

A New Average – elevating food service design for local Bangkok street food

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Abstract

Due to a rushed lifestyle, limited cooking time and skills, street food which is tasty, relatively cheap and available everywhere has become quintessential in low- to middle-income Thai urban everyday dining. Unfortunately this convenient street food dining usually comes with throwaway food containers creating unsustainable consumption. Moreover, these independent street food businesses have been confronted inevitably with cut-throat competition from powerful domestic and international chain restaurants as well as other food service-oriented businesses with far better strategies and practices. This paper investigates how design can lead to a sustainable product service system (PSS) that fits accordingly to its situated culture. Two undergraduate service system design projects, "Like Dish" and "Pinto Boy" were examined within the context of sustainability as well as social and cultural human factors. The key findings could contribute innovatively towards sustainable PSS design. The centralized management system utilized in both projects not only makes Thai street food service environmentally, economically and socially sustainable but also enhances stakeholders' needs, resource sharing, logistics, management, community interaction and collaboration as well as small-scale local business competitiveness.

KEYWORDS: service design, sustainability, street food, social and culture

Introduction

Street food is ready-to-eat foods and beverages typically prepared and sold in a street or other busy public areas by hawkers and vendors, who usually are small-scale entrepreneurs. It is available everywhere, convenient, cheap, tasty, authentic, culturally enriching and relatively nutritious. Its types of foods, services and areas depend mostly on local dining habits, cultures, as well as the social and economic environment. Street food has become a staple food for urban dwellers in developing countries (Consumers International, n.d.; Subratty et al., 2004). According to the Food and Agriculture Organization (2007), 2.5 billion people world-wide eat street food every day while in Bangkok, 40 percent of its residents' overall daily energy intake is from street food. A large number of families living in Bangkok are nuclear families, where both parents usually go to work and have less time to prepare meals. For people living alone in a small space, cooking at home becomes inconvenient, time-consuming and sometimes uneconomic. Furthermore, Bangkokians have to spend a great deal of their time commuting from place to place due to heavy traffic jams. Due to the current rushed lifestyle, changing family structures, limited cooking time, facilities, and skills, as well as the economic constraints of Bangkok dwellers; affordable and accessible street

food has become quintessential in low- to middle-income Thai urban everyday dining. Instead of preparing food for their own consumption, Bangkokians increasingly rely on low-cost and abundant ready-to-eat food while they are at work and school; or on the way to work, school, and back home (Burusnukul et al., 2011).

Types of street food in Bangkok

Thai street food available on almost every corner of Bangkok includes a variety of foods ranging from beverages, fruits, snacks, quick and easy one dish, to full range of a la carte courses, which are freshly made to order or already cooked foods. The roadside service offers their food in the form of sitting and dining in, take-away, short distance by foot delivery, and a long distance by bicycle or motorcycle delivery. Similarly to the study of the Consumers International (n.d.), street food service in Bangkok can be fixed stalls, semi-mobile vendors, or fully mobile vendors. Fixed stalls are usually located outdoors or under roofs with budget seating facilities in busy commercial and residential areas as individual stalls or parts of a well-organized food centre. Semi-mobile vendors such as push carts, bicycle carts, motorcycle carts, and pickup trucks normally park alongside busy street sides and corners, in front of schools and office blocks, at bus stands and mass transit stations, as well as near shopping areas, parks, and other public spaces at certain times and locations. Fully mobile vendors constantly move around the city with fast vehicles to offer food right at the front gate of customers usually living in the remote residential areas. This type of vendor has a certain route and a routine, which are mutually understood among customers. They usually come at certain periods of the day with distinctive loud speakers promoting their specialty to passerby and home dwellers and stop when people call out. They normally have regular customers, who they serve frequently or some can even order ahead of time for a special order.

