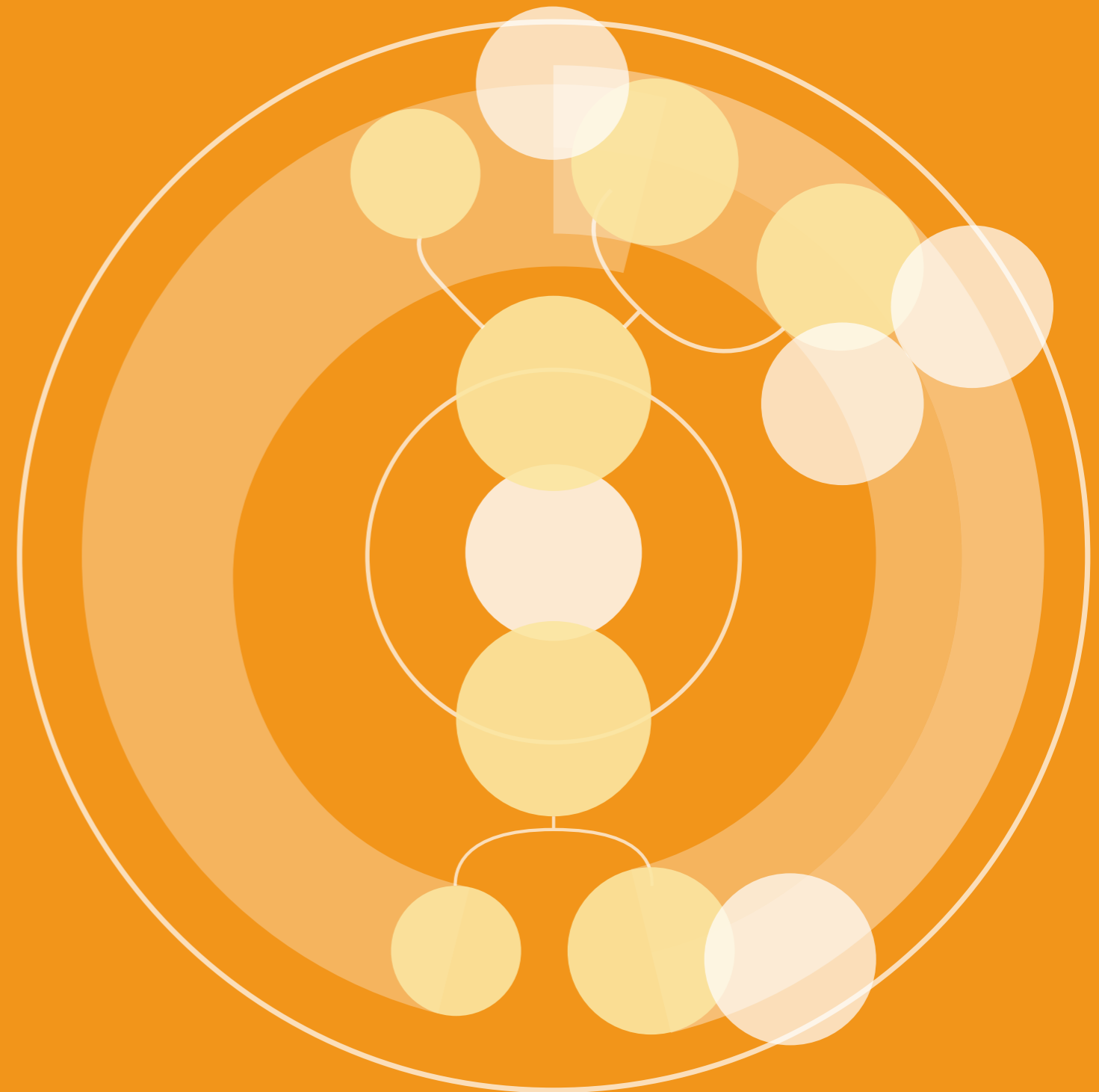# SYSTEMATIC RETAIL DESIGN

P E N G   S H A N

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SYSTEMATIC RETAIL DESIGN

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Abstract

With the development of technology, people's lifestyles have changed. The use of space has also changed. Due to the development of the Internet, the retail industry is one of the industries that has changed the most in the past two decades (Verhoef et al., 2015). Market demand has led to the emergence of marketing studies, but the related space design seems to be one step behind. In the traditional retail space design, the space is usually the product-centric independent space. This type of space lacks competitiveness in the current multi-channel market environment. Retailing now frequently includes more businesses that were originally conceived of as services (Hagberg et al., 2016). The focus of retail space design needs to shift from displaying products to a composite functional space combining services. In addition, as part of the entire retail system, the retail space is the physical retailer-consumer interface (Madsen, S.M. and Petermans,2020; Hagberg et al., 2016), but not the only retailer-consumer interface.In order to achieve the best results in the design of retail space, retail space designers must not only design independent spaces, but also need to consider the unification of the entire retail system and multiple retailer-consumer interfaces.

The focus of this paper is to discuss how consumers' motivations and popular technology affect retail space, and combine product characteristics to break the limitations of traditional retail space. From the perspective of a systematic retail design, explore how to build a multi-channel operation complex retail space.

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1 Theoretical

Synopsis

Retail is the final step in the entire commodity supply chain. Commodities are transferred from producers to consumers at this stage. In the traditional retail stage, customers' consumption occurs in a specific space which are created by retailers (Specialty stores, department stores, supermarkets, etc.). And retailers master the upstream information of the supply chain, they dominate the transaction relationship with consumers. But with digitalization, consumers have more power than before because of the reduction of information asymmetry (Doherty and Ellis-Chadwick, 2010).

This transfer of power between retailers and consumers is driving changes in the retail environment and space. The retail space is transformed from the original specific (supplier-oriented) space to the more diverse (customer-oriented) space. In order to improve competitiveness and avoid falling into price wars, retailers need to explore specific (difficult to imitate) business models and systematic retail designs (David J.Teece, 2016). Different business models lead to different space design. The space design under the same business model is not constant, but will change dynamically with the development of the company, the release of new products, or the holding of events.

This chapter starts from the development of retail, uses it as a springboard to analyzes market demand, and discusses the relationship between space and new retail models.

The development of the retailing

1.1.1 Development and early forecast of digital retail

Since the emergence of the Internet, people have realized the possible influence of the Internet in the business field (Doherty, N.F,2010). As a highly effective communications channel, the Internet has opened up new avenues for business (Raymond Pyle, 1996). Since Internet retail is not limited by time and space like traditional retail, many speculations emerged in the 1990s that it will eventually dominate the global market (van Tassel and Weitz, 1997). Based on this confident view of the Internet, many people predicted that physical retail would be greatly impacted and even replaced (like Angelides, 1997). Although from the current market situation, digital retail cannot replace physical retail, digital retail has several advantages that traditional physical retail cannot have:

1 Increase the transparency of information
The Internet makes it easier for consumers to obtain product information. By comparison, consumers can quickly choose more cost-effective products. Conversely, this also gives the market an incentive to improve goods and services. In addition to making information about commodities transparent, the Internet also makes the supply chain more transparent. Some research argue that the transparency of the supply chain improves consumers' willingness to buy (Gargi Bhaduri and Jung E. Ha-Brookshire, 2011), while others believe

that the supply chain transparency is a useful corporate tool that enables companies to increase sales without subjecting themselves to increased consumer pressure. (Egels-Zandén and Hansson, 2015)

2 Reducing management costs
The Internet can reduce the internal communication costs of enterprises and simplify some sales links. Even in some industries, business models have undergone radical changes. For example, in the music field, the distribution of songs has changed from the physical record store to streaming media (Hagberg, J., Sundström, M.and Egels-Zandén, N, 2016)

3 Simplify the buying process and save time
For consumers, the Internet provides a new channel of buying, which can find and compare similar products faster.

These advantages have made digital retail gradually become a part of people's lives and began to be valued by space designers, and added to the actual space design as part of the considerations.

1.1.2 From multi-channel to cross-channel to omni-channel retailing

Due to the development of industrialization, the stability of product quality has been guaranteed, so it is difficult for retailers of the same type of product to generate competitive advantage through product quality. In order to avoid falling into a price war, providing consumers with differentiated services and consumer experience is a key consideration for retailers.When the market quickly realized the huge potential of Internet retail, many companies realized that a single offline channel lacked competitiveness. This has led to the emergence of multiple-channel strategies in the market. Beck and Rygl (2015) identify a taxonomy of multiple channel retailing and propose the categories Multi-, Cross-, and Omni-Channel Retailing and

Retailer. The classification of different retail channel strategies helps designers organize and design spaces more clearly.

1 Multi-Channel Retailing
Multi-channel retailing means that the retailer provides more than one channel. But these coexisting channels neither the possibility of customers triggering interaction, nor retailers controlling integration. The operations of online channels and offline channels are separate (Beck and Rygl, 2015). For example, consumers can place orders online, but cannot pick them up in physical stores. In this case, the layout of the physical store is still a traditional retail space. Online retail channels cannot influence the spatial design of physical stores. Online retail is just a channel for retailers to increase profits.
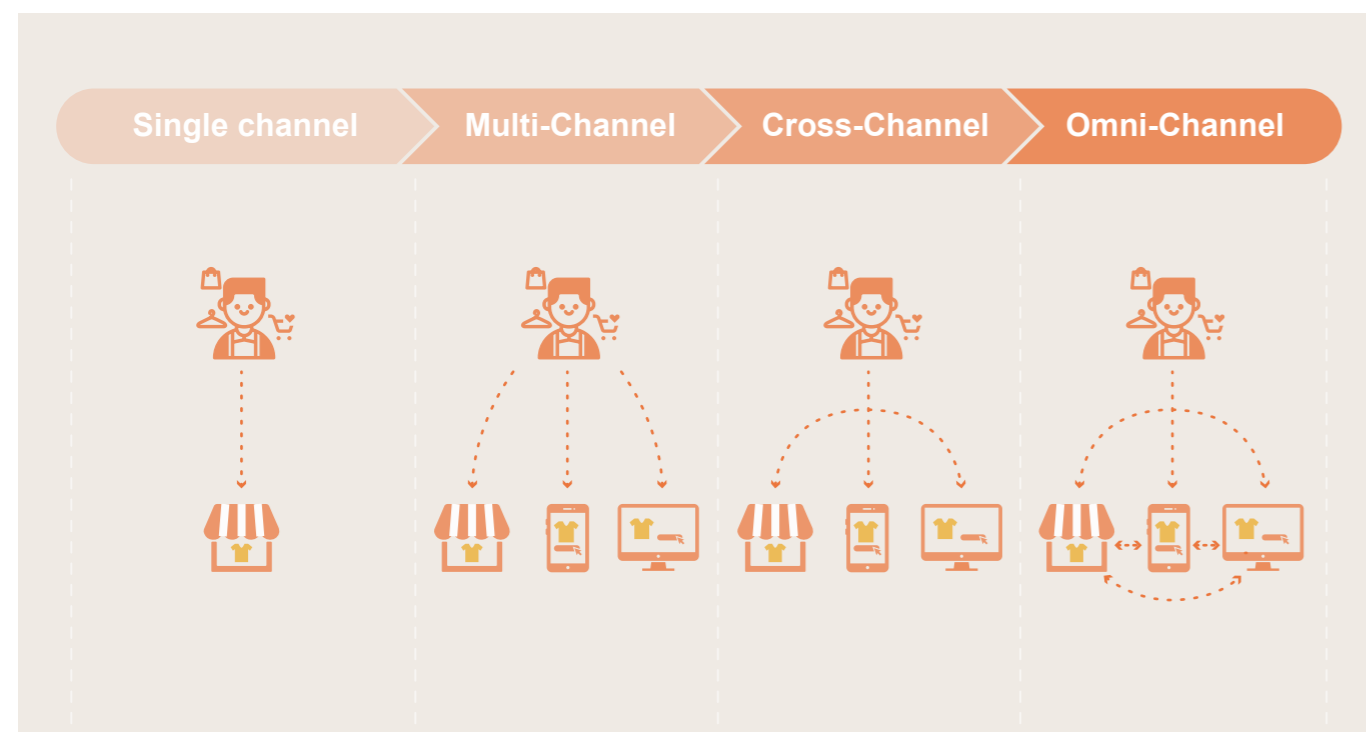
2 Cross-Channel Retailing
Cross-channel retailing means that customers can trigger partial interactions and retailers can control part integration of at least two or all channels at that time (Beck and Rygl, 2015). In this case, Retailers can integrate product and customer information on different channels to provide customers with cross-channel services. For example, customers can buy online and pick up the goods in physical stores. In order to seamlessly connect with the services of other channels, the space design of the physical store needs to consider the new character activities generated in this regard. For example, provide information verification area and pick up waiting area.

3 Omni-Channel Retailing
Omni-channel retail is a more systematic strategy. Customers can trigger full interaction and the retailer controls full integration of all channels (Beck and Rygl, 2015). Under this strategy, the channel is fully integrated and the three dimensions of omni-channel: a seamless customer experience, an integrated analytics system and an effective supply chain and logistics are the focus of management (Jocevski, M., Arvidsson, N., Miragliotta, G, 2019). Retailers can dynamically control all retail channels according to marketing needs. In this mode, the physical retail space is dynamic, and the space design needs to link other channels. When a certain node of the omni-channel strategy changes, all channels must be coordinated and adjusted, including spatial design.

Although some literature points out that omni-channel retail strategies may lead to a competitive advantage (Brynjolfsson et al., 2015; Rigby, 2011; Verhoef et al., 2015), Mika and Hannu (2018) believe that all multi-channel strategies can generate such advantage. If retailers pursue an omni-channel strategy too much, it will lead to unnecessary investment. Retailers should evaluate appropriate multi-channel strategies based on product characteristics and consumer value propositions(CVPs). In fact, in the actual retail space design, the boundary between cross-channel retail and omni-channel retail is blurred.

1.1.3 Consumer value proposition

Consumer value proposition(CVP) is defined as "a competitive statement of the dimension of value offered to a specific group of customers, the ways in which the firm creates value, and reasons for customers to select the firms' offering" (Yrjölä, 2015). To put it simply, CVP helps retailers define consumer needs and clarify the value that company can provides to consumers. According to CVP, retailers can establish suitable business models, retail strategies and design methods. If designer can fully understand the CVP of a company, it can make the space design more in line with the needs of consumers and enlarge the company's competitive advantage.

Utilitarian and Hedonic

Consumer motivation drives behavior. Many researches confirmed that consumption activities produce both hedonic and utilitarian outcomes (Batra and Ahtola, 1991; Barry J. Babin, Darden and Griffin, 1994). Hedonic motivations relate to the multisensory, experience and emotive aspects of consumption (Hirschman and Holbrook, 1982; Batra and Ahtola,1991). And utilitarian motivations is associated with more rational and efficiency and functional attributes (Batra and Ahtola, 1991; Yrjölä, Saarijärvi and Nummela,2018). Consumers' motivations

and the characteristics of products produced by enterprises together determine the CVP. This further affected the business model of the enterprises and the design of the retail space. Different motivations and product characteristics will lead to different design results. Therefore, retail space design can be classified according to different motivation-oriented business models.
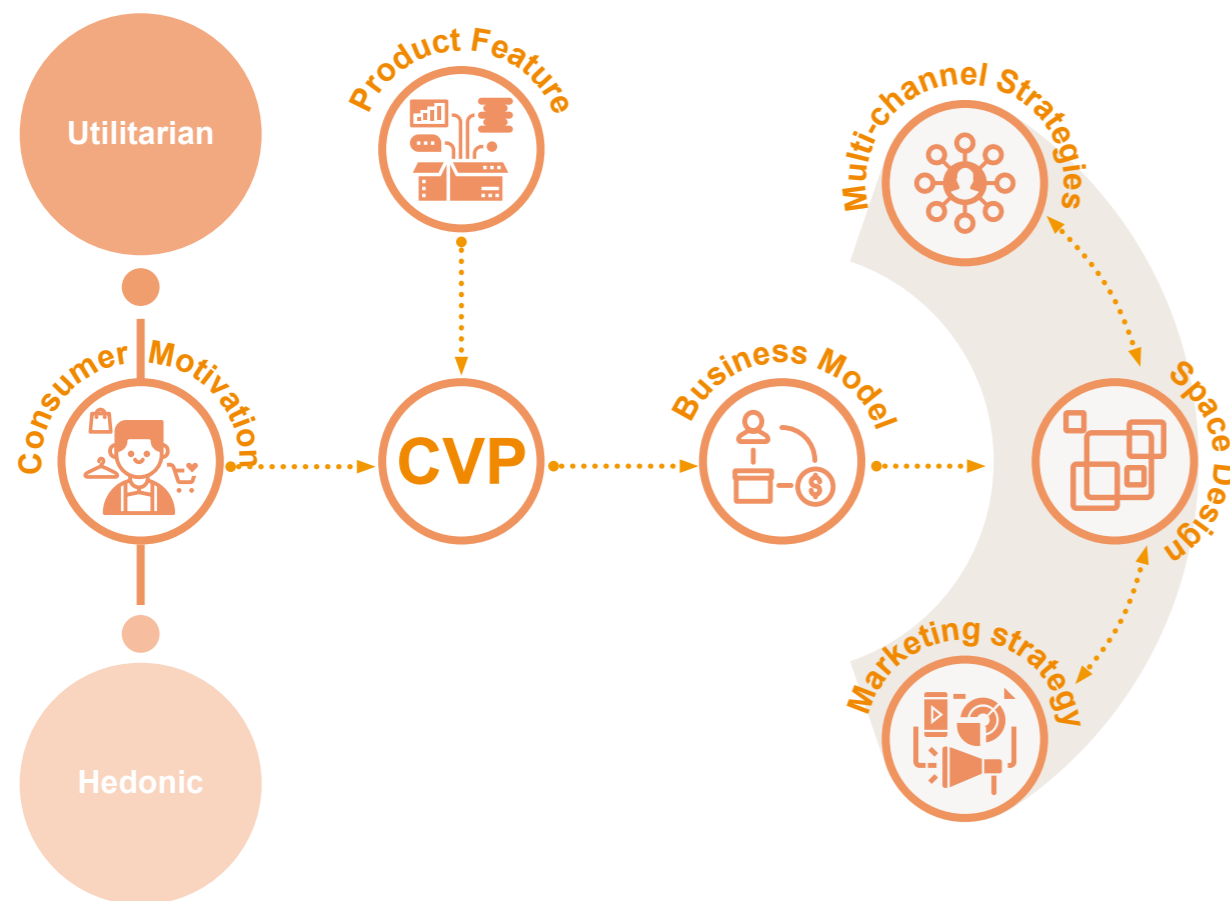
Current common business models

1.3.1 Utilitarian-driven business model

Food and grocery retail are typical of this business model. Take supermarkets as an example. Many supermarkets now offer both online and offline channels. Before entering the supermarket (either online or offline), customers often have a general shopping goal. Therefore, customers need to find products quickly and accurately.

Starting from this utilitarian demand, the offline space of supermarket will usually mark the product categories clearly(Image 1.1). The distance between the shelf and the shelf is usually wider than the distance between two trolleys, allowing customers to quickly pass through when choosing goods. Products will be arranged on the shelf according to the symbiotic relationship (For example, the toothbrush is placed near the toothpaste). In addition, early studies have shown that the placement of items on the shelf will affect customers' judgments on the value of goods. Drieze, Hoch and Park (1994) found that the best site for product selection on the shelf is near eye level, and consumers usually think similar products at the bottom of the shelf are cheaper (Raghubir and Valenzuela, 2009). Similar phenomena are also appearing in online channels. The advantage of online versus offline channels is that they can better show the diversity of products, and the rationality of online classification will affect the attractiveness of products to customers

(Barbara, 2016).

Consumers can buy instantly through offline channels at any time, but they will spend a lot of time on product selection. Online channels improve the efficiency of product selection, but they are not appropriate when purchasing a small number of products. The shopping process of the two channels is complete and relatively independent.

Although some retailers try to add cross-channel services to customers' shopping process (for example, add QR codes on products so that customers can query more detailed information about products through their mobile phones), they only use cross-channels as a supplement to other information Unable to improve the shopping efficiency of consumers. Therefore, the usage rate of the QR code is not high.

Image 1.1

1.3.2 Hedonic-driven business model

Luxury industry is a typical industry driven by hedonic. In the process of consumption, due to the highly personalization of human body shape and taste, people and commodities need high-intensity interaction. Therefore, providing supporting service and facilities in clothing stores of Luxury brand (such as comfortable waiting area, fitting room with suitable lighting, and seller who can give advice) will help enhance customers' consumption experience (Image 1.2).

Under this business model, online channels and mobile channels play more complementary roles. Consumers can browse clothes online and try them in physical stores, and they can also enjoy convenient after-sales service through online channels. However, consumers are usually unable to make purchases completely out of offline channels because of the highly customized services of luxury accessories.

1.3.3 Product-oriented sales logic

The offline environment of clothing retail tends to hedonic, while online has the characteristics of utilitarian. Whether it is a business model driven by hedonic or driven by utilitarian, its essence is a service-oriented sales logic. Another completely different business model is the product-oriented sales logic. The business model of technology product companies is typical of this category.

Online, technology companies help consumers quickly understand product performance by listing detailed parameters and using screen demonstrations. In the offline environment, unlike apparel retailing to enhance consumer shopping experience through services, technology companies pay more attention to product display. There is a large space between the product and the product, allowing customers to communicate with the seller while testing the product, and it is also enough for multiple people to discuss around a product (Image 1.3). In the customer's consumption process, detailed information on the product line and offline physical testing work together to help customers complete judgment and purchase.Obviously, in the offline space of this kind of business model, the priority of the product space is higher than the consumer experience space.

Image 1.2

Image 1.3

The influence of the Internet community on the retail space

1.4.1 Online communities and retail

Usually when people think of online retail, shopping websites are the first to be mentioned. In fact, online retail channels are not limited to shopping websites. The Internet community also plays an important role in the retail sector, including both information promotion and sales.
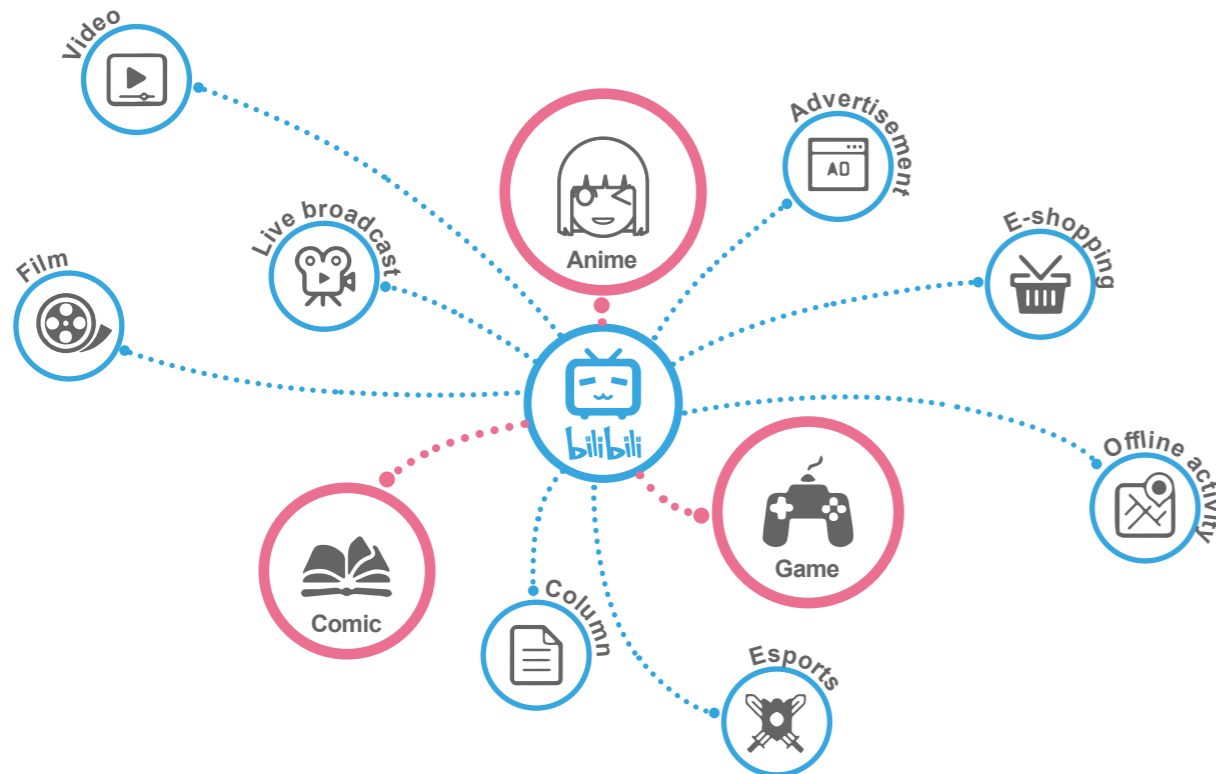
Due to its high-efficiency transmission of information, the Internet makes it easier for people with the same interests or goals to gather together. These people gather on a specific website to communicate with each other, and after forming a certain scale, they become a community.

Users in the community are highly active and interactive, and they are also groups with specific needs. Therefore, compared with traditional product promotion methods (advertisement on TV and websites), online communities have great economic potential. From the perspective of economic potential, online communities can be roughly divided into two types:

1 Community formed spontaneously by interest

There are many types of communities in this category. The upper limit of the scale is determined by the core concept and operating model of the community. For example, various bulletin board system(BBS) that flourished in the past have gathered users for a period of time due to their high-quality text content. But except for the more specialized BBS, most of the comprehensive BBS have been replaced by Facebook and Twitter. The economic value of specialized BBS is not good, because its user characteristics is high specialization, which limits the scale of users. Facebook and Twitter are the opposite, they have a large user base, and they can do targeted advertising based on user interests. But it should be noted that this kind of promotion is a one-way promotion like traditional TV advertisements, without two-way interaction. Retailers cannot directly recognize consumers' reactions to advertisements.

Bilibili is a well-known large-scale community on the Internet in China. It was an online video platform that gathered a large number of fans of animation, comics and game at early stages.In order to expand the user base, the content of Bilibili is no longer limited to animation, comics and game, and transformed into a more diverse content community. As an online video community, Bilibili's core feature is a real-time "bullet chatting" system (Chinese name: Danmu) that displays user comments as streams of scrolling subtitles overlaid on the video playback screen, visually resembling a danmaku shooter game. Danmu's function enables interaction between users and videos, and also brings users the experience of watching videos and discussing together with others across time and space .

This kind of highly interactive video experience is deeply loved by young Chinese, and Bilibili's user base has demonstrated strong engagement and loyalty to their communities, make Bilibili have strong economic value.

Danmu interactive area

Danmu input position

Display the number of real-time viewers and danmu to improve user participation

However, unlike ordinary online video sites, Bilibili promises users that it will never insert ads before or after the video. Instead, Bilibili's most distinctive marketing plan for retailers is to cooperate with video creators. Video creators who are willing to advertise for retailers will not only introduce products within the video, but also implant product links below the video. The link below the video will jump directly from the Bilibili app to the product page of the shopping app, and users can buy immediately within one second. For users, ''bullet chatting'' system can reflect other users' truly evaluations and experience of the product in time. For retailers, this feature can not only visually see the sales brought by the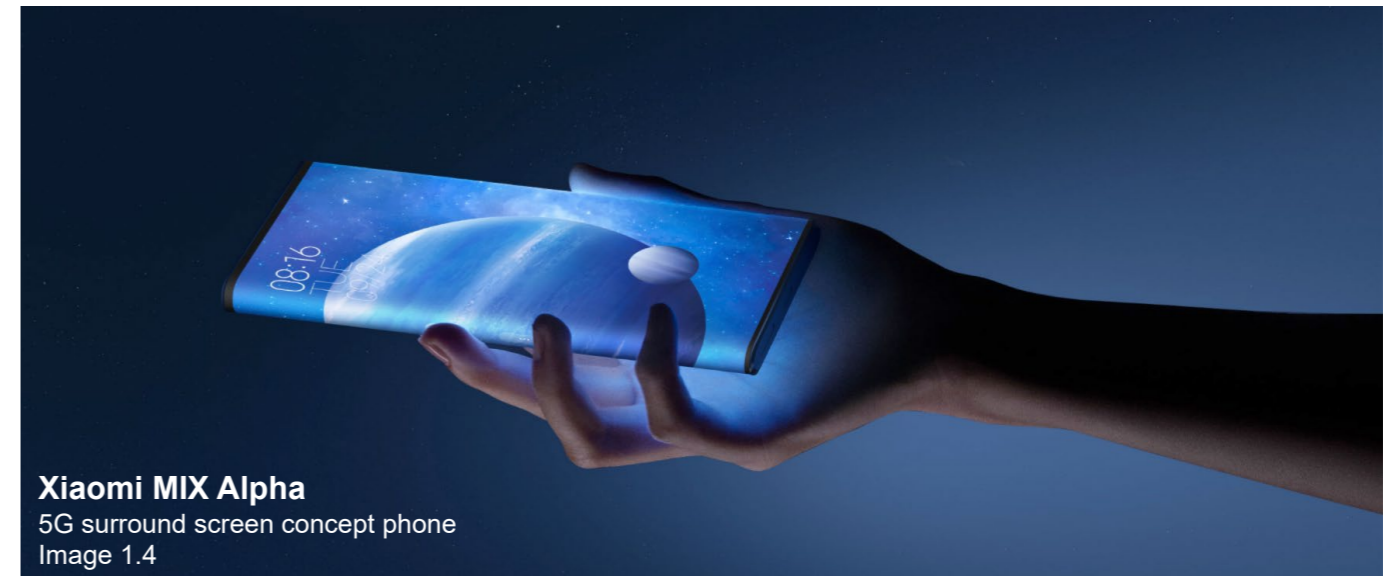 video creator, but also see the user's reaction to the product from the Danmu. It is convenient for retailers to make adjustments to products based on user responses.

2 A community formed by brands

For some big brand retailers, they need instant user feedback to improve their products. So, they chose to form their own community. Users who are active in this type of community are usually loyal supporters of the brand. Retailers communicate with users directly in the community, so that retailers and users form a benign and mutually beneficial relationship. Xiaomi Corporation is a typical example of this case.

Xiaomi Corporation is a Chinese multinational electronics company founded in 2010. Corporation claims that Xiaomi is an internet company with smartphones and smart hardware connected by an IoT platform at its core. "Just for fans" is their belief. Xiaomi's business model focuses on online channels, so they can keep product costs as low as possible. And communicating with users through online communities can help them create the best user experience and innovation direction. Although compared to the comprehensive community, the user scale of the Xiaomi online community is difficult to increase rapidly. But the users are very loyal, and because of the good reputation created by the benign communication, it helps Xiaomi continue to attract new people to join.

Video producers can set video-related shopping links below the video, and redirect to the product interface through the shopping link

Xiaomi MIX Alpha
5G surround screen concept phone
Image 1.4

Xiaomi Community App

Retailer-initiated discussions

User-initiated discussions

After-sales service

Discussion zones for different products and activities

Acceptance survey of the most watched products

Proposals initiated by users. If the proposal is passed, the feature will be added to the product.

User feedback and requests for help

Answers from product managers and engineers

1.4.2 Consumer self-extension

Belk proposed the concept of self-expansion as early as 1989. In the original conceived, the extended self consists of a person's mind, body, physical possessions, family, friends, and affiliation groups (Belk,1989). With the development of the Internet, the emergence of social media, virtual worlds and other digital activities have expanded the ways people express themselves (Belk,2015). This has had a huge impact on the retail industry.

Nowadays, if retailers want to stand out from the competition, it is difficult to win on the basis of product quality and price alone. Winning customers' love has become the focus of retailer's development. In order to more accurately grasp the needs of consumers, more and more companies are trying to shift from unilaterally promoting products to users to establishing two-way connections with consumers. Individual voices

are becoming more and more audible on the Internet. Therefore, the influence and initiative of consumers have been expanded. Some consumers speak up online. When their voice is welcomed by other people, they will gather a group of followers. Their opinions will serve as a reference for followers and influence their decision-making. As a result, these people turned from consumers to influencers. Of course, even ordinary consumers with low volume, as long as they speak online, they may affect the decisions of other consumers. But influencer's views can even directly affect the brand. It is also worth noting that due to the development of 4g networks, the video and live broadcast fields of mobile internet networks have become more and more popular. This means that the space of the video creator has also become a part of the video information. The environment and spacial design in this field is currently lacking in discussion and study.

Mr 迷瞪(Mr confused) is a video maker of Bilibili who focuses on publishing home decoration related information. On June 28, 2020, he released the "23 Socket Horizontal Evaluation". After the video was released, the sales of a niche brand (LEVITON) sockets unexpectedly increased, the retailer spent money to invite Mr 迷瞪 to produce a video specifically to promote the brand's sockets. So Mr. Mizeng released a new video introducing the brand on October 26 and added a product link below the video.

1.4.3 KOL: Key opinion leader

In addition to influencers, there is also a third party that affects retailers through digital channels. Before the Internet's social sector flourished, many retailers began to use key opinion leaders (KOL) to convey information to consumers. KOLs are usually people with relevant professional knowledge, and consumers believe that they can give professional advice. Based on this trust, KOL can effectively convert reputation into purchasing power. For retailers, KOL can deliver product information to consumers accurately and humanely. An example of this situation is the relationship between pharmaceutical companies and doctors and patients.

On the Chinese Internet, in addition to independent KOLs (independent KOLs usually overlap with influencers), e-commerce platforms will also cultivate their own third-party KOLs. Taobao online shopping platform is the first platform to cultivate KOLs. Taobao's KOLs will set up a professional selection team to recommend Taobao retailers and their products to the audience through daily mobile live streaming. This kind of KOL's live space usually needs to be designed to fit their recommended products.

Professional selection team cultivated by Taobao shopping platform.

2 Methodology
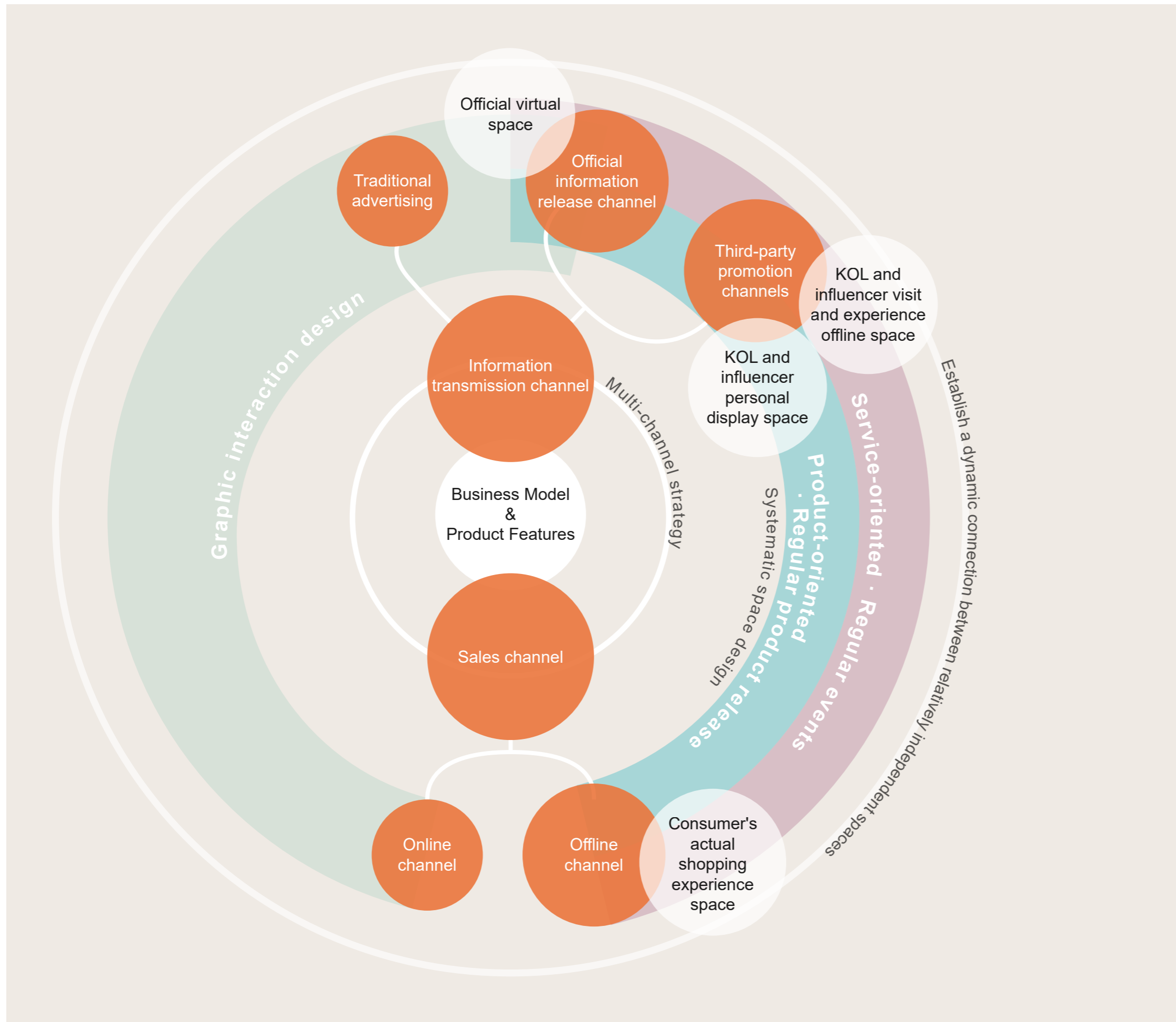
Systematic retail design framework

Today's world is becoming more complex, and business models have become more complex and diversified.The multi-channel retail strategy allows consumers to obtain products from retailers no longer limited to physical space. Therefore, the designer's retail space design includes not only physical space, but also digital space. The space on these different channels can be collectively referred to as the retailer-consumer interface. Under the complex multi-channel business model, if the designer only designs a single retailer-consumer interface, it is not conducive to the unified planning and adjustment of decision makers, and it will also leave consumers with a confused image of the brand value proposition. The systematic approach grants decision makers to have a broader and more dynamic view of observed phenomena (Barile, Lusch, Reynoso, Saviano, Spohrer,2016). Therefore, designers need to use systematic thinking to design the retailer-consumer interface of the enterprise. In addition, although the core value of an enterprise is constant, the enterprise is constantly moving forward. In compliance with this need for a more holistic and dynamic view of business and social phenomena, we need to explore a systematic design framework that can continue to evolve.

