

Service Design For The Food Network Innovation In China

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Abstract

Facing the food security problem and some citizens' innovation activities, the paper starts from the concept of food network innovation, especially pay attention on the community support agriculture, then through the CSA cases study, analysing the innovation model of CSA practice. In addition, CSA as a new commercial model, develop public services and innovation policies trigger, empower, direct the emerging social networks to meet the consumer need of purchasing health food. At last, base on some cases that service design can promote the food network innovation and improve the service standard of CSA, the writer proposes the design strategy on how to build the health food net, contribute to shifting consumers as well as farmers toward a more sustainable system of agriculture, and the health food.

KEYWORDS: social-innovation, sustainable, Public Service, eco-friendly, service design

1 Food Network Innovation

1.1 Food Security

Mass use of chemical fertilizer and pesticides, then monocultures, battery rearing of livestock, and now genetic engineering-the onward march of intensive farming has seemed unstoppable in the last half-century, as the yields of produce have soared. But the damage it has caused has been colossal. natural soil fertility is dropping in many areas because of continuous industrial fertilizer and pesticide use, while the growth of algae is increasing in lakes because of the fertilizer run-off. Now we are all confused by food safety problem, such as pesticide and fertilizer remains on various agricultural products and so on, the serious effect have caught the attention widely.

1.2 Food Network

The network connects all the activities related with the producing and the consuming of food, including production, vendition, purchase, delivery, consumption, etc. To solve the food security, need to offer a complete solution from production, wholesale, circulation even to the terminal, these links cover production standard, commercial credit, authentication and

so on a series of problems. Resolve this problem need public authorities, civic society, small business etc. play respective active role to promote food producing net innovation. China in an era of transition. Something that we know very well about the present is that the world is changing, rapidly and profoundly. A changing is involving everyone. Today traditional product-service-systems is changing. What are the new ways to organize production chains? As a kind Social innovation, Community Support Agriculture(CSA) offers integrated solutions to make food safe, reliable, and ecological.

1.3 A food Net Work Innovation-CSA

1.3.1 The demand of safe food

Industrialise production into agriculture, the use of chemical fertilizers and pesticides cause increasing pollution , food safety problems emerge in endlessly, the desire to healthy food increasingly intense.

1.3.2 Food network innovation

As "ecological civilization" concept of society have put forward, the society have appeared CSA (community support agricultural), Guoren green alliance, and other types of agricultural development mode, so as to reflect on chemical agriculture and oil agricultural damage to the environment and waste of resources, then to explore the sustainable development roads of agriculture, established non-commercial authentication trust system between consumers and producers.



Figure 1 garden agriculture -citizens plant vegetable by themselves

Today urban residents in order to improve the quality of food materials, create many agriculture produce and consume models. there are many food net innovation emerging in the society: such as farmer market, urban vegetable garden, purchasing group, community-based agriculture. Public participate in agriculture and form a new commercial model named Community Supported Agriculture. CSA has developed in many country for half century. now in china, CSA as the social innovation, promotes improving the production of the healthy food, so CSA was gradually accepted as the sustainable lifestyle.

In recent years, many communities support agricultural projects develop all of the country, such as Beijing's "small donkey" plantations, Wuxi Tianlandilv farm, "Ainonghui" in liuzhou, Guangxi etc, they produce natural agricultural product without chemicals and pesticide contamination, connect with "farmer play", modern agriculture education tourism etc. series of activities, forming a sustainable development new business model.

1.3.2 The history of CSA

The concept of Community support agriculture originated in Switzerland in the 1970s , the consumer in order to look for safe food, and cooperate with those farmers who hope to establish a stable source of consuming, create economic cooperation relationship, and get initially development in Japan. in 1965, a group of housewives began to care about pesticides to food pollution, processing and import food is more and more, and accordingly, local produce less. So, they reached an agreement on supply and demand with the organic food producers. This is called Teikei system. This concept later spread to North America and Europe, and gradually developed into CSA.