Contexts of street food in Bangkok

In terms of context, street food is usually sold in commercial and residential areas. For commercial areas, the lifestyle of the customers tends to be dashing and dining like a quick and easy breakfast, a hectic lunch due to the short lunch break, or an on-the-way-back-home dinner after an exhausting working day. Food service in commercial areas is lucrative during the working days but normally very quiet during the weekend. During the weekday lunch break, food stalls especially in the heart of Bangkok are heavily congested with office workers. A delivery service or take-away menu to their office is favorable to avoid the queuing, the crowding, and the unpleasant walking in the hot climate; as well as to save traveling time. As a result, being fast is one of the important criteria for doing business to accommodate needs of time-constrained customers. Types of food come in a streamlined menu with a variety of choices ranging from one plate dishes such as noodles, fried- rice, rice with topping to all modern foods, which fit an hour's dining duration. Besides having proper meals during the day, many Thai office workers tend to snack during work. They often purchase take-away ready-to-eat fresh fruit, snacks, and sweets to bring back to their workplace. Street food service in residential areas; where there are different types of customers such as stay at home house wives and the elderly, rushed and busy office workers, as well as early-bird and small-income high school and university students; are more versatile to accommodate a variety of dining lifestyles. Sitting and dining at a nearby food stall or food centre, takeaways, as well as home delivery are common for this type of area. Besides the same kinds of food provided in commercial areas for short dining, more elaborate foods like a la carte with assorted types of food is also available for longer dining hours. Contrary to

food service in commercial areas, food service in residential areas is usually available throughout the day from breakfast, lunch, dinner, supper, and even late night meal.

Today's situation of street food in Bangkok

Many studies have shown that street food undoubtedly has played an economically, socially and culturally important role in its local food consumption, culinary culture, as well as local economy (Subratty et al., 2004). According to the Consumers International (n.d.), it supplies low-cost food to people to meet their daily basic energy and nutritional needs. It is part of cultural identities by preserving traditional cuisine and authentic local food. Moreover, it also supports local economy by using ingredients from local farmers and markets. Inevitably, street food is threatened by its poor hygiene and environmentally unfriendly practices, as well as globalization.

Street food service is normally started up and run by a low- to middle-educated single owner or a small family with a small investment and day-to-day cash flow. It's funding resource, monetary management, operational system and provided service is relatively limited and fundamental. Unavoidably, a food business needs a physical space, where food can be prepared sold and served. As space rental fee in lucrative areas especially in the middle of Bangkok is considered high for low budget street vendors, most of whom can only afford to have very limited space to run their business while some can only afford space to park their cart without any seating. The lack of space and proper facilities for cooking and washing water as well as waste management is a major factor contributing to unhygienic operation, which often discourages customers from consuming street food (Consumers International, n.d.; Subratty et al., 2004). In addition, these street vendors have created more public visual clutter and an unhygienic environment is left behind during and after service hours.

Nowadays street food usually comes with excess packaging to protect the food inside and boost sale. Moreover, most street food is served in cheap disposable plastic bags, utensils and cups as well as paper and Styrofoam boxes, plates and bowls. These packaging is low priced, quick and easy to use, readily available and convenient for vendors who have difficulty accessing water for washing. But the packaging is also environmentally harmful, hazardous to consumers' health and create a tremendous amount of waste.

Recently the number of international chain restaurants in Thailand such as Pizza Hut, McDonald's, Burger King, KFC, and Sizzler has dramatically increased (Burusnukul et al., 2011). Furthermore, domestic chain restaurants also have an important role to play in Thailand's food business. Popular and famous domestic chain restaurants are for example S&P, a Thai and international restaurant and bakery, MK Suki, a hot pot and Chinese dim sum restaurant, Seefah, a Thai and Chinese one-dish restaurant, Oishi, a Japanese restaurant, Yayoi, a Japanese fast food restaurant, and Grand Canyon, a western-style food café and restaurant. In addition, there are other food service-oriented chain businesses, for example, CP Fresh Mart selling ready meal frozen foods, Seven Eleven, a 24 hour convenience store providing beverages, snacks, and ready-to-eat food with warming-up service; as well as gas station minimarts are also considered as competitors of street food vendors. These chain restaurants and businesses are usually operated in an air-conditioned space with distinctive decoration, by employed staffs in uniform, with well-management, operational system and marketing from their headquarters. Inevitably, independent street food businesses have confronted competition from powerful domestic and international chain restaurants as well as other food service-oriented chain businesses with far better business strategies and practices. Besides their strategy of price cutting, which normally offer food at prices lower than the established food service brand; they hardly are able to offer better quality food as

well as other services to their customers. Furthermore, they have limited information on management of how to run their business to be more hygienic and environmentally friendly while remaining profitable. As a result, their business practices are in desperate need of a real solution that can improve this old average to a better new standard.