The core of the systematic design framework is the business model and product features of the enterprise. Generally speaking, business models can be divided into two categories, service-oriented and product-oriented. These two models will lead to two different design
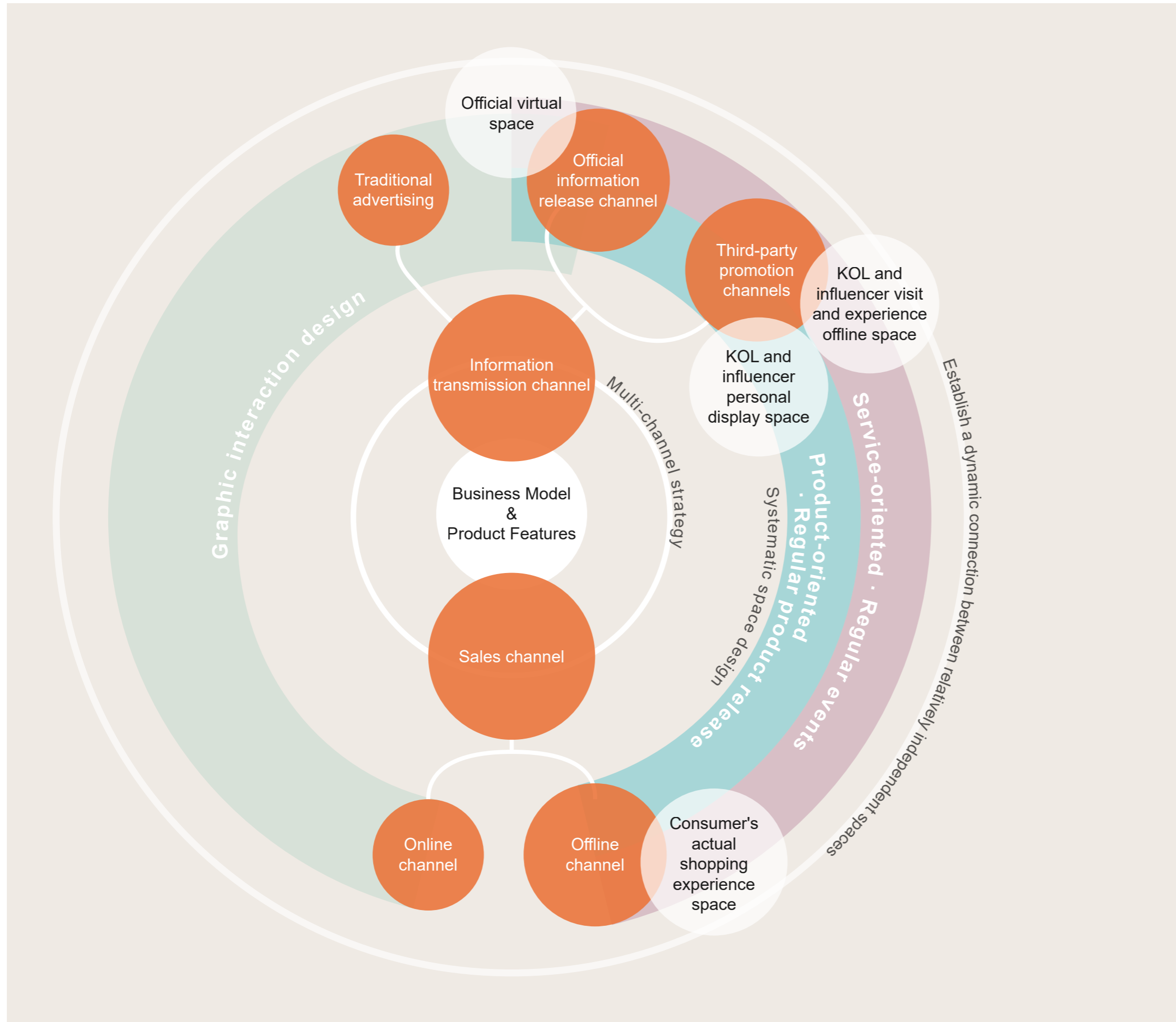
frameworks. In a product-oriented framework, the release of new products will bring about a series of spatial changes. The most obvious case in traditional retail is the fashion industry. As the clothing is updated every quarter, the theme of the window layout in the physical store will change. In a service-oriented framework, the business model driven by hedonism usually holds regular special events, which brings about a series of spatial changes. A business model driven by utilitarianism usually does not change much in the space. It will only change dramatically when new and more convenient technologies appear (For example, new technology turns traditional supermarkets into unmanned supermarkets).

Compared with the traditional retail model, the new retail model must not only establish multiple sales channels, but also establish channels for information transmission to consumers. In addition to traditional advertising, in order for consumers to quickly find accurate information of product, it is necessary to establish official information release channels on various social media platform. And do special design based on different characteristics of platform. For example, post the latest product short messages on Twitter, and post detailed product explanations on the video platform. Another important promotion channel is to invite KOLs/influencers to test new products or invite them to experience offline stores.

Regular product updates and new events will

help keep consumers fresh about the brand, and the matching space changes will help deepen this feeling. Online purchase channels and offline purchase channels will attract traffic to each other (Pantano and Gandini, 2018). Maintain the unity of online space and offline space in every cyclical change, which helps strengthen mutual traffic flow between channels.

How to use systematic retail design framework

The design team and the retail company usually have a cooperative relationship, mainly to help the company optimize the interface between the consumer and the company, and will not directly participate in the company's product design and value proposition construction. Therefore, before starting a specific design, the design team must first fully understand the product features, the company's value proposition, user portraits, and existing business models. And judge the direction of deepening the business model.

In the process of further optimizing the business model, the designer team needs to establish a relatively fixed design framework, evaluate and improve multi-channel strategies and marketing strategies, and integrate them into the retailer-consumer interface.

After completing the fixed design framework, the design team can further implement specific space design and graphic interaction design in combination with current popular technologies. And in the design process, always pay attention to ensure the correlation between different channel interfaces, and always be consistent with the value proposition. The design of this part can be adjusted and changed with the company's development plan.
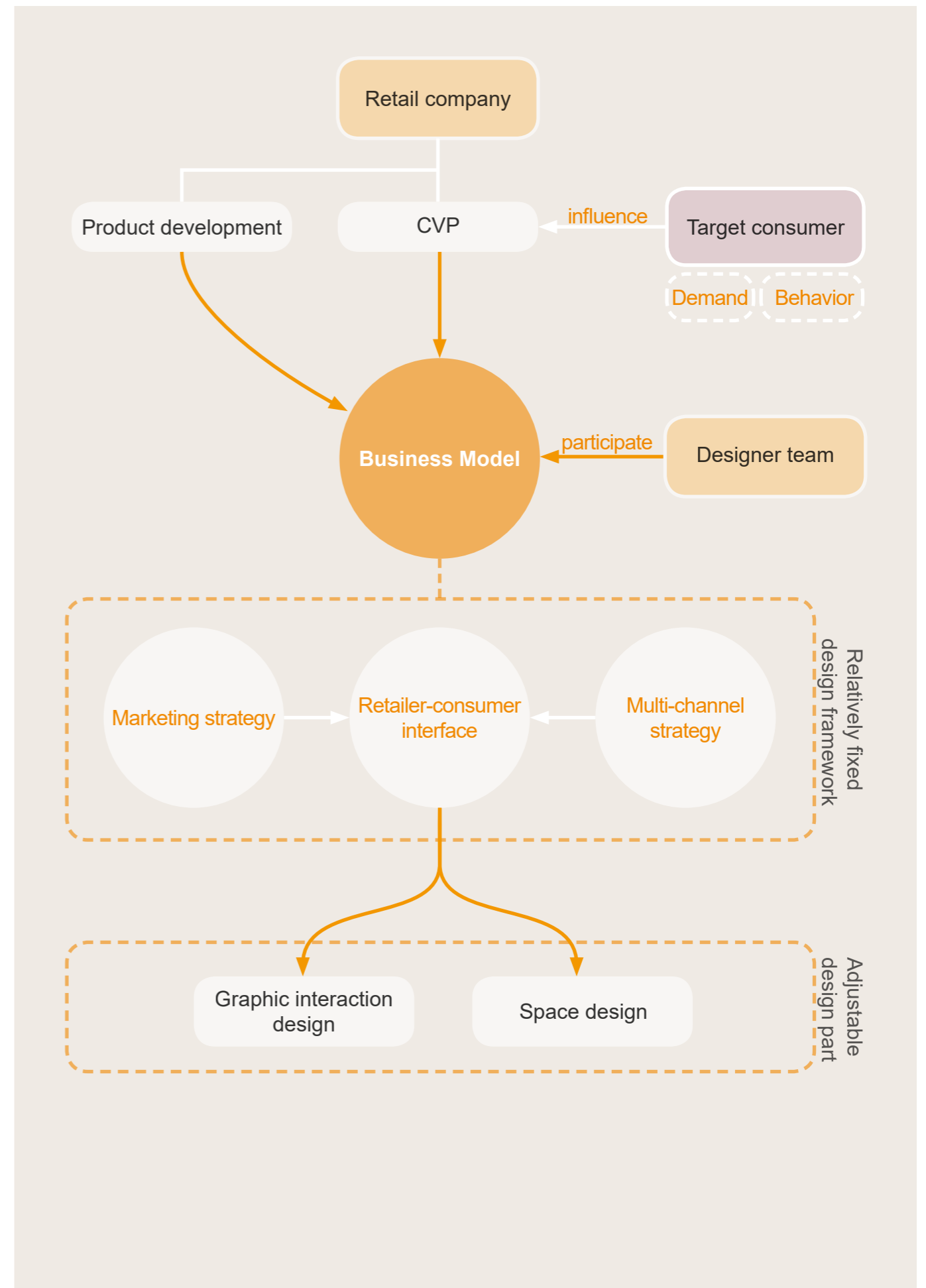
How to design online space based on the characteristics of current popular online channels

As mentioned previously, the prospects of using systematic thinking and frameworks for design in the current market have been demonstrated. Retail designers need to learn to use a systematic design framework to coordinate and design with multiple parties. In actual operation, the design framework involves marketing planning, interface design, space design and other aspects, requiring division of labor and cooperation within the design team. This paper mainly discusses how spatial design works under the framework of systematic retail design. The space design mainly involves two parts, the online space and the offline space. The design methodology of offline retail space has been studied many times, but the research on the design methodology of online space is still relatively few. In this part, how to construct online space will be discussed. The design of the offline space will be discussed in the following chapters in conjunction with the specific situation.

Currently, there are two popular online channels, one is online channels with computers as terminal devices, and the other is mobile channels with mobile phones as terminal devices. Users usually regard terminal equipment and the performance of online space as a whole. Therefore, when designing an online space for retailers and KOLs, it is necessary to consider the performance of the space when it is converted to the device screen and the appropriateness of the space and the online platform.

The presentation effect of the online space is closer to the window performance and stage effect. According to the person's binocular field of view (120°) and the limit of color discrimination (55°) of the vertical field of view, it can be concluded that the high aspect ratio is more suitable for the human body. Currently the most widely used screen aspect ratio is 16:9. The screen size of most computers, laptops and TV is based on the 16:9 aspect ratio. Unlike a computer, mobile phone can use a larger aspect ratio (use the screen vertically) due to its one-handed operation. But most of the apps on mobile phones still use 16:9, because of need to cooperate with other devices. Therefore, there are usually two kinds of "stages" for the presentation of online space, one is the traditional horizontal screen (16:9), and the other is the vertical screen that is convenient for one-handed operation (9:16).

Whether it's horizontal screen or vertical screen, for the staged-like online space, the foreground, middle ground and background need to be considered in the design process.
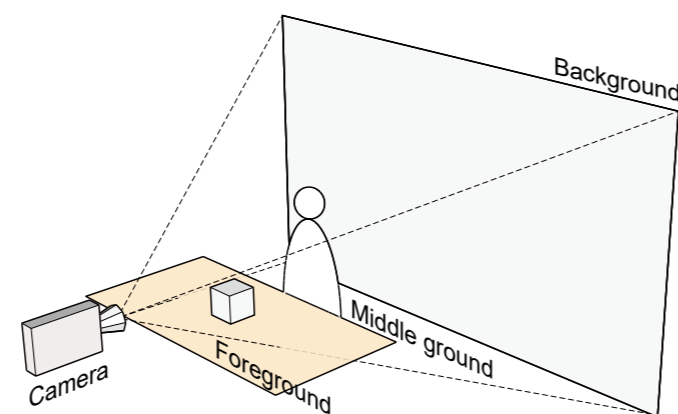
The foreground of the space is used to display the product, the middle ground is the KOL or influencer, and the background is the product-related display design. When consumers look at the online space, they hope to see the actual effect of the product. If the viewing angle presented on the screen is similar to the human eye's field of view, the experience of online space is close to the sense of consumers experience when they actually touch the product in the offline space. On a 35mm full-frame camera (36mm x 24mm frame size)(Joe Pepersack,2020):

· A 10mm lens has a 121.9° horizontal field of view (FOV), which corresponds to our full range of binocular vision.
· A 28mm lens has a 65.5° FOV, which is a little wider than the area of focus, so it includes some peripheral vision.
· A 35mm lens has a 54.4° FOV, which corresponds to the area of focus for two eyes.
· A 50mm lens has a 39.6° FOV, which corresponds to the monocular vision from a single eye.

When a person is looking at the screen, the screen is usually in the area of focus of the eyes, so the camera for shooting online space, it is best to use a 28~50mm lens.
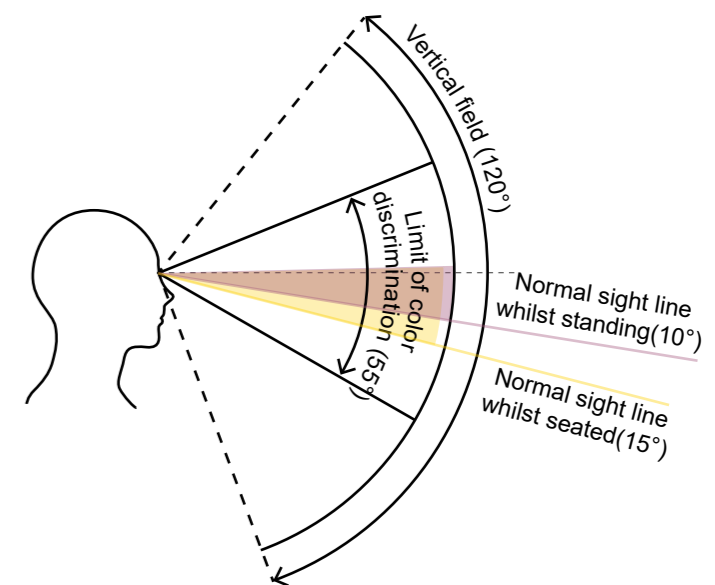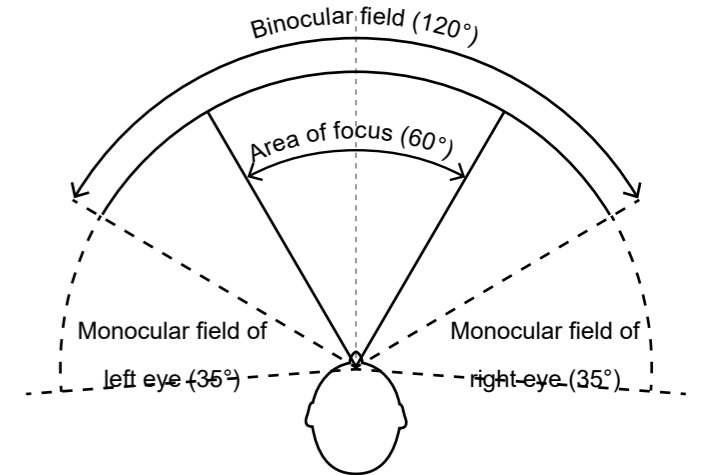
Picture data source:
[1] Howard, Ian P.; Rogers, Brian J. (1995). Binocular vision and stereopsis. New York: Oxford University Press, 32.
[2] Torrejon, A., Callaghan, V., & Hagras, H. (2013). Panoramic Audio and Video: Towards an Immersive Learning Experience, iED Europe Summit.

2.1.1 Single-person operation space in horizontal screen

KOLs and influencers cannot decide whether to use the screen horizontally or vertically. This is usually determined by platform characteristics. The Bilibili platform mainly publishes long videos. For long videos, the horizontal screen is more in line with the physiological needs of the eyes.Therefore Bilibili use 16:9 horizontal screens as the mainstream. In order to prevent the audience from getting tired, product-related videos usually have a fast pace, the video of a single product introduction is controlled within 5 minutes.And a single product introduction needs multiple scenarios to add change and drama.

钳子拯救没胃口（Pliers save the appetite）is a KOL of seafood product in Bilibili. His profession is a seafood dealer. On his Bilibili channel, he mainly talks about different kinds of seafood knowledge and taste, and occasionally advertises related foods. In his early online space, there was only one scene. The background colors and lack of

The early online space of "Pliers "

auxiliary light sources made the environment dark, giving food and his's faces a dull and unhealthy color. Now, his online space is divided into three scenes according to the video process.

The first scene is used to introduce seafood varieties. In this scene, the video author replaced the oppressive blue background with a white background. The pure white background and white costumes dilute the sense of existence. The newly added supplementary light source improves the brightness of the picture. In order to further highlight the seafood in the foreground, the video author's chair is shorter than the traditional dining table and chair height. Therefore, in the scene of introducing seafood, the focus of the picture is on the foreground.

The second scene is used to introduce how to process the ingredients, so the setting of the scene is the kitchen. In this scene, the video author needs to show the audience the action of handling the ingredients, so the center of the screen is the middle ground of the space, and the table corresponds to the height of the kitchen console. Besides, using the kitchen as a background can give the audience a better sense of substitution.

The third scene is tasting. In this scene, the audience mainly listens to the video author's analysis and evaluation of the taste, so the focus of the picture is still on the middle ground. To avoid monotony, close-ups of food

are inserted. In addition, in order to undertake the previous scene, this scene chose the exterior of the kitchen as the background.

This three scenes are connected in series with the timeline as the axis. Introduced seafood related information, cooking methods and taste from the perspective of consumers.

First scene

The visual center is on the foreground

Second scene

The visual center is on the middle ground

Third scene

The visual center is on the middle ground
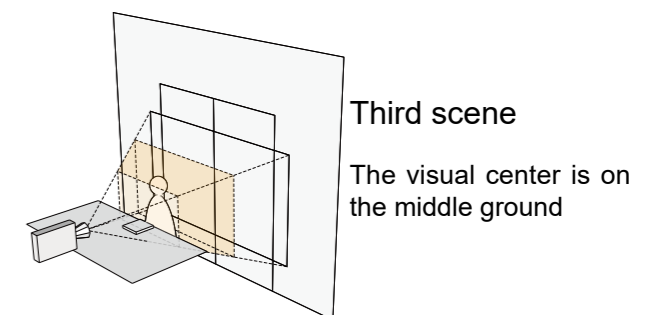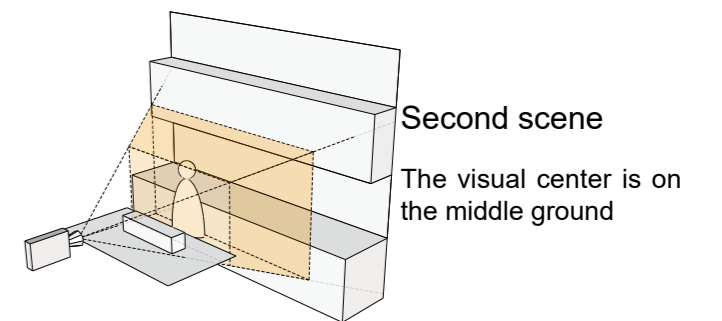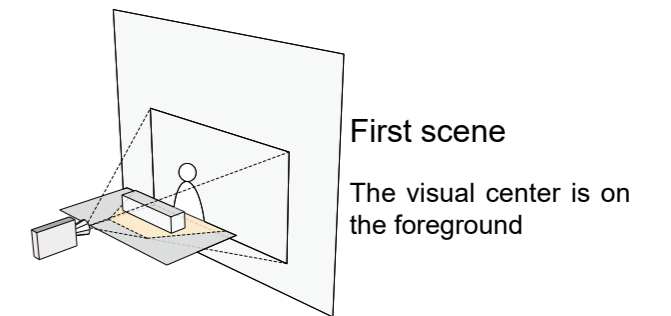
2.1.2 Two-person interaction space in horizontal screen

Another common scenario for horizontal screens is a two-person interaction scenario. The single-person scenario is usually the interaction between people and the product, and the two-person scene pays more attention to the communication between people.

AHALOLO is bilibili's fashion KOL. Both AHA and LOL are fashion practitioners. Their channel is mainly composed of three types of content: discussion of quarterly fashion shows, telling stories of famous brands, and actual testing of clothing.There are usually about 10 pieces of clothing in the wear-and-match video for testing clothing products, and the duration is controlled at about 20 minutes. In this kinds of video, AHALOLO usually divides the video into two scenes, one is a two-person discussion scene, and the other is a display of outfit effects.

In the discussion scene, the video author only set up the foreground and background, sincethe size of the clothes does not fit in the foreground of the horizontal screen. In the foreground, the distance between the person and the camera is very close, in order to create an atmosphere that audience and video author are friends chatting together. The background is a solid-color wall with plenty of space above. This is to adapt to the unique Danmu culture of the Bilibili.

When showing the effect of clothes on the body, a vertical screen is more suitable than a horizontal screen. In order to solve this problem, the video author chose to divide the frame into two parts. The left half uses a vertical composition to show the scene of trying on clothes, and the right half is still a discussion scene with a horizontal composition. In addition, this split-screen method can make the screen more flexible. When displaying the details of the clothing, the left half of the screen is converted to a horizontal screen.
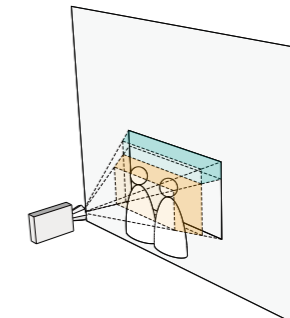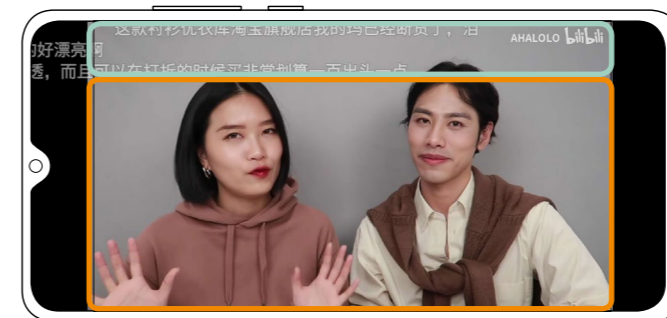
Discussion scene

The visual center is on the foreground
The background is left to the Danmu
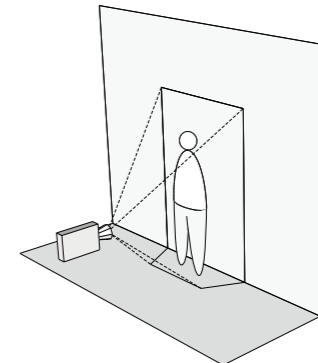
Display scene

Vertical screen is more suitable for displaying clothing
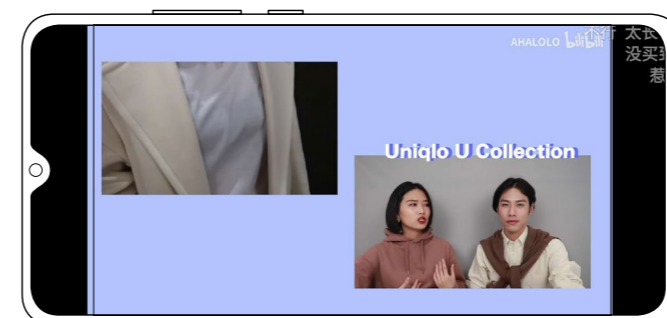
Display scene

Close-ups display

The live interface and product purchase interface can be quickly switched.

Close button
Follow button
Discount button

Live chat window

Commodity link

Message input box + interactive button

Live interface layout

2.1.3 Single-person display space in vertical screen

Taobao is a Chinese online shopping platform. In 2018, Taobao launched the livestreaming service on its mobile app. Taobao's shopping interface uses a vertical composition design, because the user is more in line with the habit of using mobile devices with one hand. Therefore, when the livestreaming service is added, in order to ensure that the user is not have to turn the screen horizontally and vertically when switching between the shopping interface and the live interface, the livestreaming interface inherits the vertical composition design.

Bilibili can send Danmu throughout the screen, so the background of the online space is usually very simple. The live chat of Taobao Live is limited to a small area in the right corner, and the vertical screen allows a lot of space at the top of the screen, so Taobao Live 's background of online space can have more complex performance.

There are two main types of livestreaming space on Taobao. One is the live room directly opened by retailer to answer questions about products to consumers, and the other is a professional selection team that acts as a bridge between consumers and retailers.

There are thousands of large and small retailers on Taobao shopping platform. Generally, big brands pay more attention to

the display of online space, but whether it is a big brand or a small retailer, they generally choose to let a single person appear in the scene to show consumers their products. And the space is usually adjusted according to the size of the product.
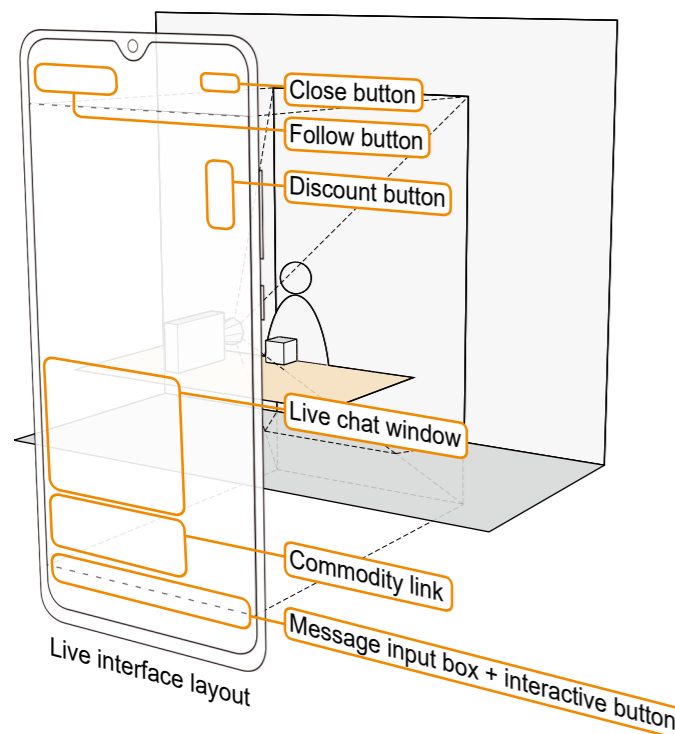
From the live platform, three representative products were selected according to their sizes. The products in the picture are clothing, furniture, and mobile phones from left to right. The size of products are from large to small. The distance between the products and the lens is also from far to close. Although the size is different, the face of the person in the scene is on the center of the screen. The live room host needs to read the questions of
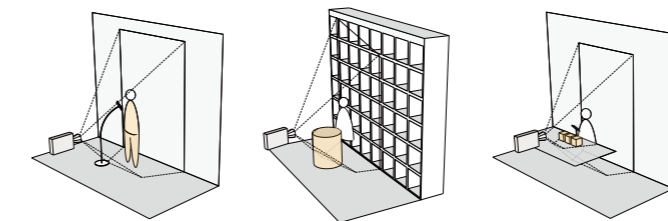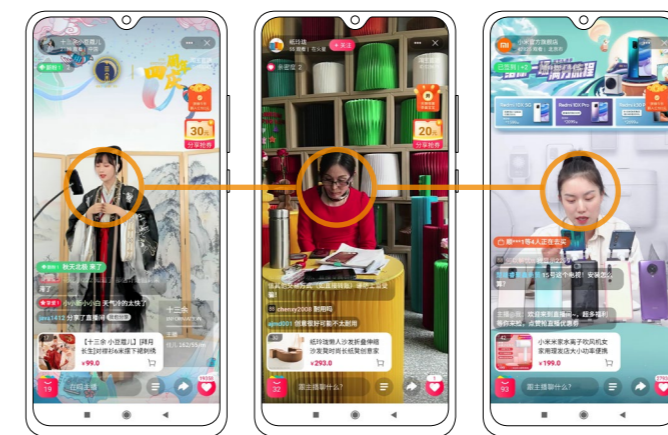
Size of products

BIG .... SMALL

Distance between the products and the lens

FAR .... CLOSE

consumers on the mobile phone. For scenes that need to use both hands to display the product, a special mobile phone holder is usually required.

In the single-player single-scene live space, the layout of the foreground and the middle ground is relatively modular because of the characteristics of the product. Therefore, to improve the quality of the space, it is necessary to improve the design of the background. The background can develop three functions: assist in displaying the details of a single product, show the diversity of products, create an atmosphere in line with the product. Take the online space of clothing products as an example:

Focus on the clothing itself
Choose a simple background that matches the style of clothing, allowing consumers to focus on the clothing itself
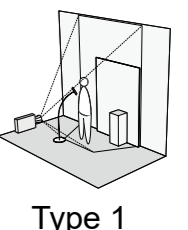
Type 1

Focus on the diversity of the series
In addition to the regular background, use the movable hanger as part of the background
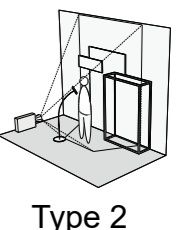
Type 2

Double background
Choose the corner of the wall as the background to form a double background. One to show the diversity of products, one to add furniture to create atmosphere

Type 3

"Li Jiaqi" selection team choose a cosmetic display shelf which has the iconic significance of the team as the background of the main scene.
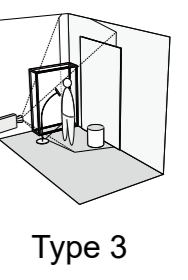
2.1.4 Multiplayer operation space in vertical screen

The professional selection team on Taobao live platform usually requires more than five people to adapt to more complex live show situations. Because the selection team will display various types of products, the live room usually requires multiple scenes. Moreover, according to the different themes of each live show, the style of the live room space will also change greatly.

Take Taobao's top selection team "Li Jiaqi" as an example. Li Jiaqi was famous for lipstick evaluation in the early days. Li Jiaqi was initially dedicated to cosmetics evaluation and recommendation, of which lipstick evaluation is the most famous on shopping platforms. Later, he established a selection team, and the selection of products is no longer limited to cosmetics. As long as they are excellent products, they will be selected into his team's selection list. Although his selection is no longer limited to cosmetics, the evaluation of cosmetics has become an important image label for his team. Therefore, the background design of the main scene of his daily online space is based on the theme of displaying cosmetic products.

In each daily live event, the selection team will introduce about 20 products. Each product takes about 5 minutes. After introducing one product, you must quickly switch to the next. The introduction time is very tight, so the

layout of the live space need to ensure high mobility and efficiency.

In the middle ground of the main scene, the leader (Li Jiaqi) and an assistant need to appear on the screen. The leader introduces and evaluates the product, and the assistant is responsible for answering and supplementing information. Due to the limitation of the vertical screen, the leader usually shows his whole body on the screen, and the assistant usually only shows half of his body. The table used to display the product should be long enough, and the mobile phone displaying the interactive comments of the audience is placed on the side of the leader outside the screen, which can facilitate the leader to read the consumer's information feedback, and will not let the mobile phone occupy the valuable product display area. The unintroduced products are placed on the side of the assistant off-screen in order. When it is a product's turn, the assistant will transfer the product from the waiting area to the product display area. When the introduction of the product is finished, the leader will transfer the product to the introduction completion area off the screen.

Secondary scene

Main scene

Secondary scene

the distance hould not be less than 1.5m

1.5m
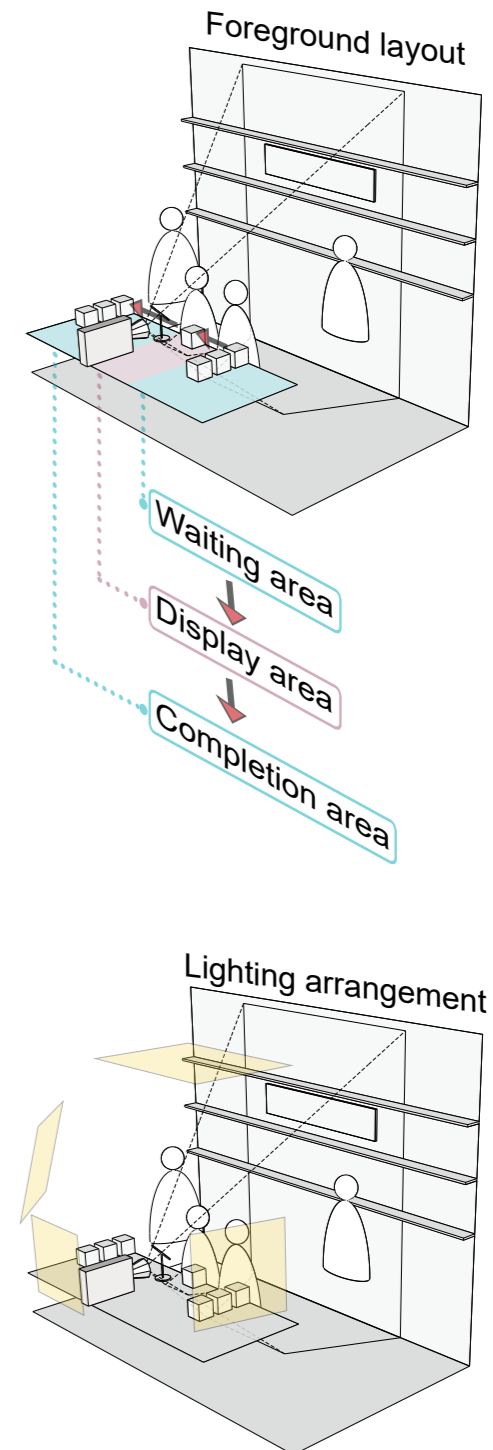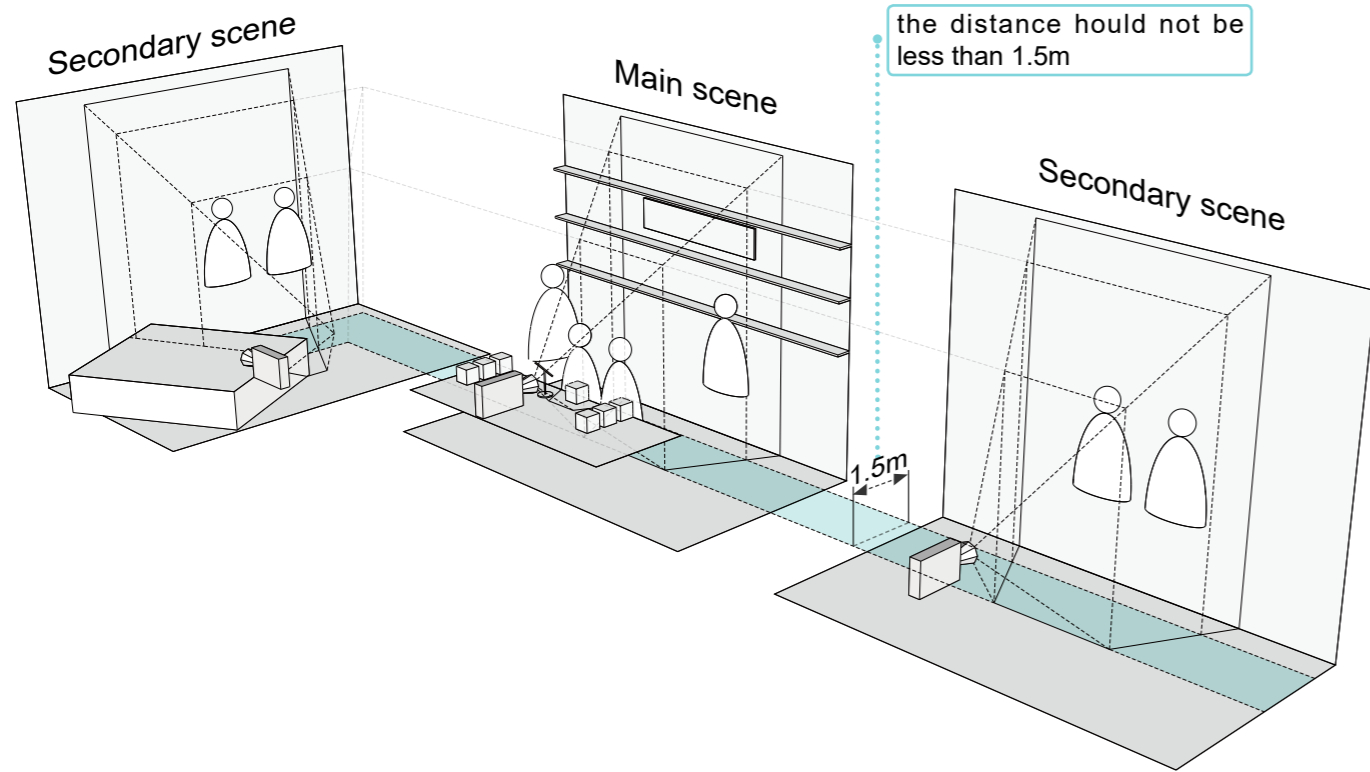
The secondary scene atmosphere needs to fit the product charac-teristics

The main scene has the need for multiple people to enter the scene

Need to leave enough space above to display product parameters

Due to the diversity of products, a single scene cannot satisfy the selection team, so multiple secondary scenes must be set. For example, In a daily live event, food products, bedding products and clothing products need to be introduced. The suitable scene layouts corresponding to these three products are different. Food products are suitable for the main scene, but the other two products require additional scene layout. Therefore, the distance between the middle ground and the background should not be less than 1.5m. This is not only allow other assistants to pull some products into the scene (such as clothes display racks) or allow multiple assistants to appear in the scene, but also let leaders and assistants to quickly move to other scenes.

In addition to the online space for daily live, the selection team will also set up short-term online spaces according to specially planned activities. Li Jiaqi's team planned a live event on food topics. According to the theme of food, the online space has been arranged as a nostalgic Chinese restaurant. This style of space will make Chinese consumers easily think of food memories in the 1990s. Therefore, the retailer's designer can work with the product selection team to create a specific online space for their own brand and enhance consumers' brand impression of the product.

Scene design of food theme activities

3 Case study

Social background

The traditional retail spaces impacted by online channels

Technology change

change

Individual Needs

constitute

Social needs

influences

Business Model

influences

Systematic Design Framework

Technology changes lives, and new lifestyles create new needs for individuals. Society is a collection of individuals, and a collection of individual preferences is social needs. Understanding social issues can help retailers grasp group preferences and formulate CVP and business Model. This enables the designer team to accurately establish a systematic design framework.

From popularization to mobile payment in every city, to retail stores using various new Internet devices, the Chinese market has been constantly exploring the way of life in the future. The consumption goals of Chinese consumers have become more extreme, either pursuing extreme high efficiency or pursuing a special consumption experience. Traditional retail no longer adapts to the current social needs. Retailers who want to be loved by consumers must constantly explore new spatial models. It can be said that new social needs provide opportunities for retailers, and new retail helps solve social problems.

This chapter will give three cases of new retail in China. The success of these three retail models is because they have filled the gap in social demand. Understanding the relationship between these cases and social needs can help designers understand how to find social needs related to products when establishing design framework, and convert the needs into designs.

