24x7 MAKE MART
the future nexus of innovation

by Chia Chieh (Jessica) Lee
Bachelor of Art in Architecture
University of California - Berkeley, 2006

Submitted to the Department of Architecture
in Partial Fulfillment of the Requirements for the Degree of
Master of Architecture
at the
Massachusetts Institute of Technology
February 2014

© 2014 Chia Chieh Lee. All rights reserved. The author hereby
grants to MIT permission to reproduce and to distribute publicly
paper and electronic copies of this thesis document in whole or
in part in any medium now known or hereafter created.

Signature of Author .......................................................... Department of Architecture
January 16, 2014

Certified by ................................................................. J. Meejin Yoon
Associate Professor of Architecture
Thesis Supervisor

Accepted by ............................................................... Takehiko Nagakura
Chair of the Department Committee on Graduate Students
thesis committee

[advisor]

J. Meejin Yoon
Associate Professor of Architecture @ MIT

[readers]

Azra Aksamija
Class of ‘22 Career Development
Assistant Professor of Art, Culture and Technology @ MIT

Chun-Chieh (Jay) Chen
Computer Science PhD Candidate
@ National Taiwan University

Tim Wong
Co-founder, FabCafe - Taipei
| abstract |

by : Chia Chieh (Jessica) Lee
Submitted to the Department of Architecture on January 16, 2014 in partial fulfillment of the requirements for the degree of Master of Architecture.

There is a total of more than 9700 convenient stores in Taiwan. In Taipei, the capital of the country, there is 1 convenient store in every 400 meters, which is equivalent to one convenient store in every 5 minutes.

This thesis aims to explore the possibility of optimizing the notion of convenience, in its provision of amenity and services, to facilitate innovations at the individual level while fostering a culture of do-it-together as a collaborative knowledge-based community. Unlike US where innovators can make and prototype in their own garages, people in Taipei do not have a physical space to prototype without paying the high cost of renting an office or workspace, not to mention the lack of equipment and facilities. This thesis examines how can one translate the success behind the business model of highly distributed convenience store into the paradigm for fostering innovations at individual level.

The thesis began with a thorough study of 7-Eleven to try to understand its recipe of success. Throughout its 34 years of history in Taiwan, 7-Eleven serves as the paradigm of its typology and constantly innovates its services and products to address the daily needs of the common individuals. This thesis will demonstrate that 7-Eleven is ready to take on a greater challenge, a challenge that aims to serve the individuals with all the amenities and services needed to become an entrepreneurial innovator by rebranding itself into a new identity - the 24x7 Make Mart.

The newly re-branded 24x7 Make Mart will not only transform the physical space of 7-Eleven’s current typologies, but also prototype a new architectural typology emerged from the synergy of conventional 7-Eleven strategies and innovative programs. The 24x7 Make Mart adopts the current distributed model of 7-Eleven and provides 3 layers of megafloors that can be programmed into different uses, including individual workstation, self-storage, event space, exhibition, workshop/classroom, fabrication labs, meeting rooms, etc, and everything is rentable at an affordable price to the public. The experimental implementation of 24x7 Make Mart will be highly distributed in the urban setting of Taipei and searchable by a corresponding mobile APP called Where is my 24x7 Make Mart?

[thesis supervisor]
J. Meejin Yoon
Associate Professor of Architecture @ MIT
| acknowledgement |

To Meejin:
Thank you for all the inspiring criticisms and guidances at critical moments throughout the thesis. I appreciate all the challenges emerged as results of constant scrutiny on the limits of the thesis subject and me as a student. I will continue to challenge myself with the same level of criticality that you have inspired in all the future endeavors.

To Azra:
Thank you for your inspiring injection of whimsical ideas and at the same time, reminding me of careful attention to social aspects of the thesis subject. Our communication was short but I am grateful for all the inspiring feedbacks and excitement you expressed towards the thesis subject.

