



POLITECNICO
DI MILANO

Facolta del Design

Product Service System Design

CHINESE HARMONY APPROACH AND PRODUCT SERVICE SYSTEM DESIGN FOR SUSTAINABILITY

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ABSTRACT_ENG

The main purpose of this thesis is redesign a Sustainability Design Orienting Toolkit (SDO) based on the theme of Harmony that suitable for China.

It's mainly applying to Chinese sustainability education and sustainability designers. The main idea of this toolkit is for user's better learning and examine whether the project is suitable for the environment and current society, economic status.

At the present stage of China, it doesn't have any system for sustainability students and designers, and it doesn't have any software could evaluate the sustainability of a project neither.

In Europe, there are some existing running systems and tools for inspiring and evaluate sustainable design which have been used for many years and in research and practical areas on sustainability.

The research object of this paper, is a design tool one of them, named SDO. An improved system that was developed by DIS research unit in Politecnico di Milano 10 years ago . This toolkit is not a prototype but already has been widely used in many consultancy projects and students works on the system level which focus on the eco-efficient sustainability issue.

This SDO system contains a series of design guidelines and checklists which used for trigger design thinking and ideas as well evaluate the design concept which named product service system design.

The target of this research is introducing and transferring the SDO system to Chinese context, so research process is mainly focus on the Chinese understanding for sustainability and its design methodology and so on. Through literature research and cases studies, this paper propose a hypothesis that there exists an integrated system in Chinese traditional philosophy which could be named as Sustainable Harmony System, the harmony system consists 6 different but joint meaning design principals which could be recognized as sustainable design guide dimensions, each of them could generate detailed design guidelines from Chinese culture background and contemporary meaning though they are not exact same with original guidelines in SDO system. This paper also presented related examples based on almost each Chinese design guideline and describe in deep how these guideline work in China.

Based on the theoretical research, a prototype system which named Chinese Harmony Design System has been built up based on original SDO toolkit, a simulating project has carried by using this system to verify the design process logic and usability of this new design aided system for sustainability. Now this system has sent to some Chinese university to start the evaluation process in education area in China.

ABSTRACT_ITA

Lo scopo principale di questa tesi è ridisegnare un Sustainability Design Orientarsi Toolkit (SDO), basato sul tema di armonia che adatta per la Cina.

E 'soprattutto l'applicazione di educazione alla sostenibilità e designer cinesi sostenibilità. L'idea principale di questo toolkit è per l'utente di un apprendimento migliore e valutare se il progetto è adatto per l'ambiente e la società attuale, condizione economica.

Allo stato attuale della Cina, non ha alcun sistema di sostenibilità per gli studenti e designer, e non ha alcun software potrebbe valutare la sostenibilità di un progetto nessuno dei due.

In Europa, ci sono alcuni sistemi esistenti in esecuzione e strumenti per l'ispirazione e valutare la progettazione sostenibile che sono stati usati per molti anni e in aree di ricerca e pratica sulla sostenibilità.

L'oggetto della ricerca di questa carta, è uno strumento di progettazione di loro, di nome SDO. Un migliore sistema che è stato sviluppato da unità di ricerca DIS del Politecnico di Milano 10 anni fa. Questo toolkit non è un prototipo, ma già è stato ampiamente utilizzato in molti progetti di consulenza e lavori degli studenti a livello di sistema che si concentrano sul problema della sostenibilità eco-efficienti.

Questo sistema SDO contiene una serie di linee guida di progettazione e liste di controllo che ha usato per innescare il pensiero di progettazione e di idee, nonché di valutare il concetto di design che di nome servizio di progettazione di sistema.

L'obiettivo di questa ricerca è l'introduzione e il trasferimento del sistema SDO al contesto cinese, per cui è processo di ricerca si concentrano principalmente sulla comprensione cinese per la sostenibilità e la sua metodologia di progettazione e così via. Attraverso studi di ricerca letteratura e di casi, questo lavoro propone una ipotesi che ci esce un sistema integrato in cinese tradizionale filosofia che potrebbe essere chiamato come sostenibile Harmony System, il sistema di armonia consiste 6 principi diversi, ma comuni design significato che potrebbe essere riconosciuto come guida per la progettazione sostenibile dimensioni, ciascuna di esse potrebbe generare linee guida di progettazione dettagliata da sfondo cultura cinese contemporanea e significato se non sono esattamente le stesse linee guida originale nel sistema SDO. Questo documento inoltre presentato esempi connessi basata su quasi ogni orientamento design cinese e descrivere in profondità il funzionamento di queste linee guida in Cina.

Sulla base della ricerca teorica, un prototipo di sistema, che di nome cinese Harmony Design System è stato costruito sulla base originale toolkit SDO, un progetto simulando ha realizzato utilizzando questo sistema per verificare la logica di processo di design e usabilità di questo nuovo disegno del sistema assistito per la sostenibilità . Ora questo sistema ha inviato a qualche università cinesi per avviare il processo di valutazione in area istruzione in Cina.

CHAPTER 1 SUSTAINABLE DEVELOPMENT DESIGN APPROACH IN CHINA

1.1 Sustainable Development in China

Governmental Policy

Chinese Government pay more attention to sustainable development and planed such National Sustainable Development Programmer.

[Report on the Environment and Development of the People's Republic of China] , 1992, as earliest sustainable policy.

[China's Agenda 21Century---White Paper on China's Population, Environment, and Development in the 21st Century] , 1994

[The People's Republic of China National Report of Sustainable Development] , 1997

[Program of Action for Sustainable Development in China in the Early 21st Century] , 2003

[China Sustainable Development Strategy Report 2010] , 2010

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Governmental Strategy

[Low-carbon Economy] Chinese Meaning

In broadly speaking, Low-carbon, means Energy Conservation in China, is the conservation of material resources and energy resources and reduce harmful waste and the environment (including waste and noise, etc.) emissions

[Industry Transformation] in China

Chinese Government is promoting China's industrial restructuring, hopes converting industries from low-end manufacturing into a high-end & green industry rely on new technology and creative design.

[New Approach to Industrialization] in Hunan Province

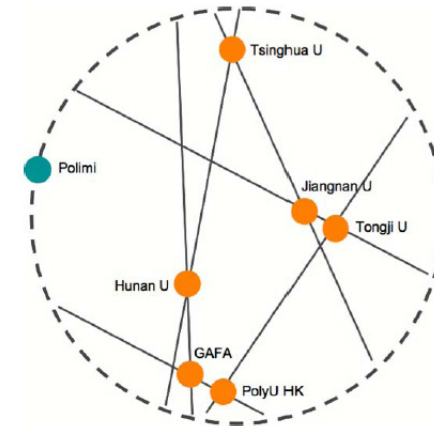
Informatization and industrialization are mutually reinforcing, and this path of new development would embrace high technologies, pursue high-economic efficiency, low-resources consumption and optimize human resources but make less environment pollution.

1.2 Design For Sustainability in China

DESIS09
Social Innovation & Connection

DESIS Network

Design for Social Innovation and Sustainability



DESIS is a network of schools of design and other schools, institutions, companies and non-profit organizations interested in promoting and supporting design for social innovation and sustainability. It is a light, no-profit organization, conceived as a network of partners collaborating in a peer-to-peer spirit. It is articulated in several DESIS-Local (that are sub-networks within a specified local area). DESIS-International is therefore the framework where the different DESIS-Local coordinate themselves and where some global initiatives are taken.

DESIS-China aims to actively support design initiatives and projects in the field of design for social innovation and sustainability in China. That is, in the fields of the ecological reconversion of production and consumption systems, the social construction of services, and the balanced, distributed development of local areas. Specific initiatives and projects in these fields can be, for example: local sustainable development programs; services for elderly people and for social cohesion; collaborative networks based on digital services and platforms, etc.