Social background

China's Internet shopping boom is inseparable from an efficient express delivery system. According to the latest data from the Cainiao platform (one of China's largest logistics platforms), the average delivery efficiency of express parcels in 2020 has reached an astonishing 48 hours. Efficient logistics systems have expanded online sales for many retailers and have further suppressed some traditional offline retail models. One of the retail industries severely hit by e-commerce is book retail.

Compared with many other products, physical books are non-emergency products most of the time. The delivery time of three to two days will not affect consumers' use of books, so consumers with clear shopping goals are more inclined to buy books online. In addition, the popularity of e-books has fundamentally affected the sales of physical books. According to a report by China News in 2014, the number of physical bookstores in Shenyang has decreased by 70% in ten years, from 3,000 to 700. At that time, the decline of the traditional retail of physical bookstores could not be stopped. However, the reduction of bookstores has not only affected book retailers, but also caused modern people to reduce the amount of in-depth reading. This is not conducive to the construction of social culture.

For such social problems, the Chinese government always issue corresponding policies to intervene. Therefore, in 2016, eleven government departments jointly issued the document << Guidance on supporting the development of physical bookstores>>. This document points out that it is necessary to promote the development of physical bookstores, enhance the informatization of physical bookstores, encourage physical bookstores to participate in public cultural services, and give play to their social service functions. The most important thing is to reserve business premises for physical bookstores during urban planning, and provide project subsidies for bookstore innovation projects and the transformation of small bookstores. The support of the policy attracts capital to participate in the upgrading of bookstore space and developed many well-known physical bookstore brands. The "2019-2020 China Physical Bookstore Industry Report" pointed out that the number of physical bookstores in China in 2019 exceeded 70,000, a significant improvement over the past.

Many products can integrate online and offline channels, but products such as books have created competition between the two channels. In the early days, there was pure price competition between physical bookstores and e-commerce platforms. Because online platforms did not have physical space, online retailers were able to further reduce costs. Therefore, traditional physical bookstores gradually declined. The current competition between physical bookstores and e-commerce platforms has moved towards complementary

and differentiated competition. The shopping core of the e-commerce platform is to satisfied the utilitarian needs of consumers. The core of the transformation and upgrading of the physical bookstore is to create a "cultural complex space", the essence of which is to create a new consumer experience by adding other types of space. To satisfy consumers' hedonistic needs. The business model of the new physical bookstore is also different from that of the traditional bookstore. Book sales profits in new bookstores usually only account for a small part of physical bookstores, and most of the profits often come from the consumption of additional space. This business model is called "Bookstore+". The physical bookstore also uses online channels, but the application of online channels by physical bookstores is basically limited to advertisements and event notifications.

Case analysis

Sisyphe is one of the top three physical bookstore brand in China. It's business model is a typical "Bookstore +", and the core model of its spatial layout is "Bookstore + Café". Sisyphe 's business philosophy is to "participate in the construction of local spiritual life and guide the public to read deeply." Sisyphe tries to cover the city extensively, so it will not open a large bookstore in the center, but distribute multiple small bookstores in the city. Sisyphe has developed four standards of bookstore space to adapt to different location needs:

"SISYPHE CITY BOOKS"
A flagship store with a relatively complete product structure and the service radius is entire city.

"SISYPHE GARGEN BOOKS"
The bookstore that mainly serves families and children. Parent-child reading activities will be held regularly.

"SISYPHE PARK BOOKS"
The standard bookstore which is adjust the corresponding humanized theme according to the location. The service radius is surrounding communities.

"SISYPHE THEME BOOKS"
The bookstore with special theme.

Image 3.1
"SISYPHE CITY BOOKS"
Bookstore mainly for adults.
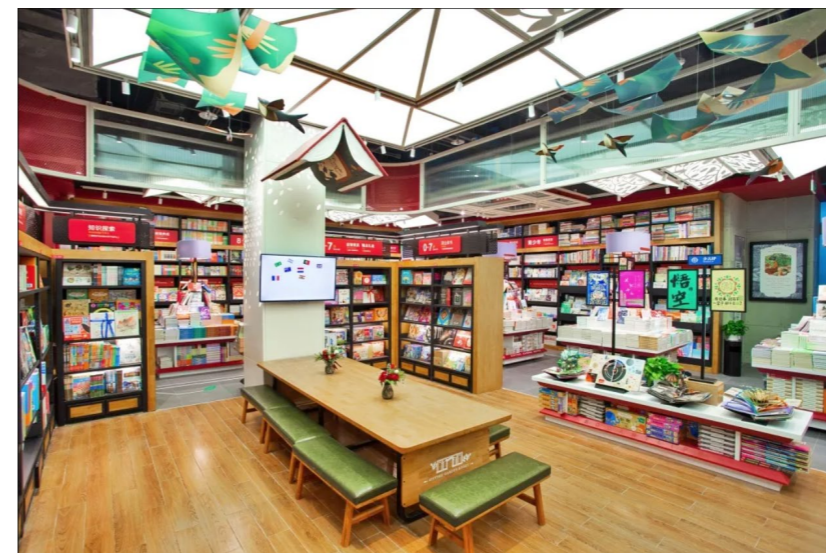
Image 3.2
"SISYPHE GARGEN BOOKS"
Bookstore centered on the parent-child reading activity area.

Image 3.3

"SISYPHE THEME BOOKS"
Bookstore with the theme of "travel"

Denouement
Reading area

Falling action
Bookstore area

Exhibition
Exhibition area

Climax
Bar & Café area

Rising action
Window area

Climax
Café area

"Huangpu River" pavement ▼
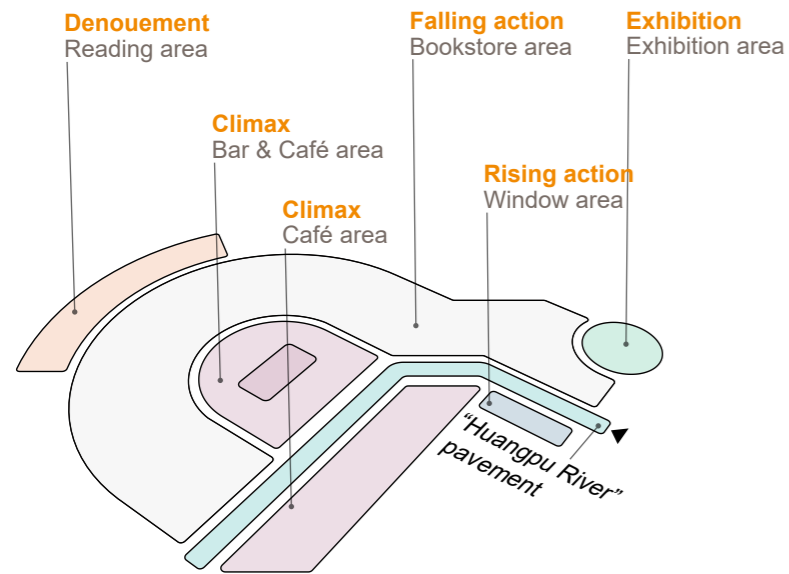
Take "SISYPHE · TIMECROSS" as an example.

"SISYPHE · TIMECROSS" located in Pudong New Area, Shanghai belongs to the "SISYPHE Theme Book" series.Sisyphe defines this bookstore as the intersection of time and time, the intersection of culture and culture, expressing space in the form of a theater.

Its location is near the Huangpu River, which is the most prosperous place in Shanghai. It can be said that the Huangpu River has witnessed the changes in Shanghai. Therefore, the guide route in the bookstore uses the "Huangpu River" as a pavement (Image 3.5), as a response to the regional cultural background. Dramatic structure usually consists of five parts: " Exposition, Rising action, Climax, Falling action, and Denouement ". The bookstore space integrates the dramatic structure into the "Exhibition area, Window area, Café area, Bookstore area, and Reading

Image 3.4 Huangpu River

Image 3.5 Huangpu River pavement

area". These areas are connected in series by "Huangpu River".

As the beginning of the entire space, Exhibition area and Window area show consumers history and books related to drama and attract consumers to explore the bookstore (Image 3.6). Drama-related products will also be displayed at the entrance to stimulate consumption. The Café area, which represents the part of Climax, is the center of the entire space (Image 3.7). When readers meditate in the café and look around in the reading area, they can have a sense of stage viewing.

The space of the Café area can be quickly adjusted to meet the needs of the event when reading activities and signing activities are held. The comfortable café space makes consumers willing to stay for a long time. Even if consumers don't buy books, retailers can make money from coffee and beverages. Regularly held activities can maintain the exposure of the bookstore and the number of consumers, so that consumers around the bookstore can be transformed into members of the bookstore, and the bookstores can get continuous profits from members.

Summary

The "2019-2020 China Physical Bookstore Industry Report" pointed out that although the "bookstore +" business model has successfully turned the physical bookstore industry back into profit, it has not achieved an increase in scale. In addition, some bookstore brands pay too much attention to additional space and become restaurants, flower shops or cafes with bookstore shells. In order to prevent more bookstores from losing their original reading function, the report pointed out that the business core of the future bookstore space is to create a "learning field" for consumers. Consumers enter the "learning field" through various book and non-book content, reading and non-reading forms, and get lifelong learning services.

From a design perspective, the reason why "bookstore+" becomes a bookstore shell is that in the design process, the designer did not consider the additional space and the main reading space as a whole, and overemphasized the function of the additional space. The most important thing is that the designer did not take "reading" as the core of the design. This means that the retailer-consumer interface is separated from the product characteristics. The concept of "learning field" emphasizes the function of learning more than "bookstore +", which means that additional space should be designed around learning-related functions, rather than just using coffee shops or flower shops as tools to attract customers.

The method of the "SISYPHE THEME BOOKS" is to select a "learning point" of public interest as the theme. From the decoration style of the store to the function of the auxiliary space, all the designs are developed around the "learning point". The space design of "SISYPHE · TIMECROSS" is an attempt to expand the theme of "drama", trying to allow consumers to improve their knowledge of drama and literature through exhibitions, readings and activities.

The "learning point" makes the "SISYPHE · TIMECROSS" bookstore stand out from many physical bookstores. It also created a place for the surrounding residents to continue learning, and completed the transformation from traditional book retail to new book retail.

Image 3.6 The entrance of SISYPHE · TIMECROSS

Image 3.7 The Café area of SISYPHE · TIMECROSS

Menu of Hema mini·Breakfast

Traditional retail space combined with online channels

Social background

The characteristics of some products such as books determine that offline space is to enhance the quality of space in the hedonic way. Other products are more suitable for utilitarian-driven business models.The offline space of these products is suitable for integration with online channels to help consumers improve shopping efficiency. A typical example in Chinese society is the breakfast store.

In China, breakfast is an important part of food culture and eating breakfast regularly and nutritiously is beneficial to our health. Youth is an important force in the social labor force. However, according to a 2018 survey by the Social Survey Center of China Youth Daily, only 47.5% of the unmarried people interviewed eat breakfast every day. Respondents think that the biggest reason for the low quality of breakfast is stressful work and fast-paced life (56.7%), followed by failure to get up in the morning (51.5%). Other reasons include: not paying enough attention to breakfast (47.4%), losing weight (32.5 %), buy less healthy and nutritious breakfast (26.8%), troublesome (22.6%) and so on. The impact of fast-paced life on breakfast is particularly evident in big cities. Taking Shanghai as an example, according to the data of the "2018 Workplace Commuter Survey", the average commuting radius of the working population in Shanghai is 15.64 kilometers and the average one-way commuting time is 59.56 minutes. Commuting time greatly reduces the working population's breakfast time. China's well-developed logistics system makes food delivery services very popular. However, compared to lunch and dinner, the breakfast delivery service is uneconomical because of the delivery fee and delivery time. These reasons have caused a large number of young working people to give up breakfast.

The State Council of China pointed out the necessity of promoting the construction of breakfast services in cities in 2008. As a result, the Ministry of Commerce launched the breakfast project in the same year and listed Shanghai as a "national breakfast demonstration project pilot city" in 2011. The Shanghai Municipal People's Government has been constantly exploring solutions for breakfast related issues. In the early years, the focus of work was on regulating the market and solving health and nutrition issues. The Shanghai Municipal Government issued the "Opinions on Further Promoting the Construction of the Breakfast Project in Our City" in 2020, indicating that the government's focus has shifted to solving the problem of breakfast efficiency. One of the innovative models that the government focuses on supporting physical breakfast stores is the Hema mini·Breakfast project operated by Alibaba O2O supermarket arm Freshippo.
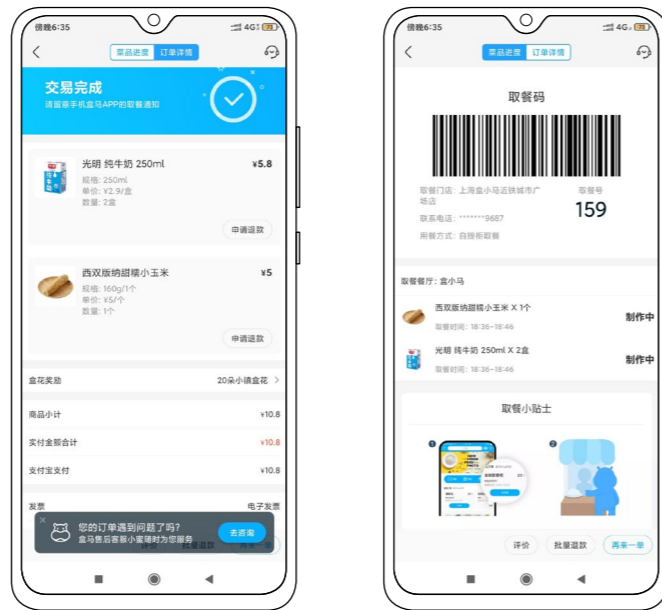
Case analysis

The core of the innovative business model of Hema mini is "Offline self-pickup meal cabinet + Online purchase channel". This business model of Hema mini project is designed to address the problems of "no time" and "less choices" in the breakfast scene.

There are many types of breakfast in China, but there are not many choices in traditional breakfast store, because most traditional breakfast stores usually only sell the same type of products, such as a baozi store that only sells baozi and a ramen store that only sells ramen. Therefore, consumers have to go to different places if they want to eat different breakfasts. Hema mini has introduced 7 currently popular breakfast types and provides consumers with more than 40 personalized choices. To a certain extent, it alleviates the embarrassment of office workers not eating breakfast because of "less choices".

After purchasing the product, consumer will get a barcode for picking up the meal

The Hema mini project solves the problem of "no time" from two aspects. One is to filter suitable addresses, and the other is to optimize the purchase process. The subway is the public transportation that many consumers must use when going to work. Therefore, Most of the Hema mini stores are located at the subway exit or in the building which is directly connected to the subway. When taking the subway, consumers can order and pay through the mobile app. After a while, they will receive a barcode for the meal. When leaving the subway station, they can scan the barcode for the meal and obtain the meal from the self-pickup cabinet (Image 3.8). Consumers will not stay in the breakfast store for more than 1 minute, which greatly improves the efficiency of consumers' meal retrieval.

Image 3.8
The self-pickup cabinet has a two-way window, so consumers do not have to have direct contact with staff

The average area of the Hema mini store is no more than 30 ㎡ , and each store is equipped with 24 self-pickup cabinets. This is the first standard module that has been successfully verified in the first store (in Shanghai Gopher Center) in the past year. The turnover rate of Hema mini's self-pickup cabinets in the morning peak is extremely high. The average time per order per cabinet is only 130 seconds, setting a record of more than 500 orders in the morning peak.
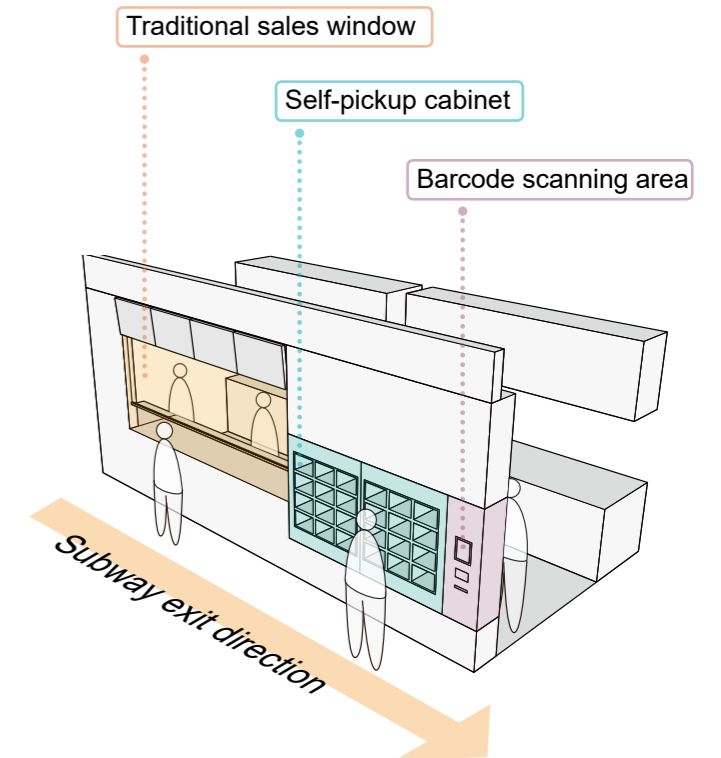
Image 3.9 the first store in Shanghai Gopher Center
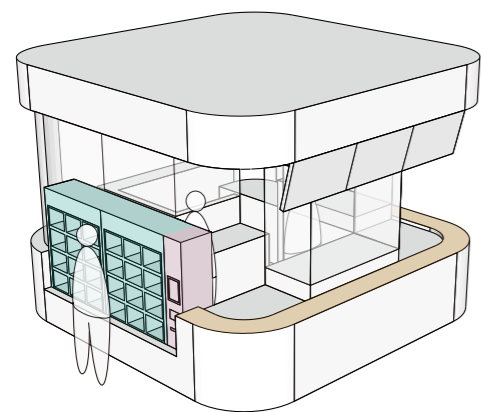
The Hema mini in the building adopts a round island design. Consumers can see the activities in the kitchen from multiple directions.

Summary

The combination of online channels and offline spaces makes consumer behavior no longer limited to indoors.The design of Hema mini's offline space does not focus on a single store, but expands the design area to the entire city. At present, Hema plans to open 80 min stores in Shanghai within one year, and 12 stores are currently in use, of which 9 are opened at subway exits near the office building, and 3 are located in commercial area near the subway station. The breakfast stores planned to be opened will all be opened near the subway entrance, eventually forming a breakfast network covering the whole city and serving all communities.

Image 3.10 the store in Shanghai MTR City Plsza

盒小马
Location Distribution of Hema mini·Breakfast

There are currently 12 stores in use. After the plan to open 80 stores in Shanghai within one year is completed, on average, there will be one Hema mini breakfast restaurant for every 5.175 subway station.
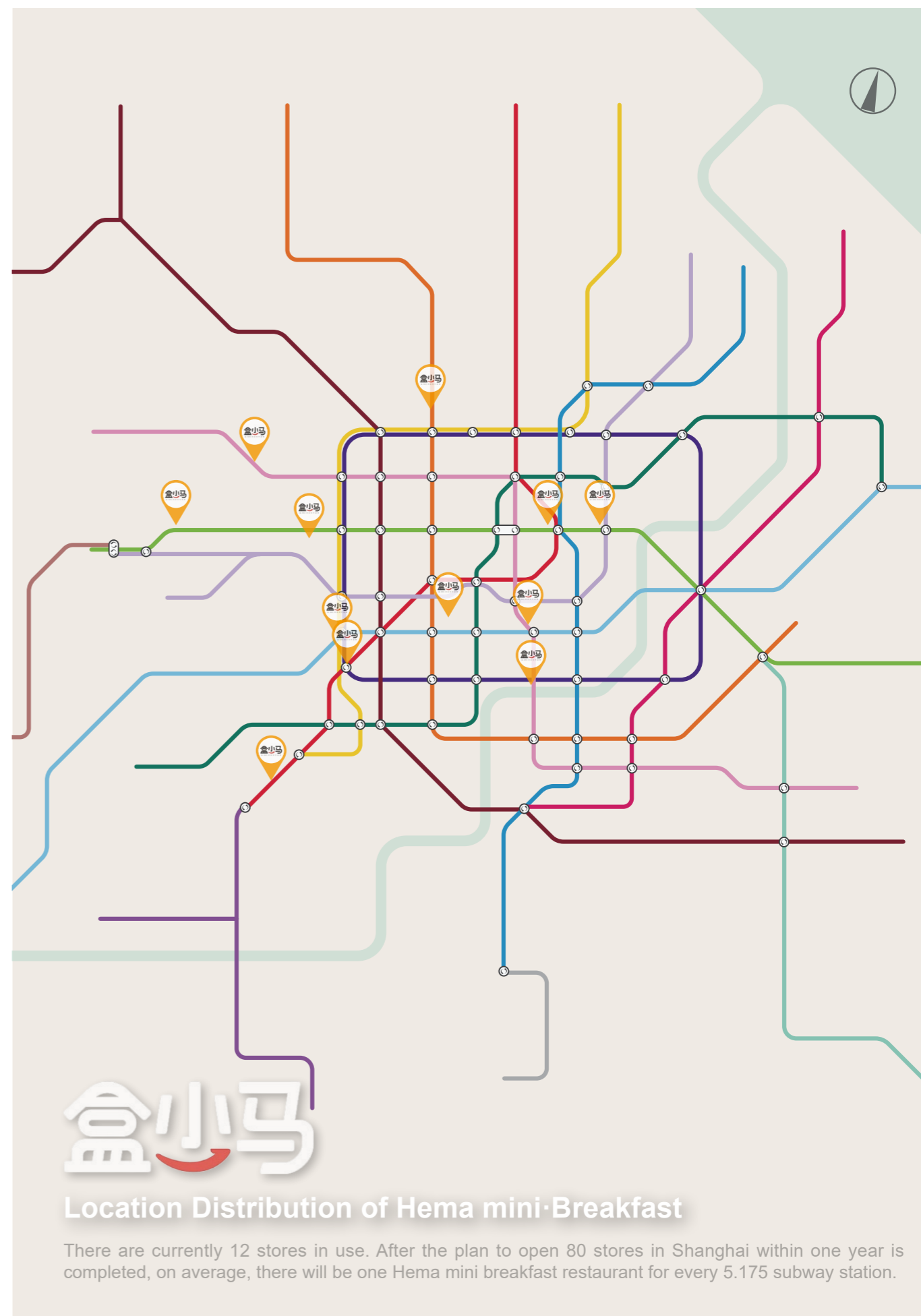
New retail space that breaks the boundaries of traditional retail space based on basic needs

Background

In the face of fierce market competition pressure, some retailers choose to add new application scenes in traditional retailing space based on product characteristics; other retailers choose to directly construct new consumption scenes from basic needs. The emergence of traditional markets is because farmers need to sell agricultural products to consumers, and they gather spontaneously to improve consumers' efficiency in finding different ingredients. The demand of market's consumers is to buy fresh food and cook for themselves. Supermarkets are industrialized products of traditional markets. The emergence of restaurants is due to consumers' demand for better-tasting food and to save time in cooking. The consumption positioning of traditional markets and restaurants seems to be different, but in fact both core essence of consumption is to solve the problem of consumers eating. If "eating" is directly regarded as the core demand of retail space, the layout of new retail space will be completely different from supermarket and restaurant.

Case analysis

Alibaba O2O supermarket arm Freshippo is pathfinder of Alibaba's new retail. Hema mini · Breakfast is Freshippo 's new attempt in new retail in 2020. In fact, Freshippo's earliest attempt started with Hema Fresh (Freshippo supermarket) in 2016. The positioning of Hema Fresh's consumption scene is "eating". Therefore, Hema Fresh's business model adopts "offline supermarkets + offline restaurants + logistics systems + online purchase channels" to fully solve consumers' eating problems.

Whether it is a bookstore or a breakfast shop, the new retail model uses traditional retail space + other complex spaces to enhance the experience. This type of new retail space still has one main functional space. And Hema Fresh's offline stores adopt a dual-main functional space, namely "supermarket + restaurant". Supermarkets meet consumers' needs for cheap and fresh ingredients, but they cannot help consumers improve the taste of food. Restaurants can help consumers improve the taste of food, but consumers cannot ensure the freshness and quality of the ingredients. As Hema Fresh adopts the

Image 3.11 Supermarket area of Hema Fresh

Image 3.12 Dining area of Hema Fresh
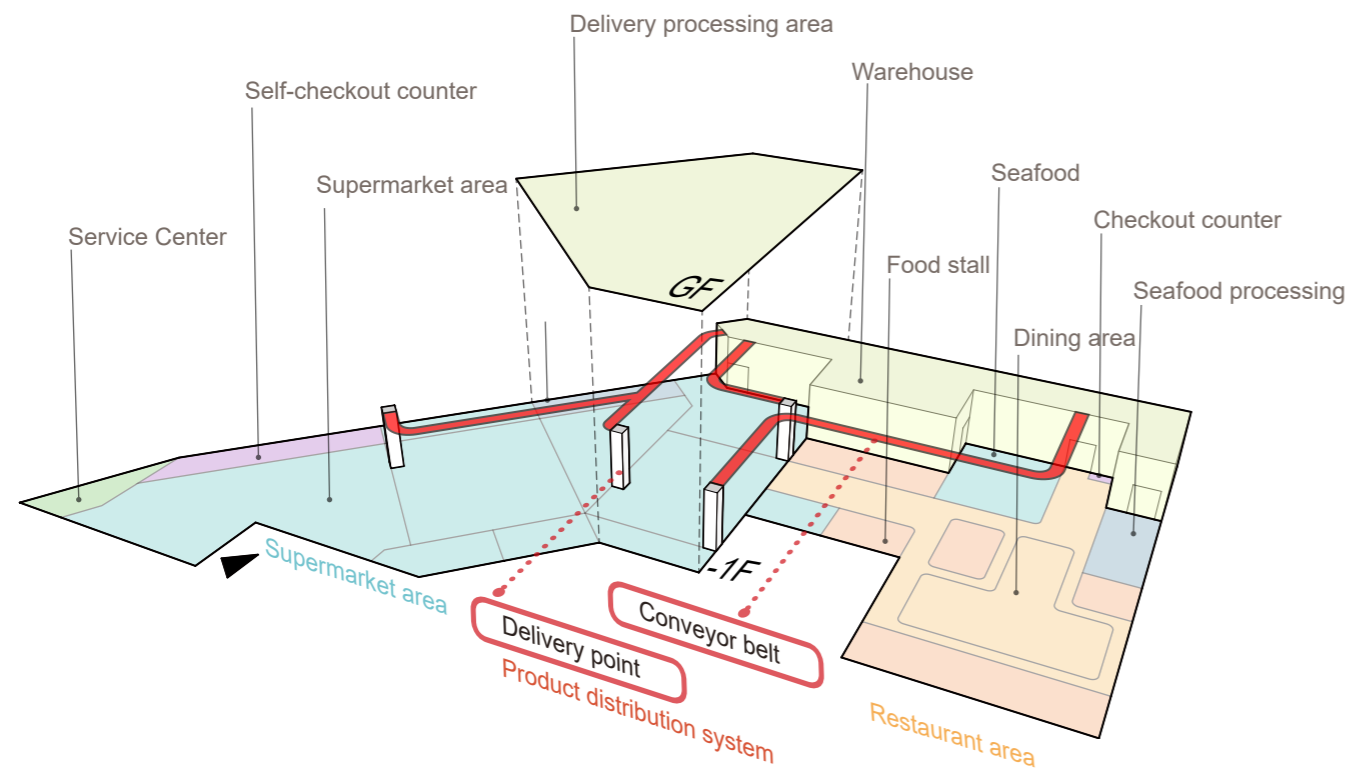
offline model of "supermarket + restaurant", the limitation of meeting consumer needs between supermarkets and restaurants has been broken. Consumers can personally choose standardized fresh ingredients in the supermarket to hand over to the restaurant for cooking. Especially for foods such as seafood with high standards for the freshness of ingredients, such cross-scene consumption greatly improves the consumer experience. In addition, while consumers are waiting for the restaurant to cook, consumers can choose to continue shopping in the supermarket, which improves the efficiency of consumers' time application and converts some consumers who plan to go to traditional restaurants during the meal time into Hema Fresh consumers.

Image 3.13 Self-checkout counter

In addition, the payment system in offline stores is completely transformed into a self-service online model. In 2019, 86% of consumers in China use mobile payment (Data from PWC). This ratio is even higher in cities. Therefore, Hema Fresh has the courage to use cashless self-service payment to completely replace the traditional cashier. And consumers need to use the Hema app during the payment process.

In fact, Hema app not only serves the payment system of offline stores, but also can be used for online shopping. Relying on a sound logistics system, Hema Fresh also provides efficient delivery services. Distribution services are usually affected by two factors:

1 Whether the staff can accurately and quickly find and complete all the products in each order.

2 Whether the delivery process can be delivered quickly to ensure that the loss rate of fresh ingredients will not be too high.

The store size of Hema Fresh is usually 4000~6000 square meter. The space on the ground belongs to consumers and employees, while the space on the ceiling belongs to the distribution system. When an employee is looking for a delivery product in the store, the electronic tag that shows the price for the consumer is turned into a tag for the employee to confirm the delivery product information. When employees find a product, they can

Image 3.14

Consumers use their mobile phones to scan the barcode above the electronic price tag to display product information.
Employees scans the barcode will display delivery product information.

Image 3.15 When the employee finds all the products on the online order, the picking bag will be hung on the transfer point, and the transfer point will transfer the picking bag to the warehouse through the track on the ceiling.

scan the barcode on the electronic price tag to confirm the information and quantity of the product, reducing the probability of picking the wrong product. Hema has 4 to 6 delivery points in the store. When employees find all the products, they need to find the delivery point closest to them, and automatically transport the products to the background for unified delivery through the conveyor belt. Since the conveyor belt occupies the ceiling space, it will not affect the shopping experience of consumers in the store and the delivery efficiency of employees.

In order to ensure that consumers living within three kilometers of the store can get the ingredients and food within 30 minutes, in addition to the efficient semi-automated sorting system in the store, each store is also equipped with more than 100 electric bicycles to ensure the speed of delivery.

Summary

In the case of Hema Fresh, the offline experience of consumers has been improved through the "supermarket + restaurant" model, and online shopping efficiency has been improved through the innovative track sorting system. The online and offline shopping systems coexist in the same space without affecting each other. This not only improves the utilization of space, but also allows consumers to intuitively recognize the difference between Hema and traditional supermarkets, and attract consumers to participate in Hema's new retail lifestyle combining online and offline.

Image 3.16 The shopping space and the transmission track share the same space without interference with each other

4 The Project

Research of Brand & Product

4.0.1 Why choose Xiaomi Smart home as the research object

In the chapter of the case study, we have discussed how traditional retail can be transformed into a more competitive new retail by adding additional space or online channels. These cases fully illustrate that successful new retail is different from traditional retail in terms of business model and design framework. If only adding new technical equipment to the traditional retail space, it will not essentially change the consumers' shopping experience. Using whether it can bring changes to consumers' shopping experience as a measure, we can judge the retail space is a real new retail space or not.

These new retail cases are to provide consumers with further services when purchasing traditional products. On the other hand, due to the popularity of new technologies, some products that only existed in science fiction in the past have appeared. These nascent industries have different characteristics from traditional commodities and need to consider retail design from a new perspective. Moreover, the birth time of these industries is relatively short, so the possibility of retail space design for such products has not been fully developed. How to design the retailer-consumer interface of those new industries through a systematic retail design framework is worth exploring.

Smart home products are a typical emerging

industry. Consumer attitudes on the current smart home market has not yet fully formed. However, with the further implementation of the popularization of the smart home market and the cultivation of consumer habits, the consumption potential of the smart home market is bound to be huge. Correspondingly, the design and development of smart home retail space is also in the process of exploration. In China, many traditional home appliance brands (such as Haier, Midea) are developing into the field of smart home, and their retail space is still developed on the basis of traditional retail space design. Although the traditional home appliance industry seems to be closer to the smart home field than other industries, from the perspective of smart home market share in 2019, the number one device shipment is not a brand transformed from traditional home appliances, but Xiaomi, which is famous for electronic productselectronic products.

Xiaomi is in a leading position in the field of smart home, and is widely recognized by the public for its cost-effective and complete smart home appliances in China. However, its marketing strategy and the space design of omni-channel sales still follow the sales model of smartphones. In fact, the features of smart homes' product are between electronic device and furniture. The retail space of smart electronic devices such as smartphones is not perfectly suitable for smart home products. In general, Xiaomi's smart home has a huge market, and the retail space has a lot of room

for improvement, which is a good research object.

The focus of this chapter is to deeply analyze the product characteristics of smart home and Xiaomi's value proposition, and use systematic retail design framework to design a complete set of retail strategies and spaces for Xiaomi's smart home products.

4.0.2 Smart home industry overview

If we define the smartphone industry as the biggest growth engine in the past decade, then the smart home industry is likely to be the biggest growth engine in the next decade.

In recent years, in the context of the slowdown in smartphone shipments, major technology companies that started with smartphones have sought new growth points. These companies have set their sights on the field of smart home. Traditional home appliance giants are also trying to enter this new field in order to seek transformation.

The constant updating of smart phones means the upgrading of information exchange methods. And the meaning behind the emerging industry of smart home is people's expectations for future life, the further expression is "everything is interconnected." The current development of the smart home industry is still initial stage, the market model is constantly changing, and there is great room for imagination in the future.

1 The concept of smart home

Based on Chinese national standard GB/T35134-2017 and existing concepts in the market, EO Intelligence define the smart home. Smart homes, also called Smart house, are based on housing and comprehensively utilize technologies such as the Internet of Things, cloud-edge computing, and artificial intelligence to enable home equipment

to have functions such as centralized management, remote control, interconnection, and independent learning. Let the family environment management, safety and defense, information exchange, consumer services, audio-visual entertainment and other life needs be organically combined with home life to create a convenient, comfortable, healthy, safe and environmentally friendly family living environment. (EO Intelligence, 2020)

Early smart homes were centered on a single product. The user can remotely control the smart product through the mobile phone or the

sensor, but the smart product is isolated from other products. Compared with the traditional manual operation, the early smart home does not greatly improve the user's life experience.

In the current development stage of smart home, the interconnection between smart devices has been initially realized through the Internet of Things technology. In different situations and scenarios, multiple devices can be automatically adjusted at the same time according to the set logic .

From the perspective of space design, traditional home design is based on people's
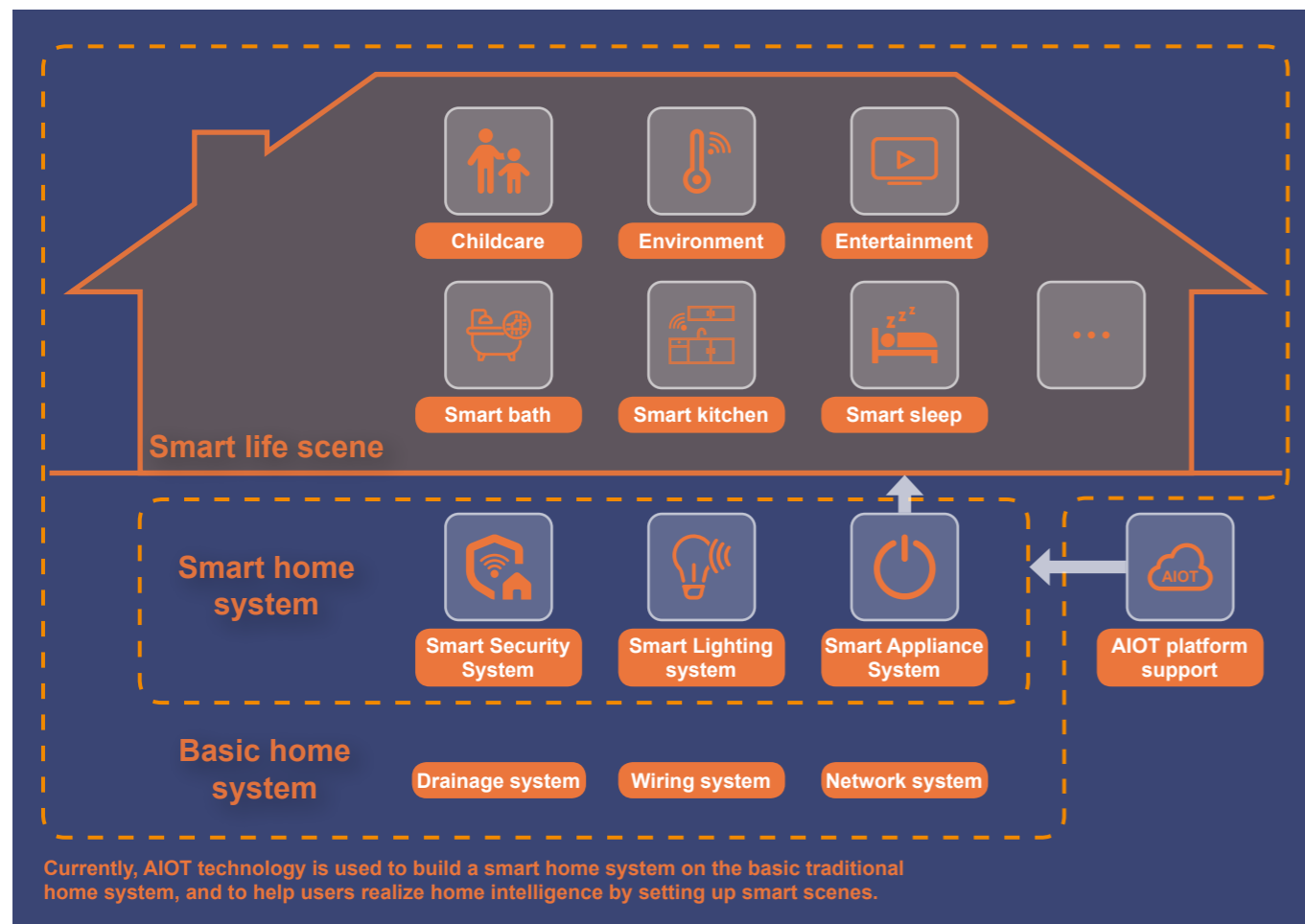
activities and personality, combined with stylized functions. For houses with smart home systems at this stage, time and life scene are added as design considerations on the basis of traditional space design.

The expectation of the smart home industry for the future is to realize the direct correlation between smart home equipment and human behavior through AI's autonomous deep learning technology, and it is no longer necessary to set scenes in advance to achieve true automation.

2 Three key technologies in the field of smart home

The Internet of Things(IOT), cloud-side computing and artificial intelligence(AI) are the three key technologies in the field of smart home. These technologies have allowed some new devices to appear in the home and have

affected the interior design.

IOT technology is a collective term for a variety of wireless communication technologies in the application of device-to-device connection.Promoted by operators, wireless communication technology has achieved large-scale applications in the field of smart homes. Correspondingly, gateways, sensors and other devices serving the IOT scene have appeared in the home space.