Now, the concept of CSA also expand from the original aim to purchase together and corporate economic to a more connotation. CSA is not need middlemen to manipulate the local food economy. It can restore friendly relationship between farmers and consumers. The important principles of CSA is that farmers produce healthy food in the agricultural system with ecological safety, consumer is also "shareholders ", also take the risk of farming production, for example, maybe meet with natural disasters, etc.

2 CSA In China

Japan and the Europe complete the transformations of the agricultural policy from simply pursuit for production scale and size to pursuit for multi-function and ecological benefit in the eighty's and ninety's of last century. the China government establish ecological agriculture status from the policies and laws. At present the central government agricultural development thought has turned to ecology, such as the 2008 the 17th the third plenary session proposed reach two type agriculture to 2020, the 17th meeting emphasis on modern agriculture under the ecological civilization.

2.1 The Development Of CSA In China

2.1.1 The Little Donkey CSA

CSA reached the Beijing area of China via the US. 2005, Shi Yan, a doctoral candidate at the Renmin University School of Agricultural Economics and Rural Development, spent 6 months at Earthrise Farm in Minnesota learning how a CSA is run. Upon returning home, she was able to convince her school and assorted authorities to transform Dondon farm, a production-study research base for the Rural Development Institute, into a CSA. The management team is the Guoren Urban-Rural Mutual Coop, which was founded by Shi Yan's teacher, Professor Wen, who has been promoting ecological agriculture for many years. Within a year, Little Donkey CSA was up and running with two types of members, a creative mixture of CSA and community garden. One group has ordinary shares. Every week, the farm delivers fresh and organic produce to their homes. The variety and quantity of the produce changes weekly depending on what is ripe for harvest. The others have work shares. Each household has a 30-square-meter plot of land on the farm. Every weekend, they tend their land and harvest whatever is ready to pick. Both types of customers have to sign a 20-week contract with the farm before each planting season and pay in advance, thus the risks are shared by the farm and customers. Little Donkey CSA does not lack workers: besides five managers and 12 farmers, some of them peasants from the village, the farm also has a dozen committed interns. It will be very interesting to see if this CSA continues to flourish and if other farms in China replicate the CSA model.(Elizabeth Henderson.2010,03).

2.1.2 Ainong Association

Ainong association, a private organization in liuzhou, guangxi, cooperate with nearly 400 households in the surrounding mountains, looking for crops and poultry without pesticides and additives for city people. Ainong associations take conservative development pattern, determine the participation degree and quantity of farmers according to the demand of the urban platform, ensure demand exceeds supply, and during the passing process of the variety production, such as local sweet pigs, shackled and etc, are all paid beforehand, all the production are buyback by ainong association, and so, farmers just avoid many risk.

There are more than four hundred farmers cooperate with ainong association in liuzhou area, the core families are more than 20, they mainly supply rice for ainong associations, native chicken, duck raising in rice feild, pork, green vegetables, the rest of the families provide the individual production, such as eggs, beans, etc.

Tushengliangpin restaurant was founded in liuzhou city n 2005, a month of the turnover were more than 300 thousand yuan, new community agriculture fair were opened in February 2010, it sold 10000 multivariate of goods in the first month.

2.1.3 The Nanling Association

The nanling association was founded at the beginning of 2007, the idea at start was that hope to find alternative income for farmers, and protect the ecological diversity. So The nanling association develop sustainable ecological agriculture contact farmers, and on the other hand searched health and safety food for citizens.

the nanling association organized "Ruyuan of farm traveling by self driving" into the Wuzhishan town, dozen of people from Guangzhou and Hong Kong involved in activities such as the harvest, at same time they also snapped up the organic rice.

So far, there are 6 peasant households in Luokeng and the surrounding villages to join in contracted cooperation project of this year, planting area up to four acres, involving the organic paddy rice, organic soybean and so on many kinds of crops.

2.1.4 Tianlandilv Organic farm

There are nearly 100 acres of vegetables experience area in the Organic farm. Urban residents who participate in this project as "the lords of farm", pay a membership fee, and can have a 20 m² area to plant the vegetable, and enjoy all kinds of activities organized by farm within a year. All the Lord can directly involve in farm plans to grow by themselves, use a variety of tools freely and farm provide four seasons vegetables seedlings or seeds, or the farm service center replace lords to manage those lands, ensure that each land can harvest more than 15 types vegetables and fruits each year.