D4S in China's journey

Strategic design for sustainability in China



Facing environmental pollution and social problems, our Chinese design community needs to integrate sustainable design thinking into the ongoing development agenda for a creative economy. We should leap from the old industrial society model where designers work for mass production and mass consumption based on intense use of limited natural resources, to the new knowledge society where designers collaborate in design for a sustainable future by making full use of our unlimited creativity. Design ignites transformation. Designers can use design thinking to solve the challenges of profitability and sustainability, raise social awareness and become catalysts for the transformation. More than aesthetics, functions and usability, we will contribute unimaginable innovations to our society. We need to redesign and promote a healthier lifestyle that can regenerate Chinese cultural values of harmony and balance. In this way, our design community can become a restorative force to help Chinese people make the transition towards a better life, a better society and a better environment.

LENS

The learning Network on Sustainability



Asian-European multi-polar network for curricula development on Design for Sustainability focused on product-service system innovation.

LeNs is a 3 years project (15/12/2007 - 15/12/2010) funded by the Asia Link Programme, EuropAid, European Commission, involving 7 design schools in Europe and Asia.

LeNS aims at contributing to human resources and curriculum development, in a reciprocal understanding of cultures, by promoting a new generation of designers (and design educators) capable to effectively contribute to a transition towards a sustainable society.

LeNS ambitions to promote a new shared disciplinary ground on Design for Sustainability through a series of exchange activities among the partner institutions. LeNS consortium will jointly produce an open e-learning package (a modular and adaptable package for curriculum development with teaching materials and tools for design educators and guidelines for courses design and implementation in diverse contexts). It will also promote a series of diffusion activities targeting the design community worldwide.

1.3 Problem of Design for Sustainability Application in China

The very nature of sustainable development lies in rationalizing man's economic activities and producing a virtuous circle of human society and ecological environment by highlighting man's connection with nature and the sustainability of natural resources. The concept of sustainable development is mainly characterized by the continuous utilizing of resources and favorable ecological environment.

The simple version of definition for sustainability-oriented design is meeting the needs of modern time without influencing and harming the satisfaction for the needs in the future; the extended version of its definition is improving the living environment of the future while meeting the needs at present time.

On one hand, sustainability is a deep-rooted concept for the Chinese. It can be noticed in all the aspects of people's ordinary life, such as in TV, internet and other media. So, there is no controversy involving the concept of it.

On the other hand, there is a lot to do considering the present situation of sustainability-oriented design in the designing profession.

First of all, designers in sustainability-oriented designing can be provided with a tool that is more convenient, effective and functional, with which a sustainability-oriented design will be better guaranteed in the process of designing.

The second thing to do is the cultivation of sustainability-oriented designing tendency. Once the concept of sustainability-oriented design is introduced, the designer will alter the traditional design process and the designing pattern. And it will require more simulation analysis and calculation as well as additional procedures to the traditional designing process from the designer's part.

At the present stage of the sustainable design in China, there are still some problems: lack of basic knowledge related to sustainable development design whether in business or in the design education, as well as lack of practical application methods, lack of particular understanding some western original contemporary concept of service and design, and lack of knowing how to use and develop a system tool suitable for the condition in China.

CHAPTER 2 PRODUCT SERVICE SYSTEM DESIGN FOR SUSTAINABILITY

2.1 System design for sustainability (SDS)

Definition of system design for sustainability

“the design for eco-efficiency (and/or) social equity and cohesion of the system of products and services that are together able to fulfil a particular demand of (customer) “satisfaction”, as well as the design of the interaction of the stakeholders directly and indirectly linked to that “satisfaction” system”

[VEZZOLI, 2009]

During the last ten years the concept of sustainable development has entered into the scene of international politics. This term refers to systemic conditions, where on planetary and regional level both the social and productive development takes place:

- 1) within limits of environmental resilience; i.e. within its capacity to absorb the effects of human impact without causing any irreversible deterioration;
- 2) without compromising the ability of future generations to meet their own needs; i.e. maintain the means, or natural capital, which will be passed to future generations;
- 3) on the ground of equal redistribution of the resources following the principle that everyone have the same rights of environmental space, the same access to global natural resources

System design for eco-efficiency

Design criteria for system eco-efficiency is defined in the MEPSS EU research, 6 criteria can be listed according to their orientation towards eco-efficiency

- system life optimisation
- transportation/distribution reduction
- resources reduction
- waste minimisation/valorisation
- conservation/bio-compatibility
- toxicity reduction

Though similar to product guidelines, a clear shift from functional to satisfactory design reference appears, that emphasises the enlargement of design scope, the reconcentration from single product to the whole product service system and its participants, the system that provides satisfaction for given needs and desires.

From here on, the perspective stays on the multiple life cycles of demand satisfaction systems.

System design for social equity and cohesion

The social equity and cohesion within sustainable design should include the criteria that

- improve employment/working conditions
- equity and justice in relation to stakeholders
- enable a responsible/sustainable consumption
- favour/integrate weak and marginalized
- improve social cohesion
- empower/enhance local resources

2.2 MSDS method approach and phases

It has been argued that exists a potential role for the design for sustainability, in promoting and facilitating system innovation resulting in eco-efficient and socially equitable/cohesive enterprises/initiatives offering a mix of products and services, based on network-structured and locally-based model.

A first key point is the approach to a design of stakeholders configuration, committed to create and promote innovative types of interactions and partnerships between appropriate socio-economic stakeholders of a system responding to a particular social demand.

Consequently new skills are required from the designer.

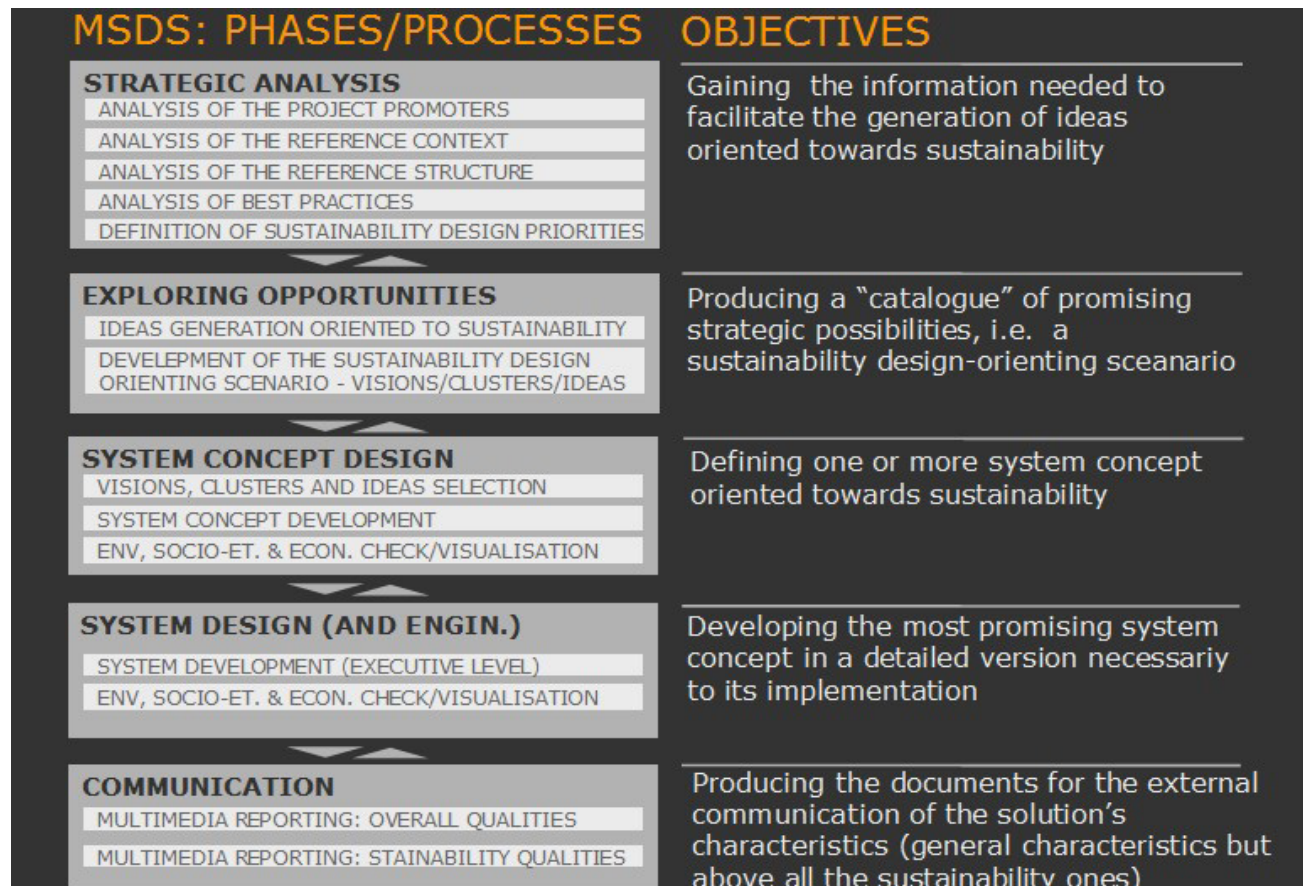
- A designer must be able to design together products and services, related to a given demand of needs and/or desires satisfaction.
- A designer must be able to find, promote and facilitate innovative configurations (i.e. interactions/partnership) between different stakeholders (entrepreneurs, users, NGO, institutions, etc.), related to a given demand of needs and/or desires satisfaction.