Cloud-Edge computing refers to cloud computing and edge computing. Cloud computing integrates computing resources, storage resources, and flexibly expands corresponding resources as needed to support the interconnection and operation of smart devices. Edge computing uses local devices to reduce the single product response delay at the edge of the home data source. Edge

Currently, AIOT technology is used to build a smart home system on the basic traditional home system, and to help users realize home intelligence by setting up smart scenes.

Three key technologies in the field of smart home

Application of technology in the smart home
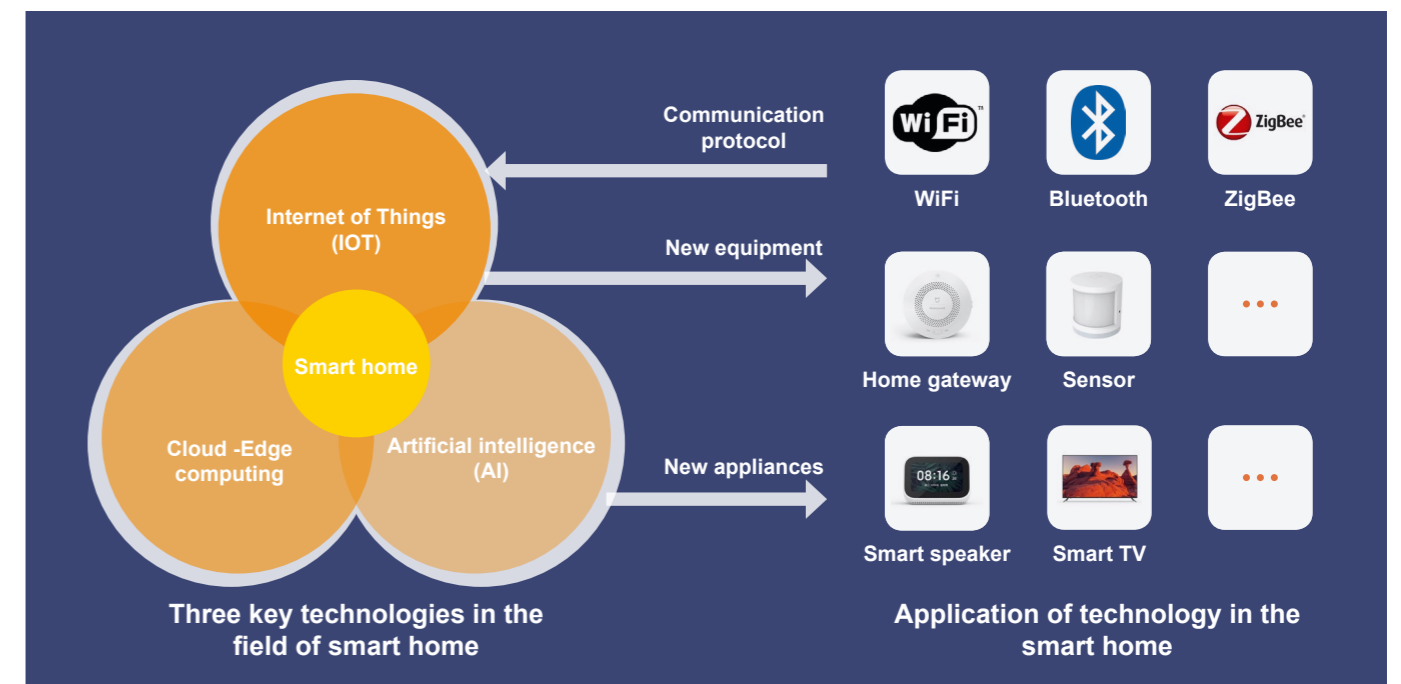
computing can also relieve the pressure of cloud storage and processing data, and make network transmission more efficient.

AI technologies currently used in smart homes include intelligent voice, face recognition, object analysis, deep learning, and so on. AI technology and cloud-side computing support each other, and have achieved preliminary intelligence in the field of smart homes. The representative products developed from this are smart speakers and smart TVs.

3 The impact of policies on the smart home industry

As one of the key applications of IOT, smart home has been mentioned many times in Chinese national policies. Many government departments have given important instructions to the development of the smart home industry. Some of these policies have a significant impact on the development of Chinese smart home industry.

In 2012, the Ministry of Industry and Information Technology released the "Twelfth Five-Year Plan for the Internet of Things". This is the first time that smart homes have been written into the national five-year plan. The plan proposes to expand the application requirements of the IOTs and adopt new technologies to retrofit and upgrade traditional industries, and improve the level of intelligence in home life. In 2016, four departments, including the Ministry of Industry and Information Technology, jointly release

the "Internet + Artificial Intelligence Three-year Action Implementation Plan", which further planned the government's promotion and support for smart home and other new technology industries. The following year, State Administration for Market Regulation and Standardization administration approved three smart home series national standards including "Smart home for internet of things—Unicode of data and device"(GB/T 35143-2017), further regulating the Chinese smart home market. In 2020, the Standing Committee of the Central Politburo of the CCP proposed a "new infrastructure policy" which will promote the application of 5G, artificial intelligence, cloud computing and other technologies in smart homes industry and make the traditional infrastructure develop towards "intelligence".

This series of policies have helped the rapid development of the smart home industry. Although industry-related national standards have been issued, due to the rapid development of the smart home industry and numerous participating companies, the smart home industry system is still not standardized. From the perspective of the market, smart homes are still in a "fragmented" stage.

4 Smart home industry chain structure

The basic layer of the smart home industry chain is mainly AI service providers that provide AI technologies such as intelligent voice and visual recognition, cloud service providers that support the underlying IoT operating system

and cloud services, and telecom operators that provide communication technologies. The technical layer is mainly suppliers of components such as chips and sensors and middleware suppliers such as communication modules and intelligent controllers. The application layer mainly consists of smart home systems manufacturers, traditional home appliance manufacturers, and smart single product manufacturers that provide terminal products. Smart home systems manufacturers can provide real-estate companies and home design&improvement companies with whole-house smart solutions through B2B (Business to Business) sales channels, and smart terminal manufacturers can directly reach users through B2C (Business to Consumer) online and offline channels.

Although from the perspective of production relations, the smart home industry chain has clear stratification. But in reality, companies involved in the smart home industry are often complex enterprises. Since the B2C sales channel is that smart terminal manufacturers directly face customers, the popularity of smart terminal companies has a higher reputation and consumer market foundation than companies that only participate in the B2B model. Smart terminal companies usually also participate in the research of technology applications and the construction of platforms, and they have even gradually begun to penetrate the B2B field. Therefore, judging from the current market situation, this type of enterprise can be regarded as having a
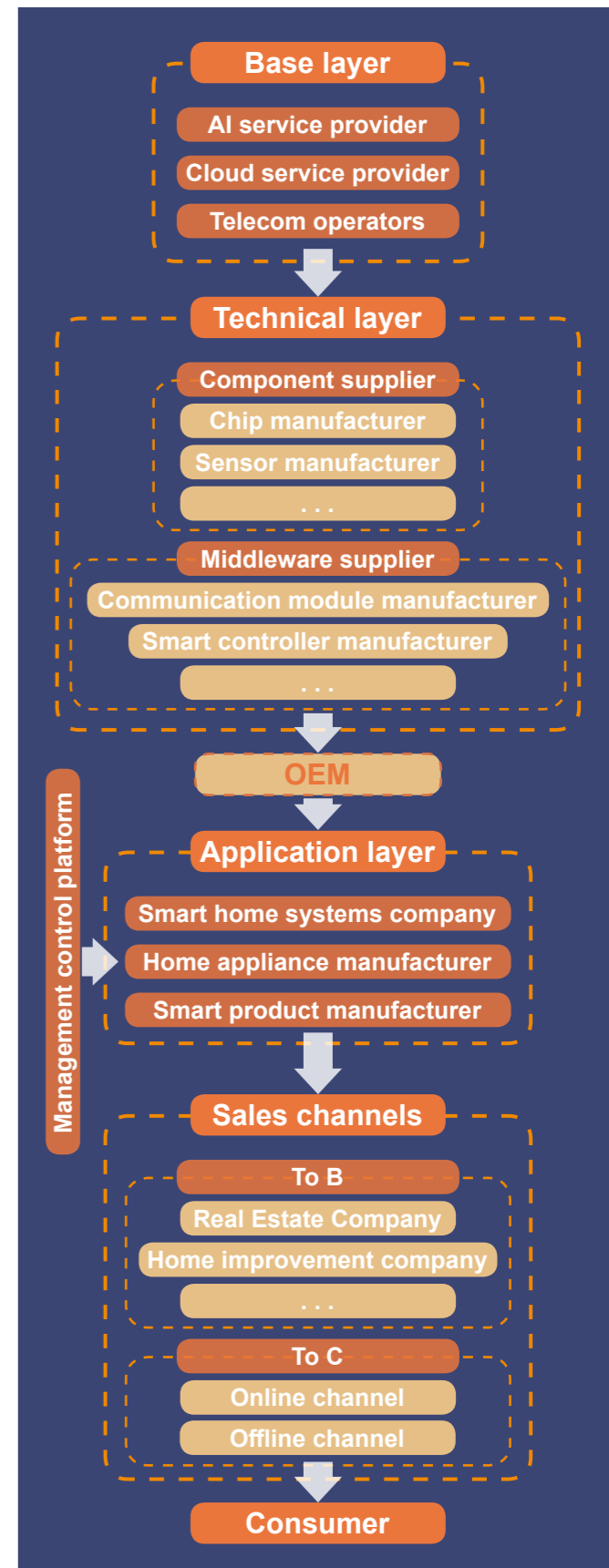
relatively large influence within the industrial chain.

5 Smart home market model

From the perspective of the smart home market or consumers, the two sales channels, B2B and B2C, can be described as the pre-installation market model and the after-installation market model.

Smart home pre-installation: It refers to providing users with a complete set of smart home solutions before home design and decoration. Participants in the pre-installation market include real estate developers, design companies and whole-house smart solution providers. The key products installed in the pre-installation program include smart cameras, smart routers, smart gateways, smart lights, smart access control, etc. Its service area is more inclined to the construction of smart communities than home intelligence. Due to the time-consuming, labor-intensive,

high investment costs and high installation threshold, it will come into consumer's sight later than the after-installation market. However, once the construction of the smart community is completed, it will drive the after-installation market of smart homes to a certain extent.

Smart home after-installation: After complet-ing the construction and decoration of the whole house, users do not need to change the water and electricity layout. By purchasing smart home products, using wireless connections can achieve product interconnection and home intelligence. After-installation has the characteristics of simplicity, convenience, and low cost, making it easier to be accepted by consumers.

There are many companies participating in the after-installation market, and their scales are different. As a result, the market has developed three main market models. Some
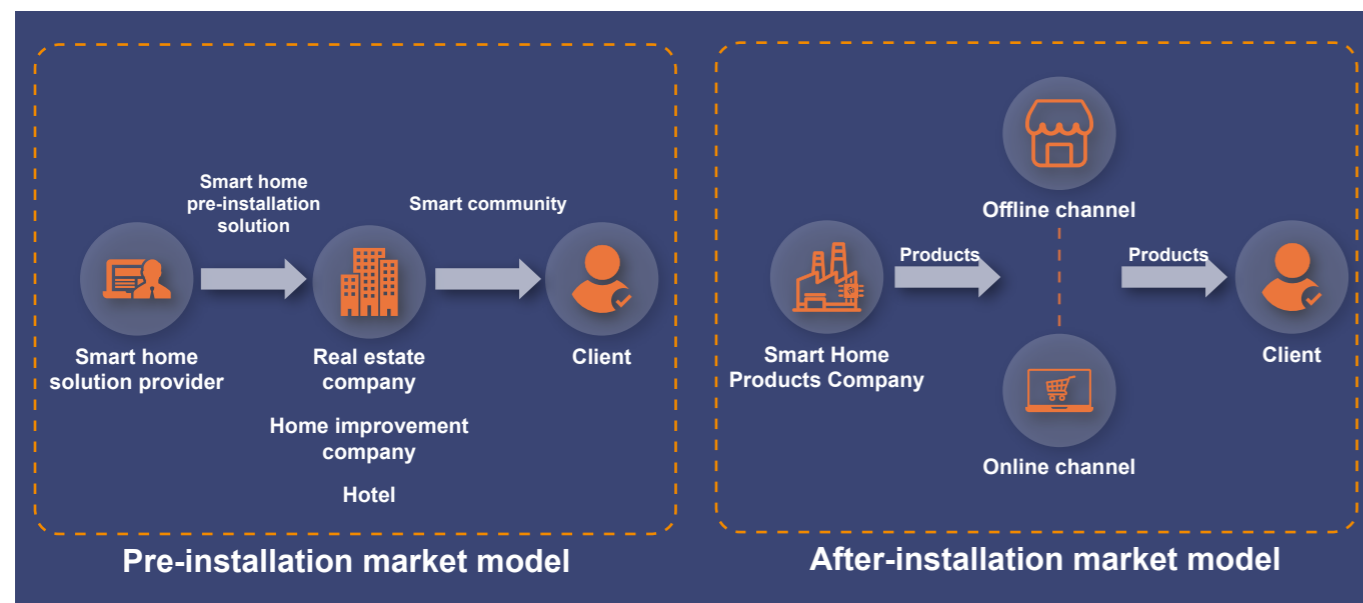
traditional home appliance manufacturers have a certain market scale and brand foundation, and their new field development method is to build a closed-loop smart home brand on the existing basis. However, due to the diversity and complexity of the smart home products, brands need to invest a lot of money in multiple new technical fields and product research and development. Therefore, small or new companies cannot build this kind of business model.

Some companies have deep accumulation and competitiveness in technical fields such as basic communication facilities services and software development. The business focus of these companies is not on product design and production, but on using their own technology to build an open smart home platform, inviting other product-focused companies to join the platform, but will not interfere with the operations of these companies. With the expansion of platform scale, platform

companies have also begun to deploy their own core products.

The third type of aftermarket model is the dominant incubation model represented by Xiaomi. Xiaomi has a certain accumulation in software and hardware. However, in order to ensure that the company always focuses on its core business, while developing its own core products, it also needs to cooperate with other companies and delegate the research and development tasks of multiple and complicated products to other companies in the ecological chain. Xiaomi heads up to incubate and cultivate small companies in the ecological chain, and provide assistance in brand, sales channels, technology and other aspects, and establish its own platform to form a vibrant industry ecological chain.

Pre-installation market model

After-installation market model

Single brand closed loop model   **Open platform model**   **Ecological chain model**
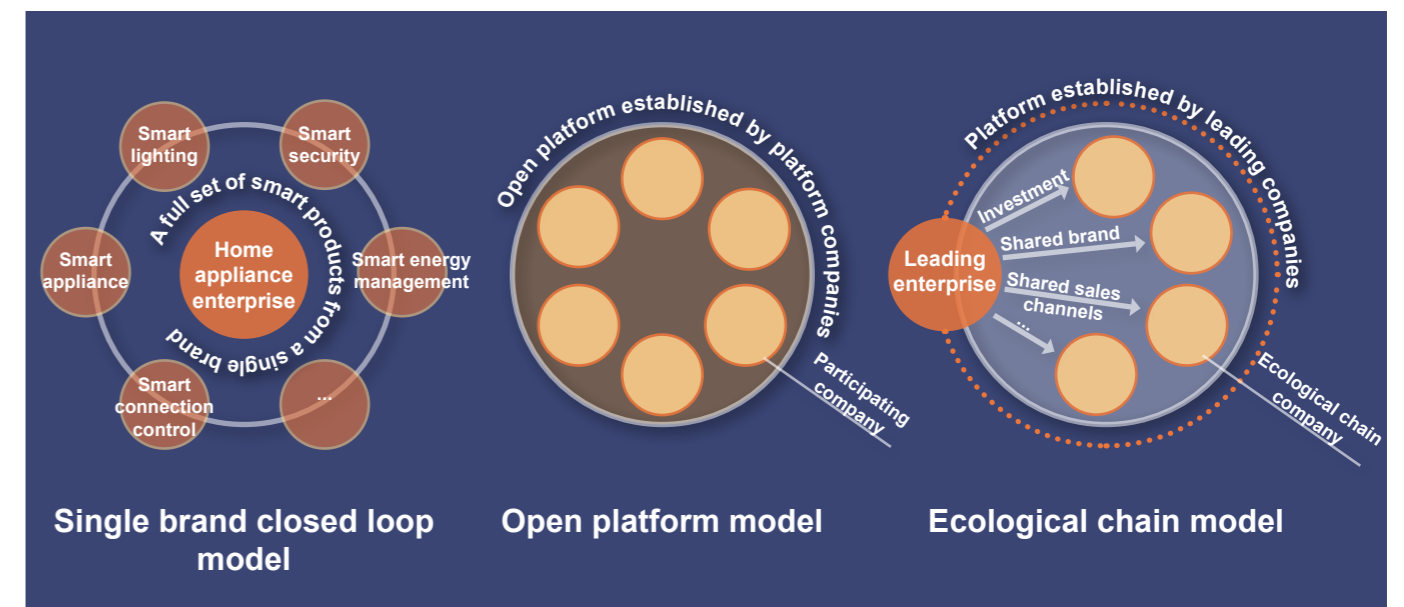
4.0.3 Xiaomi and its business model

Xiaomi's customer value proposition(CVP)

Xiaomi Corporation was founded in 2011, focusing on smart phones and mobile operating systems in the first few years. However, Xiaomi does not consider itself a smart phone company, but an Internet company. This definition is based on Xiaomi's customer value proposition(CVP). Xiaomi's CVP is to maximize the value of customer by increasing product value and reducing customer costs, using their slogan to express: "Let everyone enjoy the fun of technology."

In order to realize its CVP, Xiaomi needs to cut costs as much as possible without losing the quality of its products. Xiaomi's main business lines in product production and the design of core products is all done by its own team. However, in the early years, Xiaomi did not have its own production line, but adopted the form of business outsourcing, so that more energy and funds can be used for product research and development. After completing a certain amount of capital and technology accumulation, Xiaomi's self-developed fully automated production line began production.

The sales of Xiaomi products mainly rely on online channels, which greatly reduces the cost of intermediary and physical store leasing. Compared with other similar sized mobile phone manufacturers, the number of Xiaomi physical stores is much less. Taking the data

for 2020 as an example, Huawei has opened 11,000 retail stores in China, while Xiaomi has only opened about 6,000 offline stores. The focus of Xiaomi's marketing strategy is also to release products through the Internet, minimize the cost of information promotion. Such sales channels and marketing strategies enable low prices and high quality products to be achieved at the same time. The highly cost-effective products have enabled Xiaomi to gain a good reputation and quickly occupy the market, ultimately form profitability through small profits but large sales.

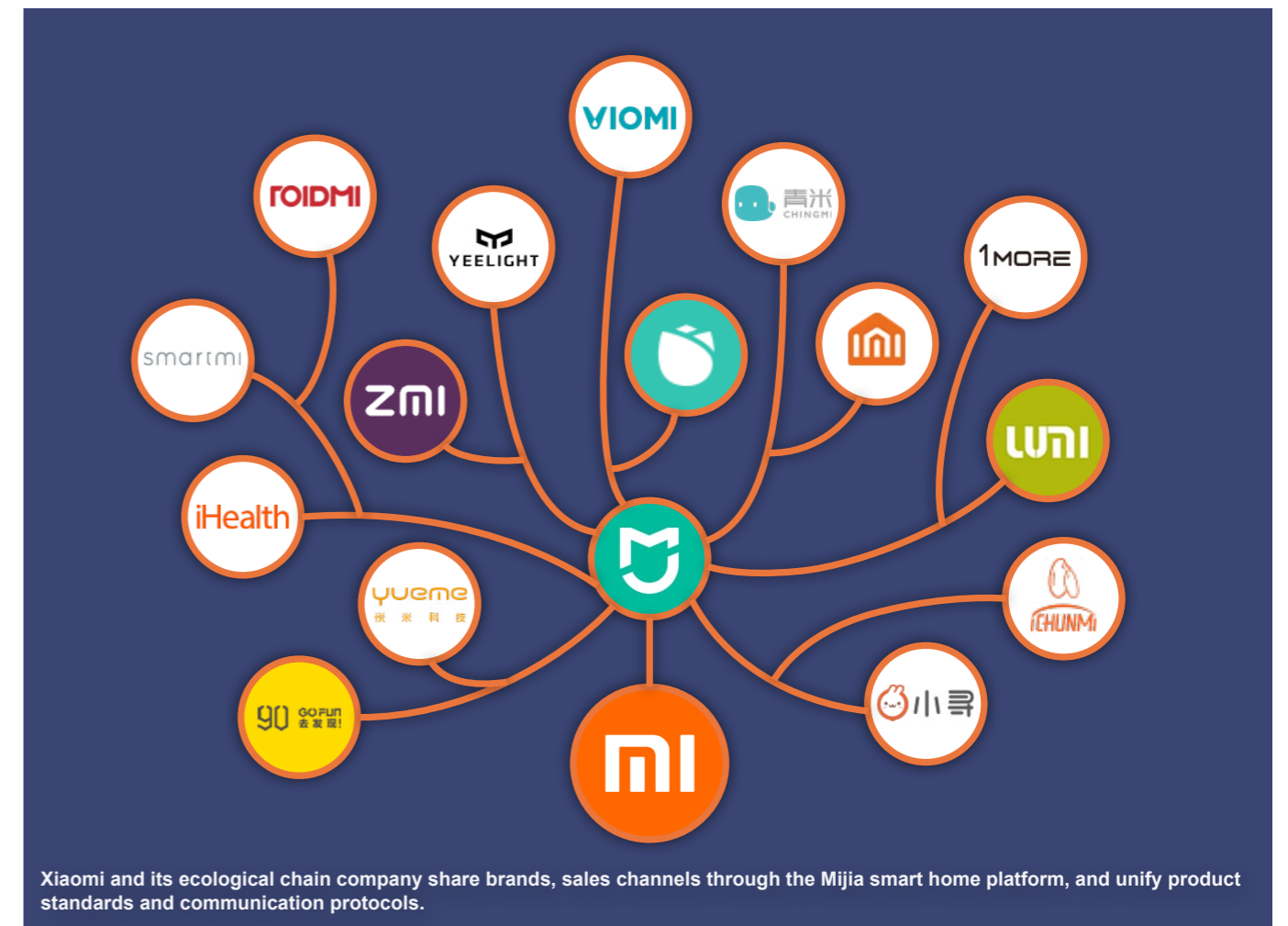## Xiaomi smart home and ecological chain model

In 2013, Xiaomi began to produce other electronic products (such as Xiaomi TV) and realized the market potential of IOT. The prerequisite for realizing the idea of smart life is that a large number of smart products are connected to each other through IOT technology. This means that there are a lot of research segments in the IOT market. For Xiaomi, a company that only focused on smart phone design before, it was impossible to research a large number of new products at the same time. In response, Xiaomi began to allocate funds to incubate other smart product R&D companies and smart hardware upstream companies. Although Xiaomi invests in these companies, it will not participate in the operations of these companies. Xiaomi just send people to these companies to guide product design, to ensure that products produced by different companies

have similar appearance style, use the same communication protocol and unify product standards. In addition, Xiaomi also provides technologies and sales channels for these companies. These companies are deeply involved in the construction of Xiaomi's smart home platform, so they are called Xiaomi's ecological chain enterprises. After launching a number of successful new products, Xiaomi officially announced the layout of the Xiaomi ecological chain and launched the smart home ecological chain brand MIJIA in 2016. This means that the smart home ecological chain has officially separated from Xiaomi's

traditional technology product business and rebuilt a platform only focused on building smart life.

MIJIA platform and products

Relying on the Xiaomi ecological chain system, MIJIA APP is the control center and e-commerce platform of Xiaomi ecological chain products. It integrates equipment control, e-commerce marketing, crowdfunding platform, and scene sharing. It is the overall solution for the user's intelligent life based on smart hardware, covering hardware and home service products. MIJIA APP not only realizes

Xiaomi and its ecological chain company share brands, sales channels through the Mijia smart home platform, and unify product standards and communication protocols.

interconnection with all Xiaomi and ecological chain smart products, but also accesses third-party products that cooperate with Xiaomi.

For users who use MIJIA products, as long as they install the Mijia APP in their smartphones, they can complete a series of consumer experiences including purchase, product setting and control, and sharing of experience.

In addition, the product crowdfunding project on the Mijia platform can also enable serious users to participate in the latest product optimization. It can be said that MIJIA APP is a new retailer-consumer interface that includes transaction, product use, after-sales service and community functions.

In product control interface on the MIJIA APP, the user can add a new device through the Bluetooth communication protocol, and can freely establish association logic between different devices and operating conditions.

Smart home shopping platform on MIJIA APP. Users with MIJIA APP can easily find products without using other shopping APP. MIJIA realizes ecological closed loop through its own platform.

The current smart home has a certain learning threshold. Through community sharing on the MIJIA APP, users can share their experience and inquire about problem solutions.

Xiaomi Smart Home's product strategy and marketing strategy

After years of deployment, Xiaomi has invested in more than 290 ecological chain companies in 2019. And in the same year, it officially announced that Xiaomi will use smartphone + AIOT as its core business. This means that Xiaomi has officially transformed from an Internet company only focusing on smartphone to an Internet company focusing on smartphone, smart hardware and IOT platform.

Xiaomi has participated in the production of many products through self-research and investment in ecological chain companies. On the one hand, it has enriched Xiaomi's IoT category and ecology; On the other hand, it has also caused Xiaomi to face the problem of blurred boundaries in the open IoT ecosystem. In order to avoid blurring the boundaries, Xiaomi announced a new product strategy at the Xiaomi Developer Conference (MIDC) in 2019, namely 1+4+x. Among them, 1 is smartphone, 4 includes TV, smart speaker, router and laptop. 1+4 is the core product independently developed by Xiaomi. X refers to smart products jointly developed by ecological chain companies and Xiaomi.

In after-installation market competition, Xiaomi Smart Home relies on the ecological chain model to gain an advantage with product richness. From the perspective of market strategy, Xiaomi Smart Home uses a product-based promotion model. Therefore, most of Xiaomi's promotion content is mainly reflected in the detailed introduction of the functions and features of individual products. As Xiaomi takes online channels as its development

Smart phone + Television Laptop + Router Smart speaker

**1+4+X
AIoT category strategy**

Ecological chain products

focus, Xiaomi's online promotion methods show diversified characteristics. There are four typical forms of promotion: online product launches, product newsletters published by Xiaomi's official account on social platforms, product usage evaluation videos released by KOL, and advertisements sent through Xiaomi's own platform. Especially the videos released by the technology product KOL can often have millions of views. These promotion methods that can directly affect product sales can be called performance-based advertising.

In addition to performance-based advertising, Xiaomi also publishes brand advertising through official accounts. Unlike performance-based advertising that directly promote product sales, brand advertising establish brand image and focus on enhancing brand awareness to increase market share. Lei Jun , the founder and CEO of Xiaomi, has always personally promoted Xiaomi during the development period of brand. So he has a high reputation on the Chinese Internet, and the videos centered on him often have extremely high number of views. But relatively, the direct promotion of Xiaomi's brand does not have such a large spread. For example, Lei Jun's related videos on the Bilibili video platform can reach more than 5 million. Among the videos released by Xiaomi's official account, seven of the top ten most viewed videos are all related to Lei Jun. In contrast, the most viewed video showing the concept of smart home has less than 400,000 views. Many videos promoting the concept of smart home do not exceed

20,000 views. Obviously, there is an order of magnitude gap in promotion between Xiaomi smart home business itself and founder brand effect.

Although the current focus of Xiaomi's publicity strategy is still on the promotion of individual products, Xiaomi still makes new attempts. For example, Xiaomi and IKEA joint released the promotion videos of smart home transformation. This series of videos focuses on how smart homes improve the quality of life as a whole, rather than focusing on the characteristics of individual smart products. Therefore, it can better express the difference between smart home and traditional home appliances. However, the improvement of life experience is difficult to perfectly show through the flat performance of screen. The best way is still to let consumers feel the advantages of smart homes through the actual offline space .

In addition, Xiaomi is also actively participating in the pre-installation market of smart homes. At the 2019 Developer Conference, Xiaomi announced that it will not only directly provide products to consumers, but also cooperate with hotels, real estate developers and other companies to develop smart communities and new business of property management.

4.0.4 Market data analysis of smart home industry

The development of technology and the guidance of policies have promoted the rapid development of the smart home industry. However, the society's awareness of emerging industries often lags behind the development of the industry. The society's perception of the industry has affected the market to a certain extent. Analyzing market data can effectively adjust retail strategies and expand the market. The data analysis in this section is based on the "2020 Smart Home Industry Research Report" released by 36KR Research and the "2019/2020 China Smart Home Development White Paper" released by CSHIA Research.

Consumers and potential consumers' perception of smart home

The research objects of 36KR Research and CSHIA Research are all smart home consumers and potential consumers. The characteristics of smart home products combine both technology products and household products. Therefore, most consumers who pay attention to smart home are young technology product enthusiasts or people with home decoration needs. However, traditional home appliances have a long life cycle, overlap with the functions of smart home products to a certain extent. Therefore, ordinary consumers will not deliberately learn about smart home related information. The report released by 36KR

Q1: Channels for consumers to learned about smart home
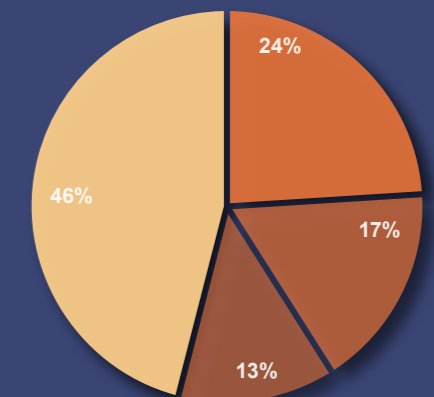
- Online channel
- Offline promotion
- Designer recommendation
- Friend recommendation

Data Sources: 36KR Research

Q2: Consumers' perception of smart home application scenarios

Remote control of household appliances by mobile phone	366
Control single smart devices by mobile phone	345
Detection of safety issues such as gas leaks	256
Smart alarm for intrusion	240
Remote control lights and curtains	224
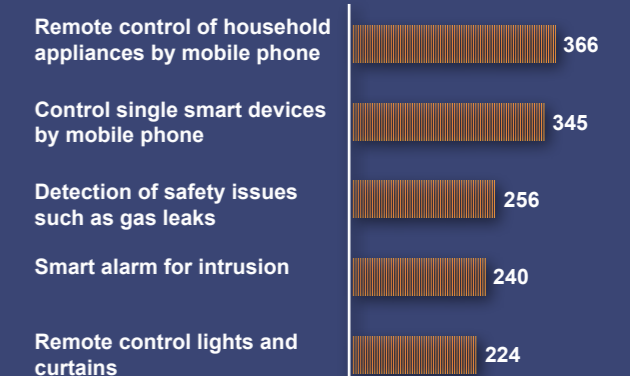
Data Sources: 36KR Research
*Total sample size: 500
Multiple choice

Research shows that more than 80% of consumers have a certain understanding of smart home (the data released by CSHIA Research in 2019 is 78.17%), and 46% of consumers have learned about smart home through online channels(Q1). However, most consumers' knowledge of smart homes is not comprehensive, their knowledge of smart home are usually limited to fragmented scenarios such as using mobile apps to control home appliances or other products(Q2). Consumer cognition reflected in the market is the high sales volume of popular smart items and the low penetration rate of the whole smart home system. In addition, factors such as poor brand compatibility, low cost performance, concerns about product safety and overly complicated operations constitute barriers for consumers(Q3). So only 2% of consumers use the whole smart home system, and 94% of consumers only use smart home single products. But in the face of so many obstacles, consumers are still optimistic about the whole smart home system. According to data released by CSHIA Research in 2019, 46.37% of consumers are willing to use the whole house smart home system in the future and 33.64% of consumers hold a negative attitude.

Consumer portrait
According to the survey data released by CSHIA Research in 2020, there are the largest number of smart home consumers aged 25-34(Q4). People in the 25-29 age group usually work for a period of time after leaving campus,

Q3: Hindering factors of consumers use the whole smart home system

288　237　184　167　130　105　86　71　1
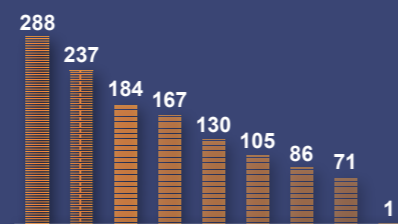
Poor brand compatibility(288):
In the current smart home market, because a fully unified industry standard has not been reached, many smart home system platforms cannot be connected with products of non-own brand. Compatibility issues affect consumers' choice of products. This problem requires negotiation among various manufacturers, but it is difficult to solve in the early stage of industry development.

The product is updated quickly and cannot maintain its value(237):
Unlike traditional home appliances, the functions of smart home products are not yet completely fixed, and the functions of the same type of products will undergo major upgrades every year. Therefore, many consumers believe that the performance of current products is not worth buying.

Not cost-effective(184):
Although the market response of some smart single products is hot, there are still many shortcomings in technology for the whole smart home system. Therefore, if a lot of money is currently spent on smart homes, consumers' life experience will only improve partly.

Have doubts about the safety of the product(167):
Smart home products involve cloud computing technology, and some data needs to be uploaded to the cloud during operation. Manufacturers need to explain clearly their information protection mechanism to consumers to dispel consumers' doubts.

Overly complex operation(130):
The current smart home still requires consumers to make complex settings before use, and retailers need to provide related services to help consumers overcome barriers to use.

Residential area size limit(105)

Not sure about the purchase or installation channel(86)

Traditional homes have met the demand(71)

**Others(1)**

Data Sources: 36KR Research
Multiple choice

have a stable income, and have a certain need to improve the living environment. The time to generate demand coincides with the rise of the smart home industry. Most of these consumers have a fragmented demand for improvement. People in the 30-35 age group usually have a certain amount of savings and plan to buy real estate at this age, willing to spend money on upgrading their living environment. Such consumers are potential users who use the whole house smart home system. If the manufacturer wants to expand the market, they need to expand the target customer group with strong consumption ability and wide age.

Traditional consumers pay more attention to price, brand and service. Young consumers pay more attention to function, scene and design. On the one hand, the stability of equipment and systems has a great impact on the user experience, which in turn affects consumers' choices; On the other hand, consumers' emphasis on the design of life scenes means that consumers have the same expectations for the appearance design of smart home products. The balance of appearance and function is the focus of consumers' consideration.(Q5)

Xiaomi's strengths and weaknesses
Xiaomi has always been in a leading position in the smart home industry. This is because Xiaomi's ecological chain layout has prompted the Xiaomi to have a sufficient number of products (over 2,000 in total) that can be

Q4: Consumer age group

6.33%　12.73%　12.82%　14.52%　26.22%　25.73%
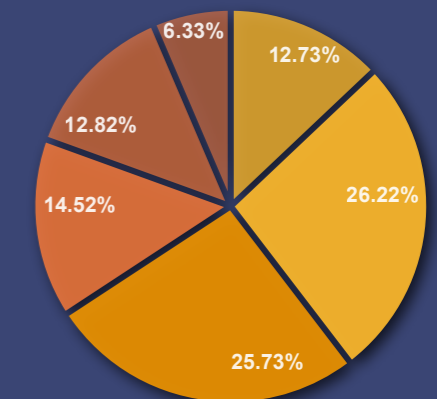
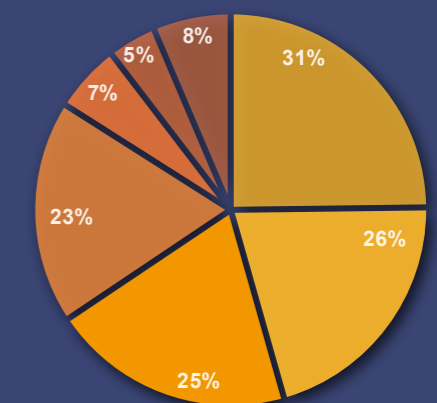- 18-24 years old
- 25-29 years old
- 30-34 years old
- 35-39 years old
- 40-49 years old
- ≥50 years old

Data Sources: CSHIA Research

Q5: Factors affecting consumer choice

8%　5%　7%　31%　23%　26%　25%

- Functional practicality
- Supporting installation service
- Brand reputation
- Cost-effective
- System scalability
- Product appearance design
- Interest experience

Data Sources: CSHIA Research

interconnected on the same platform, and the appearance of the products remains relatively uniform in design. In addition, most consumers tend to buy smart products through online channels(Q6). After years of deployment, Xiaomi has a relatively stable and huge online channel. At the same time, the gradual improvement of the AIOT platform has led to continuous growth of platform users.Focusing on the research and development of core products, Xiaomi's smart TVs, smart speakers and other core smart products are in a leading position in the market. From the perspective of China's smart home market shipments in the third quarter of 2020, Xiaomi still remains the number one(Q7).

Xiaomi uses technology upgrades, channel advantages and user base to achieve hot sales of multiple smart single products. However, many manufacturers, including Xiaomi, have not yet developed in the market for whole smart home systems. On the one hand, it is limited by the inconsistent standards between technology and brands; on the other hand, consumers still have misunderstandings about smart homes. Consumers' perception of smart homes is still in the popular smart products, rather than the upgrading of the whole house smart home system. Because the current retailer-consumer interface design still focuses on a single product, rather than a whole smart home system.

Q6: How consumers get smart home products

	%
1%	
3%	
5%	
8%	
12%	
71%	

- Online shopping platform
- Offline store/experience store
- Crowdfunding platform
- Offline digital store
- Operator channel
- Other channels

Data Sources: CSHIA Research

Q7: Shipment share of top 3 vendors in China's smart home market in the third quarter of 2020

	%
16.3%	
11.3%	
9.8%	
62.7%	

- Xiaomi
- Midea
- Haier
- Others

Data Sources: IDC

Establish a suitable systematic design framework based on research

4.1.1 Optimization of marketing strategy

As an Internet company that started with smartphones and smartphone operating systems, Xiaomi's core business is to continuously develop new smartphones. Xiaomi's main marketing strategy is also based on smartphones. Although Xiaomi has proposed 1+4+x product strategy, Xiaomi's marketing strategy has not been structurally adjusted according to the new product strategy. The marketing strategy of smart home-related products still follows the strategy of smartphone, that is, in-depth display and promotion of single product. This has enabled Xiaomi to successfully launch smart TVs, sweeping robots and other popular smart items. The public impression that Xiaomi can produce many useful smart items gradually replaced Xiaomi as an image of the smartphone brand, but the concept of Xiaomi smart home has not been recognized by the majority of consumers.

The concept of smart home is different from smart products. Smart home is a whole that connects all smart devices in the home through IOT technology. Xiaomi's current market strategy hopes that consumers will actively learn more about Xiaomi's smart home after purchasing smart products, thereby driving the sales of other smart home products. Due to immature IoT technology, this strategy has indeed achieved results in the early development of the smart home

industry. The development of smart home industry is currently entering the next stage of development. AI and IOT technologies are gradually mature, and marketing strategies should shift from focusing on a single product itself to the promotion of smart home systems.

