

5.8 FLIP

Flip is a modular furniture design that holds the idea of “one for all” – it has both functions of a seating chair and a table when flip it over. The shape makes it joining perfectly with another in various ways (Figure 5.14).

Figure 5.14: Flip
**Pros of the idea:** it is flexible furniture with multiple usages. The shape of the design provides many configured possibilities for seating design.

**Cons of the idea:** there is concern of whether it will be comfortable to sit in and use. The flipping movement might not happen for users in reality as expected.

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**5.9 HONEYCOMB**

Honeycomb (Figure 5.15) is furniture consists of a hexagon-shape table along with a rotatable chair that can be divided into two. The hexagon shape makes it conjunctive in many ways. When two hexagons combine, there are two ways of seating according to the table shape: the short distance seats on the combing line (personal distance) and the longer one crossing two tables that refers to social distance. People could choose which side to sit as the behavior need. The purpose of dividing the chair into two is to consider the situation in a busy time when there are no big seats, those (two people come for a short social time) could still get a small table with sharing chairs. Visitors who are working with laptops would prefer to sit by the edge in a social distance and social people would like sitting in personal distance for talking.
Pros of the idea: it is interesting to use hexagon shape to implement changeable layouts. When compiling hexagons it shows edges with different distances, those distances provide seating possibilities for social behaviors in a way to define the space attributes.
**Cons of the idea:** since there is a need to join tables for seats, people who want to chat (for personal distance) will sit at the joining edges that might have reduced sitting comfort unless the floor and the table are extremely flat and well made.

**5.10 IDEA SELECTION AND DEVELOPMENT**

To help deciding the final idea for development, it is necessary to re-think the design goal and its meaning.

**Goal:**

*Challenging the conventional coffee shop layout, the aim is to create new schemes that accommodate diverse functions and users by means of flexible and modular arrangement.*

As the second step to compare all ideas, there was a decision to combine the “Falling Power” and the “Honeycomb” for concept development. And the idea is:

*To create a space for good working and socializing: 1 table + 1 chair + 1 outlet*

**Shape & Size development of table:**

Based on the initial concept of “honeycomb”, the designer continued to try out different shapes and sizes for usability test – square, rectangular and rectangular with one round corner (Figure 5.16). The challenge at this stage is to design the
right size for a mobile worker (people who work on laptops), at the same time to make sure tables could be combined easily for seating variety, especially on chatting/social distance (Figure 5.17).

![Figure 5.16: Shape & Size Development of Table](image)

![Figure 5.17: Shape & Size Development Configuration](image)

According the workstation design standard (Chiara, Panero, Zelnik), the normal sitting height varies between 15 – 18 in/381 – 457mm, table height should be about 30in/762mm, with the depth of 18in/457mm as minimum (Figure 5.18). And Figure 5.19 shows 15 to 19 in/381 to 483mm is the normal reach distance for the work surface, with 30-degree central field of view at least. The dimension between the front edge of the table and the chair back should be 18in/457mm as a standard.
Figure 5.18: Workstation Design Standard

Figure 5.19: Work Surface Guideline
In comparison rectangular seems more universal and versatile than the one with a round corner, it is also a better shape than square for laptop users. As a solution the shape of the table was decided with 800mm/31.5in * 400mm/15.7in at this time, because of the easy variability of composition (Figure 5.20).

![Figure 5.20: Reconfiguration of rectangular table-chair](image)

**Shape & Size development of chair:**

Since the table and chair are joined, it would be good to improve chair flexibility. Here the designer decided on a 360-degree rotatable chair. The size of sitting space is 450mm/18in * 350mm/13.8in as a regular office chair dimension (Figure 5.21).

![Figure 5.21: Shape & Size Development of Chair](image)
Table-chair jointed structure:

To keep it simple with less material consumption, the solution is to connect table and the chair with simple metal frames (Figure 5.22). Here are three mock-ups. Frame A has three legs as two by the sides for the table standing and the third one link the table and the chair at the middle. B also has three legs but with the connecting leg by the right side and another two support the table and the chair respectively. Frame C has only two legs with one support of the table and the other one links from the table base to the chair bottom.