- A designer must be able to operate/facilitate a participatory design process among entrepreneurs, users, NGO, institutions, etc. orientating this process towards environmentally sustainable solutions.
- second key point, given that not all system innovations will have ecoefficient or socially equitable and cohesive results, underlines that design process should be somehow oriented towards sustainable solutions. Consequently new skills are required also from the designer:
 - the ability to orientate the system design process towards eco-efficient solutions
 - the ability to orientate the system design process towards socioefficient solutions.

In order to design a sustainable system, MSDS tools is a very useful approach to achieve.

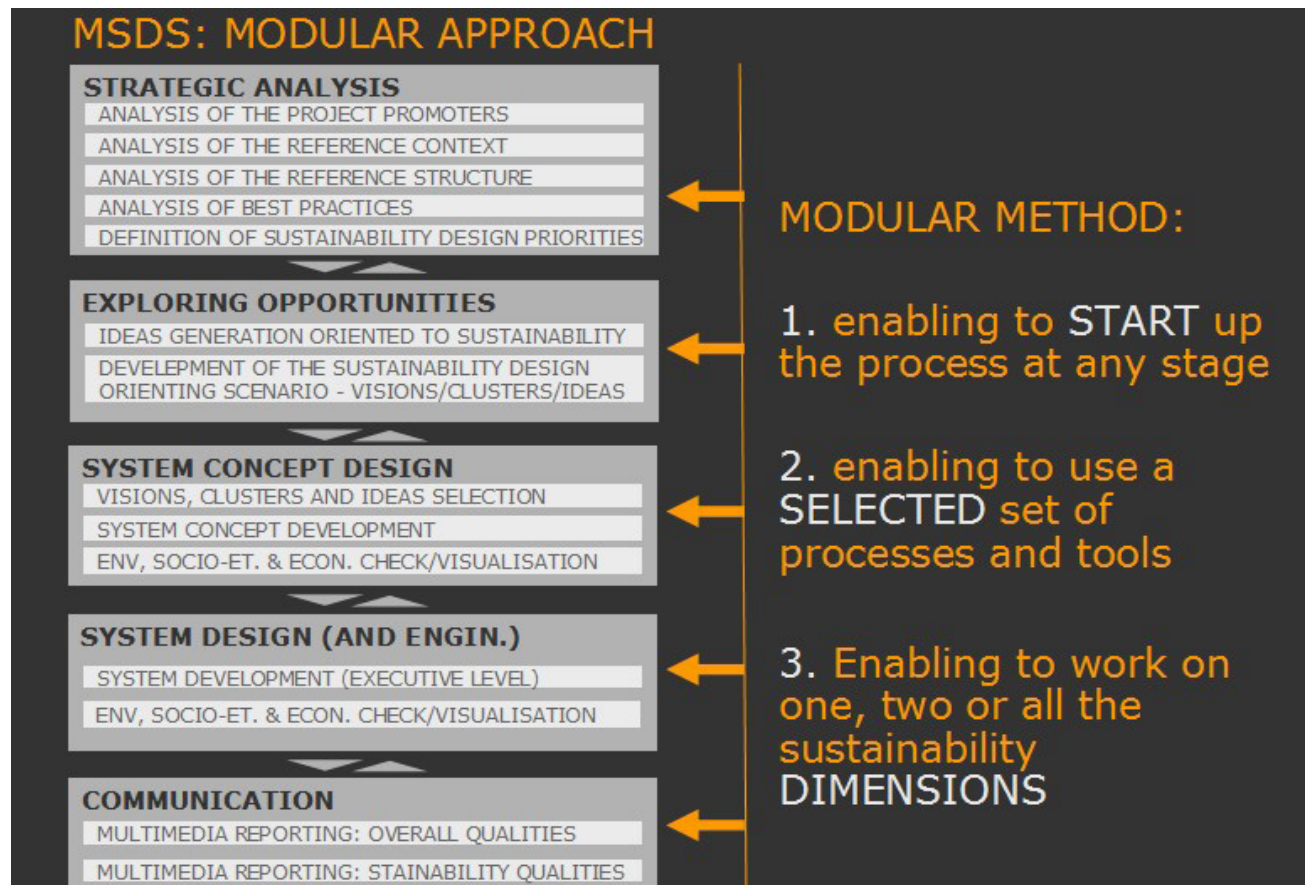
The method for system design for sustainability (MSDS) has the basic modular phases which are

- strategic analysis
- exploring opportunities
- system concept design
- system design (and engineering)
- communication



Each of the phase is subsequently structured in steps, and steps are described by a series of processes. This “phasesteps-process” hierarchy has been developed to offer a systematic and a layered innovation model. Finally, three main action grounds are:

- Design
- Environmental assessment
- Consumer acceptance. And three of those,
- Exploring opportunities
- System Ideadevelopment
- System design are related to design.



2.3 Introduction of SDO tools and methods

A tool-kit available to orientate the design process towards sustainable system innovation, is:

- Sustainability Design-Orienting toolkit (SDO) Other tool-kits available, that are orientated to strategical design

system innovations are:

- System map
- Interaction table (story-board)
- Interaction story-spot
- Offering diagram

The strategic analysis part of MSDS is sustainability design-orienting (SDO) tools which is to orientate system design process towards sustainable solutions in environment, social-ethical and economic demensions.



This modular software toolkit supporting the following processes:

- priorities sustainability criteria/guidelines (existing system qualitative analysis)
- identify sustainable existing options (best practices analysis)
- generate sustainability-focused idea
- check/visualise sustainability improvement/worsening of developed concept/s

This tool is meant and has been developed to be a “bridge” between language, data and tools of the sustainability assessment “world” and the designer’s “world”, when dealing with complex systems.

In fact, it is a qualitative tool that allows everything concerning sustainability system assessments to make preliminary assessment or to integrate quantitative assessments with preliminary ones.