Sustainable PSS cases

According to Manzini and Vezzoli (2003), product service system (PSS) is:

an innovation strategy, shifting the business focus from designing (and selling) physical products only, to designing (and selling) a system of products and services which are jointly capable of fulfilling specific client demands (p. 851).

In spite of its possible rebound effects generating unwanted damage to the environment, PSS has been seen as a potential approach to do business combining economic, environmental and social benefits (Manzini & Vezzoli, 2003; Morelli, 2006).

As design has increasingly played a significant role in PSS (Manzini & Vezzoli, 2003; Zehrer, 2009), this paper aimed to bring to light how design can lead to a sustainable service that fits accordingly to its situated social and cultural context. To investigate this, two undergraduate PSS design projects, Pinto Boy and Like Dish were examined within the context of sustainability as well as social and cultural human factors. Both projects were the results from the fourth year design studio course conducted at the School of Architecture and Design, King Mongkut's University of Technology Thonburi in 2009 and 2010, respectively. The objective of both studio courses was to introduce students to PSS design in the scope of social and cultural human factors. Both courses started with giving students a design project topic, which was Sustainable Food in Thai Cultural Context in 2009 and Waste Reduction for Thai Social and Cultural Context in 2010.

According to Manzini & Vessel (2003), PSS has to satisfy everyone, all involved stakeholders, not only those for whom it is directly destined. Hence, a user-centered design approach was used throughout both projects. Firstly, students were assigned to conduct related literature reviews, user (business, end-user, and other relevant parties) studies since understanding the customers and stakeholders as well as their requirements and values is a good starting point leading to the success of PSS (Holmild & Evenson, 2006; Manzini & Vezzoli, 2003; Walter et al., 2010; Zehrer, 2009). Secondly, they were asked to reconsider the existing local food culture or waste management investigation. Finally, they were required to design, validate and develop a food system or waste reduction system, which fulfills three sustainable dimensions including environmental, economic, as well as social and cultural aspects. During this phase, key stakeholders in each PSS such as street vendors, their customers as well as possible service owners and their employees were involved in design evaluation in terms of its practicality, feasibility and acceptability. At the end of both studios, several practical environmentally, economically, as well as social and culturally sustainable PSS design solutions were proposed with promising marketing plans. Nevertheless, due to the scope of both design studios as well as time and budget limitations, some final design components were fully developed as design prototypes while some were only conceptual designs. Both projects ended at the end of the academic semester and have not yet been implemented.

Pinto Boy

Pinto Boy, designed by Prin Tanapaisankit, Tad Wongpiromsan, Apisit Nattaworrawarot, and Threerapat Suthisak, is a PSS design dealing with the improvement of street food service in Bangkok's commercial area context to meet economic, environmental and social sustainability. The word 'Pinto' is a traditional stackable reusable container for taking away home-cooked food to wherever. Traditionally, Thais love to dine with multi-dished a la carte courses such as soup, curry, stir-fried dish and assorted types of food, accompanied by plain streamed rice while single dish is considered relatively contemporary lifestyle dining culture. Consequently, 'Pinto' has been designed to accommodate Thai traditional preference and dining lifestyle.

Pinto Boy delivery system was designed to enhance the needs of time-constrained customers during a rush lunch break at affordable price. Customers can order local food available in the area via calling in, website (Figure 1), or by walking in to a Pinto Boy station. After that, a Pinto Boy call center will call a participating food stall to order food according to the received order. Then the food stall will prepare food into a ready-to-use stackable and portable Pinto (Figure 2), which will be picked up later by a Pinto Boy delivery man and delivered to the customer by an electric motorcycle (Figure 3). Besides food and delivery fee, a bill includes a Pinto deposit fee, which will be fully refunded when customers return it to any Pinto Boy hub or any food stall in the network. A Pinto Boy delivery man can also pick up the used Pinto by himself, but only half of the deposit will be refunded. Customers can order food in advance for a five-weekday meal plan, with a lower price than a meal by meal order. By joining Pinto Boy network, food vendors can decrease their cost of providing their take-away customers disposable food containers and at the same time increase their competitiveness. A distinct added value for customers is convenience and time saving since there is no need to go out to have lunch at a nearby food stall, which is normally over-crowded, chaotic, and not so appealing dining atmosphere; as well as no more a rush walking in the soaring heat of the mid day back and forth. Moreover, they can order a variety of food from the provided menu compiling delicious food from local and famous food stalls. In addition, a reusable well-cleaned Pinto used in the system will also give customers hygienic gains and at the same time decrease their waste disposal and dish washing efforts. Pinto Boy not only fulfills all involved stakeholders' needs, but it also increases environmental advantages including reducing disposable waste to the landfill as well as decreasing fuel use and pollution from transportation.