Power supply development:

To develop the “Falling Power” concept, there will be a few tracks on the ceiling with slidable outlets coming down crossing over the store. One outlet will supply two units of seats (Figure 5.23). Since only parts of the seats will be reconfigured (ex: 40% of seats will be moved for layout change), the corresponding outlets will match to slide.
Mock-up:

In order to test the size in usability, a quick mock-up (Figure 5.24) was built with cardboard. As a result the length (800mm/31.5in) of the table felt good but the width (400mm/15.7in) seemed narrow with a laptop on. Also the width (350mm/13.8in) of the chair needed to be wider in consideration of various human body types.
**Improvement:**

Based on the mock-up testing and design evaluation, the table has revised with symmetrical curve at one side, in the width of 480mm/19in and a 60mm's indent by degrees. This works better with a person using laptop, it also seems a reasonable distance when two tables join for a chatting scenario. Moreover, in reference of the standard of office chair dimensions (Chiara, Panero, Zelnik), the size of the chair has improved to 450mm/18in (W) * 470mm/18.5 (L), with an entire depth of 555mm/22in including the chair back. Table and chair joins was changed with one connecting frame and two supporting feet adhered. An updated prototype has made for further testing (Figure 5.25).

![Prototype with Improvements](image)

**Figure 5.25: Prototype with Improvements**

**Computer-Aid 3D modeling:**

A 3D model (Figure 5.26) of the design has been created with Rhinoceros for a transitory summary and discussion with thesis committee and design professionals. As Figure 5.27 shows, the outlet hanging above the table can be pulled down for convenient use; there is a little indent on the chair back for the use of hanging personal belongings like handbag, umbrella. The entire furniture spins and the chair is 180 degree rotatable. Talking about the way of a person sitting in is firstly spinning the chair to sit down then turn it back (Figure 5.28). Figure 5.29 indicates
six tables combined for a small conference scene with a white board pulled down (same structure as the outlet design) for discussion, which would happen occasionally in coffee shops.

Figure 5.26: 3D Model

Figure 5.27: Design Functions
Figure 5.28: User Scenario

Figure 5.29: Conference Scenario
Chapter 6 – Design Solution

6.1 DETAIL REFINEMENT

Based on the previous design model there were details need to refine that include: the mechanism of the spin movement; table legs; chair comfort; power supply system.

The first design refinement (Figure 6.1) was to look at the legs of table-chair. The designer changed the original legs to straight ones and improved the weight support of the chair. However, those high legs might block users’ feet and reduce the seating comfort.

![Figure 6.1: Design Refinement 1](image_url)

As the second step, a sliding movement has been integrated into model for better usage. At first the designer added this movement to the frame bottom (Figure 6.2), but in real usage it causes sliding difficulty due to the friction from the floor ground. So in later development the sliding movement was moved up underneath the chair, combing with the rotation movement. To consider the gravity issue, a loop frame and a sliding base for the chair were tried to support the chair stronger but they greatly reduced the design aesthetics (Figure 6.3). As a better solution, a short-distance (about 150mm/6in) of slide was made under the chair seat, with a
carefully chosen position that persistently keeps chair stable when slide (Figure 6.4).

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**Figure 6.2: Design Refinement 2**

**Figure 6.3: Design Refinement 3**

**Figure 6.4: Final Sliding Solution**
Having outlet rings swinging above heads would not be safe so the design was changed to mold it on the table surface, together with a control button commanding the frame spin mechanism (Figure 6.5). Because of the physical distance from the table to the base, it needs an electric cable in order to activate the button, which will increase the design complexity as well as the cost of production. At the end, the control button was moved out to the frame base, to keep the simple mechanism.