Online information transmission channels are not suitable for smart home promotion. Smart products are suitable for online promotion because product parameters and performance can be displayed intuitively on the screen. Demonstrating the functions of industrialized products to consumers does not require consumer to directly touch the product. But smart home involves the interaction between people and devices. Consumers need to feel it in the real space to understand how smart home work.

Smart home system and traditional home design are closely related. The choice of traditional home furnishing products is influenced by consumers' subjective aesthetics and experience. Therefore, traditional home furnishing manufacturers need to provide a large enough offline space with various styles for consumers to experience products. One of the most representative manufacturer is IKEA. Smart homes are also affected by consumers' subjective experience evaluation. The same smart products can provide more personalized services for consumers who have different habits through different combinations. From this perspective, the offline space of smart home can refer to the space design of

traditional home furnishing manufacturers.

From the perspective of Xiaomi's business model, although Xiaomi adopts an omni-channel model, Xiaomi's information release channels and sales channels mainly rely on online channels. Relying on online channels, Xiaomi has developed a sound logistics system, reduced the cost of offline inputs, and accumulated a large number of consumer groups. If Xiaomi's smart home business is completely converted to offline channels, it will lose its original advantages.

What Xiaomi currently needs is to expand the consumer group (currently Xiaomi's consumers are mainly young and middle-aged who like use the Internet), popularize the concept of smart home to consumers, and cultivate usage habits. And make consumers subconsciously associate Xiaomi with the concept of smart home, in order to expand the market share.

Therefore, the focus of offline space design is not to expand new forms of offline sales

channels, but to use space as a means of publicity and promotion. Due to the short release cycle of smart products, a fixed space design is not the best solution. The temporary exhibition space is arranged according to the cycle of the new product launch event of Xiaomi Home Furnishing, to attract consumers come to experience and guide consumers to purchase through online channels. In this way, retailers can not only save the cost of fixed storefronts, but also do not have to worry about additional storage problems caused by new offline channels.

In general, the current business model of Xiaomi Smart Home is to use online as the main channel for promotion and sales, and offline as an auxiliary sales channel. After optimization, the sales channels are still mainly online channels. But the marketing strategy is changed to focus on promotion activities, combining online advertising based on smart products and offline space based on smart life experience.

Image 4.1
The exhibition space provided by IKEA for consumers. Consumers can experience in the exhibition room and find suitable furniture

4.1.2 Optimization of Retailer-consumer interface

Original offline space design
At the beginning of its establishment, Xiaomi adopted online single-channel sales model. In order to provide after-sales service for products sold online, Xiaomi created the "Xiaomi Home" as an offline after-sales service and communication center. After Xiaomi's transformation into omni-channel business model, "Xiaomi Home" also transformed into sales experience center and cancelled the after-sales maintenance function. At present, Xiaomi Home is the official retail experience store directly operated by Xiaomi.

"Xiaomi Home" is a typical retail space driven by product-oriented sales logic. In addition

to the shelves where products are closely placed, the area that occupies the most space is the product display. Smart phones are Xiaomi's core products. Due to their multi-functional features, offline consumers need to fully experience various functions before purchasing. Therefore, the distance between smartphones on the display table is large, which provides sufficient space for consumers and shopping guides. To avoid consumers staying too long in front of the product, no seat is provided in front of the product. This display design provides enough opportunities for each smart phone to show consumers.

The same design logic also extends to other smart products including smart home products. Small-sized smart products are placed on the desktop at the same height as smart phones

Image 4.2 "Xiaomi Home" flagship store in Shenzhen

for consumers to experience, while large-sized smart products are placed on the booth at a suitable height. Each smart product has been given ample display space, but at the same time the concept of the Internet of Things is eliminated by the design for independent display space of goods. Consumers in such a retail experience space, consumers feel independent smart products. This kind of space is more like a grocery store displaying smart products than a smart life experience store.

It is necessary to provide consumers with a "grocery store that can experience smart products", but if Xiaomi wants to further promote the concept of smart life and the Internet of Things to consumers, it is necessary to increase new offline space with different purposes.

Optimize offline space design

As a sales experience center, "Xiaomi Home" is a supplement to its online sales channels. Visitors usually have basic expectations about the experience after entering the store, that is, entering the store to try and play smart products.Smart home is a sub-business of Xiaomi. Its retail space covers a smaller product range than the traditional "Xiaomi Home". This leads to changes in space requirements.

To redesign the space for Xiaomi's smart home business, it is necessary to reorganize the needs and goals of visitors. According to

the data analysis of the smart home industry (pages 81-84), we know that the penetration rate of the smart home concept is not high. But young people who often use the Internet and are interested in technology will also know some knowledge of smart home. And there is a high overlap rate between people who know smart homes and people who need home improvement and decoration. As a result, we can further expand potential consumers, that is, young people who do not understand smart homes and those who need home improvement in the future. Therefore, presenting future lifestyles to potential consumers and attracting them to purchase related products is the focus of smart home offline business. This means that offline space cannot be product-oriented, but display-oriented (service-oriented). On the other hand, smart home and traditional home furnishing industries are highly overlapped in use. The space design of the smart home can refer to the furniture retail space display.

Because the purpose is to show the concept of smart home, not to deploy long-term offline sales channels. The new type of offline space needs to consider short-term explosive visitor flow. When there are a certain number of people who know the concept and brand of smart home in the target area, the communication between consumers can continue to expand the brand's popularity, and the space used to show the concept can be removed to avoid waste of funds. Therefore, offline space can be combined with marketing

activities to use the form of pop-up store to maximize benefits.

Pop-up store are currently a relatively mature concept, often without any large-scale publicity in advance. When the pop-up store suddenly appears somewhere on the street, it quickly attracted consumers. From a product perspective, pop-up store can adapt to the rapid update of smart products and IOT technology. When the related technology of smart home enters the next stage, the design of the pop-up store can also be adjusted immediately. In addition, because pop-up stores can be flexibly changed, retailers can adjust a series of design points such as pop-

up store location, space layout and display focus according to different target groups to achieve the best results.

Container pop-up store case

The container pop-up store is currently a popular design. The container building covers a small area, is recyclable, and does not produce construction waste. And the container can be flexibly built according to the demand, not subject to site restrictions. Artboxer is a design team specializing in designing container retail stores for various brands. Take one of their projects SUPERMONKEY as an example:

Image 4.3 SUPERMONKEY gyms in Shenzhen

SUPERMONKEY is an emerging brand of gyms located in Shenzhen, China. The brand hopes to create a convenient and smart fitness space. To solve the current fitness dilemma faced by young people who love fitness: Traditional fitness clubs are too far and too expensive; The annual card system and the current high-mobility city life are misaligned; Overtime causes missed business hours

The project is composed of two containers spliced together, with a corridor in the middle and floor-to-ceiling glass on the north side of the box to ensure the light permeability of the cabin (Image 4.4). With a total construction area of 86 square meters, there are locker rooms, aerobic training areas and strength training areas inside. Although there are not as many equipment in large fitness venues, it guarantees the use needs of ordinary users.

The project is called "fitness cabin" because it does not require staff to be on duty, and it can operate 24 hours a day through smart hardware and Internet of Things technology. Users make self-service appointments through WeChat APP (Image 4.5). The access control, lighting, air conditioning, fresh air system, and audio of the fitness cabin will be adjusted according to the user's appointment. Even if the fitness cabin cannot be placed on the site due to various factors, it is very easy to move to a new location and put it back into use in a short time due to the convenience of reassembly of the container building.
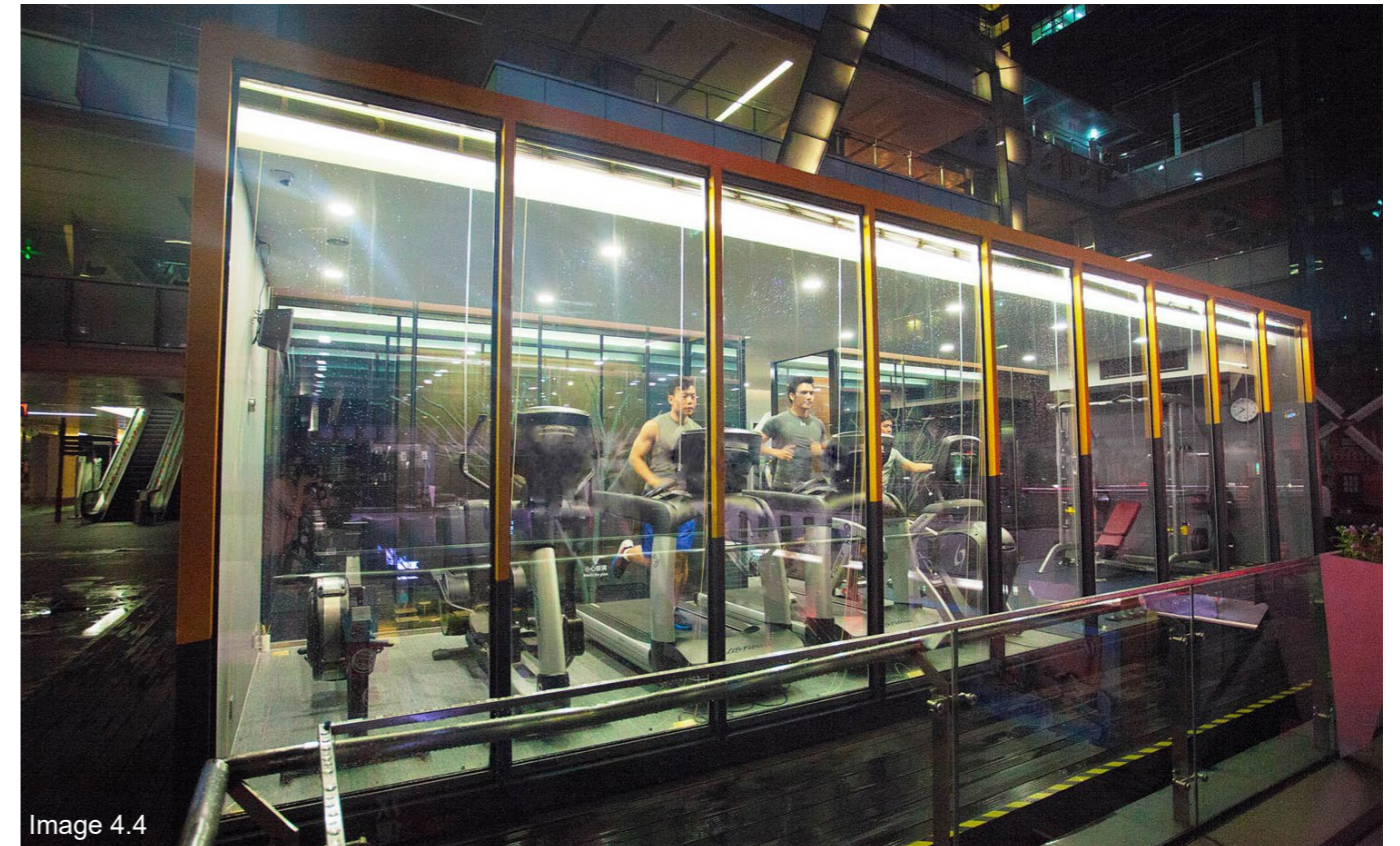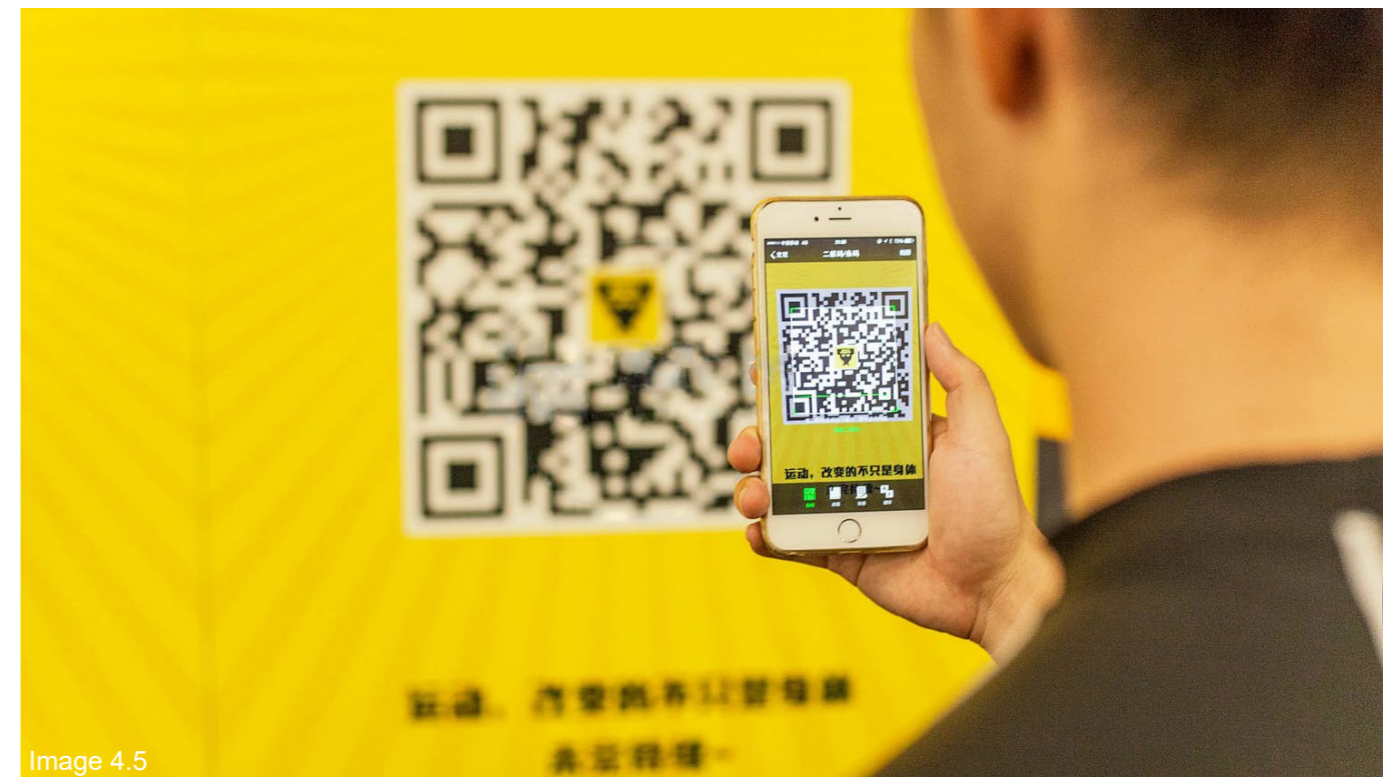

Image 4.4

Image 4.5

Original online retailer-consumer interface

Compared with the conservative offline electronic product retail space design, Xiaomi's online retailer-consumer interface design has made diversified explorations.

In terms of information transmission channels, Xiaomi has registered official accounts on WeChat, Weibo, Douyin, Bilibili and other social platforms with a large number of users in China, and releases different forms of information according to the characteristics of different platforms.

· **Weibo** is a social media platform for sending micro-blogs. Most of the information that Xiaomi publishes on Weibo are short texts and pictures, and it often initiates online activities to interact with Xiaomi users.

· **WeChat** is an instant messaging application, but unlike other instant messaging applications, WeChat provides a variety of functions including public accounts services. Users can use the public accounts to conduct one-to-many media activities. Xiaomi mainly publishes articles on the WeChat public platform, introducing products and activities in detail. In addition, Xiaomi has also embedded sales channels on the public platform. For Xiaomi, the WeChat channel is a composite channel combining information and sales.

· **Bilibili,** as a video community platform, also provides live streaming services. In addition to

publishing video information on Bilibili, Xiaomi also uses live streaming service to hold live events. Although Bilibili provides a service to jump to the shopping platform, Xiaomi has not opened this service so far. The third-party publishers of smart products review on Bilibili are also important channels for promoting Xiaomi product information.

· **TikTok(in China named as Douyin)** is an emerging short video-sharing social platform, launched in 2016. Xiaomi officially settled on Douyin in 2017, which shows that Xiaomi is very willing to cater to the trendy group in terms of marketing. In addition to publishing short video messages on Douyin, Xiaomi also opened daily live streaming channel and merchandise sales channel.

In terms of online sales channels, Xiaomi relied on the community and logistics channels established in the early days to develop three sales platforms: Mi Store, Xiaomi Youpin and Mijia. At the same time, it also opened online shops on third-party platforms.

· **Mi Store** mainly sells mobile phones and related accessories and extension products, including Xiaomi phones, Xiaomi TVs, Xiaomi purifiers, etc. It is worth noting that Mi Store is the only offline sales channel that provides offline self-pickup services.

· **Mijia** takes the smart home business as its core, integrating smart device control, Mijia Youpin (sales platform), smart product

information and personal center. One APP can satisfy the user's needs for manipulation and purchase at the same time.

· **Xiaomi Youpin** relies on the ecological chain, in addition to Xiaomi, Mijia brand products, and ecological chain company products, it also introduces third-party high-quality manufacturers. Therefore, Mijia Youpin has far greater product categories than Mi Store and Mijia.

· Xiaomi has opened online stores on third-party shopping platforms such as Taobao, JD.com, and Pinduoduo. And these stores

have also opened live streaming services. The live streaming service on the current shopping platform has shown an increasingly important trend, which means that the design requirements of the live streaming space are becoming more and more important.

In general, Xiaomi has diversified channels online, and online information release channels and sales channels are well integrated. But it is relatively separated from offline sales channels, but its after-sales service is shared across all channels.
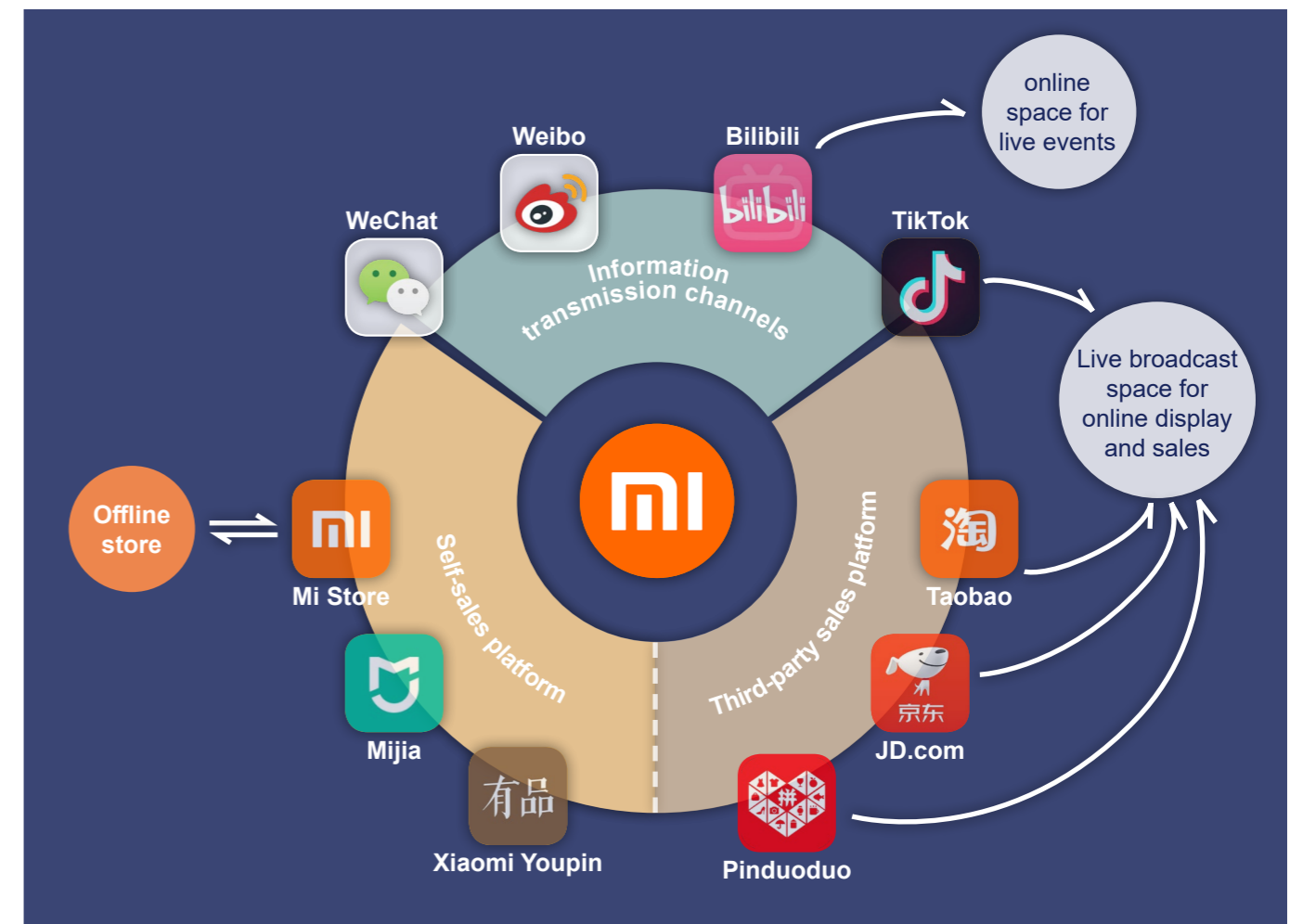
Optimize the online retailer-consumer interface

One of the problems brought about by Xiaomi's diversified online channels is that each channel is operated independently. This has caused the online space of different channels to fail to achieve a unified style. The relative independence of each channel is caused by cross-platform. It is impossible to achieve omni-channel sales at the sales level, but it is still possible in terms of information transmission. If Xiaomi has plans to carry out large-scale events in all channels in the future, the unification of information channels will be more conducive to the promotion of events.

When specific to the smart home business, Xiaomi's online sales focus is on the Mijia app, but Xiaomi's information release mainly relies on third-party community platforms such as Weibo and Bilibili. By cooperating with a third party, Xiaomi can set up a link to jump directly to the Mijia app when publishing information or opening a live broadcast room to achieve consumer diversion(page 20).

As the core of Xiaomi's smart home business, Mijia's interface also needs to be optimized. Mijia app's sales logic is oriented towards independent smart products. The most intuitive performance is that in the interface interaction design of the Mijia app, the product classification is arranged by product category. But smart home is a living space constructed by multiple smart products. It is difficult for

consumers to construct a complete smart home space vision before purchase by only relying on independent product sales interfaces.

Similar problems have solutions in the traditional home furnishing field. Taking the IKEA app as an example, in addition to classification by product type, users can also choose to search for products based on room and scene. The three retrieval methods are aimed at different consumer groups. The retrieval method classified by product type is aimed at consumers who want to quickly search for specific targets. Consumers who search by room usually have relatively vague needs. Classification by space can help consumers clarify their needs. "Scene purchase" provides another service. Some consumers have no specific ideas and can only express "I want a warm bedroom" and are not clear about what to buy. Retailers can show consumers the possibilities of various product combinations by showing scenes. Consumers can rely on scenes as shopping guides.

In the traditional home furnishing market, if consumers want to solve the home improvement problem by themselves, the biggest obstacle is the aesthetic level and spatial imagination ability. The IKEA app helps consumers lower the purchase threshold through "scenario shopping". In addition, the IKEA app provides design services on the homepage to help consumers who don't want to decorate themselves to solve problems.

For consumers, the emerging smart home field has a higher learning cost than the traditional home decoration. The concept of smart home has not yet fully entered the public eyes, and consumers need to relearn from installation to setup. Although the Mijia app includes purchase section, smart home control section and community section, the design of the interface is actually very unfriendly to new customers who do not know smart home. First of all, there is only one way to search for smart home products by product type. That is not a problem for consumers who only want to buy a specific product. But for consumers who want to make whole-house

intelligence, there is no way to start. Secondly, a large number of articles published in the Mijia community introduce a certain product in detail. Consumers who want to understand how smart homes work often need to spend a lot of vigor on mass reading. Third, according to the market research results (page 83), the second most important factor influencing consumers to choose smart home brands is matching installation services. Xiaomi disclosed at the 2019 Developers Conference that Xiaomi's ecological chain company Aqara provides smart home design and installation services, but there is no relevant information on the Mijia app. This further limits consumers'

The shopping interface of Mijia app is only retrieved by product category, and consumers cannot intuitively see the final presentation of the smart home.
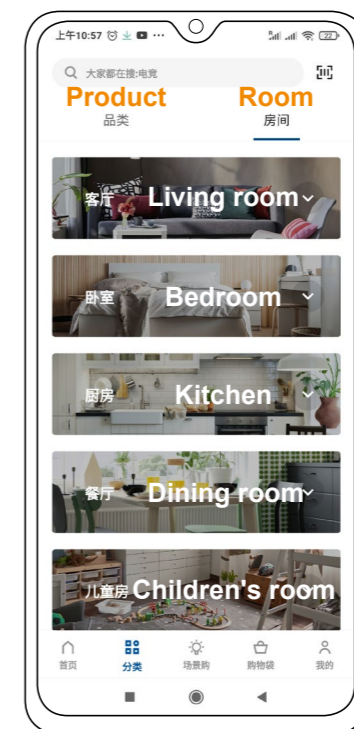
In addition to searching by product category, the IKEA app can also search by room to help consumers find relevant products when constructing specific functional spaces
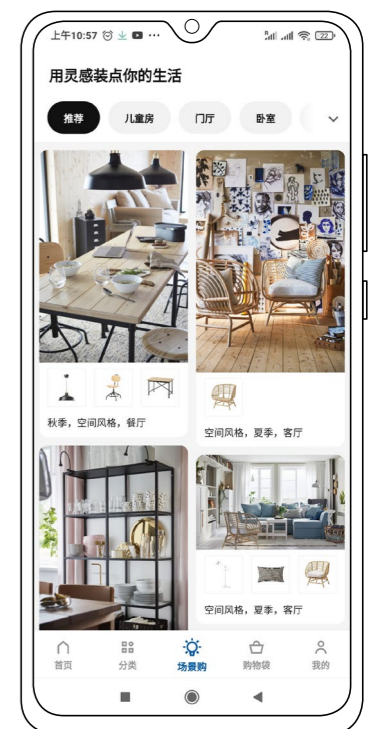
The "scenario purchase" provided by the IKEA app can provide consumers with guidance on home design through scenarios.

desire to shop for smart home.

Launching offline activities can popularize smart home to the public, but subsequent purchases and services still need to rely on the Mijia app, so the optimization of the Mijia app is also a key point. On the other hand, the ideal model for the offline space of smart homes is to connect with online channels. Online information transmission channels attract consumers to offline space, and offline space turns visitors into online sales channel consumers. For example, it can optimize the linkage between the existing live broadcast space and offline event space, and the offline space can help consumers who have not been exposed to smart homes understand the Mijia app.

In addition, Xiaomi can also carry out more in-depth cooperation in smart home business with other companies that have already cooperated. For example, Xiaomi has collaborated with IKEA to shoot smart home renovation videos. Xiaomi can continue to cooperate with IKEA to allow IKEA to provide furniture products for Xiaomi's offline limited time activities, so that both parties can make profits together. Xiaomi also launched a smart community jointly with real estate companies in the smart home pre-installation market. Xiaomi's smart home business can establish a limited-time sales store in the early stage of home sales in the smart community.

4.1.3 Establish the systematic design framework

Online channel-based business model and the consumer value proposition that pursues cost-effective are the base of Xiaomi's development. On this basis, designers can use the systematic design framework to optimize the spatial design of Xiaomi smart home business and make specific designs according to marketing activities.

In terms of information transmission channels, the styles of the live broadcast spaces of different channels need to be integrated to facilitate subsequent marketing activities. In terms of sales channels, the Mijia app, which is mainly engaged in smart home business, should be optimized for its interface.

The focus of the design framework is the offline experience space. The main function of the offline experience space is to convey Xiaomi's smart home concept to the public and attract more consumers to use online channels (Mijia app). The design plan of the offline space is related to the plan of the marketing activity, cooperate with the online live broadcast space to complete the activity, and cooperate with the Mijia app for after-sales service.

The final design results are not just a fixed plan. The program can be adjusted according to the target group and product updates.
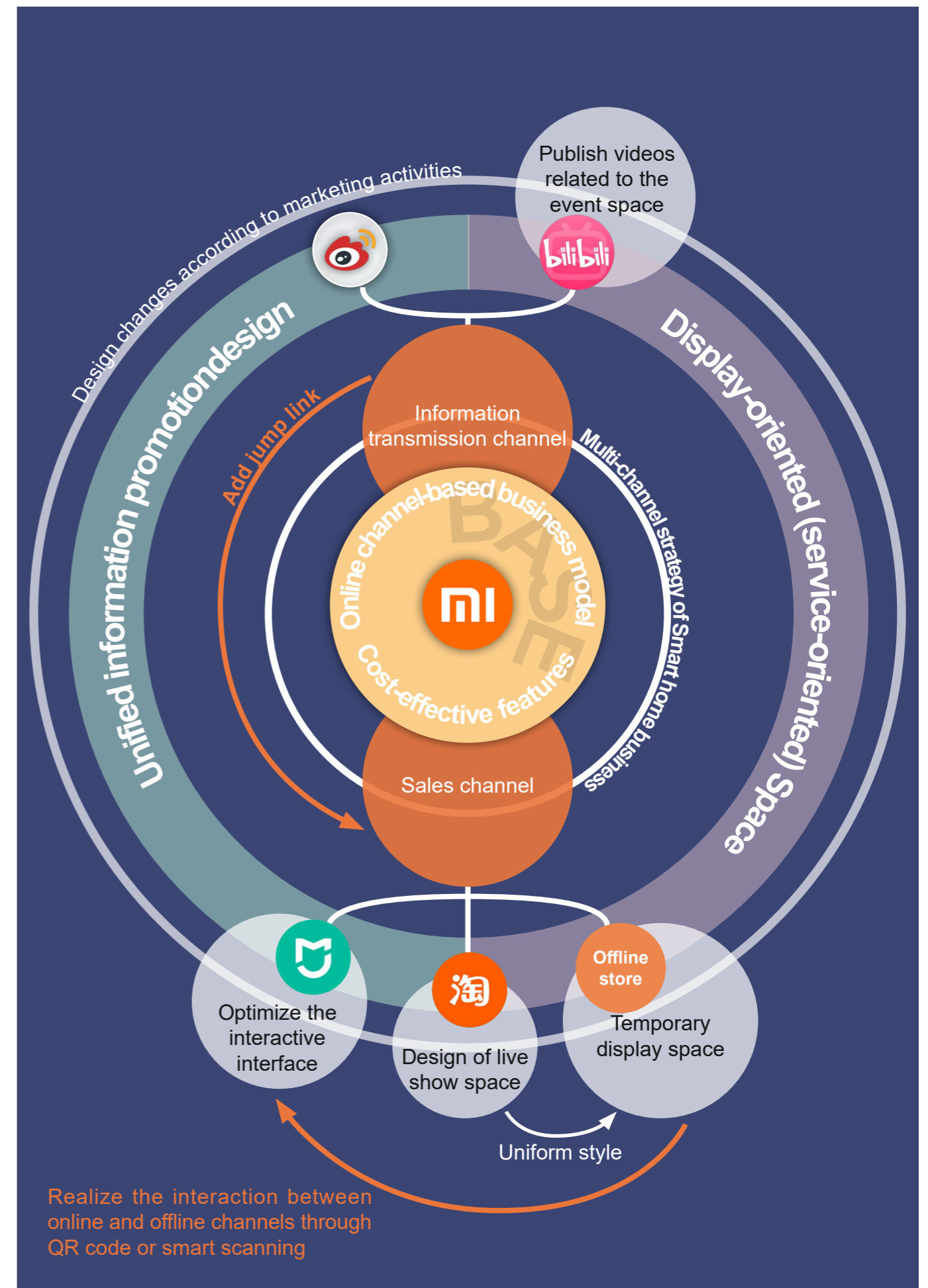
The Design

4.2.1 Promotional event planning

After clarifying that the entire system design framework is developed around marketing activities, it is necessary to analyze the objectives, activity areas and audiences of the marketing activities.

1 Promotion objective

People's lives gradually become more intelligent. Who can master the market before the full expansion of smart life will become the future leader of the smart home industry. The current smart home is still only popular in a small area, and the public has not yet fully understood the concept of smart home. The purpose of the promotion is to help Xiaomi promote the concept of smart home, so that every time consumers come into contact with smart home products, the first brand they think of is Xiaomi.

2 Social background analysis

Smart home products are currently not necessities of life, but non-essential products to improve the quality of life. Chinese cities with higher purchasing power are better choices for hosting promotional activities. The smart home industry is highly related to the degree of consumer housing, so the housing conditions and related policies in Chinese cities will also affect the promotion of smart homes.

Due to China's huge population, the overall situation of urban housing in China is often

difficult to count and measure. Relatively speaking, the relevant data of the national census released by the government is more accurate. The seventh national census began on November 1, 2020. At the time of writing, the latest census data has not yet been released. In 2015, the Ministry of Information Resources Development used relevant data from the sixth population census in 2010 (including the age structure of housing, per capita housing area, and 10% of the total housing area sampled, etc.) to perform calculations in conjunction with other data from previous years. In the end, they comprehensively analyzed the data differences of several different calculation methods and inferred a relatively scientific housing stock data:

In 2015, the number of households with permanent residents in urban areas in China was 271 million, with an average of 2.83 persons per household. The average number of housing units per household is 0.94, and the per capita housing area is 30.56 square meters, so the average living area per household is 86.48 square meters. Judging from the annual increase in housing volume and other data, around 2020, China can achieve the goal of one house per household in urban, and the per household living area exceeds 90 square meters.

In addition, according to the data in the "2010-2018 Analysis Report on the Price-to-income Ratio by Regions and Cities" released by the National Information Center, the average sales

area of newly built commercial residential buildings from 2005 to 2017 was 107.6 square meters (G1).

Xiaomi's CVP is to allow everyone to enjoy the life of science and technology. The offline display space needs to be close to the living conditions of Chinese urban residents, so as to cover more potential users, which can infer the design direction of the offline display space:

Showcasing the lifestyle of contemporary Chinese urban families (2~3 people) in a home space of 80~110 square meters.

3 Location selection and target population analysis of promotion activities

Groups with home decoration needs are usually more likely to pay attention to information about smart homes than ordinary consumers. Promoting the concept of smart home to these types of consumers will make it easier to create demand for smart home products. They are typical potential consumer groups. First-time homebuyers are usually those who need house decoration.

First-time homebuyers

First-time buyers usually have necessary needs for living, so they will decorate the house after the property is purchased. Xiaomi can set up pop-up stores near popular shopping districts. The "2020 Urban Rigid Needs Report" released by the Ke Research Institute gives a spatial distribution map of the popular commercial districts in Shanghai for

G1: Average sales area of newly built commercial residential units from 2005 to 2017
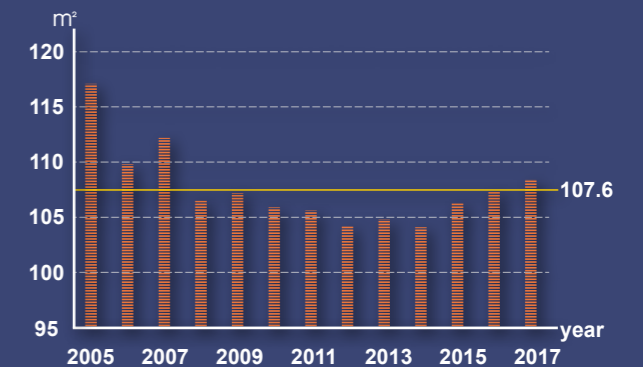
G2: Spatial distribution of popular commercial districts for buying houses in Shanghai
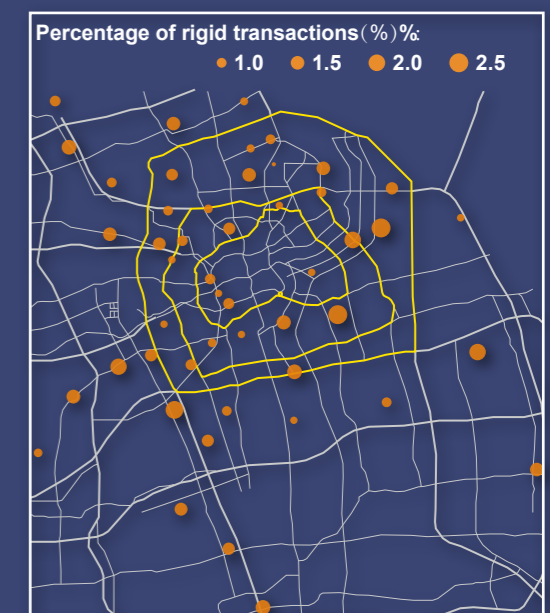
housing purchases (G2). Setting up pop-up stores near popular business districts has a greater chance of attracting target customers.

In addition to setting up pop-up stores in popular shopping districts, Xiaomi can also conduct in-depth cooperation with real estate companies. When Chinese real estate companies launch new houses, they will set up a sales office in the community. It is convenient for buyers to have an overall understanding of the entire real estate at the sales office. After the houses in area are bought, the sales office will be demolished or converted into a community's public activity center, restaurant, library or other supporting facilities. Xiaomi has cooperated with a number of real estate companies to launch smart community services. On this basis, Xiaomi can establish the same temporary exhibition space as the sales office in the new community. When the houses in the community are sold out, Xiaomi's temporary exhibition space can be demolished together with the sales office.

Consumer groups affected by policies
In addition to first-time homebuyers, there is another consumer group that has a demand for house decoration due to the government's livelihood security policy.

Urbanization is the only way to modernization. China has experienced large-scale and rapid urbanization in recent decades. In this process, cities have absorbed a large amount of rural labor, which has promoted the overall improvement of the living standards of urban and rural residents, but at the same time some problems have also arisen, one of which is the emergence of shanty towns. In view of the concentrated dilapidated houses, and areas where public facilities cannot be matched, the government has issued a series of related policies on "shantytown renovation" since 2008.This series of policies is to demolish (or transform) the original shanty towns and re-plan, design and construct new residential areas and roads, squares, education, commerce and other infrastructure facilities. Residents involved in this policy will be resettled in newly built buildings and adequate compensation will be given. This not only solves the problems left by the city, but also stimulates local residents' consumption on home furnishings. From 2008 to 2020, the renovation of various shanty towns across the country has started more than 50 million houses, which has exceeded the target and task.

After basically completing the policy plan for "shantytown renovation", the government issued a new people's livelihood project "urban old community renovation" in 2020. Urban old community refer to residential communities that were built earlier in the city or county, are out of maintenance and management, inadequate municipal supporting facilities, incomplete community service facilities, and residents have a strong desire to renovate. In the "Guiding Opinions on Comprehensively Promoting the Reconstruction of Old Communities in Cities and Towns" issued by the General Office of the State Council, it is mentioned that in addition to repairing public parts such as roofs, exterior walls, and stairs, repairing and upgrading municipal supporting infrastructure, and adding comprehensive service facilities such as health stations and kindergartens, it also specifically mentioned intelligent transformation. According to estimates by the Ministry of Housing and Urban-Rural Development, by the end of 2025, there will be 170,000 old urban communities that need to be renovated, involving more than 42 million households. Based on the average family population of 2.6, the benefited population will exceed 100 million.