To Tim and Jay from Taiwan:
I am very grateful for all your constant encouragement and criticism during struggles and confusions. You both gave very different perspective to the thesis subject and the thesis will not turn out as the way it is w/o your help and support.

To Li, Malcolm and Rudy for all the fun time in our little tiny niche in studio. (we should’ve played DDR at some point)

To Li and Seto for being great thesis comrades and all the intellectual (and silly) discussions and critiques on thesis subjects!

To Li, Dabai and Jing for being great roommates and supporting me through my difficult times.

To Ja-Sheng, Peng, Natalie, Jing, Xiao Lai, Ma Zhao, Richard, Fai+Andy (NYC), George (CA), and Tiger+Cecilia (Shanghai) for all the help on the FINAL push on the thesis production. Amazing model, renderings and diagrams. This thesis would not be possible without your generous help and support.

To my awesome awesome classmates of 2014 for all the fun times at late nights and love/care for each other. I will miss you all!

To Chih-Chao for leading me into the venture of entrepreneurship and eventually inspired the initiative of the thesis subject.

To Tracy (YY) for being a great listener when I needed one.

To my family for bearing me as the weirdo of the family.
| **table of contents** |
| thesis : research |
|  || introduction: culture of convenience |
|  || discourse: branding and architecture |
|  || discourse: social motivations behind thesis |
|  || challenge: battle on innovation |
|  || redefine: production processes |
|  || site: typical urban corner investigated |
| precedents : architecture as machine |
|  || Cedric Price: fun palace |
|  || Archigram |
|  || what’s next for 21st Century? |
| project : 24x7 Make Mart |
|  || innovation x convenience |
|  || diagrams |
|  || plans |
|  || sectional perspective |
|  || renderings |
|  || final models |
| Appendix |
|  || sketch models |
| Bibliography |
24x7 Make Mart: the future nexus of innovation
INTRODUCTION: culture of convenience
“in Taiwan, there is a total of 9,700+ convenience stores, averaging 1 store for every 2,400 people”

“in Taipei, there is 1 convenience store every 400 meters”
24x7 Make Mart: the future nexus of innovation

- **Growth in # of stores**
  - 14 stores in 1979
  - 4849 stores in 2012

- **Expansion of store space** since 2019
  - 75 sqm ➔ 90 sqm [urban] / 165 sqm [suburban]

- **Revenue** ➔ 10%

- **DURATION of stay**
  - 3 min. ➔ 15 min. to 2-3 hrs.
the future 7-11 typology
7-Eleven in Taiwan provides much more services and amenities than the 7-Eleven in the states. It not only provides convenient snacks and beverages, it is also a bank, a post office, delivery agency, a recycle center, a ticket booth, etc. 7-Eleven in Taiwan also has its own coffee chain called City Cafe, which is much more affordable than Starbucks and provides seatings and quality coffee just like Starbucks. City Cafe also attempts to provide cultural amenities, such as books and music venues, to customers in order to increase satisfactions and pleasures during their visits.
the ‘convenience’ lifestyle

approx. 8/10 people go to 7-ELEVEN at least once a day

sale ranking | PRODUCTS

sale ranking | SERVICES

24x7 Make Mart: the future nexus of innovation
the ‘convenience’ golden rules

the power of display | repetitive display increase ‘impulsive buying’
the ‘convenience’ golden rules

the power of display: ‘golden visual’ >> you can see what you want to buy in a quick glance!
the ‘convenience’ golden rules

the power of visibility | you can see it from afar!
the ‘convenience’ kit-of-parts

- the counter
- hot food zone
- free standing machine zone
- island open shelves
- open fridge
- closed fridge
the ‘convenience’ skin

“regardless how OLD is the host building, 7-ELEVEN always looks NEW and CLEAN!”

the signage

the glass windows
(emits lights at night)

the ceramic tiling cosmetics
the ‘convenience’ development

1980  1998  2013
BEGINNING  COMPETITION  MATURE  INNOVATION

time/distance  commodity improvement + development  better quality + services  RE-BRANDING

convenience as ‘lifestyle’
aka UBIQUITOUS!