Example: Environmental Sustainability Dimension

ENVIRONMENTAL/SUSTAINABILITY PRIORITIES DEF.

6 criteria define priorities for each criteria
evaluation checklists

set priorities

for environm. sustainability dimension

write answers

The screenshot shows the SDO Sustainability Design-Orienting Toolkit interface. The sidebar on the left contains the following sections:

- Project Record
- Sustainability Dimension
 - Environmental Sustainability
 - Set Priorities (highlighted)
 - Orientate Concept
 - Check Concept
 - Socio-Ethical Sustainability
 - Economic Sustainability
- Radars
 - Environmental
 - Socio-Ethical
 - Economic

The main content area is titled "project_test" and "Environmental Sustainability - Set Priorities". It lists six criteria with their respective priority levels (N, O, L, M, O, H):

- System life optimisation: priority: ○ N ○ L ● M ○ H
- Transportation/distribution reduction: priority: ○ N ○ L ○ M ○ H
- Resources reduction: priority: ○ N ○ L ○ M ○ H
- Waste minimisation/valorisation: priority: ○ N ○ L ○ M ○ H
- Conservation/bio-compatibility: priority: ○ N ○ L ○ M ○ H
- Toxicity reduction: priority: ○ N ○ L ○ M ○ H

The right-hand panel shows a "Check List" with six empty boxes and a question: "Are infrastructure with short life-span used in the system?". Below this is a text area containing the following answers:

- 1- NO CONCERN
- 2- DISHES, SILVER AND GLASSES ARE REUSABLE
- 3- APPLIANCES TEND TO BE TECHNOLOGICALLY OBSOLETE
- 4- ALREADY SHARED IN CATTEEN
- 5- FOOD IN FACT, HAS LIMITED SHELF TIME; TO BE CHECKED THE QUANTITY OF FOOD TO LANDIFILL PER CONTEXTS; ON APPLIANCES TO BE RESEARCHED
- 6- THE SOLAR PANELS AND THE APPLIANCES ARE NOT WELL MAINTAINED

Set priorities

From this page we could analysis the exist system according to the check list questions of each criterials and set the priorities of them from the button.

In the case study section you can compare a best practice with the existing system to collect promising inputs and to compare it for the concept to be developed.

. GENERATE "SUSTAINABLE IDEAS" BY BRAINSTORMING

select **idea table**
(one per criterion)

type **idea**
emerged

read **guidelines**
(criteria/system
-related)

Orientate concept

Performing an environmentally sustainability-focused brainstorming, using the idea tables with the related guidelines at the system level (stakeholder interaction).

Begin with idea tables (criteria) having the highest priorities. This is done by typing the emerged idea in the available digital 'post it' box of the idea tables of system level.

. CHECK IN PROGRESS CONCEPT

for each given criteria

define improvement

evaluation helped by **checklists** for each criteria

click on check concept

for each sustainab. dimension

Radar env.

write improvem.

The screenshot shows the SDO Sustainability Design-Orienting Toolkit interface. The left sidebar contains a navigation menu with sections: Project Record, Sustainability Dimension (with sub-items: Environmental Sustainability, Set Priorities, Orientate Concept, Check Concept, Socio-Ethical Sustainability, Economic Sustainability), and Radars (with sub-items: Environmental, Socio-Ethical, Economic). The main content area is titled 'project_test' and 'Environmental Sustainability - Check Concept'. It features a 'Concept Check' section with a 'Check List' of six empty checkboxes. Below this is a 'Concept Description' area with a text input field containing the question: 'Are infrastructure with short life-span used in the system?'. The interface also includes a top navigation bar with options: Menu, Save, Reload, Print, Logout, and Help. Improvement scales are visible for several criteria, such as 'System life optimisation' and 'Transportation/distribution reduction', each with a scale from 0 to 4 (represented by circles) and a current value indicated by a dot.

Check concept

Check sustainability improvements of the developed system concept.

. CHECK/VISUALISE IN PROGRESS CONCEPT

priority of existing system (e.g. Medium)

concept improvement (e.g. +)

per each sustainability dimension

type text synthesising improvement

IMPROVEMENT (sust. dimension)

priority: N=No L=Low M=Medium H=High

Check concept

Visualize sustainability improvements of the developed system concept. After the improvements (or worsening) are checked in each criteria of the environmental sustainability dimensions, graphical representation is given by the radar diagram where the main advantages or disadvantages are synthesised together with the level of improvement.

CHAPTER 3 THE HARMONY THOUGHT AND THEORY FROM CHINA CONTEXT

3.1 Theory of Harmony -- "The Unity of Nature and Man"

"The unity of nature and man " is one of the fundamental concepts in Chinese traditional philosophy. As for "heaven" in this belief, some people think it as the representative of "nature". At present time when people is put first and nature is regarded as the origin of world, "the unity of heaven and man" is the final pursuit as well as the direction of development in product designing.

In the field of product design, it is our common knowledge that the nature and the external environment can be seen as the "heaven" and we are the "man". And the " unity of heaven and man ", the concept in product design, can be displayed in its unity with environment and the unity with man. The essence of product design is to serve the people, and it targets man's all-round development.

The theory that "The Unity of Nature and Man" is the most basic proposition of traditional Chinese philosophy and the fundamental spirit of Chinese philosophy .The basic idea is that the human physiology, ethics, politics and other social phenomena are a direct reflection of the natural. This doctrine ask for harmony between man and nature.

One of the most profound meaning is to recognize that nature has a meaning of life, and it has its own intrinsic value. In other words, nature is not the only source of a human life and all life, but also the source of human values.

The so-called "Unity of Nature and Man" realm is the highest level of the traditional Chinese aesthetic. The "Unity of Nature and Man" harmonious aesthetics is the highest pursuit of traditional Chinese aesthetics.

Taoist Lao Tzu and Chuang Tzu school founded "Unity of Nature and Man" thinking, the bright spot is wisdom of the harmony between man and nature.

In Chinese philosophy, how heaven relate to man is one fundamental issue, and the unity of nature and man is an essential belief, which requires for harmony of man and nature.

One of the connotations in this relation of man and nature is that nature possesses the meaning of life and its intrinsic value. In other words, nature is not only the origin of life for human beings and other living creatures but also source for men's value.

The concept of sustainable development is based on placing man and nature in the status of full equality.

Its most essential meaning is that by clarifying the importance in relationship between man and nature and the sustainability of natural resources, human economic activity is rationalized to form a virtuous cycle between the formation of human society and ecological environment, the hallmark of which is the sustainable exploit of resource and a friendly ecological environment.

The ratio between population, resources and environment, as well as reasonable allocation of resources and the improvement of resource productivity, is important in ancient Chinese concept.

Most of the design industry understand it as "a combination of design and nature", " high degree of harmony with design and the natural environment". It should be mentioned that "Unity of Nature and Man" is the typical Chinese traditional design.

3.3 Criteria of Harmony Theory

Holding without Ownership

Long Lasting

Resources & Reducing

Keeping Balance

Everything Maintaining Mutually

Learning from Nature

Learning from Nature

Relationship between "Learning from Nature" and "The Unity of Nature and Man"

"The Unity of Nature and Man" is a typical traditional Chinese design, "Unity of Nature and Man" is the pursuit of the ideal state, "Learn from the law of nature" can be considered as a methodology in the operating system level.

1.The concept of sustainable development is based on placing man and nature in the status of full equality. Its most essential meaning is that by clarifying the importance in relationship between man and nature and the sustainability of natural resources, human economic activity is rationalized to form a virtuous cycle between the formation of human society and ecological environment, the hallmark of which is the sustainable exploit of resource and a friendly ecological environment.

2.It can be interpreted as "a combination of design and nature", " high degree of harmony with design and the natural environment" from the design standpoint.