![Figure 6.5: Design Refinement 4](image)

### 6.2 FINAL OUTCOME

**Title:** CaFLEX  
**Brief:** CaFLEX (Figure 6.6) is versatile furniture that optimizes the dynamic of seating arrangement. It combines table and chair with easy operating mechanism and can be moved or merged to adapt various seating configurations.  
**The idea of 4th place:** Transforming and extending third place, CaFLEX meets the urgent need of mobile workers in coffee shops by using café space as a temporary office, which I personally refer to the 4th place – a sharing environment provides private space, laptop charging outlet, and free Internet access.
Figure 6.6: CaFLEX Overview

Function and details

Figure 6.7 illustrates the side views of CaFLEX. The supporting/connecting frame and feet have become simpler and minimal, with footpads and the frame integrated. The metal plates on the chair and table have been recessed inside the wood pieces. The rotation feature has been kept for flexibility.
The chair can be pushed backward/forward for 150mm/6in. A friction chain will be built for the slide to prevent the annoyance of too easy sliding. When four tables join together it turns to a social table with the size of 1600mm/63in (L)* 840mm/33in (W) (see Figure 6.8).
To show key elements of this design (Figure 6.9) – a spill-proof outlet for all laptop types is molded on the table; the indent on the chair back affords the function of hanging; rotation and slide mechanism is concealed underneath the chair, a V-shape supporting foot of the chair provides stability.
**Lock system workflow**

On the frame base there is a lock for stability and to reduce spinning. Figure 6.10 shows the workflow:

1. Step on the button to unlock;
2. While unlocks, the button pops up, the frame base rises and is ready to rotate;
3. Rotate (up to 360 degree) and move the furniture to relocate;
4. Press it down to lock back once finished. There are several ways to accomplish – step on the popping button back, sit down directly by putting weight on, use hands to press on the table/chair.

![Lock System Workflow](image)

*Figure 6.10: Lock System Workflow*

**Size and components**

As Figure 6.11 below reveals the dimension of this furniture: it is 900mm/35.4in by length, 800mm/31.5in of width and 900mm/35.4in of height as a whole. The table is
740mm/29in tall and 420mm/16.5in is the height of the chair, which is well within the suggested dimension of seating design in interior design standard (Chiara, Panero, Zelnik). For the table, the curve adds value to work comfortably by resting arms at two sides and it will not block the human body leaning forward; also it is a customized design for laptop users, and large laptops can fit in as well.

There are five main parts of this furniture: a table, a chair with outlet, linked by a frame with supporting feet. A sliding mechanism will be molded on the frame, plus a locking system installed through the frame base. The material of the furniture is plywood for table and chair, and steel for the frame and mechanics (Figure 6.12). There are also glides attached on the bottom base for noise reduction and smooth moves.
Seating scenarios

There are four types of seating (Figure 6.13) that derives from the research observation – single (a person sit alone), couple (two people sitting together), group (more than two people), and conference (in general six to ten people). Figure 6.14 is the illustration of seating scenarios.

Figure 6.12: Exploded View

Figure 6.13: Seating Types
Two café designs

To push the design further, the CaFLEX design is applied to two cafés with suggested seating arrangements – a small espresso bar in downtown Chicago, mainly serving to-go drinks but offering small retail space for short stay as well. In contrast, another design is a big coffee shop in downtown Urbana, which is a good place to work and long-term stay. The image flow (Figure 6.15 – Figure 6.25) tells the change of space attributes during the time and how seating arrangement can be transformed. Scenarios involve morning status, afternoon scene, social situation for both cafes, and an extra conference circumstance in the big café. The design of seating layouts and the change are guided by the general social behaviors from research observation and analysis.
Figure 6.15: Café A – Travel Café in Chicago

Figure 6.16: Café A – Floor Plan
Figure 6.17: Café A – Morning Seating Layout

Figure 6.18: Café A – Afternoon Seating Layout

Figure 6.19: Café A – Social Seating Layout
Figure 6.20: Café B – Café One in Urbana, IL

Figure 6.21: Café B – Floor Plan
Figure 6.22: Café B – Morning Seating Layout

Figure 6.23: Café B – Afternoon Seating Layout

Figure 6.24: Café B – Conference Seating Layout
There were two ideas of power supply, hardwire and wireless. Since the wireless technology is still being developed and it is very expensive to construct, the current solution sticks on the normal hardwire power supply. In office furniture it is common to integrate “daisy chain” power system (Figure 6.26), which could be applied to the status when tables join together with only one plug empowering the table-set.