69.6%
consumers prefer 7-ELEVEN over others

what about... convenience as “workstyle”
APPLE, arguably, redefines the shopping experience more so than that created by Rem Koolhaas for PRADA. Steve Jobs always knew what he wanted. He wanted an architect that can realize his architectural vision without too much imposition of the architect’s own. Steve Jobs knew that signature architecture by signature architect would have snapped the consumers’ focus from the signature Apple products that he has carefully designed and created. Critique of consistency (vs. desire for customization) In the book “Apple” (book published by CLOG), the editors posted a critique on the consistency of Apple product and as well as its architectural product:

"The consistency of their brand should be maintained through narrative, not aesthetic mimesis."

In this section of the book, Michael Abrahamson referred to Alison and Peter Smithson’s manifesto Without Rhetoric to critique Apple’s architectural patronage. The Smithsons believe that architecture should result from the ‘gentle and live equipoise’ between man and machine. In order to achieve such equipoise, “things need to be ordinary and heroic at the same time.” Taking on SOM as an example, the Smithsons admired the engineering behind the sleekness of corporate modernism, yet criticized its underlying banality. Essentially, the branded modernist minimal architecture of Apple is as much as a signifier as the golden arch of the McDonalds. “Apple requires extreme aesthetic asceticism” and “Their reductive palette doesn’t foster innovation but the refinement of a set of preordained aesthetic ideals, which parallel those of Apple’s in-house industrial designers and corroborate the overall brand.” The Smithsons, as well as IBM and Olivetti, understood that “the consistency of their brand should be maintained through narrative, not aesthetic mimesis.” A narrative that tells a ‘story of influence, experimentation, and adaptation.’
Before furthering my discussion on the architecture (if there is any) of contemporary 7-11 in Taiwan, I would like to refer to Rem Koolhaas’ critique and/or warning towards the expansion of brand. In the book PRADA by AM/OMA, Rem talked about the expansion of an exclusive high-end brand, such as PRADA, underlies the danger of ‘large number’ and ‘large scale’ of PRADA stores:

"The danger of the large number is repetition: each additional store reduces aura and contributes to a sense of familiarity"

"The danger of the large scale is the Flagship syndrome: a megalomaniac accumulation of the obvious that eliminates the last elements of surprise and mystery that cling to the brand, imprisoning it in a ‘definitive’ identity.”

However, I would like to use Rem’s critique of familiarity resulted from large number as an advantage to explain the success of 7-11 in Taiwan. 7-11, with its ubiquity, has fully infiltrated into everyone’s life in Taiwan, with its provision of food (the necessities) and convenient services. 7-11 not only has greatly improved people’s life, but also transformed people’s lifestyle. 7-11 has successfully branded a lifestyle of convenience and familiarity. Regardless how late at night, you know you can always count on 7-11 to provide hot food or deliver your emergency package to where it should be the next day.

I have taken on the success of 7-11 as the premise of my thesis and believe that 7-11 is ready to rebrand itself with the ambition to optimize the notion of convenience to facilitate individual innovation. How can architecture do that? This leads to a larger discourse on how branding of architecture can function as a communicative mechanism that connects the customers and the architecture through carefully strategized consumer experience.
thesis | the social motivation behind the thesis

This thesis was initiated with a curious quest of "how can architecture help with entrepreneurship to a certain extent that will shed some lights on the issue of economic stagnation in Taiwan. With the ongoing trend of globalization, Taiwan has long moved on from the thriving era of manufacturing and faces economic restructuring and industrial transformation as many other post-industrial countries do. To even worsen the problem, massive youngsters in Taiwan faces jobless situations after college graduation due to education degree inflation, and have no choice but to return to institutions to pursue higher degree. The successful stories of the innovator and entrepreneurs, such as facebook, youtube, google, etc, make me wonder if Taiwanese youngsters have alternative path to success besides conventional pursuit to higher degrees. Can Taiwan’s issue of economic stagnation be alleviated through fostering entrepreneurship and cultivating culture of innovation? I believe it is very possible and I think by providing the ease of access to amenities and services, such as the home garage, co-working space and incubators in the states, Taiwanese youngsters can easily explore possibilities as individual innovators and entrepreneurs.