3.And "Learn from the law of nature" also emphasize respect and learn the laws of nature, it's the only way to achieve a high degree of man-made objects and natural harmony, and it is the methodology from the level of operation and methods of man and world (nature) harmony .

Holding without Ownership

Satisfying the material desires in a conservational way is advocated so that the material resource is not owned but used for purpose. Sharing is promoted so that the cost is splitted and possession is rationalized. This coincides with the concept of sharing highlighted in the product service system and the sustainable design.

Long Lasting

1. In time dimension, everything is as long lasting and sustainable as natural. The so-called internity is a relative concept
2. The quality and quality of things endure to be long pursued.

Resources & Reducing

Develop new resources, energy, materials sources with respect to conservation and rational use of current local resource by avoiding waste and reducing costs.

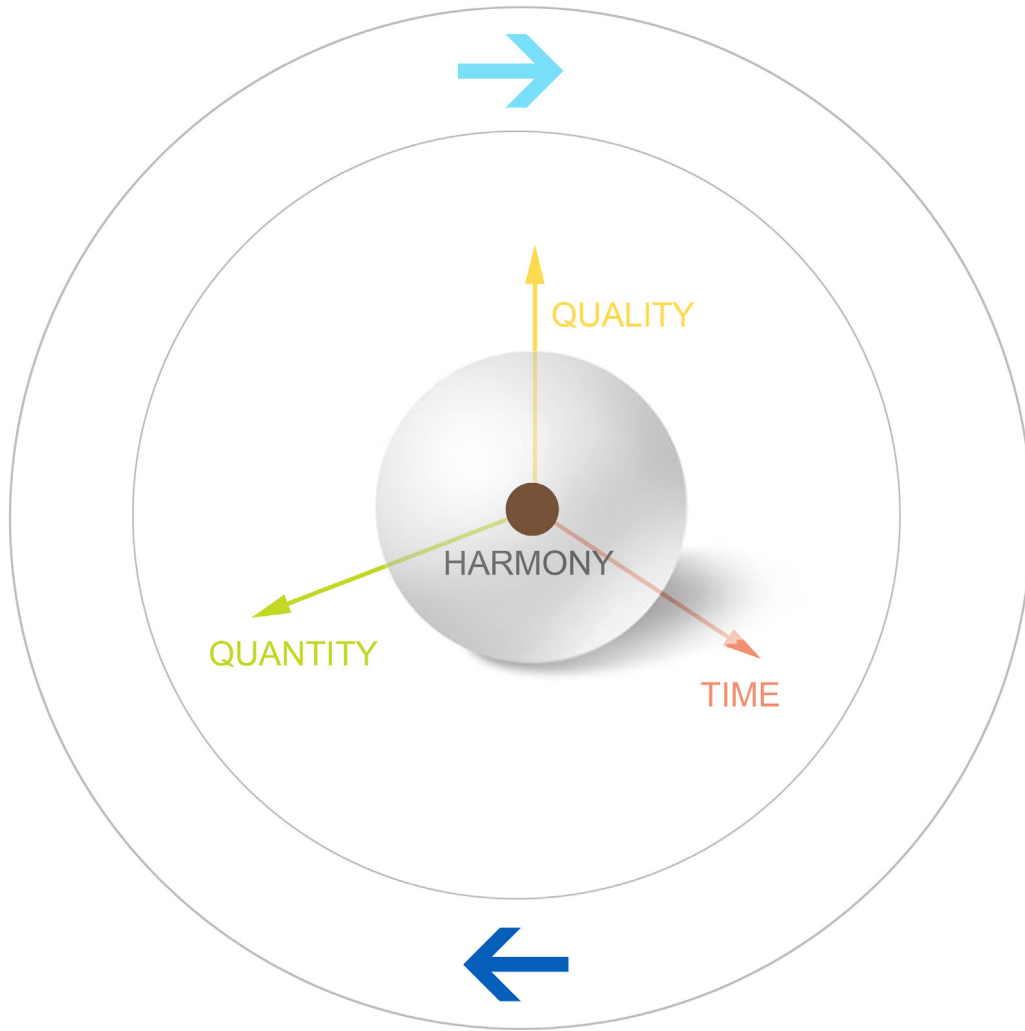
Keeping Balance

1. Balance means emphasis on balanced development, to avoid excessive or unlimited use of natural resources to maintain the balance between people and the environment, as well as that among the various systems, especially in maintaining ecological balance, which is a logic and ideal state of development.
2. The key to the balance development is the attention of the surrounding objects, environment and system relations. Great attention is also paid to the coordinated development among different systems and regional.
3. Specifically, from products or system of materials used, energy consumption to waste treatment all need to balance and coordinated development view guided. Impact and damage to the environment will eventually lead to the destruction of human beings.

Everything Maintaining Mutually

1. Input means output. Balance is achieved and maintained by the inter-cause-effect relationship, and the interaction among various elements.

2. From the point of view of the relationship with environment, the balance between man-made things (system) and the natural environment needs maintaining good circulation on the system interface (input and output) of the system design and the environment. From design, operation to the end of the whole process, the system must pay attention to environment: both the access to resources and energy of the environment, and the discharge of waste into the environment must meet the requirements of balance.



Learning from Nature

Keeping Balance

Everything Maintaining Mutually

Holding without Ownership

Long Lasting

Resources & Reducing

3.4 Contemporary Case Studies in China Context

Holding without Ownership

1.The Shanghai government: 2009 large-scale scientific facilities sharing service evaluation and reward is carried out

Shanghai government aimed at awarding system for the instrument facilities management units of the public service platform within their respective administrative areas.

Object:

The object of assessment is the instrument facilities management units who has joined the public service platform in the administrative areas of Shanghai.

Evaluation content:

Evaluation content is the large-scale scientific facilities during shared services of management unit from January 1st to December 31th,2009. "Shared services" means the management unit will make large-scale scientific facilities open to the society, so that other units or individuals may use them for scientific research and technological development activities; Scientific research and technological development activities does not include the legal authentication, law-enforcement examination and high-volume inspection, etc

2. Beijing science instruments and equipment sharing network

The screenshot shows the homepage of the Beijing Science Instruments and Equipment Sharing Network (www.kytj.com). The browser window title is "北京科学仪器设备共享服务网 - Windows Internet Explorer" and the address bar shows "http://www.kytj.com/index.jsp".

Header: The main banner features a traditional Chinese building (likely the Forbidden City) and the text "北京科学仪器设备共享服务网". Below the banner, it says "北京" and "典型案例 | 政策法规 | 认证认证 | 网站导航".

Left Column:

- 三聚氰胺 (Melamine):** A list of links including "检测机构", "热点问题", "气相色谱法", "质谱法", "液相色谱法", "高效液相色谱法", and "《原料乳与乳制品中三聚氰胺检测方法》国家标准".
- 仪器搜索 (Instrument Search):** A search box with a "搜索" button and a link to "仪器按条件组合检索".
- 资源检索 (Resource Search):** A section titled "仪器按资源类别检索" with links for "分析仪器", "电子测量仪器", "计量仪器", "工艺试验设备仪器", "海洋仪器", "地球探测仪器", "天文仪器", and "大气探测仪器".

Center Column:

- 公告栏 (Announcement):** Contains two news items: "北京市科学技术委员会关于对北京地区科技活动单位进行科学仪器设备状况统计调查的函" and "北京市科学技术委员会关于召开北京地区科研仪器设备状况统计调查培训会议的通知".
- 科技支撑服务 (Technology Support Services):** Divided into four categories:
 - 协作服务 (Collaboration Services):** Includes "五部委百台协作仪器", "五部委协作网远程申报", "首都大型仪器协作", "北京地区对外开放仪器", and "环渤海区域协作共用仪器".
 - 培训服务 (Training Services):** Includes "远程科学仪器简明教程" and "远程教学课件下载".
 - 升级改造服务 (Upgrade Services):** Includes "升级改造服务介绍".
 - 购置服务 (Purchase Services):** Includes "评估".