Similar to "shantytown renovation", "old community renovation" series of policies will drive the interior renovation and decoration industry. The Xiaomi smart home business happens to have the same goals as the policy. And the policy encourages the investment of wolves and social capital in society, and provides certain subsidies and support to the forces participating in the transformation. Xiaomi's smart home business can actively cooperate with the government, and set up pop-up stores in areas involving renovation plans. Not only can further promote the brand, but also objectively strengthen the willingness of local residents to renovate their families.

Young renters
Among consumers who pay attention to and consume smart home porducts, young people account for a large proportion. According to the analysis of the smart home market, data on consumer age groups (page 83) show that the 18-29 year old youth group accounts for 38.95% of the entire survey group. Such groups usually have just left school and started working soon. Relatively older age groups, they have lower wages but have a higher demand for improving the quality of life. Consumers in this age group have a higher acceptance of smart products even if they do not understand smart home, and they are a good potential consumer group for Xiaomi smart home business.

According to the "2020 Graduation Quarter Rental Housing Insight Report" released by the Ke Institute in July 2020, 70.76% of the respondents chose to rent a house, of which 22.8% chose to rent an entire house alone and 47.96% of the respondents chose to share with others. Most people rent a house in the range of 10 to 90 square meters, and 35.5% of the respondents choose a rental area of 31-50 square meters. And 50.3% of the respondents who choose rent an entire house alone said that they would choose a one-bedroom apartment. If design the exhibition space for such potential consumers, the display space of the smart living space needs to be small and flexible.
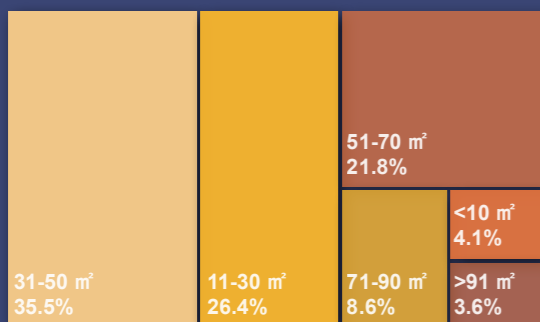
In addition, there are many sources of information on housing rental for graduated youths, and the trend of onlineization is

G3: The choice of renting for the first time

14.65%

22.8%

14.58%

47.96%
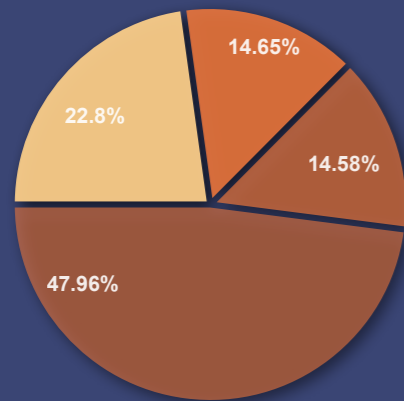
- Rent an entire house alone
- Never rented a house
- Not yet graduated
- Share with others

G4: Ideal rental area for graduates

51-70 ㎡
21.8%

<10 ㎡
4.1%

31-50 ㎡
35.5%

11-30 ㎡
26.4%

71-90 ㎡
8.6%

>91 ㎡
3.6%

G5: For renters who choose to rent an entire house alone, the preferred apartment types are:

Single room	28.2%
More than two rooms	21.4%
One bedroom with one living room	50.3%

obvious. 38.8% of the respondents indicated that they obtain housing information through online housing websites and apps, followed by offline intermediary companies and acquaintances. This means that there is no clear and concentrated gathering place for renters, and the young people who have rented houses are scattered in every corner of the city.

This means that such potential consumer groups cannot find suitable locations and set up small pop-up stores nearby like home buyers and groups affected by livelihood policies. In addition, the radiation range of pop-up stores is small and cannot accommodate excessive visitor flow.

However, young people have greater curiosity and motivation to experience new things than older people. They can be attracted through large-scale marketing activities and exhibition venues.

4 specific event design

In general, under the current Chinese urban social environment, Xiaomi smart home products have three large potential consumer groups: first-time homebuyers, groups affected by the "old community renovation" policy and young renters. For these three types of potential consumer groups, two activity programs can be developed.

Programme I

Homebuyers must go to the area where the real estate is being sold. And the "old community renovation" policy must be implemented in a define area to implement unified renovation. This means that the activities of homebuyers and consumer groups affected by policies are relatively concentrated. A small pop-up store with a small influence radiation is a suitable solution for concentrated target group. Because these two types of potential consumer groups need a larger area of family living space, the pop-up stores need to show the life of multiple family members in the smart home environment.
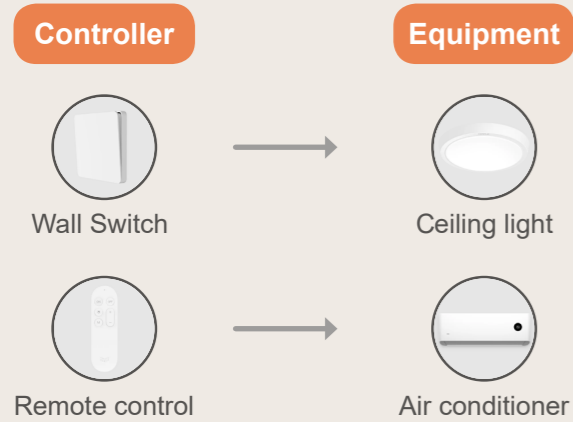
For housebuyers, the opening time of the pop-up store is related to the sales time of the real estate. When the house are sold out, the pop-up store will be removed. For people affected by the policy, pop-up stores can be opened near the renovation area after the local people and the government have reached a renovation agreement. The evacuation time of the pop-up store is related to the number of households in the reconstruction area and the number of customers in the store. When the total visitor flow reaches a certain ratio to the number of households in the area, it means that the publicity effect has been maximized. Therefore, during the planning of pop-up store activities, it is necessary to estimate the daily visitor flow and the number of families in the renovation area, and then determine the specific activity duration.
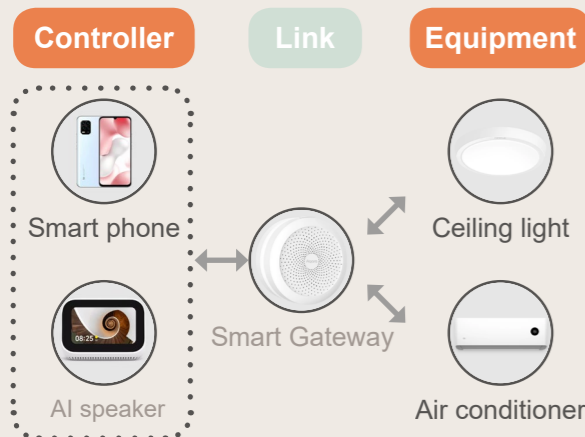
Programme II

For young renters, a relatively scattered potential consumer group, the influence of offline marketing activities needs to radiate to the whole city, which also means that a large number of people will come to the same place in a short time. Therefore, the location of the venue is unimportant, but it is necessary to provide a venue large enough to accommodate a large number of visitors. Before the start of the offline event, Xiaomi needs to use online information transmission channels to promote the event to the public, and can continue to use online information channels to interact with offline event venues to expand its influence after the event.

In addition to the targeted display of a variety of flexible smart lifestyles in small spaces, the content of the event also needs to show all the ecological chain products and the latest technologies related to smart home, and fully demonstrate Xiaomi smart home business to visitors as much as possible. Compared with small pop-up stores, it is a more comprehensive exhibition space. Taking into account the scale of this program, the activity time should be controlled within 5-7 days. The event can also be carried out in cooperation with other traditional furniture companies to attract more attention.
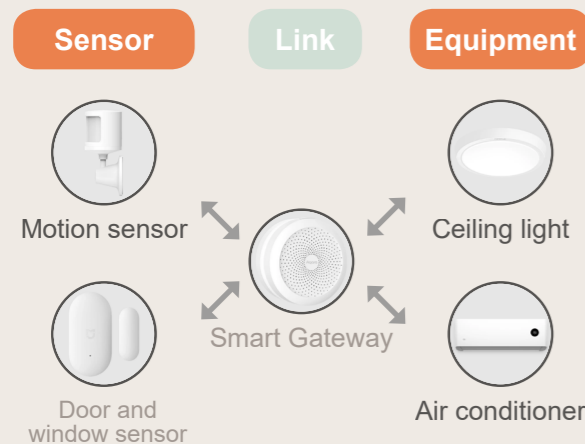
Traditional home appliances

Controller → **Equipment**

Wall Switch → Ceiling light

Remote control → Air conditioner

New control method

Controller | **Link** | **Equipment**

Smart phone

AI speaker

Smart Gateway → Ceiling light

Smart Gateway → Air conditioner

Smart home

Sensor | **Link** | **Equipment**

Motion sensor

Door and window sensor

Smart Gateway → Ceiling light

Smart Gateway → Air conditioner

4.2.2 Modular Analysis of Smart Home Scenarios

The specific retail space design will be affected by the characteristics of the product. On the surface, smart home products seem to be a kind of household appliances, but their operating logic is different.

Traditional household appliances are usually a combination of controller + device, and each device has a unique corresponding controller. For example, wall switches control lights and remote controls control air conditioners. As smart device manufacturers enter the field of home appliances, people have more convenient choices for the control method of home electrical equipment, that is, link smart phones (or smart speakers, smart wearable devices) and home appliances through router(or smart gateway). This is equivalent to integrating all the controllers of home appliances into one intelligent terminal. It not only realizes remote control of multiple devices, but also reduces the number of controllers, which greatly reduces the trouble for users. But in essence, the equipment is still controlled by people, and people judge the use time of the equipment, which is not a smart home in the true sense.

In the current sense of smart home, the traditional controller is replaced by sensors, and people do not directly control the device, but the sensor determines the user's activity intention. However, users need to set the

working logic of sensors and smart home appliances before use in order to achieve real automation. For example, a motion sensor can determine whether someone is passing by nearby, but it cannot determine the intention behind this action. Through the smart home app, users can set the lights to turn on when people pass by. In this case, every time the user passes the monitoring range of the motion sensor, the sensor can automatically control the light to turn on.
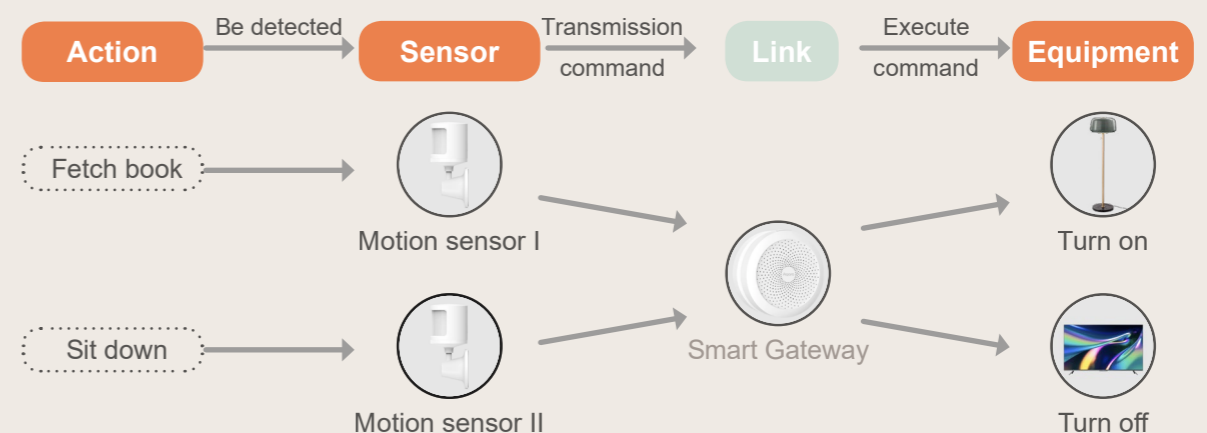
The control of smart home devices by various sensors requires users to set the judgment conditions in advance, but human behavior is complex and diverse. In order to achieve full automation as much as possible, a new concept of smart scenes has been created. The smart scene means that the user simplifies complex family activities into life scenes according to personal living habits, and sets the trigger conditions of the sensor according to this scene to realize

the intelligence of life. For example, when a user sits on a chair next to a bookshelf and takes down a book from the bookshelf, there is a high probability that he wants to read. Therefore, when the two conditions of fetching a book and sitting on a specific chair are met at the same time, it can be said that the reading scene is triggered. The user can set on the Mijia app: every time the conditions for the reading scene are triggered, the lights near the bookcase are automatically turned on and the TV is automatically turned off. Then every time the user triggers the reading scene, the smart appliance will execute the corresponding instruction.

Therefore, the focus of the current Xiaomi offline display space is to show how to trigger different smart scenes in the same space to realize the automation of family life.

The scene of smart home is evolved on the basis of people's living habits and traditional

Trigger mechanism of reading scene

Action → Be detected → **Sensor** → Transmission command → **Link** → Execute command → **Equipment**

Fetch book → Motion sensor I

Sit down → Motion sensor II

Smart Gateway

Turn on

Turn off

functional space division. The living area of most Chinese urban families is less than 120 square meters, which can generally be divided into 5 to 9 rooms. Common functional spaces in general house include: bedroom, living room, bathroom, kitchen&dining room, study room, balcony, entryway. On the basis of these seven functional spaces, smart homes divide the fragmented life scenes around the needs of users. Life scenes can be divided into two categories, one is the whole house control scene, and the other is the activity scene.

Whole house control scene

The whole-house control scene refers to that the intelligent system changes the smart scene of the whole house through the monitoring of external environmental changes. At present, this kind of scene has basically realized intelligence. After the response logic is set, the user does not need to give instructions, and the system can directly respond according to the objective conditions detected.

Security scene:
The intelligent system can be deployed against the dangers that the family may encounter. When it enters a crisis state, the intelligent system immediately starts the safe mode. For example, when an earthquake occurs, the smart speaker or TV will announce the countdown to the arrival of the earthquake wave. For different family composition, the logic settings of the safety mode will be

different. When there is an elderly person in the family, all devices in the whole house turn on voice control and one-key emergency button for calling for help can be set. When the family members include a child and the child is alone at home, the sensor can be linked with the window to prevent the children from falling and the smart faucet can turn on the child mode to prevent children from playing with water. When the water leak sensor is triggered, the main valve can immediately closed automatically, and property and user are notified at the same time. User can remotely shut off the water with Mijia app.

Back home scene:
When the user goes home, the security system is automatically cancelled, all curtains are automatically opened/closed, the main lighting equipment is turned on, and some sensors enter the standby state with all devices required by the user are executed immediately.

Leaving home scene:
When user leaves home, all dangerous electrical equipment is turned off, all lights are turned off, all curtains are automatically closed/opened, all doors and windows are automatically closed, all security sensors enter the execution state, and the security system automatically enters the armed mode.

Energy-saving scene:
The intelligent system can enter the most suitable energy-saving state according to
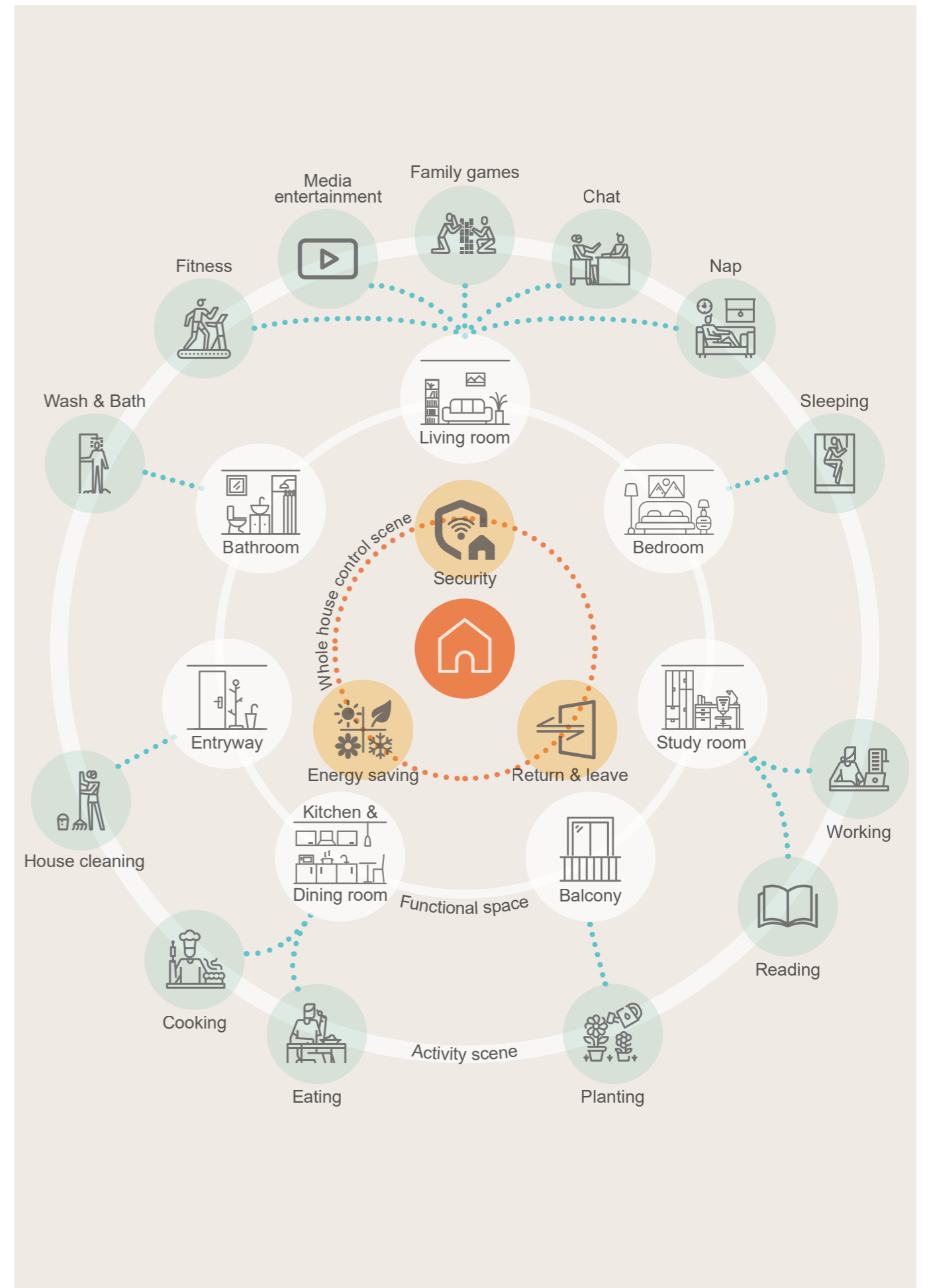
different weather conditions. The intelligent system monitors the environment through temperature sensors, light sensors and intervenes in the environment by controlling smart electrical appliances such as smart curtains, air conditioners, and lights. In summer, it controls curtains to isolate strong light and reduces sunlight radiation, prevents heat energy from entering the room, reduces air conditioning cooling load, and saves power consumption. In winter, the system controls the curtains to rise to absorb solar heat. At night, the system controls the curtains to drop to prevent the indoor heat energy from losing out, reduce the heating load of the air conditioner, and save electricity.

Activity scene

The activity scene refers to that the intelligent system makes scene changes that meet the user's needs of the activity according to the user's specific activities. Due to the complexity of human activities, such scenes have not yet been fully automated. After setting the response logic, some activity scenes still require user to give specific instructions to the intelligent system before the system execute the set scene changes. Such scenes are usually related to the functional space, so the activity scene can be summarized in combination with the functional space.

From the performance of the final result, the achievement of the activity scenario is very
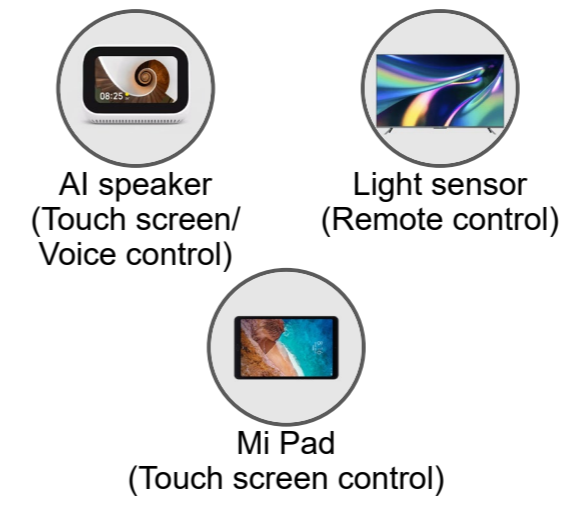
complicated, but it is easier to understand the operation logic of the activity scene by breaking down it. Usually an activity scene can be broken down into multiple trigger conditions. The trigger conditions can be summarized into three types:

Environmental trigger conditions: It is usually a prerequisite for the active scene. When the environmental conditions are not triggered, the subsequent trigger conditions will not be executed. The most typical example is the light environment trigger condition. In a well-lit environment, all light-related active scenes will not be triggered. The monitoring equipment involved in environmental triggering conditions includes:

Light sensor   Air detector

Temperature and humidity sensor   Water leak detector
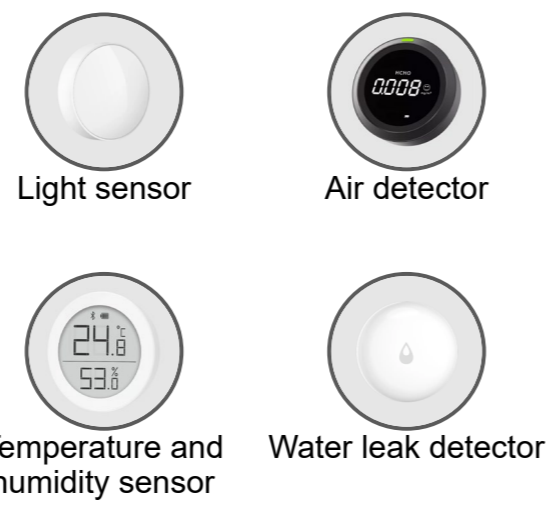
Active trigger condition: In this situation, the intelligent system will only execute commands when the user actively send instructions to the control terminal. This trigger condition is usually applied in a single space containing multiple activity scenarios.
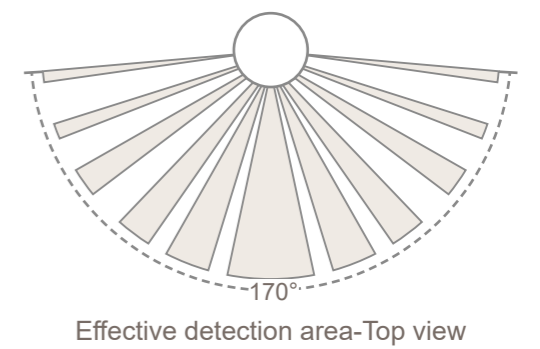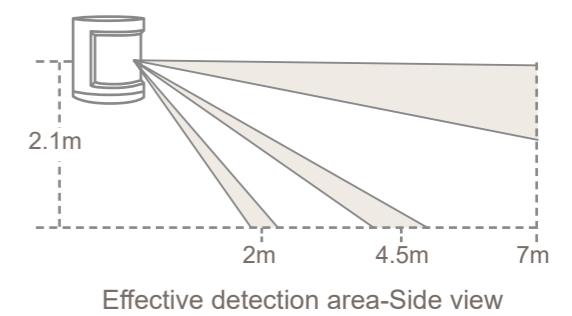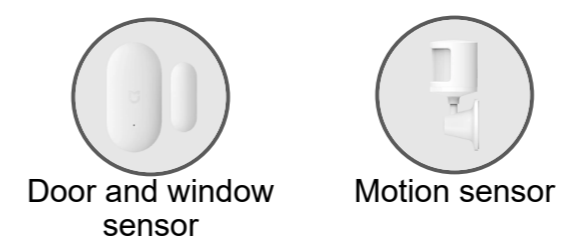
The most common way of active trigger condition is voice command. When issuing a voice instruction, the user must first say the wake-up word "Xiao Ai" (Xiao Ai is the name of the intelligent AI researched by Xiaomi) to wake up the voice assistant, and then tell the voice assistant about the needs. The terminal equipment involved in the active trigger conditions are:

AI speaker (Touch screen/ Voice control)   Light sensor (Remote control)

Mi Pad (Touch screen control)

Passive trigger condition: In this situation, when the sensor detects the specified human activity, the system will automatically execute the scene command that has been set and the user does not need to actively issue the command. The sensors involved in the passive trigger condition are:

Door and window sensor   Motion sensor

Among these sensors, the most flexible and most widely used sensor is the motion sensor.. It detects human movement with passive infrared.There is a lens in the main body of the motion sensor, and the sensor detects whether people are moving in the surrounding area through the lens. Therefore, by adjusting the position, height and angle of the sensor, the detection range can be changed to adapt to different activity scenarios.

According to the product manual,the recommended installation height is 1.2 m to 2.1 m. If the installation height is below 1.2 m , the detection area will decrease; if above 2.1 m, the detection area might have blind spots. Therefore, when user wants to control the detection area in a smaller range, reducing the height of the motion sensor and rotating the sensor so that part of the lens faces the wall can reduce the effective detection area.

2.1m   2m 4.5m 7m
Effective detection area-Side view

170°
Effective detection area-Top view

Activity scene in Entryway

The entryway is a transitional space between living space and public space. It is the place where people stay at home for the shortest time. The activities involved include leaving home and back home. Because people stay for a short time and activities are relatively simple, entryway can basically rely on passive trigger conditions to achieve full automation. This space includes lockers for storing things that need to be carried out, coat racks, mirrors for checking clothes, shoe cabinets and stools for changing shoes.

Leaving home scene

When a person wants to leave leaves the house, he will first enter the detection area of Motion Sensor1-1 (MS1-1), and immediately execute the command that has been set: turn on Downlight1-1, and turn off automatically after two minutes(The duration of lighting can be adjusted according to the time that family members are used to stay at the entrance).

When people are ready to leave the house in the entryway, they may face several possibilities:

1 Everyone left, no one in the house.
2 Someone left, but there were still people in the house.
3 Preparing to leave, but remembered that there was something missing and needed to return to the house.

In these situations, the sensors cannot distinguish. Therefore, it is up to people

to judge whether there are still activities in the house. When the user confirms that no one is in the house, then he can send a voice command to Mi Pad: "Xiao Ai, I am leaving", the intelligent system will execute the command: turn on the Security camera, run the sweeping robot, turn off all lights and electrical equipment. At this time, the user leaves home without worry.

Back home scene

When people go home, they will first enter the detection area of MS1-3. The system executes the command: turn on Downlight1-1, and it will automatically turn off after two minutes. When people change their shoes and take off their coats, they will continue to walk forward. Entering the detection range of MS1-2, the system automatically executes commands: turn off the "Leaving home scene", turn on some lights and electrical appliances according to the environment.

The reason why MS1-2 is installed far away from the door, It is to avoid conflicts with the leaving home mode. If the MS1-2 is close to the door, the user may accidentally enter the detection range of MS1-2 and interrupt the execution of the "Leaving home scene" when the user is about to leave the house.
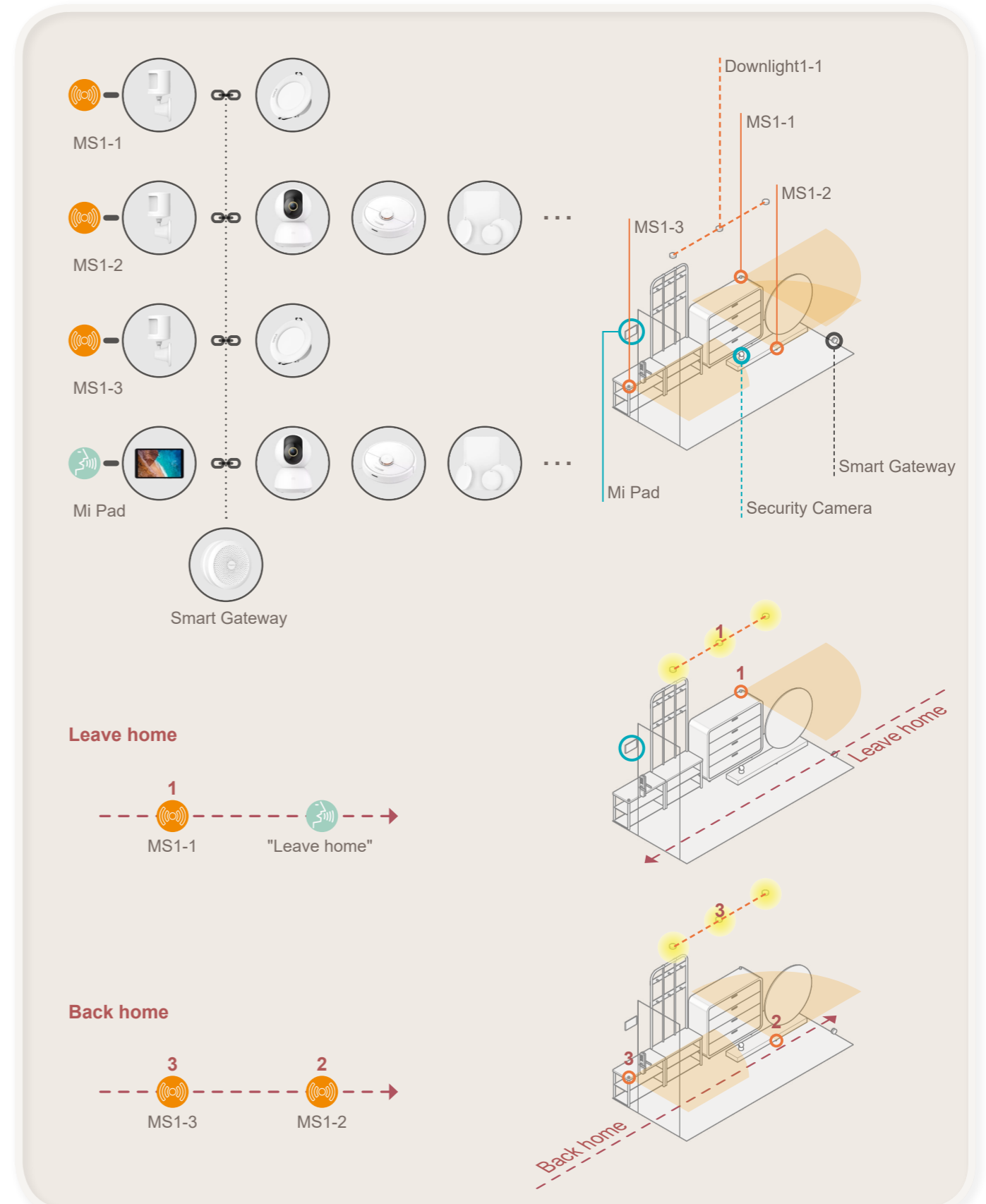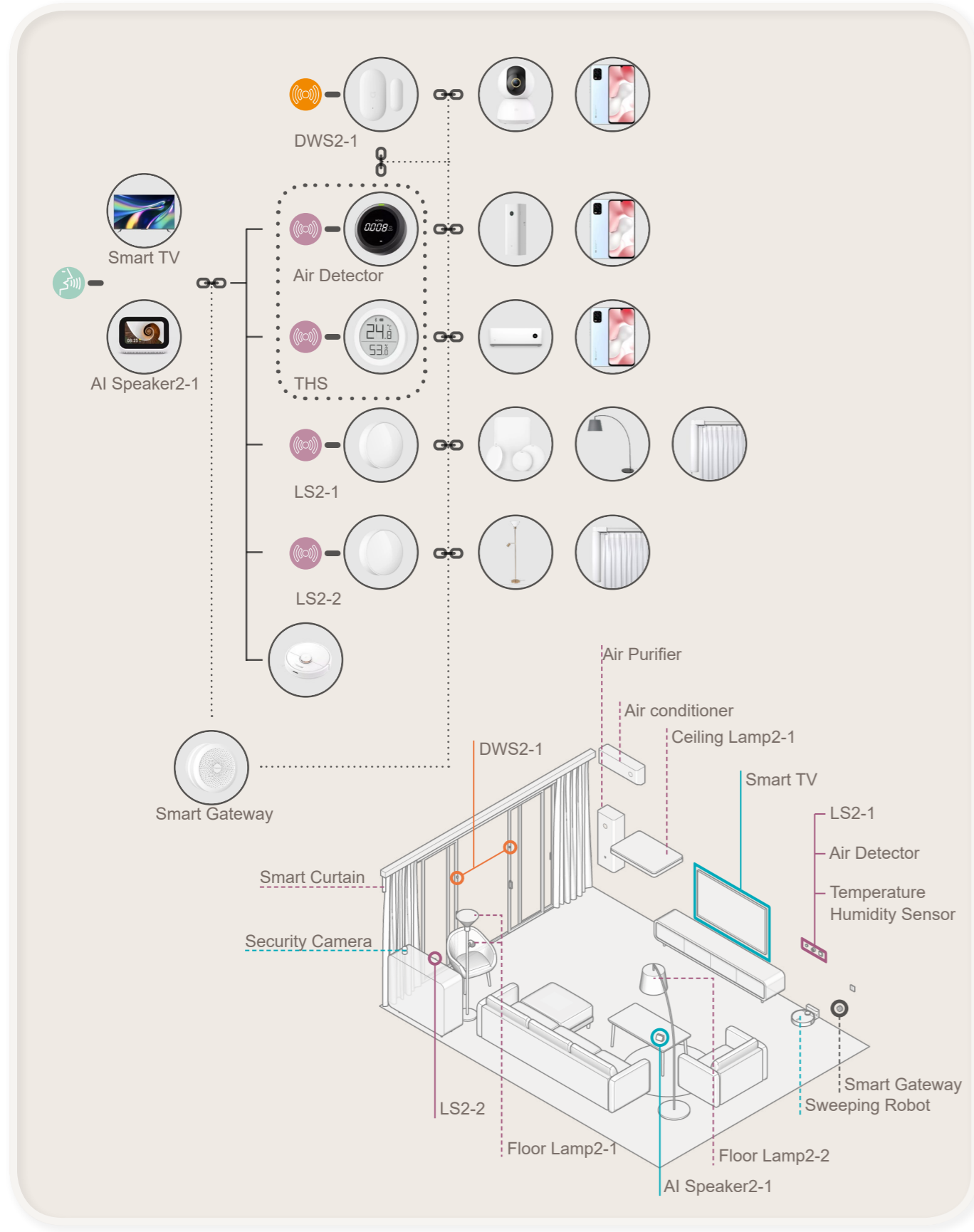
Activity scene in Living room

For many families, the living room is the most important functional space, and many family activities take place in this space. In living room, there are movie watching scenes, chat scenes, nap scenes, etc. around the sofa. And the scene that occur around the bookcase is reading scene. Due to the large number of appliances and furniture fill the living room, the scenes are diverse and involve many people. In this kind of space, the switching of scene modes can only be realized by "active **trigger** conditions". In addition, the living room is also affected by "environmental trigger conditions".

Open/Close the door

A door and window sensor (DWS2-1) is installed on the frame of the glass door which leads to the balcony. DWS2-1 is connected with air detector (AD) and temperature and humidity sensor (THS). When the balcony door is closed, according to the air condition in the house, AD decides whether to turn on the air purifier; according to the temperature and humidity in the house, THS decides whether to turn on the air conditioner. When the balcony door is opened, in order to avoid energy waste, no matter how the indoor environment changes, the air purifier and air conditioner will not be turned on. But if the environment is too harsh, AD and THS will issue warnings to the control terminal, and the AI voice assistant will issue warnings to people who are active indoors.

In addition, DWS2-1 is also connected to security camera and mobile phone. If the balcony door is opened during the execution of the "Leaving home scene" mode, DWS2-1 will issue a warning to the mobile phone and turn on the security camera at the same time.

Reading scene

A light sensor (LS2-2) is installed on the bookcase. When a person sends a voice command to the AI speaker: "Xiao Ai, I want to read a book", according to LS2-2's judgment on the lighting environment, if the environment is too bright, the smart curtain motor will draw the curtains to a suitable position; if the environment is too dark, the Floor lamp 2-1 will be turned on and adjusted to the appropriate brightness.

Movie scene

When a person sends a voice command to the AI speaker: "Xiao Ai, I want to watch a movie", the system will execute: turn on the TV, draw the curtains, and turn off all the lights in the living room.

Chat/family activity scene

When a person sends a voice command to the AI speaker: "Xiao Ai, I want to chat with my family/friends", according to LS2-1's judgment on the lighting environment, if the room is not sufficiently illuminated, the system will automatically turn on Ceiling lamp2-1, and Adjust the brightness of Floor lamp 2-2.