Taiwan GDP component:
MANUFACTURING INDUSTRY

44.8% in 1986
21.9% in 2012
“in Taiwan, approximately 47% of college fresh grads is JOBLESS”

education degree inflation
competitive job market

“approximately 50% of college fresh grads desires to seek jobs ABROAD for better opportunities”
"OR, they would go to CITIES to seek jobs for better opportunities."

24x7 Make Mart: the future nexus of innovation

competitive job market
“in RURAL Taiwan, illiteracy rate can be as high as 30-40% while urban illiteracy is as low as 4%.”

uneven distribution of resources between urban & rural
24x7 Make Mart: the future nexus of innovation

CHALLENGE: battle on innovation
85% corporate-owned patents

VS.

only 15% individual-owned patents

war on innovation
“who comprises the CREATIVE CLASS?”
“CREATIVE CLASS will save the economy for post-industrial countries”
“the creative class in Taiwan **DOUBLED** in the past two decades and expected to grow”
REDEFINE: production processes
24x7 Make Mart: the future nexus of innovation

conventional process
24x7 Make Mart: the future nexus of innovation

The future 7-11 process

- learning lab
- fabrication lab
- marketing lab
- ANYWHERE!
- engineer
- fabrication lab
- marketing lab
- prototype
- funding
- manufacture
- distribution channels
- business
- ideas!
SITE: typical urban corner investigated
Observation is made that 95% of 7-Eleven in Taipei is located at the corner of urban blocks. It is easily integrated in any building typologies. As previously mentioned in the research, the maximization of glazing to appear bright at night time, the horizontal and vertical extension of signage, and the easily recognized ceramic tiling all heightens the effect of visibility. The strategic location of corner in urban blocks can simply be identified as one of the strategies to increase visibility to the consumers. Hence, the newly branded 24x7 Make Mart will take on the corner conditions as the ground of architectural experimentation.
PRECEDENTS: architecture as machine
| discourse: architecture as machine | Cedric Price

“In his 1964 Fun Palace and the 1967 Potteries Thinkbelt projects, Price addressed what he perceived to be the new and rapidly changing conditions of knowledge and society in post-war Britain. These were not proposals for buildings in any conventional sense, but were instead *impermanent, improvisational, and interactive systems, highly adaptable* to the volatile social and economic conditions of their time and place. At a time of uncertainty and instability, Price’s work reflects a new approach to *architecture as a site of change and impermanence*, rather than as permanent and monumental symbols of cultural cohesion and consensus.”

*QUOTEs taken on Stanley Mathews on Cedric Price: From “Brain Drain” to the “Knowledge Economy”*

“There are striking similarities between Bacon’s New Atlantis and the late British architect Cedric Price’s Fun Palace and Potteries Thinkbelt. In their respective projects, both Bacon and Price proposed new modes of knowledge and inquiry which rejected established systems of education and thought. Both men confronted a crisis of knowledge at a time of paradigm shift. In Bacon’s time, this was England’s transition from a medieval world view which revered received knowledge and ancient authority, to an era of modern methods of scientific inquiry. For Price, it was an *awareness of an epistemological shift from the structures and traditions of Britain of the First Machine Age to the post-industrial, post-imperial era of information technology and the knowledge economy.*”
| discourse: architecture as machine | Archigram

It was an era fascinated by automated machinery with movable/operable architectural elements (walls/ceiling) and/or units (pods/capsules). Along with the rapid development in an urban scale, Archigram’s visions transverse across various scales; some rendered in the scale of housing as seen in the living pod proposal, while some manifested in the scale of city as the famous representation of walking city/plug-in city/instant city deeply imprinted in our minds. Archigram’s visions has inspired me to think how technology and innovation of the time has influenced architect’s visions both ideologically and spatially. I then began to think what is the technology and innovation of our time? I soon realized that we have long moved beyond automated walls and units, and an era of new physicality (or no physicality) has arrived.