Right Column:

- 首都科技资源开放服务目录 (Beijing Science and Technology Resource Open Service Directory):** A yellow banner.
- 科技条件信息服务平台 (Science and Technology Condition Information Service Platform):** Includes "地方科技基础条件资源调查管理信息系统" and "评议专家申报系统".
- 按照服务领域查询仪器 (Search Instruments by Service Field):** Includes checkboxes for "电子信息", "节能环保", "生物医药", and "新材料", along with a "搜索" button.
- 最新动态 (Latest News):** A list of recent news items with dates, such as "宁波材料所成功研制大推力直线电机 (2010-12-01)".

Footer: The bottom of the browser window shows "Internet | 保护模式: 启用" and "100%" zoom level.

Beijing large-scale scientific instruments and equipment sharing service platform is a public beneficial platform led by the Beijing government, joint with research institutes, universities, corporations and innovation units in inspection and quarantine and quality standard testing around Beijing. This platform, through opening sharing mechanism, collects large-scale scientific instruments, experimental facilities and other physical resources and professional technical and managerial talent conditions for security resources in Beijing. It boasts a rational layout construction, all-around functions, open efficiency and complete system. It consists of practicality and information service system and offers technological innovation activities to provide technical support for Beijing and circumjacent area.



3.Free ride as a tentative transportation mode appears in Beijing recently.

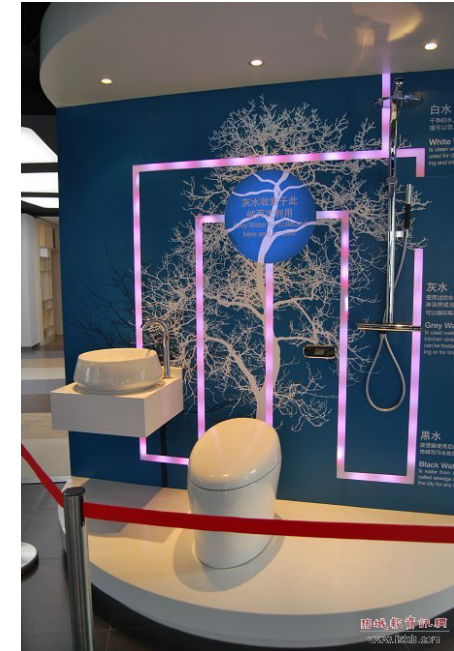
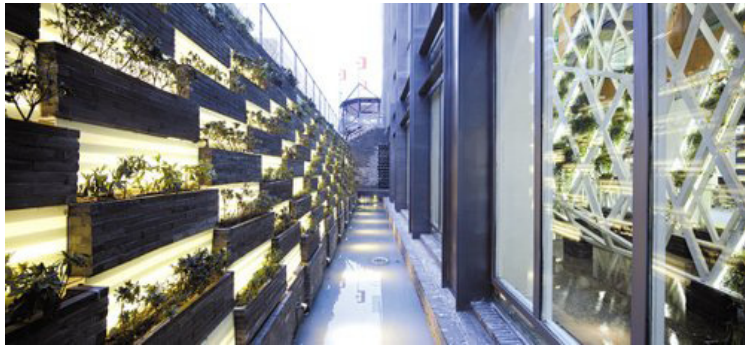
The Free Ride Club, established in April.10th of this year, launches its service of free ride pack, by which private car owners and people who need ride in the morning with their membership are enrolled and arranged in pairs or groups, so that the private car owners can give a ride to a fixed passenger on his way to work and share part of the fuel cost. It is believed that this free ride mode is still new in China, and most cars involved are private with certain amount of taxies. Most car owners in free ride think it nice, because they can pay less for fuel cost and have a friend to talk to in traffic jam without affecting their regular driving out. The hitchhikers are also quite satisfied for solving the traffic problems on their way to work.

Long Lasting



1.The Shanghai world expo pavillions use ecological environmental protection material, which can reusable after constructing.

Shanghai world expo, many pavillions will be removed. These venues materials will be reused. Shanghai science and technology commission director Shou Ziqi said that building materials itself is environmental protection and may be used repeatedly after tearing down.



In the process of construction, many pavillions themselves had adopted the ecological environmental protection material, " pavillions are made of useful straw, paper and polyester so that they are recyclable."

In addition, 50% of the 2010 world expo venues adopt recycled materials, which are modular, therefore can be re-structured. "Shanghai ecological home", for example, in construction process, used about 15 million pieces of old brick, all of which are original down to recycle.

"2010 world expo pavillions' dismantling is not what " tear houses " means in commonsense," ShouZiQi said, "first of all, dismantling down is very reduction. Second, the materials will be re-used as is possible "

Resources & Reducing



1. "Yum! Brands" reduce transportation cost path for the chain of catering enterprises.

For the industry of chain food and beverage, the means for the use of logistics in saving cost is difficult. As KFC, pizza hut etc industry giants's the appointed logistics providers, yum! Logistics company through reasonably transportation arrangement, reducing distribution frequency, implement pith-paper time delivery etc optimization management method, effectively realized the logistics cost saving, give the managers a detailed and exhaustive method to reduce logistics cost.

Reasonable arrangement of transportation scheduling

Transportation scheduling means as full-loaded vehicle as possible. Based on need, the total trip mileage should be reduced with corresponding adjustments.

Reduce unnecessary distribution

For demanding chain restaurant industry whose top concern is freshness , the logistics cost may be reduced with the decrease in unnecessary distribution frequency based on effective communication with the dining service.

Improve vehicle utilization

Vehicle availability also deserves attention. Truck's utilization efficiency may be raised with improvements in four aspects from the truck size, homework divisions, secondary driving to operating days per week.

Try to in suspension working time for delivery

At present, Chinese urban traffic restrictions are more and more severe, trucks are allowed in downtown only at night. Since the restaurant chain operation generally is out of service at 0:00 o'clock at night, if delivery is before duty-off time , the utilization rate of vehicle bound is very limited. Subsequent solution is to use the suspension working time for delivery.

2.IGS - Information Globalization Solutions Provide localized training

IGS - Information Globalization Solutions is the first company in China who focuses on globalization and internationalization and localization burgeoning industry, and offers such consulting services as product internationalization and localization in the field of professional, training and certification and information globalization solutions suppliers for domestic and foreign enterprises. It is the international software test certification committee (ISTQB) China branch and NCAT certification system in Beijing, first accredit training and certification institution.

IGS - Information Globalization Solutions is the first domestic institutions which provides localized professional training and consulting. Its service is oriented to information technology industry, the traditional manufacturing industry, business services, cultural media, communication industry, language service industry and the government agency. It provides a highly professional and comprehensive localization and international training and consultancy services. The enterprise can, according to the need by itself, chooses related localization's technical training courses. IGS sends trainers to enterprise for related training.

昱达 - 中国首家本地化培训-CAT,FrameMaker,InDesign培训服务提供商 - Windows Internet Explorer

http://www.igsgroup.com.cn/index.asp

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IGS 昱达

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北京, 2010年12月25-26日, ISTQB FL 培训+考试, [更多信息>>](#)

沈阳, 2010年12月19日, ISTQB FL 考试, [更多信息>>](#)

昱达新闻

- 北京12月ISTQB软件测试工程师培训与考试开始报名 10-04-08
- 沈阳12月19日ISTQB软件测试工程师认证考试开始报名 10-04-08
- 昱达为阿特拉斯科普柯公司提供FrameMaker手册编写 10-09-08
- 信息技术驱动的软件敏捷本地化模式 10-08-09
- 昱达为美特斯公司提供FrameMaker手册编写培训 10-08-02

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Keeping Balance



1. ShenZhen Binsheng consumable recovery Network

Binsheng is the China's earliest institution in consumable recovery, and successfully applied in electronic business. The website of the recycling quotation always correctly reflects the market and enjoys very high popularity in the industry.