The organic restaurant combines with the resources advantage of farm, food materials are all from their farm, this guarantees food without pesticide and chemical fertilizer and keep the food the most fresh, uses the abundant output, cooks with unique method and combines with modern technology of cooking, make dish more features, more fresh, more delicious.

2.1.5 The Summery

There are nearly one hundred farms similar with CSA all over the country, also have corresponding farm organizations in Shanghai, Nanjing, Guangzhou, Guangdong, Wuhan.

Fusion, Chengdu, liuzhou, Nanning and other regions have group to promote CSA, but there are many different ways, such as restaurants, group together to buy, farms, small farmers, and so on, the cost of small logistics is lower for the city is small, But of course the effect will be limited to everyone's cognitive degree and consumption level.

2.2 Innovation Model Study Of CSA Case

In China, CSA often construct an eco-farm in the rural, this kind modern agriculture plant, aiming to meet public consume slow food and develop localization crops, which is different from the traditional farm. Now let's analysis the commercial model of CSA case.

2.2.1 Innovative Producing

There are a stronger consumer-producer relationship in CSA. Vegetables and fruit are the most common CSA crops. CSA action attract many community to produce or attend the producing process, it's different from the traditional model which depend on the peasants to plant. Many CSAs practice ecological, organic or biodynamic agriculture by avoiding pesticides and in organic fertilizers. Besides, community garden organize citizens plant some vegetable in their own house or reusing abandoned land in the city. This innovation producing is the main model of food net innovation.

2.2.2 Innovative Service

Traditional service in CSA is Organic food restaurant, now the innovational service conclude on-site education, agri tourism, on-site event. The CSA farm usually organize lessons, teaching citizens to care food and environment with effective techniques, helping them plant better in their own land.

The city government develop the agriculture tourism to promote the city development transformation. Invest All kinds of agricultural program, have gain the huge economic profits. Make the modern agriculture beside the city become the fashion in the city. sightseeing agriculture develop very quickly recently in the farm.

In addition, the farm often organize some action to advertise farm or organic agriculture, such as the carpenter workplace of Little donkey farm, etc.

2.2.3 Innovative Vendition

Traditional vendition is Organize food store, now there are some kind innovative vendition, such as Farmers' market, on-line vendition, etc..

"farmers market" is a new mode of agricultural products sales. Farmers take plant vegetables and other agricultural products that plant by themselves to the inhabitants community of the city and directly sale.

The farmer market is initiated by a group of consumers who attend ecological agriculture and "three rural issues", aims to build a platform to let the farmer engage in organic agriculture could directly communicate and exchange with consumers.

On-line vendition meet the need of modern citizen surf on line. Except to Shop with on-line store and delivery organic food to door very shift, you also can knowledge related information.

2.2.4 Innovative Delivery

A distinctive feature of CSAs is the method of distribution. Shares are usually provided weekly with pick-ups or deliveries occurring on a designated day and time. CSA subscribers often live in towns and cities – local drop-off locations, convenient to a number of members, are organized, often at the homes of members. Shares are also usually available on-farm.

CSA members are often more actively involved in the growing and distribution process through shared newsletters and recipes, farm visits, farm work-days, advance purchases of shares and picking up their shares of produce.

vegetable box scheme is a delivery of fresh vegetables, usually locally grown and organic, either directly to the customer or to a local collection point. Food box delivery now is adopted by many CSA farm.

2.2.5 Innovative Purchasing

CSA develop a cohesive consumer group that is willing to fund a whole season's budget in order to get quality foods. The structure of CSA display, there is financial stability in this system that allows for thorough planning on the part of the farmer.

Some families have enrolled in subscription CSAs in which a family pays a fixed price for each delivery and can start or stop the service as they wish. In addition, purchasing groups as a innovation purchasing way emerge in the society. G.A.s. is a buying group. it is set up from a number of consumers who cooperate in order to buy food and other commonly used goods directly from the producers or from big retailers at a discounted rate. First organic food purchasing group in China is Green Union which created in 2008 and locates in Huilongguan of Beijing, they take the main service of organic foods purchasing, except that they also have book club and ballet class for children to maintain the whole rent of place.