![Diagram of a living pod proposal](image)
Next?

Perhaps, we are facing another paradigm shift as the modes of knowledge become even faster and readier than ever. With the advancement of information technology and engineering, the modes of manufacturing and production cycle also faces revolutionary shift. The rise of 3D printer, CNC machine, laser cutter, along with the supporting softwares, means of online crowd-funding and crow-sourcing, what do all these mean to the change of architectural spaces? This thesis explores the possibilities of architecture as machine in the 21st century derived from the distributed model based on the culture of convenience for future individual innovators, or simply put as a ‘convenient machine that spits out innovation’?

We are living in a digital world where our daily life transverses in between physical and digital interfaces, ie. smart phones, e-mails, instant messages, online social networks. We communicate differently, we work differently, we manufacture differently and we live differently. Following this trend of thought, I began to realize that my thesis of designing a ‘convenient machine that spits out innovation’ has to move beyond the automated machinery, and shall innovate in the level of ‘interfaces/platforms/software/computer languages’, the essentials that controls the machinery.
24x7 Make Mart: the future nexus of innovation

DISTRIBUTED MODEL: diagram

[Diagram showing various modules and their functionalities, including 24x7 FabLab, 24x7 Workshop, private zone, presentation, 7 Eleven, and collaborative zone with kitchen and open idea labs.]

CORNER in Residential BLVD.

CORNER in Residential ST.

INSIDE Metro STATIONs

CORNER in Commercial BLVD.

7 Eleven

(C) Collaborative zone:
- Social lounge
- City Cafe
- Open idea labs
DISTRIBUTED MODEL: the APP *Where is My 24x7 Make Mart?*

- **Search by inputting your location**
- **Select a preferred location**
- **Select desired machine to book**
- **Book a desired time to use the machine**
- **Check other member's project profile, seek for potential collaborator**

24x7 Make Mart: the future nexus of innovation
| CONVENTIONAL production process |
| 24x7 DISTRIBUTED production process |

idea -> virtualization -> prototyping -> prototype -> crowd funding -> production -> micro production -> delivery -> customer

- relative cost / unit
- critical cost stage
- pro/fit stage
- low                   high

virtual modelization
- virtualization
- prototyping
- prototype

physical modelization
- production
- micro production

24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
1 LARGE EVENT SPACE
   e.g. hackathon, pitch night

2 PERSONAL WORKSTATIONS FOR RENT
   e.g. storage, personal work setting

24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation

GROUND FLOOR | Floor Plan
small unit vending machine + 7-11

2nd MEGAFLOOR | Floor Plan
personal storage + digital stations
3rd_MEGAFLOOR | Floor Plan
project storage + exhibition

4th_MEGAFLOOR | Floor Plan
fabrication lab
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
24x7 Make Mart: the future nexus of innovation
BIBLIOGRAPHY
| bibliography |

| Yang, Mali. Tai Wan 7-ELEVEN Chuang Xin Xing Xiao Xue: Mei Tian 600 Wan Ge Gan Dong. Tai Bei Shi: Tian Xia Za Zhi Chu Ban, 2005. |
| Tianzhong, Yang, and Kaining Ou. Ri Ben 7-ELEVEN Wu Zhi Jing De Chuang Xin. Xin Bei Shi: Da Zhi Tong Wen Hua, 2013. |