As China's most professional recycler for the empty ink box and empty toner box, with a formal, professional, high-quality, and extremely professional spirit recovery teams. Now it has established a long-term stable recycling cooperative relationship with many enterprises.

www.chinabins.com

热门利盟/联想空墨盒回收价格

全部型号>>



lexmark 17空墨盒
回收价¥20.00

查看



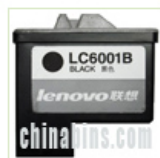
lexmark 16空墨盒
回收价¥20.00

查看



lexmark 70空墨盒
回收价¥10.00

查看



lenovo 6001空墨盒
回收价¥20.00

查看

热门空硒鼓回收报价

全部型号>>



hp 88A空硒鼓
回收价¥35.00

查看



hp 36A空硒鼓
回收价¥35.00

查看



hp 12A空硒鼓
回收价¥15.00

查看



hp 53A空硒鼓
回收价¥20.00

查看



hp CB540A空硒鼓
回收价¥50.00

查看



hp Q6000A空硒鼓
回收价¥35.00

查看



hp 05A空硒鼓
回收价¥25.00

查看



canon 303空硒鼓
回收价¥20.00

查看



For our clients, after using the empty ink box, empty toner box and empty powder box, besides cast outside, now have many another options—disposal of Binsheng.

Bingsheng pay attention to the propaganda, reminding customers not to discard, such serious resources waste and pollution of environment. The company will dispatch specialist service for you, the surrounding areas of customers. We can offer door-to-door recovery, nonlocal customers can make direct delivery to the company. According to the reuse value of various models of empty box, the company will pay the consumers correspondingly.

Everything Maintaining Mutually

1. "green marketing": glanze green recycle old home appliances service



Since the year 2003, galanz, promoted "chang old with new " activities, namely any brand old home appliances in the hands of consumers, can according to the circumstance redeemable for cash for the purchase preferential of glanze partial products. Meanwhile, glanze joint professional recycling of the waste of environmental protection company for dealing with environmental protection for small home appliance green Olympics make own contribution. In 2006, glanze in Beijing, shandong, fujian, liaoning, yunnan, jilin, chongqing and so on, more than 10 urban development "green recycle old home appliances " activities,

On July 5th, 2006 in Beijing, glanze launched the "green recycle old home appliances - light wave upgrade for new chang old" activity, any brand old home appliances in the hands of consumers, all redeemable for 30-100 yuan, used to buy glanze part models microwave oven and small home appliances of preferential, while glanze joint professional environmental protection company for dealing with environmental protection appliance.



2. Beijing "Green Community Card "

As long as residents bring garbage to the recycle bin in the community, funds can be added into the cards in return, with which they can pay for water and electricity fee, the charges for telephone and internet, and articles of daily use. When the funds in the card accumulate to a certain amount, we can witness that unnoticeable trash items can even bring color TV and other major electric appliances.

The "Beijing green community card" mentioned above is one kind of renewable resources recycling debit card, where the funds community residents get in exchange of the renewable resources they turn in. This kind of cards can be recharged and used in banks and shopping malls, and its usage can not only stimulate citizens' participation in environment protection and facilitate their life but also improve the reconstruction and development of recycle profession to a large extent.

CHAPTER 4 HARMONY APPROACH FOR PRODUCT SERVICE SYSTEM DESIGN FOR SUSTAINABILITY

4.1 Hypothesis and Research Methods

In order to do this sustainable design of Product Service System Design based on the theory of Harmony, We need to rethink and redesign about the approaches like SDO or MSDS toolkit .

First and foremost is the understanding and the analysis the Criteria of original SDO toolkit.

Chinese designers and experts in design education started an analysis, a comparatively research, the purpose is to check if is the SDO tool are applicable in the Chinese background.

Analysis and by doing some of the more sustainable for the ancient Chinese thought "Harmony" theory, especially China, Criteria for the 6 theory of "The unity of nature and man " that a comparative research.

Research methods:

A Workshop conducted and the Questionnaire analysis

Wokshop

To more rational analysis and research. We conducted a workshop. Attends the workshop is three chinese professors. They are from Chinese famous design university. Before the Workshop, questionnaire was also produced as conference materials of the Workshop. All the professors which were attend to the conference and students studying in POLIMI answered the questionnaire and provided feedbacks.

The Workshop analyzed and studied the existing criteria's, and based on the understanding of China's sustainable concept. guidelines and the existing checklist has been modified. Reclassify the existing guidelines based on the concept of sustainable development of China, removed some of the guidelines that does not suit the Chinese background, and added some more guidelines that could be easily understood by Chinese designers. Produced a set of guidelines suitable for Chinese sustainable development.

Three Chinese design educationist were invited to discuss the results of the questionnaire and problems that occurred.

By analyzing the results and the combine the ancient Chinese idea of sustainable development, based on the idea of "harmony" to developed a "Toolkit of Harmony Approach"

Try to bring out a set of Guidelines and Checklist with Chinese characteristics.

Professor Miaosen Gong JiangNan University

Professor Jun Zhang HuNan University

Professor Taifeng LV DaLian Ocean College



4.2 SDO (Guidelines & Checklist) Analyzin Research

Questionnaire

Two copies of the questionnaire were designed, one of Guidelines, one of the Checklist

The options are "Not Clear" or "Clear", "Not Relevant" or "Relevant". Researchers (Chinese designers) use of traditional Chinese thought, choose the option of the existing Guidelines and Checklist of SDO toolkit.

Questionnaire feedback--Guidelines

System life optimisation

Complement product or infrastructure with services for their maintenance, reparability, substitution

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Complement product or infrastructure with services for their technological upgradeability

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Complement existing product or infrastructure with services that increase/enable their aesthetical or cultural upgradeability

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

System life optimisation

Complement product or infrastructure with services that increase their re-configurability (adaptation in new location)

Not Clear: X Clear: X X X

Not Relevant: X X X Relevant: X

Offer shared use services for products or infrastructures

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Offer service delivery platform for product sharing/reuse/second hand selling

Not Clear: X Clear: X X X

Not Relevant: X Relevant: X X X

Transportation/distribution reduction

Use digital infrastructures (i.e. internet) for transferring/accessing information

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Create alternative partnerships that enable long distance activities (use, maintenance, repair)

Not Clear: X X X Clear: X

Not Relevant: Relevant: X X X X

Create partnerships optimising the use of local resources (info/data transfer)

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Create alternative partnerships that allow on-site production (info/data transfer)

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Merge the product/infrastructure offer, with services for their on-site assembly

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Transportation/distribution reduction

Create partnerships to reduce/avoid transportation and packaging of products or semi-finished products

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Merge the product/semi finished product with the service of its transportation to optimise distribution

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Enable clients to reuse packing and reduce transportation

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Offer service of that allow remote controlling for maintenance/repair of products

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Resources reduction

Complement energy/materials/semi-finished products, with support services for their optimal use

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Offer access to products or infrastructures (enabling platform) through payment based on the unit of satisfaction

Not Clear: X X X Clear: X

Not Relevant: X Relevant: X X X

Offer full-service (final result) to client/final user, through payment based on the unit of satisfaction

Not Clear: X Clear: X X X

Not Relevant: X Relevant: X X X

Offer collective use of products and infrastructures

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Outsource activities when higher specialisation and technological efficiency of products/infrastructures are available

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Resources reduction

Create partnerships to use/integrate existing infrastructures/products

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Outsource activities when higher scale economies are feasible

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Add to product/infrastructure the design of their adaptation in the context of use aiming at resources optimisation

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Complement product/infrastructure, with design services for their adaptation to use in variations of resource requirements

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Offer products/semi finished products on availability

Not Clear: X Clear: X X X

Not Relevant: X Relevant: X X X

Resources reduction

Offer products/semi finished products on pre-determined demand

Not Clear: X Clear: X X X

Not Relevant: X Relevant: X X X

Waste minimization/valorisation

Complement product/infrastructure, with take back services aimed at re-using or re-manufacturing

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Complement product/infrastructure offer, with take back services aimed at recycling

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Complement product/infrastructure offer, with take back services aimed at energy recovery

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Waste minimization/valorisation

Add to product withdraw services aiming at composting

Not Clear: X Clear: X X X
Not Relevant: Relevant: X X X X

Create localised alliances/partnership aiming at symbiotic/cascade approach for secondary resources' use.