2.3 The comparison of Innovation Model Of some CSA Case

The top we discuss the variety type innovation pattern, Different CSA take different innovation model. Now we look the case list before take what kind innovation model to develop their CSA. The table1 below show the information about four CSA farms innovation model.

Table 1 The comparison of Innovation Model

	dundun farm	Ai nonghui	tianlandi lv	nanling association	
angri tourism	√	√	√	√	
farmer' market	√				
organic restruant		√	√		
foodbox deleviry	√		√		
organic store		√	√		
on-site education	√				
online vendition		√	√	√	

2.4 CSA Promotes Interaction Between Urban And Rural

2.4.1 The health Of Mind And Body

CSA promote urban interaction with rural can resolve some specific issues. The CSA promotes the urban people experience rural lifestyle, releases the pressure, and then improves physiology healthy.

Intervene on the leisure time physical activity in rural, through CSA promote the rural and urban people exchanging idea and affect each other.

2.4.2 CSA Promote Countryside Renewing

The nonprofit organization organize series programs to promote the rural construction, such as providing educational resources and how-to information to individuals, families and communities wishing to support 'right livelihood' and creative, healthy, ecologically mindful and socially responsible living in rural and small town communities.

2.4.3 Benefit to County's Economy

CSA invest in different projects to boost rural economy, outcomes include: The creation of rural workspace; rural people have increased employ ability and business skills; many jobs create or safeguards; new businesses created; all these display how CSA practice successfully support the county's rural economy.

3 Service Design for CSA

The development of Service and the experience economy gave birth to the service design, it involves the broader knowledge and bigger user group, higher content of technology. People-oriented design principle and the highly developed modern civilization life demand make the boundaries between the products and services more and more fuzzy, sustainable design of the products cannot leave sustainable service system design.

3.1 Service Design For Food Net Innovation

DESIS10@Wuxi was another collaborative project between Jiangnan University and Politecnico di Milano. It was a product service system design workshop for social innovation on the specific topic of food networks, urban agriculture and Communities Supported Agriculture (CSA) for the local context of Wuxi. One aspect of the project explored was new possibilities for food solutions: services and systems aiming to radically change the mainstream food industries and consumption that has been recognized widely as unsustainable. The project also investigated a new dynamic relationship between rural and urban areas by various systematic design approaches. In the end, some design proposals such as the Next-Door Veges, Happy planting, Grow, Co-planting, are presented, these plan are all start from field study and developed based on the local context and condition. Through design public services and innovation to trigger, empower, direct the emerging social networks toward sustainable development.

3.2 A Mobile Solution to Sell Fresh Organic Food



a mobile solution to sell fresh organic food in different communities-in Ainonghui

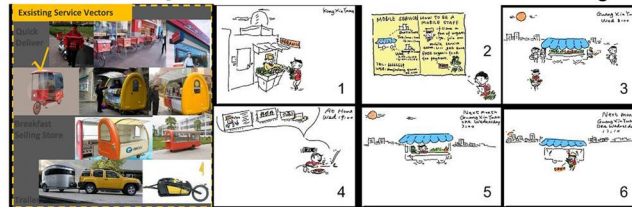
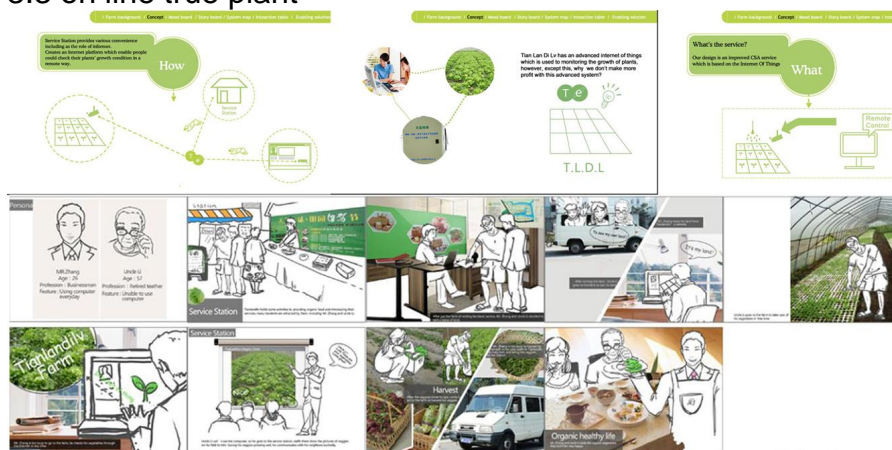