Figure 1 Pinto Boy's main page in the website

Figure 2 Pinto Boy's food container

Figure 3 Pinto Boy's electrical delivery motorcycle

Like Dish

Like Dish designed by Mr. Chaiyapat Intawong, Mr. Kanet Hunnok, Miss Panida Tanchareon and Miss Prangkaew Srikaew, is a food container rental and washing service aimed at reducing waste from single-use food containers widely used in Bangkok's residential areas, where customers tend to sit and dine or take home. Since many new generation habitants mostly have to depend on ready-made food from canteens, food courts, or street

vendors near their homes, Like Dish was designed to accommodate their lifestyle and social life as well as the economic survival of local street vendors while encouraging environmentally sustainability.

Like Dish washing and rental station (Figure 4) provides ready-to-use food containers (Figure 5) and utensils to nearby food vendors at a reasonable price. With this system, vendors receive operational, convenience, and economic gains because they no longer have to provide any food containers to their customers by themselves. This means that they no longer have to invest either for washable dishes and utensils, dish washer wages, or disposable food containers. Vendors are responsible for the cost of dining-in customers' dishes and utensil use while take-away customers have to a small user fee as well as a deposit fee. The deposit will be fully refunded when customers return a well-washed container back to the station. However, if customers return an unwashed container to the station, they will be charged a small washing fee. After getting a receipt when returning containers to the station, customers can write their comments on provided weekly topic and stick it on a board in front of the station as well as read other's comments. Customers will be encouraged to use Like Dish food containers through their convenience, hygienic, and environmental concerns because the container is designed to be suitable for different types of food, well-cleaned, made from food grade plastic, portable, microwave-able, and re-usable. Moreover, the sharing comment activity will enhance social networking in a community. In conclusion, Like Dish does not only provide street vendors and their customers with convenience, hygiene and social interaction, but it also preserves the environment through disposable container waste reduction, solar energy use for dish washing, water treatment, and left-over food composting (Figure 6).

Figure 4 Like Dish's food container rental and washing station

Figure 5 Like Dish's portable, stackable and microwave-able food containers

**Figure 6 Environmentally friendly systems embedded in
Like Dish's food container rental and washing station**

According to the design validation, both Pinto Boy and Like Dish design concepts received positive results from involved stakeholders including street vendors, their customers and possible service owners and their employees in terms of their feasibility, practicality, convenience, and desirability.

Discussion

Manzini and Vezzoli (2003), proposed that eco-efficient PSS solutions should reconfigure the traditional discrete stakeholders' interests towards mutual ones leading to new kinds of relationships/partnerships between individual stakeholders. Moreover, instead of relying on technology innovation, sustainable PSS innovation should strategically utilize today's technologies to enhance the innovative partnerships among all involved stakeholders. Similarly, Pinto Boy and Like Dish employ existing technology to systematically provide a less resource- and emission- intensive product service business fulfilling the mutual needs of all involved stakeholders such as street vendors, their customers as well as possible service owners and their employees. As customers would rather purchase the benefits and experiences provided by goods and services instead of purchasing goods and services

(Gröroos, 2001), the goal of PSS design is to enhance customer's personal experiences derived from being in contact with different service touchpoints (Holopainen, 2010; Otto & Ritchie, 1996). In both presented PSS cases, the customer's experience is ordering and buying food, eating and being served. Pinto Boy creates customers' favorable experience by changing the overcrowded, chaotic, noisy, hot and unhygienic servicescape – the man-made physical surrounding (Walter et al., 2010, p. 240) – of rush hour lunch dining to having a carefree lunch served in a hygienic container in an air-conditioned office. Besides improving the servicescape with practical and hygienic food containers, and rental and washing station; Like Dish also provides a comment board to enhance social interaction, an essential part of customer's experience (Walter et al., 2010, p. 241), which helps customers to construct their own meanings of the context and shape their preferences (Gupta & Vatic, 2000).