Leave home

Open/Close the door

1
DWS2-1

2
Air Detector
THS

On/Off

On/Off

Reading

"Reading/
Stop reading"

3
LS2-2

**Watch movie/Chat/
Nap/Family activities**

2
LS2-1

Open the door
Leave home

Reading

Watch movie
Chat
Family activities
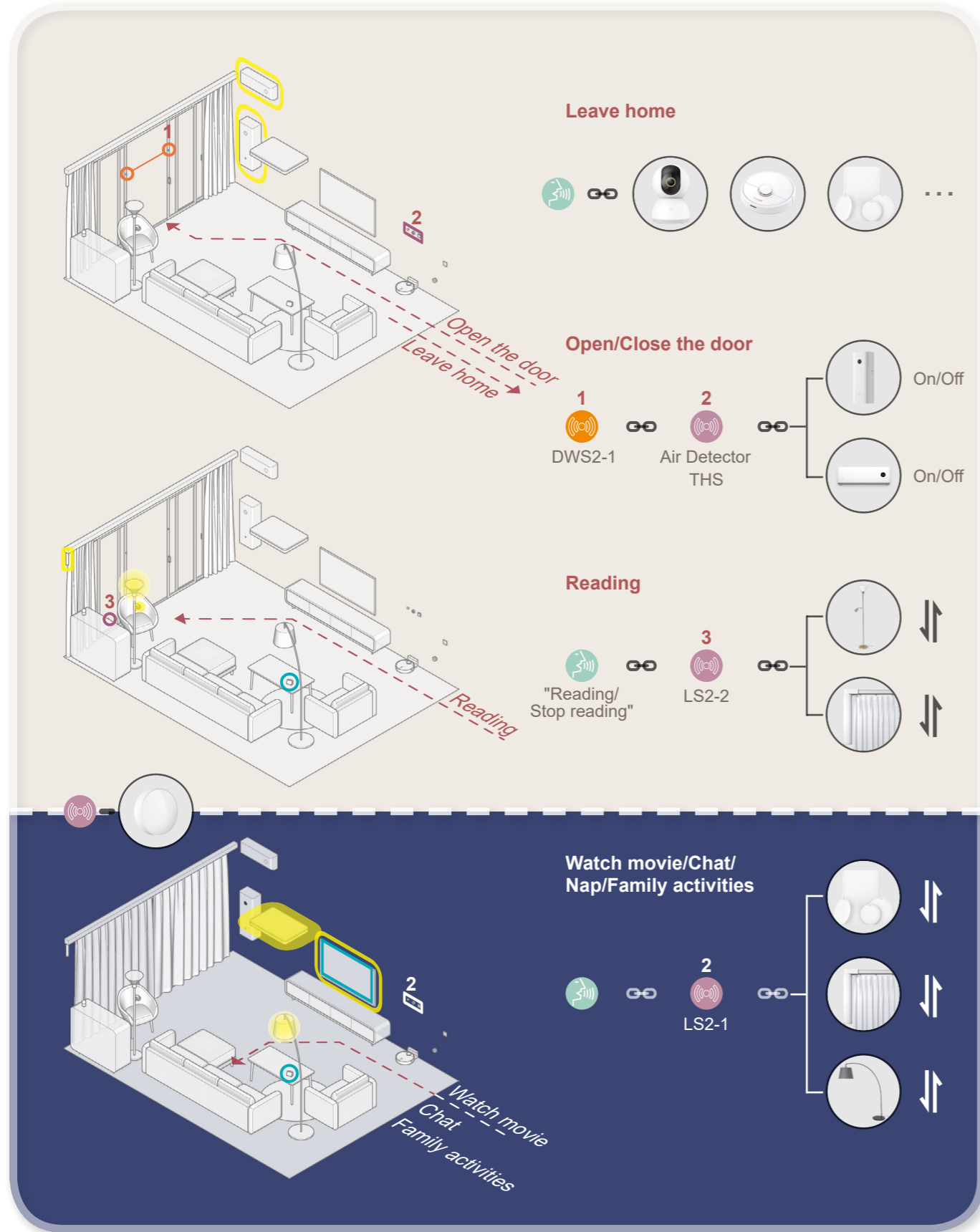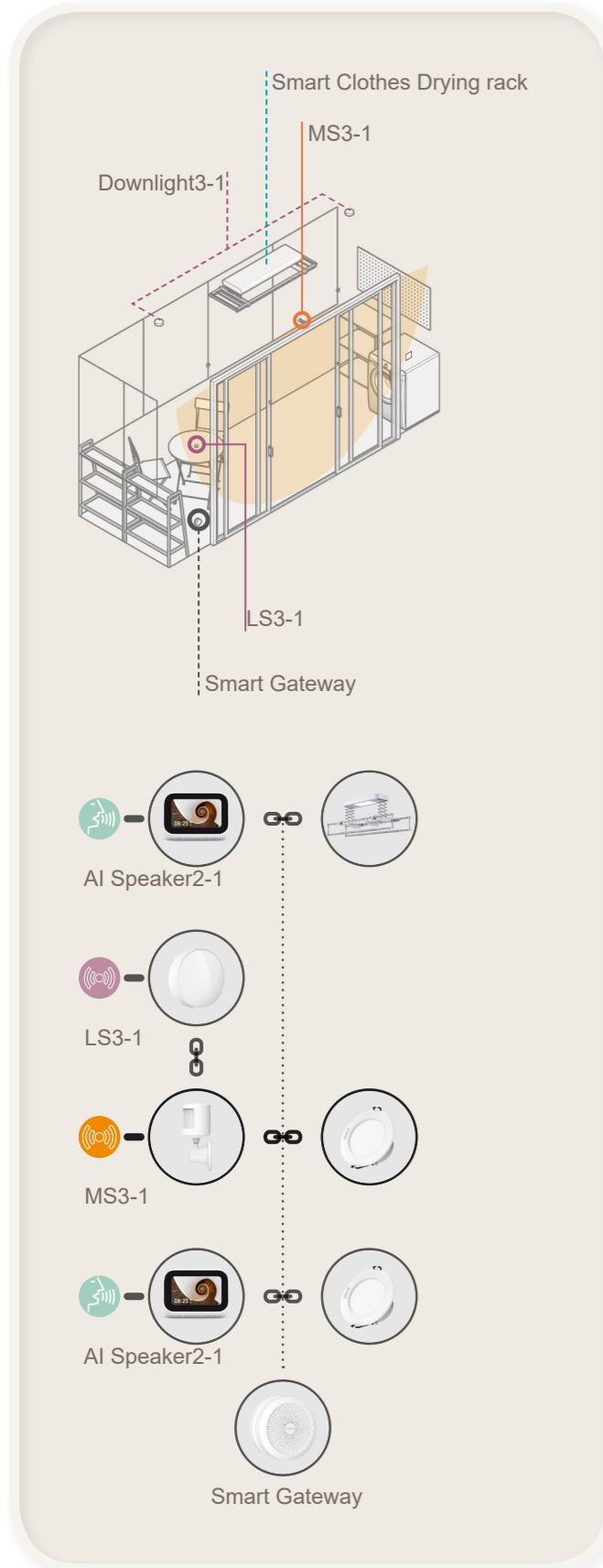
Nap scene

When a person sends a voice command to the AI speaker: "Xiao Ai, I want to take a break", according to LS2-1's judgment on the lighting environment, if the environment is too bright, the system will automatically turn off all the lights in the living room and draw the curtains to the proper location to isolates outdoor light.

Activity scene in Balcony

The balcony is not only a leisure space but also a living auxiliary space. There are not many activities scenes, but it has a great impact on the quality of life. The current trend of Chinese home interior design is to place the washing machine on the balcony. Compared to drying clothes with a dryer, the Chinese prefer to let the clothes dry naturally. Therefore, there must be a drying rack on the balcony, and placing the washing machine on the balcony is more convenient for organizing clothes, so it is widely loved by Chinese families.

Drying clothes scene

The smart clothes drying rack launched by Xiaomi has a lifting and folding function. When there is no need to dry clothes, the smart clothes rack is folded by default, reducing the occupied space. When the user has finished washing the clothes and needs to dry the clothes, he can control the height of the drying rack through voice commands or the control panel installed on the wall, making the drying process of the clothes easier.

Short stay scene

In addition to placing laundry-related items and electrical appliances on the balcony, Chinese families also like to place some tools or objects related to planting. Whether it is taking tools or watering plants, people will not stay on the balcony for long. A motion sensor (MS3-1) is placed above the balcony door, and it is connected to the Downlight3-1.

Whenever someone passes through the balcony door and the light environment is dark, the intelligent system will automatically execute the command: Turn on Downlight3-1 and turns off automatically after two minutes.

Long stay scene

At night, when the user enters the balcony and wants to stay on the balcony for a while, he can send a voice command to the AI speaker 2-1 in the living room: "Keep the balcony lights on".
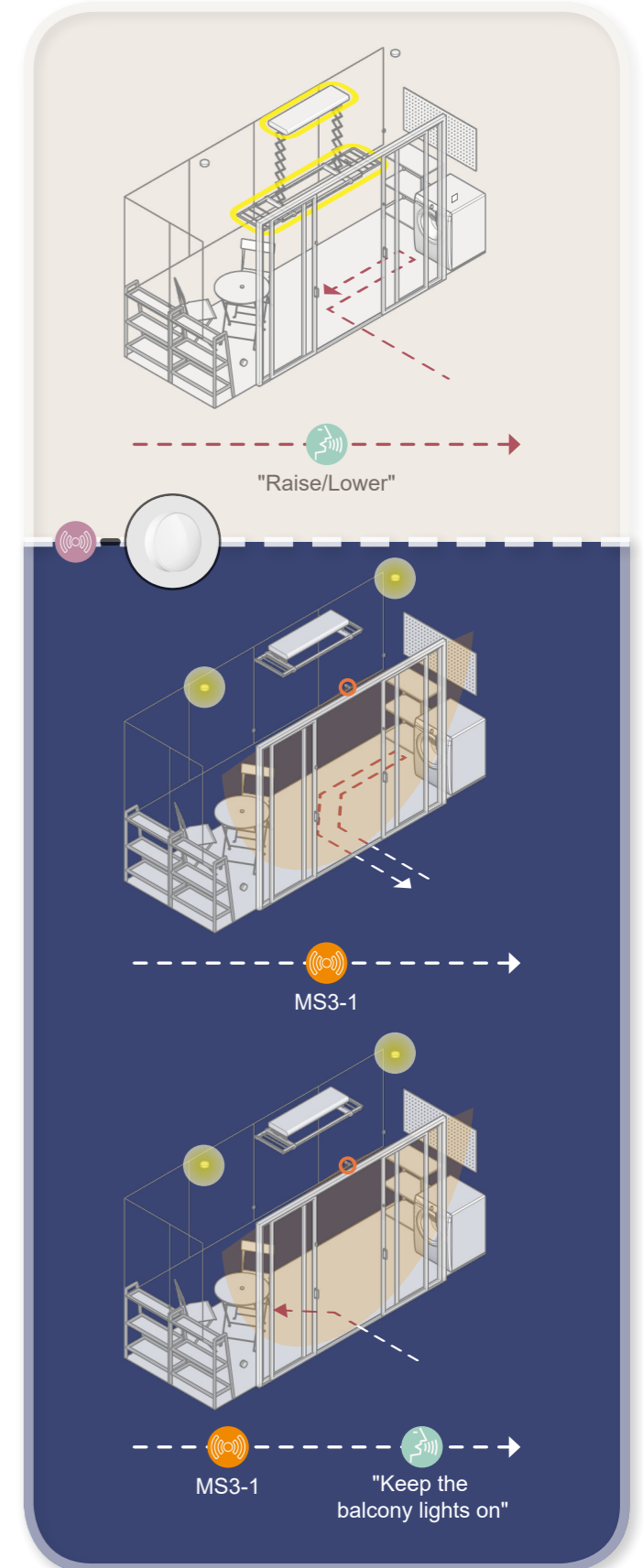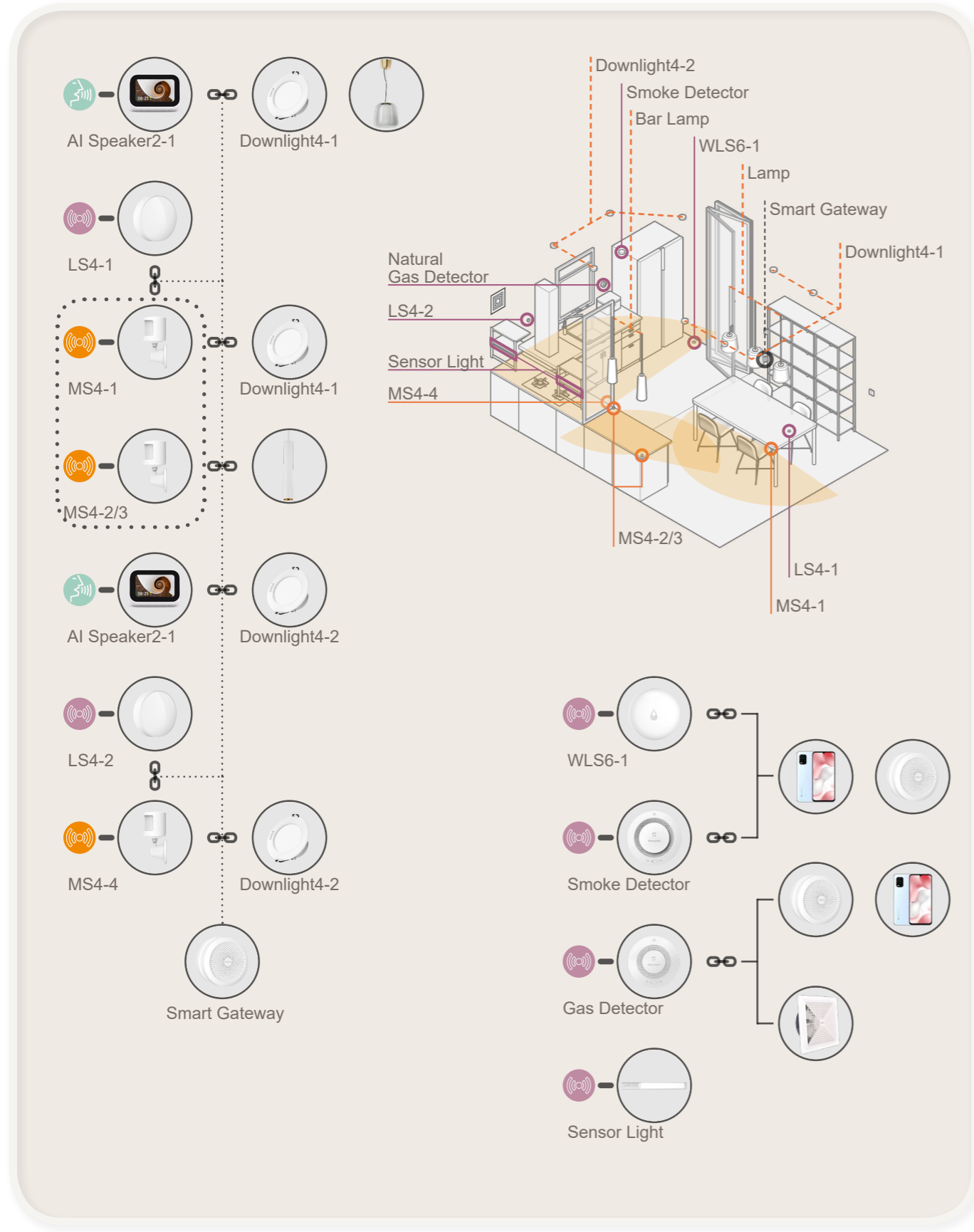
Activity scene in Kitchen & Dining room

The cooking process of Chinese food will produce a lot of oily smoke, so the traditional Chinese dining space is usually independent of the kitchen to avoid oily smoke affecting the dining space experience. Due to the development of technology, current household range hoods can basically solve this problem, so more and more families choose semi-open kitchen. The semi-open kitchen can make the people in the kitchen interact with the people in the dining area, and also can separate the kitchen and the dining area with sliding doors when family members do not want to disturb each other. And compared to independent kitchens, semi-open kitchens make it easier for families to carry out food-related traditional Chinese family activities (such as making dumplings and eating hot pot). Under this trend of family space design, we can treat the kitchen and dining space as a whole.

Compared with the activities in the living room, the activities in the kitchen & dining room have clear purpose and clear trajectories, so partial automation can be achieved. Since the kitchen involves the use of fire and water, it is the place with the highest probability of accidents in the home. Therefore, in addition to activity scenes, environmental monitoring is also the focus.

Environmental monitoring

Smart gateways are an important link in the realization of smart home. Without smart gateways, many electrical devices cannot access the network and then connect with sensors and control terminals. In addition to being a relay station for device connections, Xiaomi smart gateway also has an LED lighting function that can flash red light when a dangerous situation occurs.

A water leak sensor (WLS6-1) is installed on the kitchen floor. When the WLS6-1 is immersed in water, the gateway connected to the sensor will flash red light and send a remote alarm to the mobile phone.

A smoke detector is installed on the ceiling of the kitchen. When the smoke detector detects heavy smoke in the air, the gateway connected to the sensor will flash red light and send a remote alarm to the mobile phone.

The kitchen wall is equipped with a natural gas detector. When the natural gas detector detects a natural gas leak, the gateway connected to the sensor will flash red light, and at the same time, the exhaust fan will be automatically turned on and a remote alarm will be sent to the mobile phone.

Take things

1	2
MS4-1	MS4-4

Cooking

1	2	3	4
MS4-1	"Cooking"	Sensor Light	MS4-2/3

Eating

1	5
MS4-1	Eating
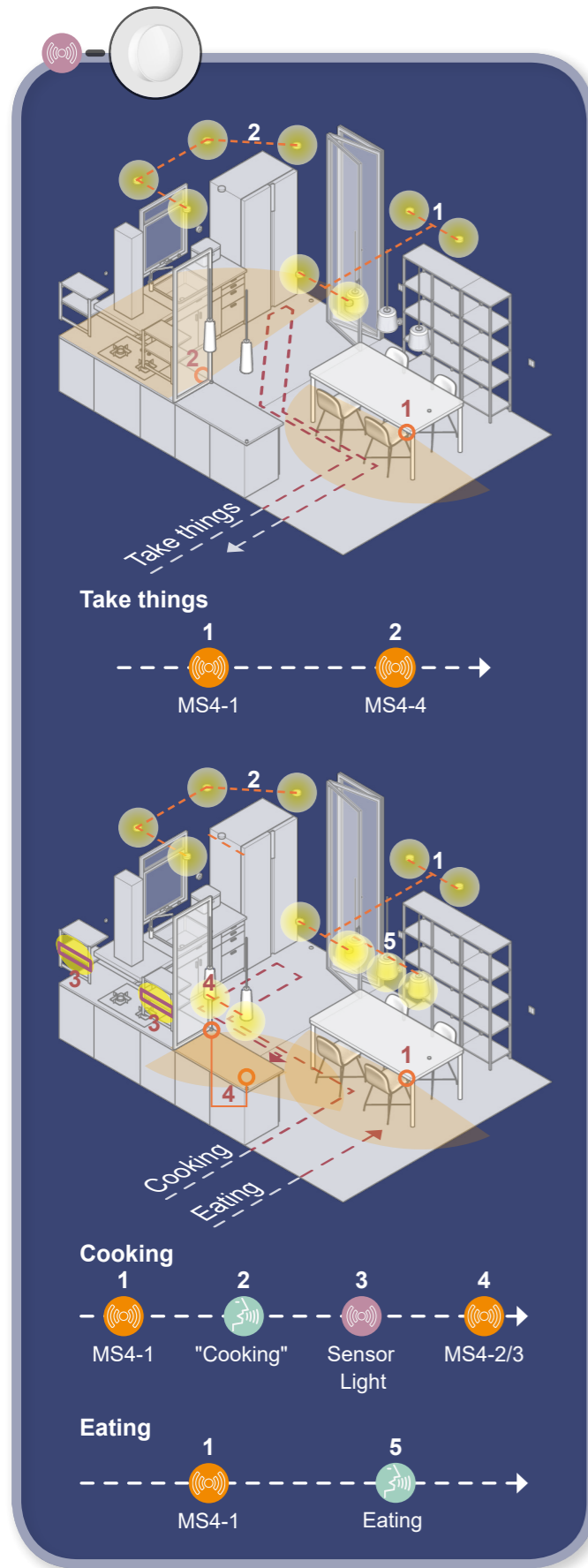
Take things scene

The electrical appliances involved in the kitchen activity scene are mainly lighting equipment. When the light environment is dark, the lighting in the kitchen can be activated.
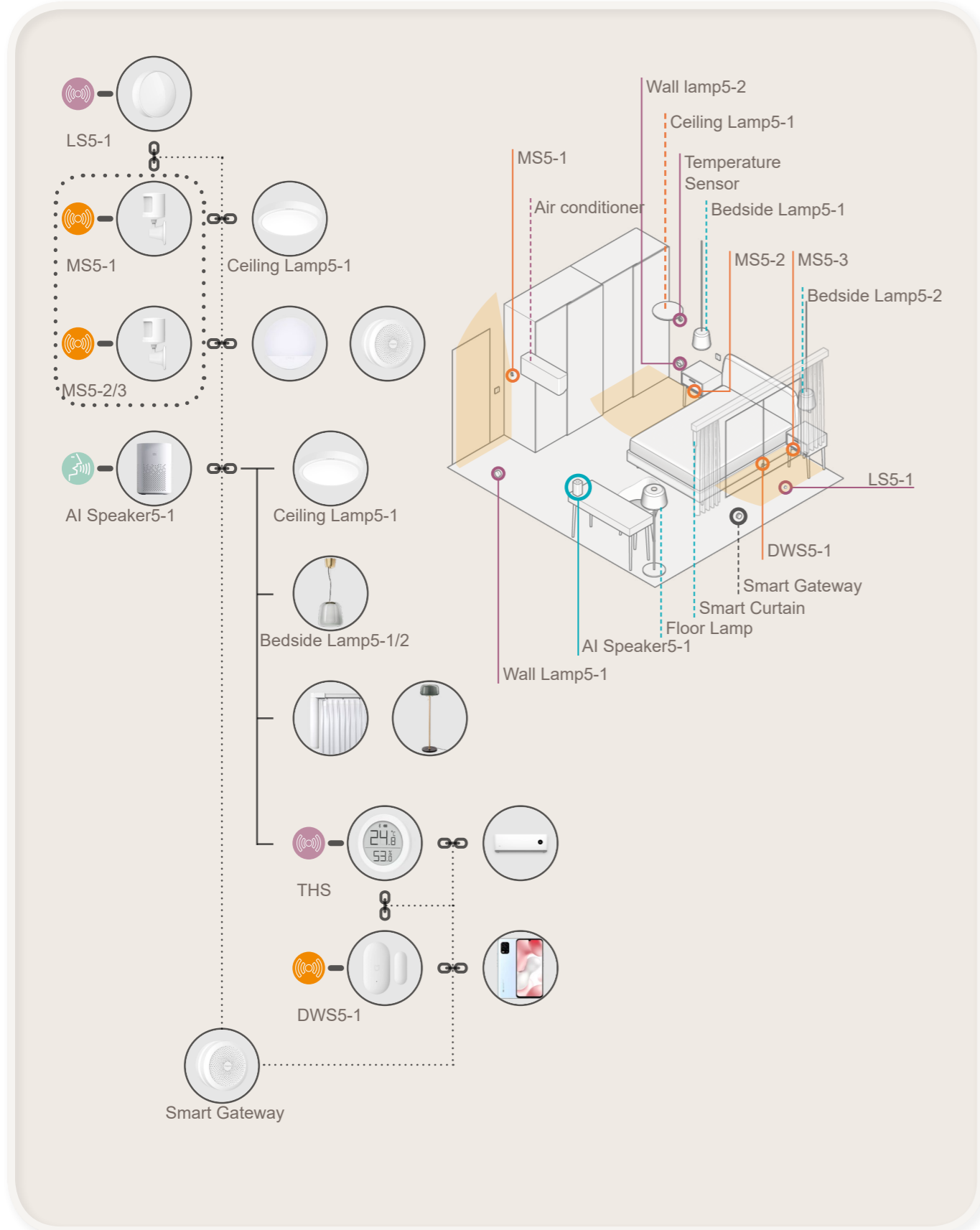
When people want to take things from the refrigerator, they don't stay in the kitchen for a long time. First, people will enter the detection area of MS4-1. The system executes the command: Turn on Downlight4-1 and turn off it automatically after two minutes; then people will enter the detection area of MS4-4. The system executes the command: Turn on Downlight4-2, and turn off it automatically after two minutes.

Cooking scene

When the user decides to cook, he first walks into the detection area of MS4-1, and the system briefly turns on Downlight4-1; then he can send a voice command to the AI speaker 2-1 in the living room: "Xiao Ai, I'm cooking" to keep Downlight4-2 on. When the user handles food on the operating table next to the stove, the action will keep the Sensor Light constantly on. After leaving the operating table, the light will automatically go out. Two motion sensors (MS4-2 and MS4-3) are placed on the top of the bar. The monitoring ranges of the two sensors overlap on the countertop. Only when there is movement within the detection range of MS4-2 and MS4-3 (that is, the table top of bar) at the same time, the bar lamp will light up.

Eating scene

When the user decides to eat, he first walks into the monitoring range of MS4-1, and the system temporarily turns on Downlight4-1; then he sends a voice command to the AI speaker 2-1: "Xiao Ai, I want to eat" to make Downlight4 -1 and the light above the dining table remain on.

LS5-1

MS5-1

MS5-2/3

AI Speaker5-1

Ceiling Lamp5-1

Ceiling Lamp5-1

Bedside Lamp5-1/2

THS

DWS5-1

Smart Gateway

Wall lamp5-2

Ceiling Lamp5-1

MS5-1

Air conditioner

Temperature
Sensor

Bedside Lamp5-1

MS5-2 MS5-3

Bedside Lamp5-2

LS5-1

DWS5-1

Smart Gateway

Smart Curtain

Floor Lamp

AI Speaker5-1

Wall Lamp5-1

Activity scene in Bedroom

The bedroom is the room where people stay at home for the longest time, but since most of the time is in a sleep state, the activity scene in the bedroom is relatively simple.
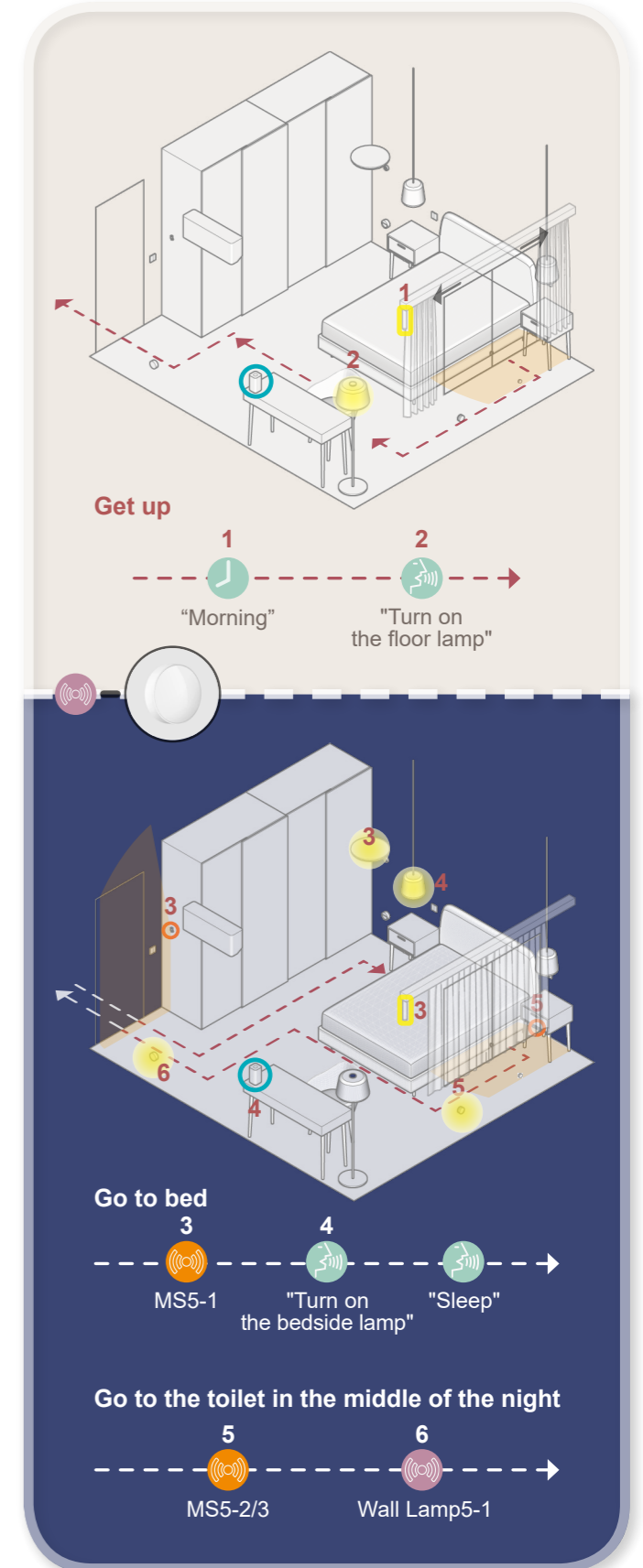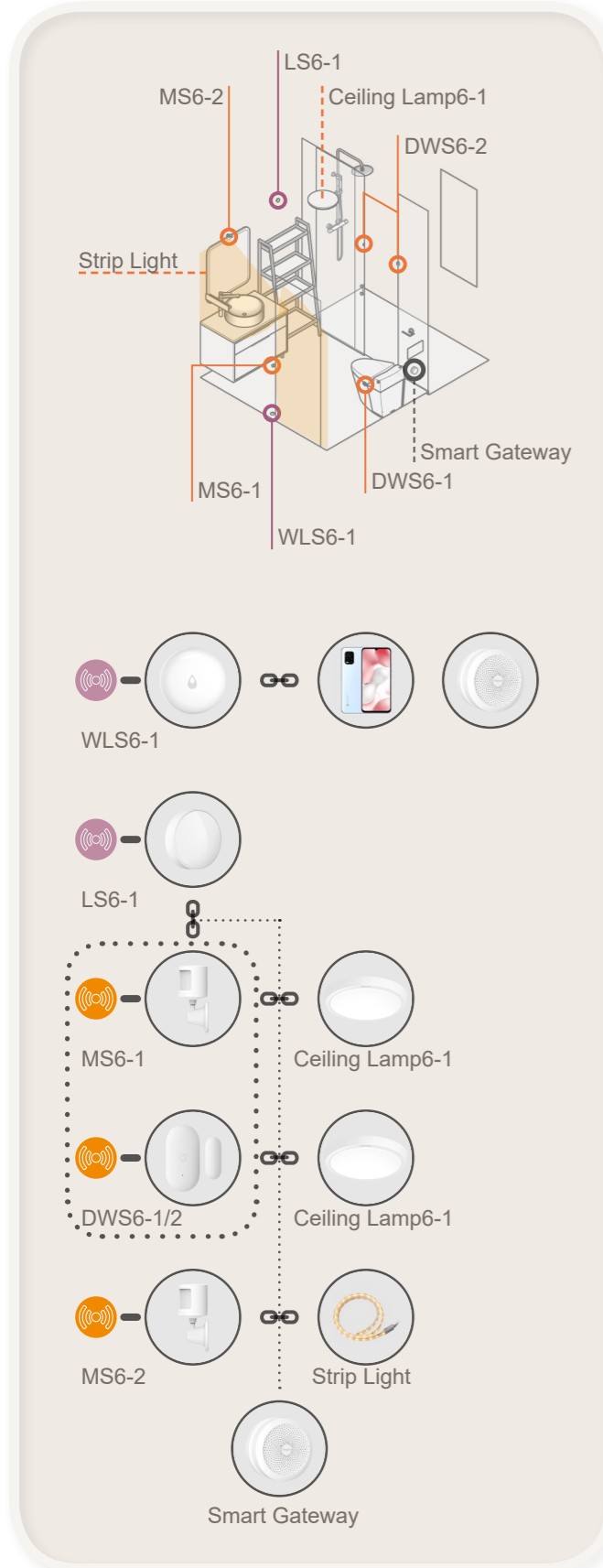
Wake up scene

The user can bind the alarm time of the mobile phone to the smart curtain in the bedroom through the Mijia app. When the wake-up bell rings, the smart curtain opens automatically.

Sleeping scene

At night, when the user walks into the bedroom, he must pass the detection area of MS5-1 and turn on Ceiling Lamp5-1 for a short time. If the user does not want to go to bed immediately, he can send voice commands to AI Speaker5-1 to keep Bedside Lamp5-1/2 on. When he issues a voice command: "Xiao Ai, I'm going to bed", the intelligent system will execute the command: Turn off all electronic equipment and lights in other spaces except the bedroom temperature control equipment, and draw the curtains.

In sleeping mode, if the user gets up to go to the toilet, MS5-2/3 will be triggered to light up the nearby wall lamp, and other lighting devices will not be triggered.

Get up

1	2
"Morning"	"Turn on the floor lamp"

Go to bed

3	4	
MS5-1	"Turn on the bedside lamp"	"Sleep"

Go to the toilet in the middle of the night

5	6
MS5-2/3	Wall Lamp5-1

Activity scene in Bathroom

The bathroom is usually the smallest functional space in the home. The activity scenes involved are closely related to the facilities in the bathroom. There are three types: use the washstand, use the toilet, and use the shower. The time of using these three types of facilities is different, and people will usually leave the bathroom immediately after using facilities. Therefore, sensor equipment can be combined with these three facilities to realize the automation of toilet lighting. This involves the flexible use of Door and window sensors. The door and window sensor is composed of two parts. When the two parts are close together, a command can be set; when the two parts are separated, another command can be set.

Use the washstand

When people clean their faces, they often want to ensure sufficient light on their faces, so the strip Light near the sink is not restricted by the light sensor (LS6-1). At any time, as long as a person walks within the monitoring area of MS6-2, Strip Light will be automatically turned on.
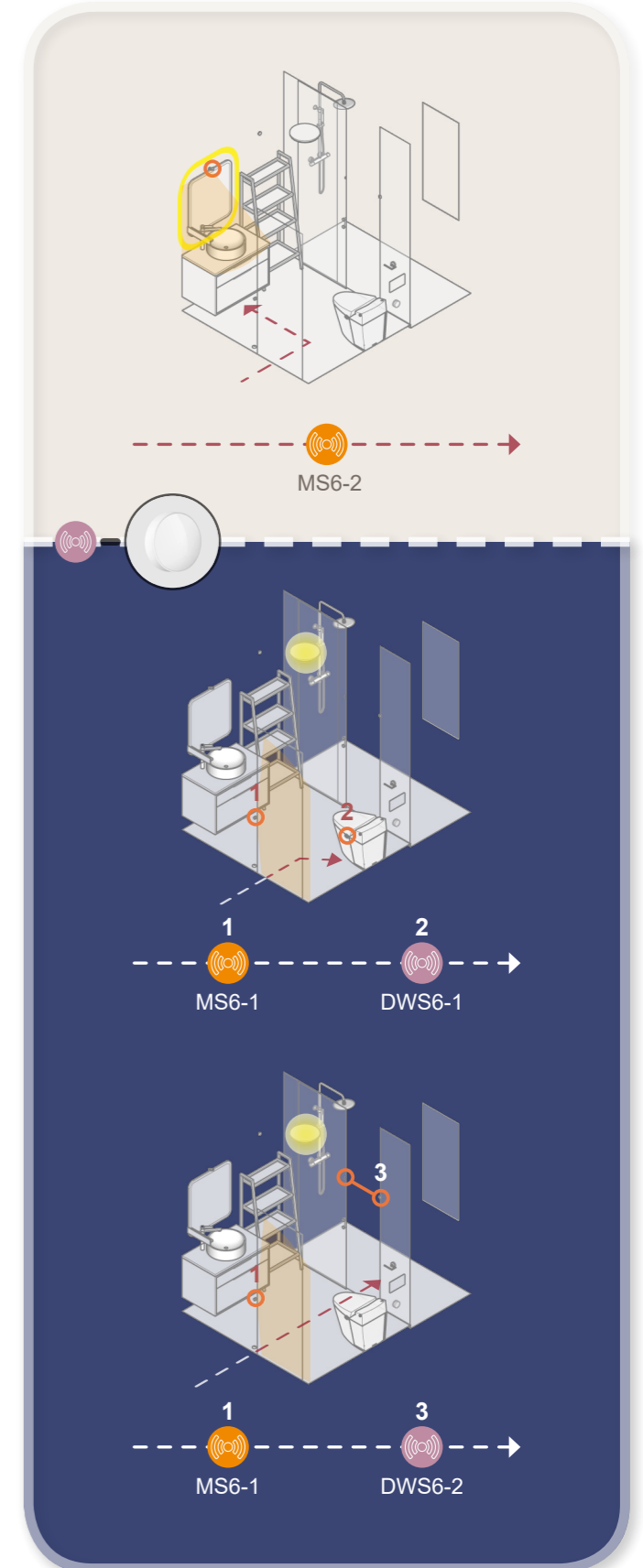
Use the toilet

In the case of LS6-1 determining that the ambient light is too dark, when a person walks into the bathroom, he first passes through the detection area of MS6-1, and activates the command: Turn on Ceiling Lamp6-1, and turn off it after one minute. Then he open the lid of the toilet, triggers the door and window sensor

DWS6-1/2 placed on the toilet, and activates the command: keep the Ceiling Lamp 6-1 on. When the toilet lid is closed, the command is activated again: turn off Ceiling Lamp 6-1 after one minute.
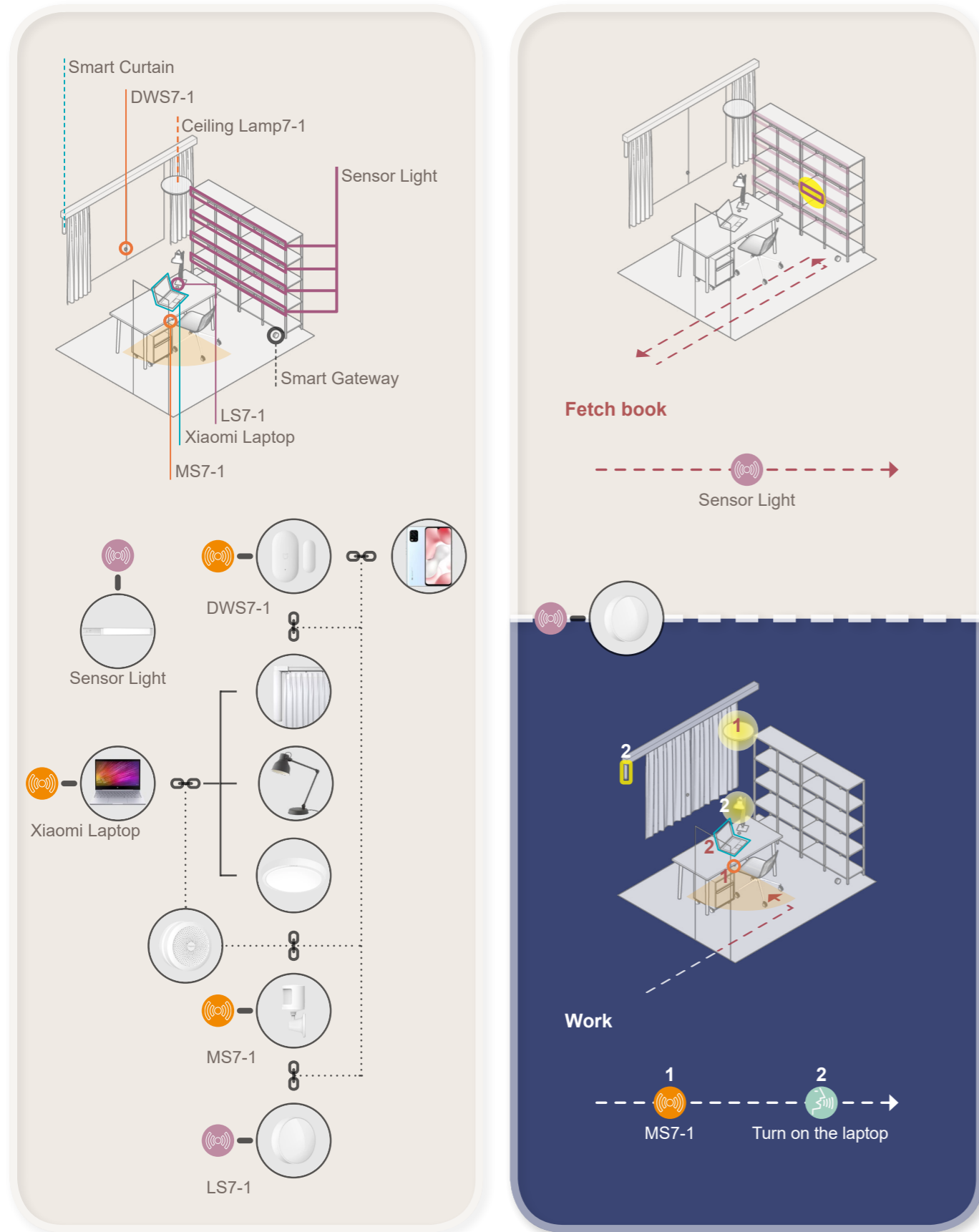
Use the shower area

In the case of LS6-1 determining that the ambient light is too dark, when a person walks into the bathroom, he first passes through the detection area of MS6-1, and activates the command: Turn on Ceiling Lamp6-1, and turn off it after one minute. Then he walk into the shower area, close the glass door of the shower room, trigger DWS6-2 on the glass door and activate the command: keep the Ceiling Lamp6-1 lit; when the person opens the glass door and leaves the shower room, DWS6-2 is triggered again and activate the command: turn off Ceiling Lamp 6-1 after one minute

Smart Curtain
DWS7-1
Ceiling Lamp7-1
Sensor Light
Smart Gateway
LS7-1
Xiaomi Laptop
MS7-1

DWS7-1

Sensor Light

Xiaomi Laptop

MS7-1

LS7-1

Fetch book

Sensor Light

Work

1 MS7-1　　2 Turn on the laptop

Activity scene in Study room

The current study room is not necessarily a independent room in the family space, but the activity scenes involved may appear in other functional spaces. And home work from home may become the norm in the future, so it is necessary to analyze the study as a functional space.