Figure 2 a mobile solution to sell fresh organic food of Ainonghui.

The farms and the citizens are far away, they are lack of face to face interactions. The on-line space isn't used well, it contains too much dialect, which makes other people too difficult to understand. A mobile solution to sell fresh organic food in different communities and at the same time give more information to citizens about this food. With this new service the network can improve the number of enjoyment and reach new communities and also make the information about organic food more clear.

3.3 on line true plant



on line true plant-the service design for CSA of Tian lan di lv farm

Figure 3 on line true plant-service design for Tianlandilv farm

Tianlandilv has advanced Internet of things which is used to monitoring the growth of plants, basing on the Internet of things to improve CSA service. Creates an Internet platform which enable people could check their plants' growth condition in a remote way.

3.4 NEXT-DOOR VEGES



Figure 4 the storyboard of next-door veges

The core concept of next-door veges is open, share, self-satisfy. next-door veges is not only integrates the small resources in city, but also enhance the involvement of social relationship. We help the old who favor to share with others to achieve their wishful social value, and make use of the "TIMEBANK" to give them deserved return. Thereby, make the whole community life full of communication and mutual help. In this way, in a certain extent, achieve self-satisfy in our city.

3.5 Co-planting

Concept of the project is about people lease a piece of land in cooperation, and co-plant during the planting process, and experience planting together.

Many citizens eager to experience the joy of planting and enjoy having healthy vegetables, but due to the reasons such as they have no time sometimes, alone in the lease there exist various problems in leaseing alone.

Service is to let people co-lease, and partners take care plants in turn to ensure vegetables grow well. Aim of the service is to make participants more relaxed to get planting experience, and to increase communication between the partners during the planting process.



Figure 5 the storyboard of co-planting

3.6 The Strategy of Service Design

The government needs to create sustainable, competitive and diverse farming and food sectors, which will contribute to a thriving and sustainable rural economy, and advance

environmental, economic, health, and animal welfare goals. How to develop the health food net, the writer propose some design strategy base on the above research.

At first we must hunt local resources, to develop their own form base on their nature condition; the second we should pay attention to those promising cases study, adopt success experience and model to director our work; the third, we must have clear scenario and strategy definition when we put up proposals; at last, the process of innovation involved many domain knowledges so to build a innovative food net is a co-design process of different discipline. Except that, we should recognize that is very important to build social network. In china, there are the kinship network in the society, it's easy to build an network if you combine the kinship network with elective social net work. In additional, we must promote on-line community. Design strategy for social network building in China must focus on the young generation. it could go a long way, to shifting consumers as well as farmers toward a more sustainable system of agriculture. (Fang Zhong, 2011)

4 Conclusion

how far can CSA mode be in China, it is too early to draw conclusions at present. Although we have to admit that, in the face of the population live pressure, the high yielding hybrid rice, big industrial production mode, will still be the direction of our agricultural production and the mainstream, but among the call we want to eat healthy food, CSA undoubtedly provides the solution for the minority.

CSA make customers buy food from farmers directly. Local, small size, organic growing, voluntary service and without interest relationship between producers and customers. Promote citizens to participate in the city ecological agriculture, let more people know and familiar with organic food. Innovation producing, delivery, service, purchasing make CSA become an new economic mode adapt to the need of society sustainable development, CSA practice guides citizens to build a liable, environmental-friendly, high-efficiency and sustainable lifestyle.

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