Figure 7 The centralized management system utilized in both projects and its relation to characteristics, types, contexts, and customers of street vendors in Bangkok

Although, Pinto Boy and Like Dish employ several distinguished strategies to run their business, they both utilize a centralization management system (Figure 7) such as distribution of reusable food containers, as well as food container washing and cleaning system; which not only makes Thai street food service economically, environmentally, and socially sustainable but also enhances stakeholders' needs, resource sharing, logistics, management, community interaction and collaboration, as well as small-scale local business's competitiveness.

Pinto Boy and Like Dish enhance the mutual needs of all involved stakeholders. For instance, they provide food vendors desirable and inexpensive shared resources, which they can hardly afford by themselves such as delivery service and environmentally and hygienically sound packaging, cleaning system, efficient waste management, as well as public relation materials and service. They provide food vendors' customers an affordable peace of mind in terms of higher food hygiene standards, practical and well-cleaned food containers, and more variety of foods from different local food stalls without unnecessary commute. Both are also a profitable business model for a service owner as well as a practical and efficient working system for service employees.

According to the Pinto Boy system, several ordered foods for different customers are handled logically to be delivered with the same electrical motorcycle. As a result, Pinto Boy's delivery service can be considered environmentally friendly especially for the heavy traffic congestion situation in Bangkok. Moreover, a business alliance model employed by both cases make street vendors' food container providing management and logistics become trouble-free. Taking away one major part of food vendors' management burden helps them to focus on food preparation and cooking. As a result, food vendors can provide a better quality of food while a better hygienic standard is controlled and looked after by the centralized management team. In this case, the food shop owners will work as an alliance, not anymore as a solo shop. Therefore, their community will get economically and socially stronger.

Both business models support each community to develop their own food characteristics differentiating them from others and giving back the sense of community and collaboration in modern Bangkok, where neighborhood and community sense is gradually disappearing. Moreover, community social interaction is also encouraged in Like Dish service.

In addition, small-scale local competitiveness is strengthened via a business alliance of various small food shops with a better standardized management system and a strong sense

of localness. Therefore, they can compete with chain restaurants in a more professional manner. For instance, Pinto Boy promotes the localization of food vendors and offers more variety of foods to the local community. In contrast, established chain restaurants offer the same menu in different regions throughout the country. This type of centric menu normally does not offer much differentiation for Thai consumers who prefer the variety and locality of food due to the nature of local food cultures, which vary throughout the country. Moreover, Pinto Boy's delivery service as well as ready-to-use food containers provided by both cases elevate local street food to a position where they are able to compete with powerful domestic and international chain competitors.

Pinto Boy and Like Dish business model's PSS characteristics could be classified according to Manzini's and Vezzoli's (2003, p. 854) proposed classification as follows: Pinto Boy's delivery could be seen as a business-to-consumer service providing value added to product life cycle, which is considered to be the lowest level of innovation. Ready-to-used food container leasing for food venders (in Pinto Boy and Like Dish) and their take-away customers (in Like Dish), as well as Pinto Boy delivery sharing could be counted as a service providing enabling platforms to customer. This type of services leads to a more dematerialized approach.

Conclusion

Both PSS cases have demonstrated how design could encourage non-business alliance and small cash flow street food business in Bangkok to contribute to environmental sustainability in terms of resource optimization, waste reduction, fuel consumption, and pollution emission; and at the same time enhance their profit, growth, and competitiveness; as well as strengthen the local community to become more socially and economically sustainable. To gear Thai urban communities towards a more environmentally, economically and socially sustainable level, Like Dish utilizes social and economic incentives while Pinto Boy employs convenient and economic gains as its main strategy. The key findings from the investigation of two presented PSS cases could contribute towards innovative sustainable PSS design.

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