*Figure 6.25: Café B – Social Seating Layout*

*Figure 6.26: Daisy Chain Power System*

(Photo Source: http://www.symphonytables.com/surface-laptop-1-2-users-per-table.html)
Final Prototype

A final model was built with all functions achieved and has been tested in terms of usability and stability. Photos and videos have also been conducted as part of design deliverables (Figure 6.27). The designer also simulated the scenario of sitting in and working on the furniture (Figure 6.28).

Figure 6.27: Final Prototype

Figure 6.28: Scenario Simulation
Chapter 7 – Conclusion

This thesis starts from questioning the social meaning of coffee shops in 21st century as if they still function like the third space, through field visiting and observation, proposes a new idea of coffee shop space to modern society - the 4th place as a temporary office. With the rapid development of technology and the empowerment of portable personal devices, the way people work becomes diverse and flexible. The traditional cubicles have been outdated and people are pursuing new ways of collaborating in the working environment. For coffee shops, the unique physical and social characteristics correspond with people’s needs. In recent years cafes have become places for independent working or work-related chats. It has become ones’ habit to sit in a nice street cafe for some time as a part of daily routine. Based on Oldenburg’s third place theory, the solution of this thesis – CaFLEX transforms and extends the functions and characteristics of the third space, meets the urgent need of mobile workers in coffee shops. By breaking up the conventional café furniture and the seating arrangement, the outcome starts with an individual unit, which could be joined and formed up into different seating layouts, in a way to satisfy the basic needs of various user groups and improve space flexibility.

In this thesis, qualitative research observations and the analysis with data helps understanding the coffee shop environment and the meaning these coffee shops held for patrons, for the purpose to explore design opportunities. Face to face interviews further inform on design direction and development. These interviews reveal the new meaning and preference for ideal coffee shop spaces, including outlet, white noise and good seating view. All of these characteristics can be directly influenced by careful design planning. It would be advisable to have further interviews, and surveys could also be done for comprehensive data collection.

As to the design solution, it introduces a brand new idea to promote the use of the furniture and the free style combination method. The final model proves the
feasibility of the design idea. Further steps would include testing with the physical prototype with potential users and stakeholders; revising and improving the mechanism for better usage. On the other hand, more collocation of colors could be discovered to match different coffee shop styles, meanwhile to consider alternatives of material. For instance, aluminum might be another choice for the base frame rather than the heavy steel, plastics could be integrated into table and chair to explore how it will influence coffee shop social climate. One could raise questions about the power supply in the real usage and concern with the conveniences. The current solution is to apply electric hardwires with daisy chain system, but it is suggested to explore the wireless charging technology in the future to simplify the charging issue with easy operation. Perhaps the future charging system would be as simple as wi-fi connection between the charging equipment and the furniture, with one button control to power appliances. The development of high capacity batteries would reduce charging times.

In this paper the author focuses on the discussion of new call for modern coffee shops, some other interesting studies would be to explore what other elements that make good café experience. A good service? Color lighting? Background music? Or store participations? As another future plan, it is critical to test the financial balance with this design in coffee shop business and measure the business value.
Works Cited


### Appendix

**RESEARCH OBSERVATION CHART**

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### Server's mood

### Customer's mood

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**Additional notes:**

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**ATTACHMENTS:**

1. Literature review & interview & description of first impression
2. Movements (behavior mapping) & Functional areas diagrams & behavior sequence maps: use ipad
3. Furniture drawings with approximate measurements
4. Menu photo
5. Photos:
   - Coffee shop
   - People & Activities
   - Food items
   - Street outside
   - Identity logo
6. 3-mins general sounds of the coffee shop