Book picking scene

Sensor lights are installed above the partitions of each shelf of the bookshelf. When the hand reaches the position of the bookshelf, the sensor lights in the corresponding area will light up.

Work scene

When LS7-1 judges that the ambient light is too dark, and a person walks into the study room, he first passes through the detection area of MS7-1, and activates the command: Turn on Ceiling Lamp7-1, and turn off it after 2 minutes. Then turn on the Xiaomi laptop. When the laptop is turned on in the study room, an instruction will be triggered to keep the Ceiling Lamp 7-1 and the desk lamp on, and automatically adjust the brightness of the desk lamp. If DWS7-1 detects that the window is closed, it will automatically draw the curtain. If it detects that the window is open, it will be reminded by the voice assistant on the phone and asked whether to close the window. The curtains will automatically open during the day.
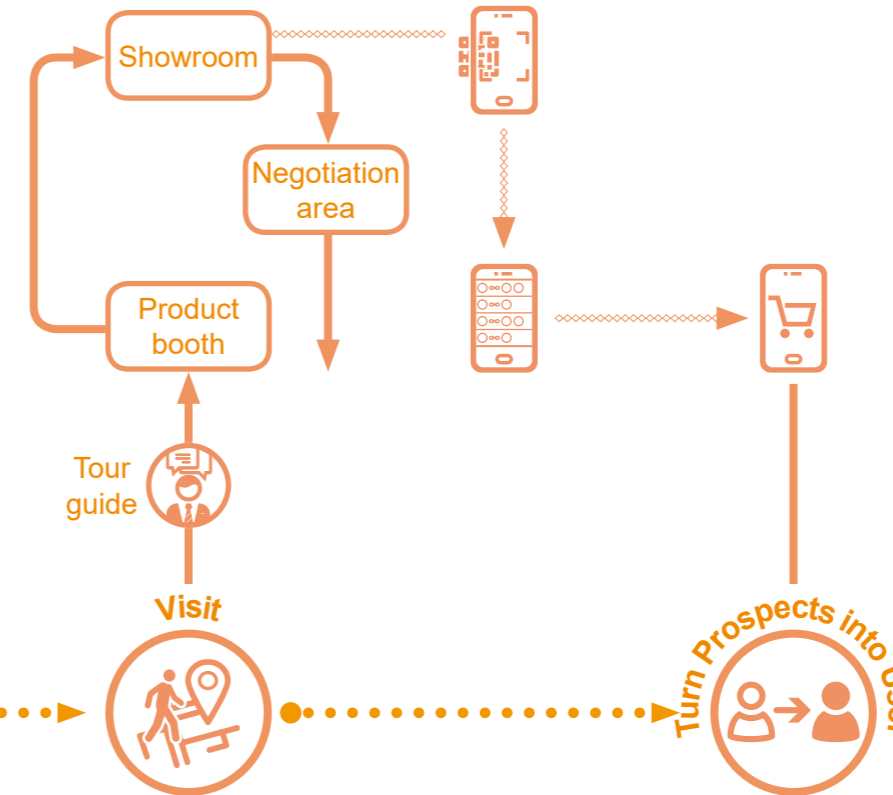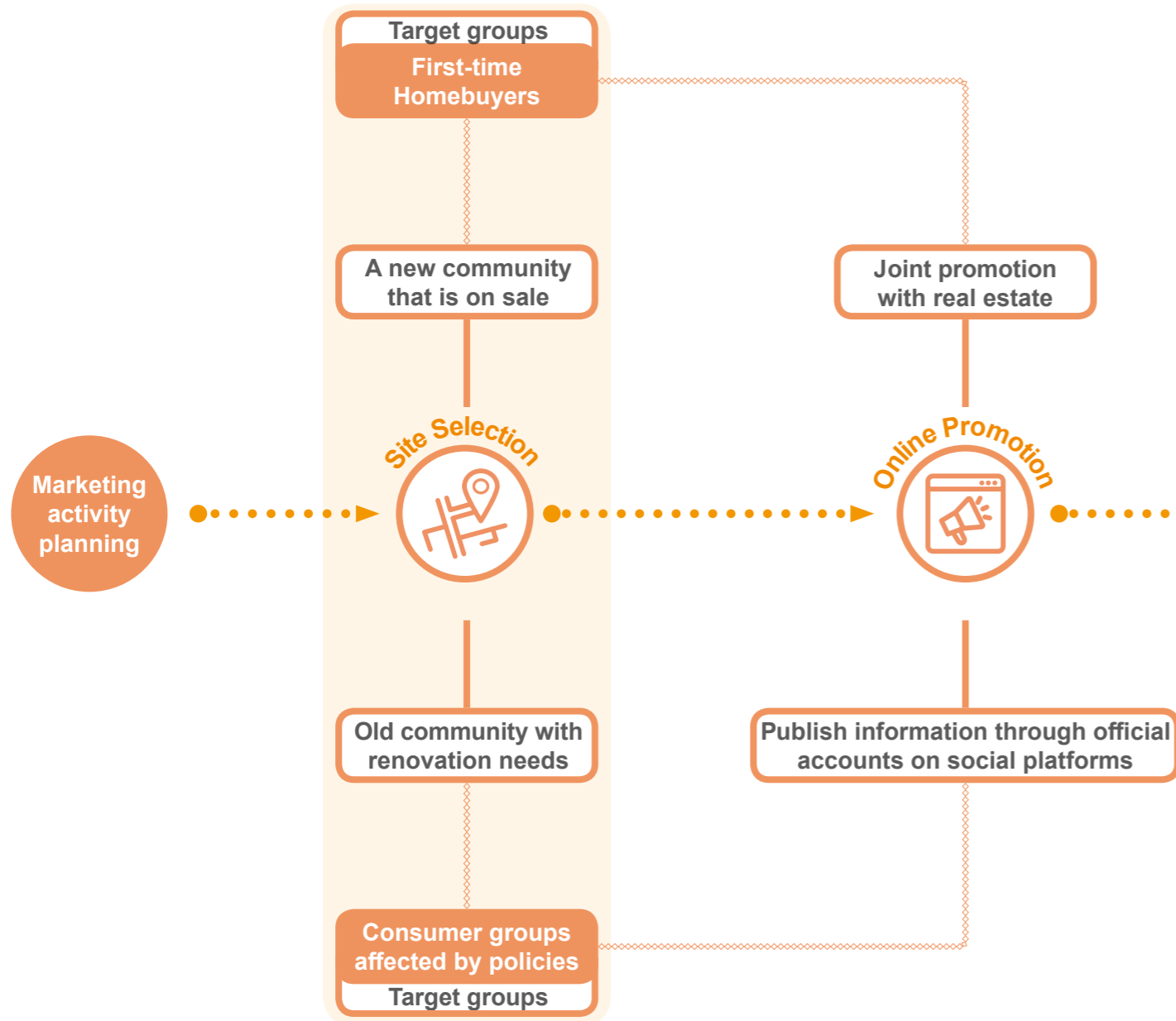
To sum up

This part simply sorts out the smart scenes that may be involved in the living space of general Chinese families. In fact, the setting of smart scenes has high flexibility. More complex and personalized adjustments can be made according to different people's living habits. In the retail display space, the response logic of the smart scene does not have to be set too complicated. It is the most important to help consumers quickly understand the working principle of smart home.

4.2.3 Design of Programme I

After in-depth analysis of the characteristics of smart products, the space design can be further improved based on marketing activities planning. This part uses Programme I (small pop-up store) as an example.

1 Site Selection

The first step of the marketing activity planning is to determine the site and time. The target group for Programme I is homebuyers and groups affected by the "old community renovation" policy.

The purpose of homebuyers is very clear, they will definitely appear in temporary sales offices and new communities where houses are being sold. Therefore, Xiaomi can cooperate with real estate agents to place pop-up stores in or near the new communities where houses are being sold. The end time of the activity is subject to the end time of the sale.

The groups affected by the "old community reconstruction" policy will definitely appear near their homes. When residents of a block agree to renovate the community, Xiaomi can choose the nearest public place (square, park, commercial street, etc.) in the block as the address of the pop-up store. The opening time is adjusted according to the ratio of the number of households in the renovated block to the daily visitors flow.

Target groups

First-time Homebuyers

A new community that is on sale

Joint promotion with real estate

Showroom

Negotiation area

Product booth

Tour guide

Vis*it*

Site Selection
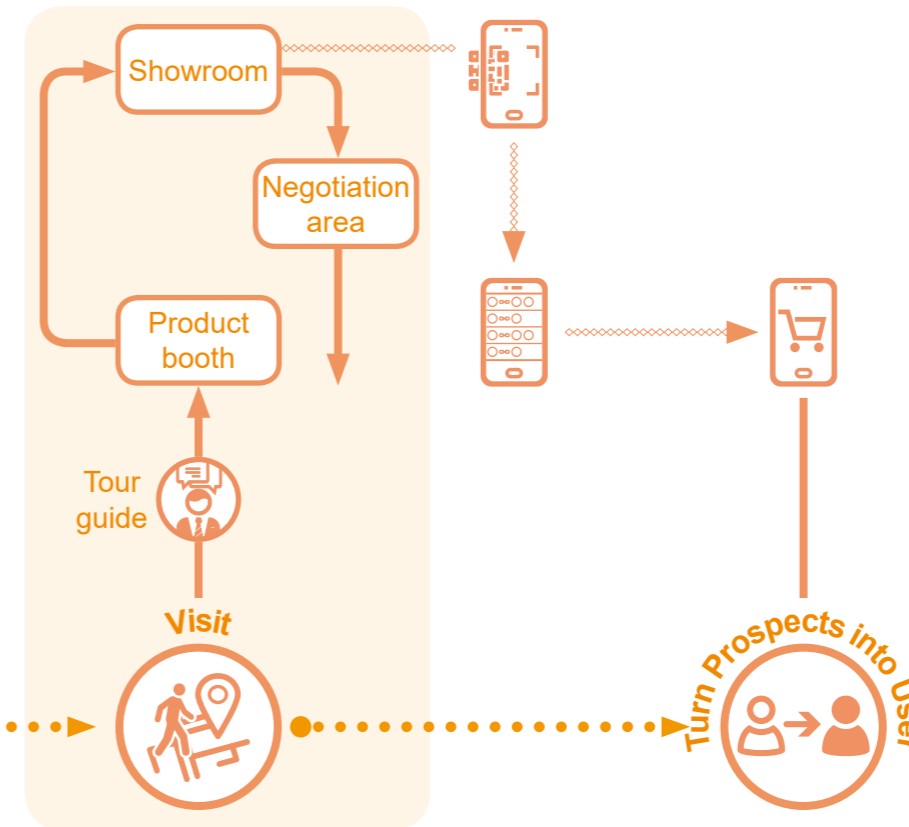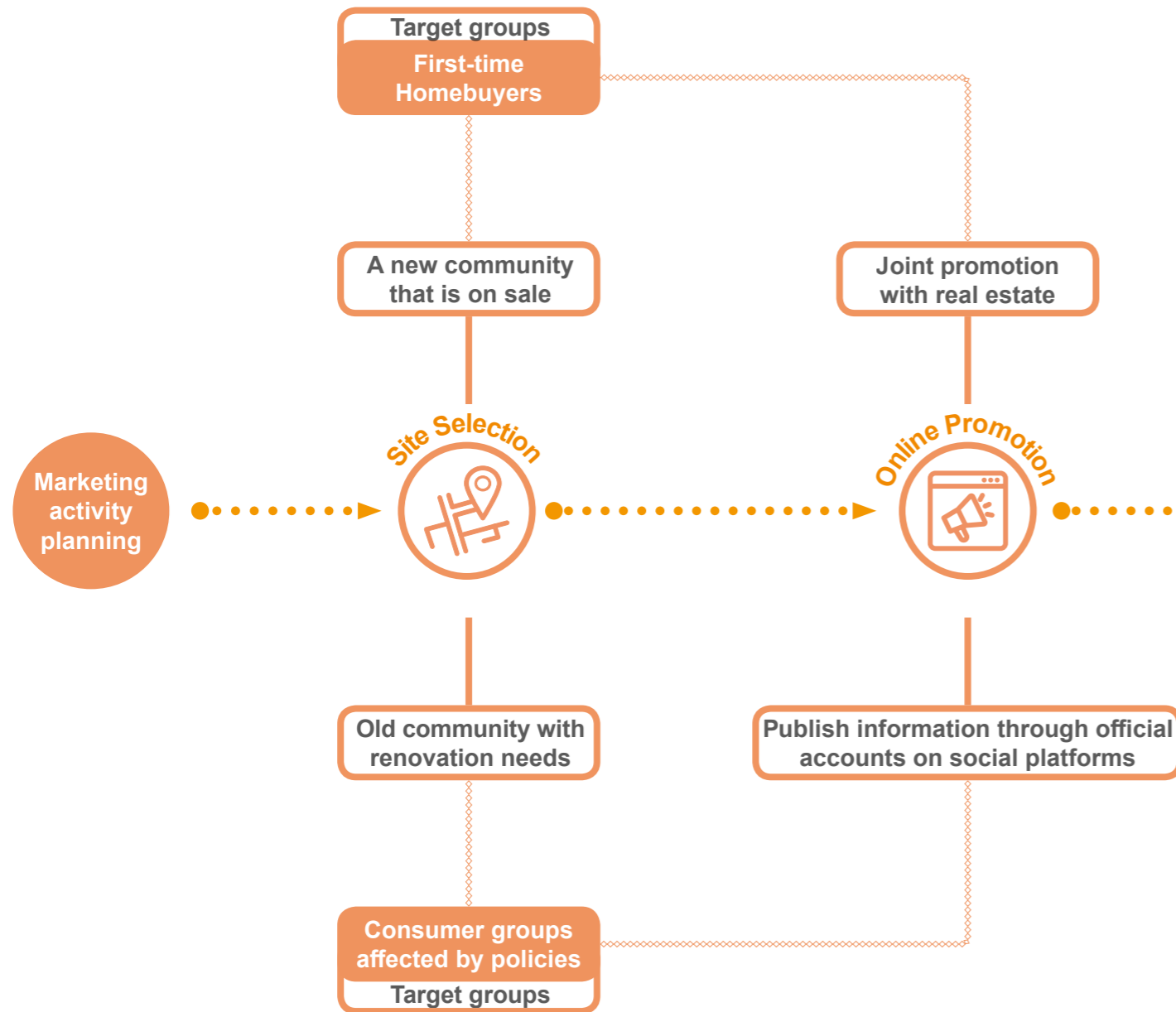
Online Promotion

Turn Prospects into User

Marketing activity planning

Old community with renovation needs

Publish information through official accounts on social platforms

Consumer groups affected by policies

Target groups

2 Online Promotion

The second step of marketing activity planning is to promote the activity online. For the two different target groups, the promotion methods are different, but they have the same goal, which is to achieve the greatest effect with the least cost.

For housebuyers, Xiaomi can jointly promote with real estate developers. Publish relevant information about smart homes and smart communities on the online platform of house sales, attracting consumers to go to offline pop-up stores for actual experience. The form of joint promotion of smart home and real estate has not yet appeared on the market. Providing services that are not available to ordinary real estate companies can increase the competitiveness of cooperative real estate companies to a certain extent.

The groups affected by the "old community renovation" policies are relatively scattered, and their demand for home interior design is not as strong as that of homebuyers. In the early stage, Xiaomi can publish information s about pop-up store through official accounts on multiple social platforms and Xiaomi's own channels. This can attract Xiaomi fans and followers of technology products to visit. Fans visit in the early stage can increase the number of visitors to attract nearby residents (the target group) to visit. Later, the social circles of the residents who have visited can further drove the residents of the entire neighborhood to pay more attention to smart homes.

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3 Visit

The third step of marketing activity planning involves specific offline space design. The main purpose of attracting the target group to visit through promotion is not to sell the goods immediately, but to promote the brand concept of Xiaomi Smart Home to the target group. Smart home is a new concept for many consumers, and tour guide's explanation is necessary for some visitors.

The tour guide first needs to introduce to the visitors the range of products included in the Xiaomi Smart Home and the basic logic of system operation in the product booth area. Then the tour guide led the visitors to the showroom to show consumers how smart products operate in real life. After visiting the showroom, visitors can choose to follow the tour guide to the negotiation area. For some consumers, the logical setting of smart home products still has a certain degree of difficulty. Consumers who do not want to set up their own smart home systems but want to use smart homes can sign a full set of smart home purchase (including personalized installation and setup services) contracts with workers in the negotiation area. Directly providing installation and setting services can effectively lower the threshold of use and further expand the consumer group.

Since the choice of site and the length of the activity time are determined according to the target population, the topography and environment of the site are highly uncertain. Therefore, a container building that can be recycled and quickly installed and disassembled is the best choice for the pop-up store program.

The usable area of container buildings can be changed by increasing the number of containers. As the showroom area needs to meet the conditions: "Showcasing the lifestyle of contemporary Chinese urban families (2~3 people) in a home space of 80~110 square meters" (page 99). After subtracting the repetitive function space, the total area of the showroom in the pop-up store needs to be controlled within 70~90 square meters. In order to avoid overcrowding of the indoor space, the passable space outside the showroom needs to be larger than the showroom. Coupled with the product booth area and negotiation area, the total area of the pop-up store needs to be controlled within 200-300 square meters.

Standard 40HQ container size (m): length 12.19m x width 2.44m x height 2.99m. The actual use area inside is approximately 28 square meters. Therefore, a Xiaomi smart home pop-up store requires 8~10 containers. The specific quantity and design can be adjusted according to the predicted value of popular household living area and passenger flow near the site.

Here is about a basic design using 8 containers as a reference. After the assembly of 8 containers, an annular space is formed. The indoor area is 224 square meters and the outdoor area is 52 square meters. The total area of the Showroom is 84.4 square meters.

There is only one entrance to the space, and the visitor's total tour route is a single linear. Visitors first enter the product booth area, then enter different functional showroom according to the general order of the homecoming activities, and finally choose to enter the outdoor or indoor negotiation area according to personal preference, or they can choose to leave directly.

Product booth

Showroom

Negotiation area
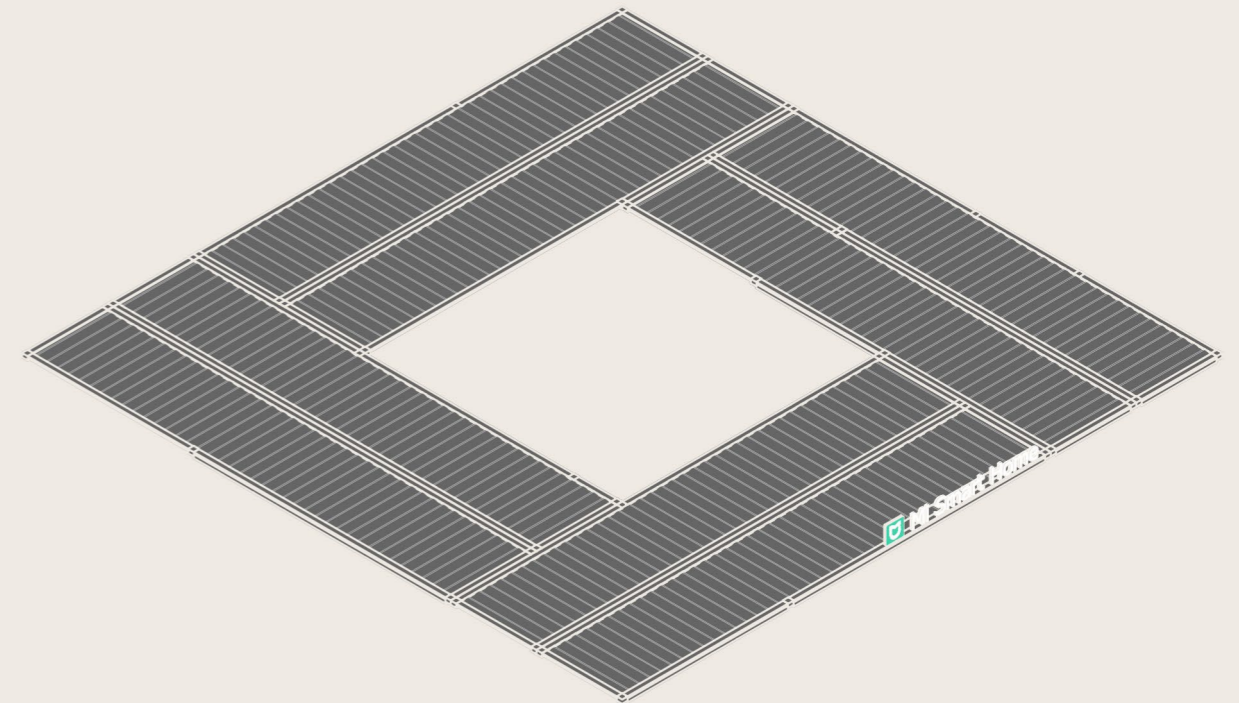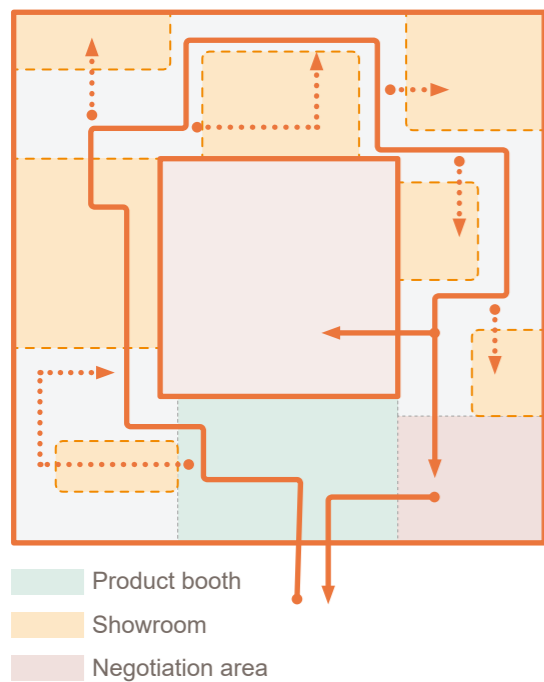
Axonometric Drawing 1:150
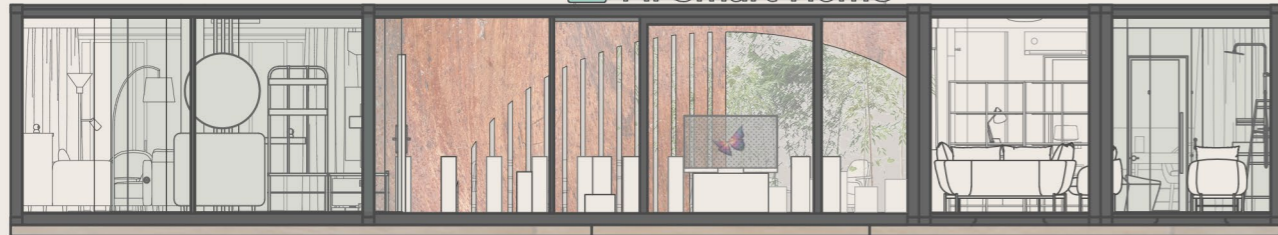
SOUTH FACADE 1:100

WEST FACADE 1:100

NORTH FACADE 1:100

EAST FACADE 1:100

PLAN 1:100

1   Product booth
2   Showroom-Entryway
3   Showroom-Living room
4   Showroom-Balcony
5   Showroom-Kitchen & Dining room

6   Showroom-Bedroom
7   Showroom-Study room
8   Showroom-Bathroom
9   Negotiation area-Inside
10 Negotiation area-Outside

Xiaomi smart home products are usually white, with a simple and smooth appearance. In order to set off the appearance of the product, the main color of the interior space is white gray and a small amount of wood. The outer wall of the container is black. A large amount of glass is used on the outer wall of the container, so that passersby can see the interior space clearly, and the black outer wall makes the interior more conspicuous through contrast.
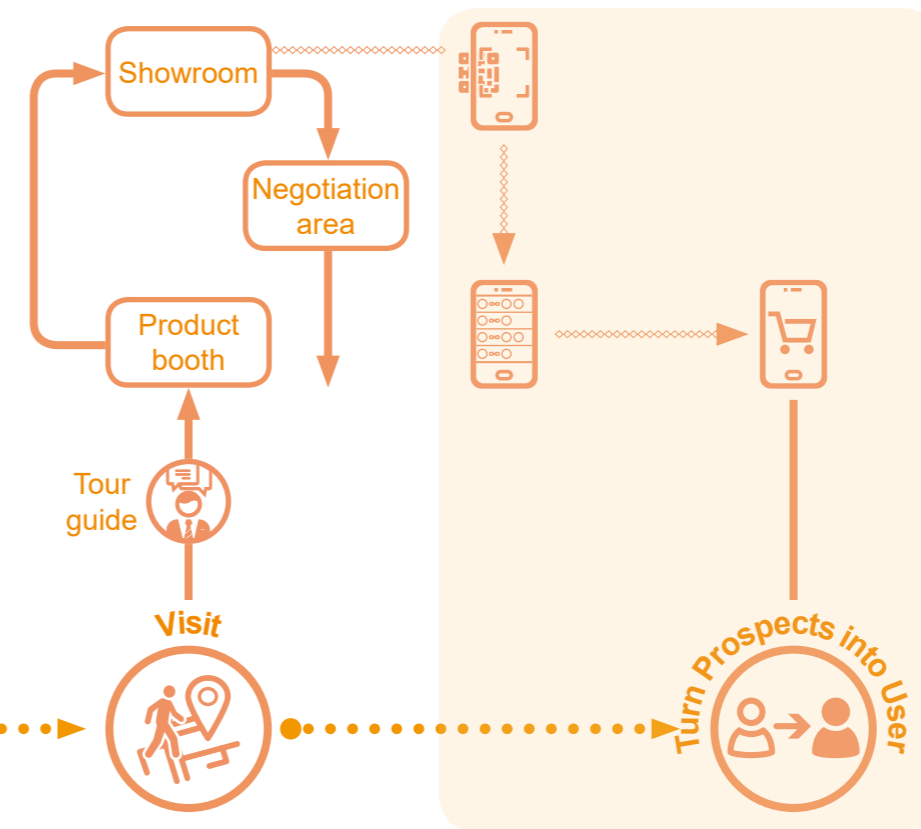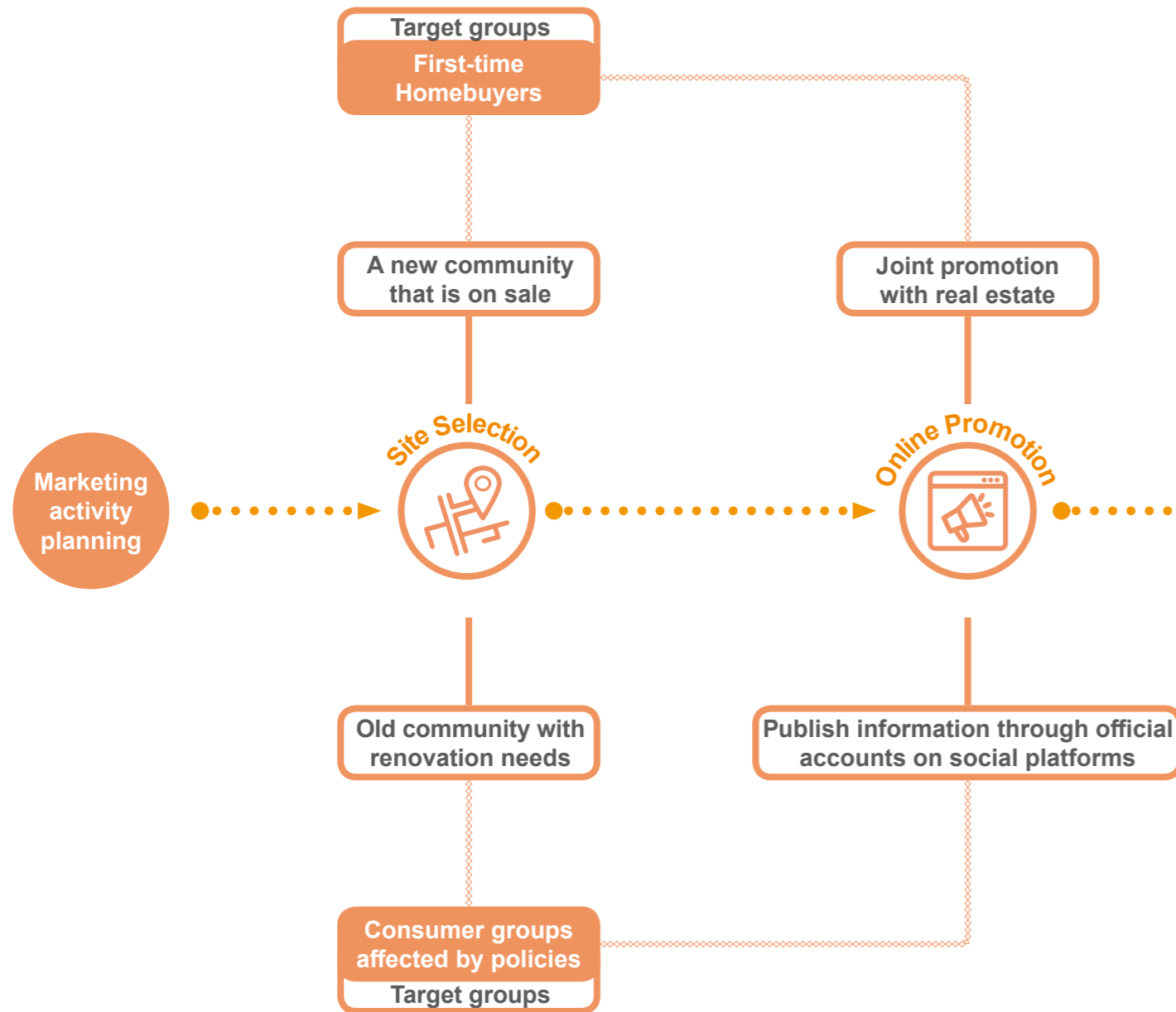
Among Xiaomi's current products, the most worth mentioning is Xiaomi's transparent TV. The dark background can make the color rendering effect of the transparent TV achieve the best, so the rusty metal wall and the black container exterior wall are used as the background. In order to make the atrium space increase visual transparency and porosity while still taking privacy into account, the rusty metal wall chooses to use regular vertical openings as wall decoration and bamboo as a partition. Because bamboo is a plant that grows vertically, its shape can also fit the design of the vertical openings on the wall. The doors connecting the atrium space and the indoor space also use the same elements. In order to fit the shape of the metal wall, red-brown translucent stickers are used on the upper part of the glass door.

In the product booth area, the booth is divided into four areas, and each area is placed with different types of representative products. The four types of products are: control terminals, smart gateways, sensors, and smart appliances. The relationship between these four types of products in the smart home system is shown through the aluminum alloy metal decorative strips on the ground. This allows visitors to more intuitively understand how the smart home system works.

The showroom is divided by functional space. Compared with directly giving a complete family space, dividing into multiple small spaces can spread the visitors apart and avoid the mutual interference of the experience of different functional spaces. The glass wall separates the passable space from the showroom. Visitors can choose to enter the showroom to experience the smart home in person, or they can choose to observe outside the showroom. Those who do not want to observe can choose to leave directly without disturbing other experiencers in the showroom.

Target groups
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Publish information through official accounts on social platforms

Consumer groups affected by policies
Target groups

4 Turn Prospects into User

The fourth step of marketing activity planning is also the ultimate goal of the marketing activity, which is to turn prospects into users of Mijia app.

Because the main sales channels of Xiaomi products rely on online channels. Attracting the target group who come to visit to download the app can further promote the target group to become consumers of Xiaomi smart home. The most direct way to connect the offline experience space and online purchase channels is to insert the scene of scan QR code and use the Mijia app in the tour route.

4 Turn Prospects into User

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.

Clicking on the product picture in the detail interface will jump to the product description and purchase interface, and remind visitors that if they want to buy or learn more about related information, they need to download the Mijia app.
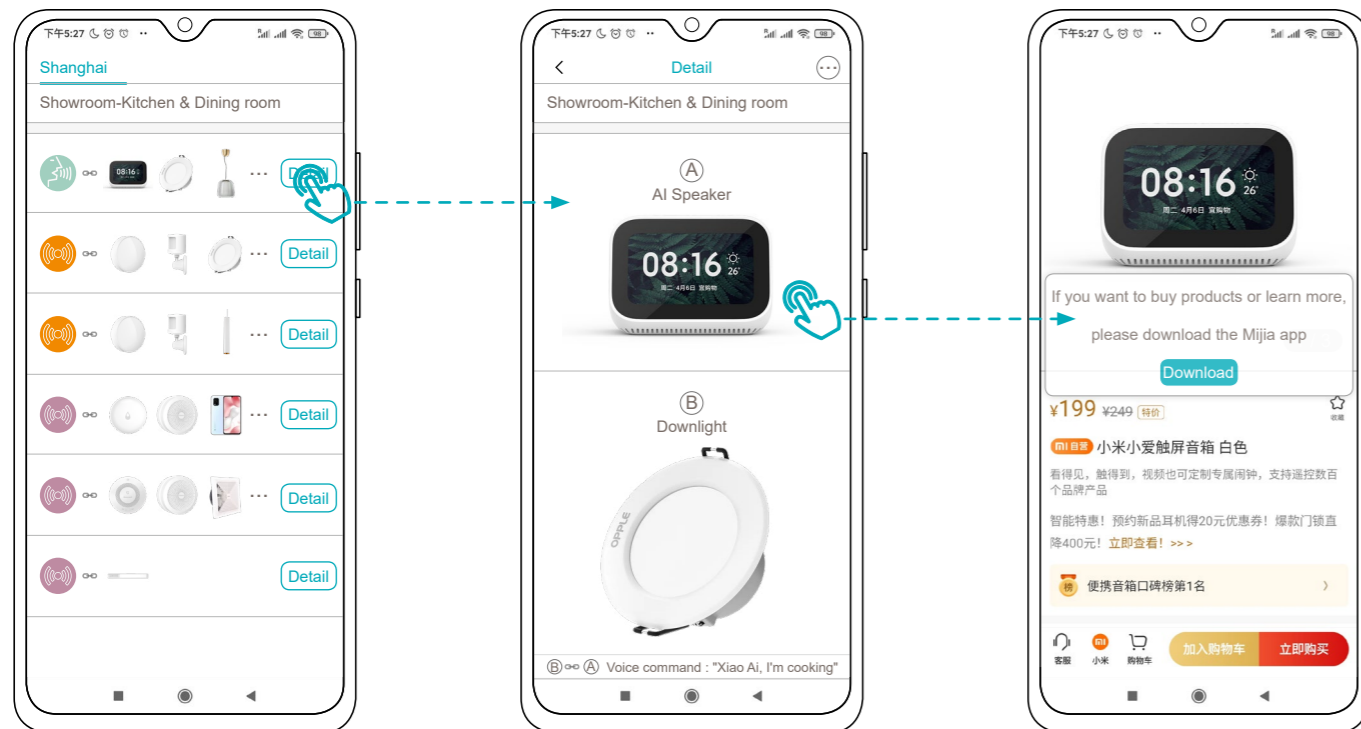
5 Conclusion

Conclusion

The essence of retail space is to help retailers sell products. In the future, the development trend of the retail industry is to multi-channel, update products at a high frequency, and focus on information promotion. These characteristics replace the design points of the traditional retail space and become the design focus of the new retail space.

The essence of the systematic retail design framework is a survey method for retail companies and products. Relying on the systematic design framework of retail space, designers can better capture the needs of retailers and consumers. Even if the retail space needs to undergo major changes due to frequent marketing activities and product updates, designers can rely on the design framework to make timely adjustments.

Although the basis of a systematic design framework is not complicated, to perfect a flexible and unique design framework on the basis, designers need to conduct in-depth investigation and research on retail brands. After completing the unique systematic design framework for retail brands, the subsequent retail space design and the transformation of the retailer-consumer interface will also become easier.

The design framework is fixed, but the subsequent design is dynamic. Take the smart home industry as an example. The industry believes that the next stage of smart home is to hand over part of the judgment and control power to AI to complete. This will further break the limitations of smart scenes. In the future, users no longer need to set the logic chain in the intelligent system by themselves, and the AI system can complete this process through self-learning. The user can directly connect the product to the system after buying the product. At this stage, the display mode of the offline retail space will definitely change, but due to other factors within the systematic design framework (corporate CVP, target group, etc.) have no change. Therefore, the design of offline retail spaces in the future can still be adjusted according to the completed design framework.

Another issue worth exploring because of technological development is the digital divide. In this era, there is a divergence between the elderly who cannot use electronic products and the young people who can use electronic products flexibly. New retail design faces the same problem. Many new services rely on electronic products to be provided to consumers, which may cause service differences between consumers. This problem is not solved in this paper, but future retail designers need to take this into consideration.

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西西弗重磅新店！这次，我们真的"入戏"了（Sisyph's new blockbuster store! This time, we are really "in the play"):
西西弗书店微信公众号 Sisyphe Bookstore WeChat Official Account

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Image

Image 1.1 LAMBETH HOCHWALD, 01.2020:
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Image 1.2 A new store for Hija de Tigre, Taller KEN, 2019:
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Image 1.3 Apple Store, Stanford, Bohlin Cywinksi Jackson, 2017:
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Image 3.8 Self-pickup cabinet of Hema mini, Wang Qianxun, 10.2020

Image 3.9 The first Hema mini in Shanghai Gopher Center:
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Image 4.1 The exhibition space provided by IKEA

Image 4.2 "Xiaomi Home" flagship store in Shenzhen, 11.2017: https://www.igao7.com/news/201711/yUNdGiJ263qUXsCi.html

Image 4.3~5 SUPERMONKEY gyms in Shenzhen, Artboxxer, 12.2018: http://www.artboxxer.com/case-item-19.html

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