Not Clear: X X X Clear: X
Not Relevant: Relevant: X X X X

Conservation /biocompatibility

Create partnerships aiming at decentralised, and renewable energy resources

Not Clear: Clear: X X X X
Not Relevant: Relevant: X X X X

Create partnerships that increase the utilisation of local renewable and bio-degradable materials and produces

Not Clear: Clear: X X X X
Not Relevant: Relevant: X X X X

Conservation /biocompatibility

Increase the utilisation of passive energy resources for infrastructure and products functioning

Not Clear: X X Clear: X X

Not Relevant: X X Relevant: X X

Create partnership that increase the utilisation of local recycled materials

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Toxic reduction

Create partnerships with other producers to reuse or recycle toxic or harmful substances

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Complement the product, infrastructure, or semi-finished products with services that minimise/treat toxic or harmful emissions they cause in use

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Include end-of-life treatments when selling toxic or harmful substances

Not Clear: Clear: X X X X

Not Relevant: Relevant: X X X X

Transportation/distribution reduction

Is there any excessive transportation of goods?

Not Clear: X Clear: X X

Not Relevant: Relevant: X X X

Is there any excessive transportation of semi-finished products or by-products?

Not Clear: Clear: X X X

Not Relevant: Relevant: X X X

Is there any excessive transportation of people? Are the transportation means in service fully used?

Not Clear: X Clear: X X

Not Relevant: X Relevant: X X

Resources reduction

Is the system consuming high quantities of energy?

Not Clear: X Clear: X X

Not Relevant: Relevant: X X X

Is the system consuming high quantities of natural resources? Is the system absorbing high quantities of consumables?

Not Clear: Clear: X X X

Not Relevant: Relevant: X X X

Are products, packaging or support products highly material intensive?

Not Clear: Clear: X X X

Not Relevant: Relevant: X X X

Waste minimization/valorisation

Do all waste end up in landfill?

Not Clear: Clear: X X X

Not Relevant: Relevant: X X X

Does the system produce high quantities of landfill waste at the end of service-life?

Not Clear: Clear: X X X

Not Relevant: Relevant: X X X

Do the production, packaging and support products produce big quantities of landfill waste?

Not Clear: Clear: X X X

Not Relevant: Relevant: X X X

Conservation / biocompatibility

Is all the energy produced from exhausting resources (e.g. fossil fuels)?

Not Clear: Clear: X X X

Not Relevant: Relevant: X X X

Does the system use mainly depleting and/or non-renewable materials for products, support products, packaging, and infrastructure?

Not Clear: Clear: X X X

Not Relevant: Relevant: X X X

Toxic reduction

Are the processed resources toxic or potentially toxic for the workers?

Not Clear: Clear: X X X

Not Relevant: Relevant: X X X

Are the processed resources toxic or potentially toxic in during distribution?

Not Clear: Clear: X X X

Not Relevant: Relevant: X X X

Are the processed resources toxic or potentially toxic for the user?

Not Clear: Clear: X X X

Not Relevant: Relevant: X X X

Are the products, support products, packaging or infrastructure toxic or potentially toxic during after service time treatments?

Not Clear: X Clear: X X

Not Relevant: X Relevant: X X

4.3 Proposal of Harmony Criteria (Guidelines & Checklist)

Guidelines

Holding without Ownership:

(NEW) The quality and functions of product possess must have the basis and conditions to meet the repeated usage.

(NEW) The usage by more than one people should be taken into consideration.

(NEW) Products, system repair and maintenance services can be provided even at night.

(NEW) Reasonable means of payment should be made available.

Long Staying Durative:

(NEW) System and products can sustain prolonged usage under different conditions.

(NEW) Space should be saved to install replacement parts, system components and subsystem for prolonged usage.

(NEW) Replacement and maintenance services of second hand items should be provided to prolong the usage.

Everything Maintaining Mutually:

(NEW) The system and process of design, operation and conclusion should be in a good circulation.

Complement product/infrastructure, with take back services aimed at re-using or re-manufacturing

Complement product/infrastructure offer, with take back services aimed at recycling

Add to product withdraw services aiming at composting

Resources & Reducing:

Use digital infrastructures (i.e. internet) for transferring/accessing information

Create alternative partnerships that enable long distance activities (use, maintenance, repair)

Merge the product/infrastructure offer, with services for their on-site assembly

Create partnerships to reduce/avoid transportation and packaging of products or semi-finished products

Merge the product/semi finished product with the service of its transportation to optimise distribution

Enable clients to reuse packing and reduce transportation

Offer service of that allow remote controlling for maintenance/repair of products

Resources & Reducing:

Complement energy/materials/semi-finished products, with support services for their optimal use

Offer collective use of products and infrastructures

Add to product/infrastructure the design of their adaptation in the context of use aiming at resources optimisation

Offer products/semi finished products on availability

Create localised alliances/partnership aiming at symbiotic/cascade approach for secondary resources use.

Create partnerships aiming at decentralised, and renewable energy resources

Create partnerships that increase the utilisation of local renewable and bio-degradable materials and produces

Create partnership that increase the utilisation of local recycled materials

Keeping Balance:

Create partnerships with other producers to reuse or recycle toxic or harmful substances

Complement the product, infrastructure, or semi-finished products with services that minimise/treat toxic or harmful emissions they cause in use

Include end-of-life treatments when selling toxic or harmful substances

Offer toxic management service to client/final user, through payment based on the unit of satisfaction

Checklist

Holding without Ownership:

Are disposable products packaging or support products used?

Do some parts of the system tend to wear out more easily (than others)?

Is the system consuming high quantities of natural resources? Is the system absorbing high quantities of consumables?

Are products, packaging or support products highly material intensive?

Long Lasting:

Do parts of the system tend to be technologically obsolete?

Do some parts of the system tend to wear out more easily (than others)?

Resources & Reducing:

Is there any excessive transportation of goods?

Is there any excessive transportation of semi-finished products or by-products?

Is there any excessive transportation of people? Are the transportation means in service fully used?

Is the system consuming high quantities of energy?

Is the system consuming high quantities of natural resources? Is the system absorbing high quantities of consumables?

Are products, packaging or support products highly material intensive?

Is all the energy produced from exhausting resources (e.g. fossil fuels)?

Does the system use mainly depleting and/or non-renewable materials for products, support products, packaging, and infrastructure?

Does the system use mainly depleting and/or non-renewable materials for products, support products, packaging, and infrastructure?

Keeping Balance:

Are the processed resources toxic or potentially toxic for the workers?

Are the processed resources toxic or potentially toxic in during distribution?

Are the processed resources toxic or potentially toxic for the user?

Are the products, support products, packaging or infrastructure toxic or potentially toxic during after service time treatments?

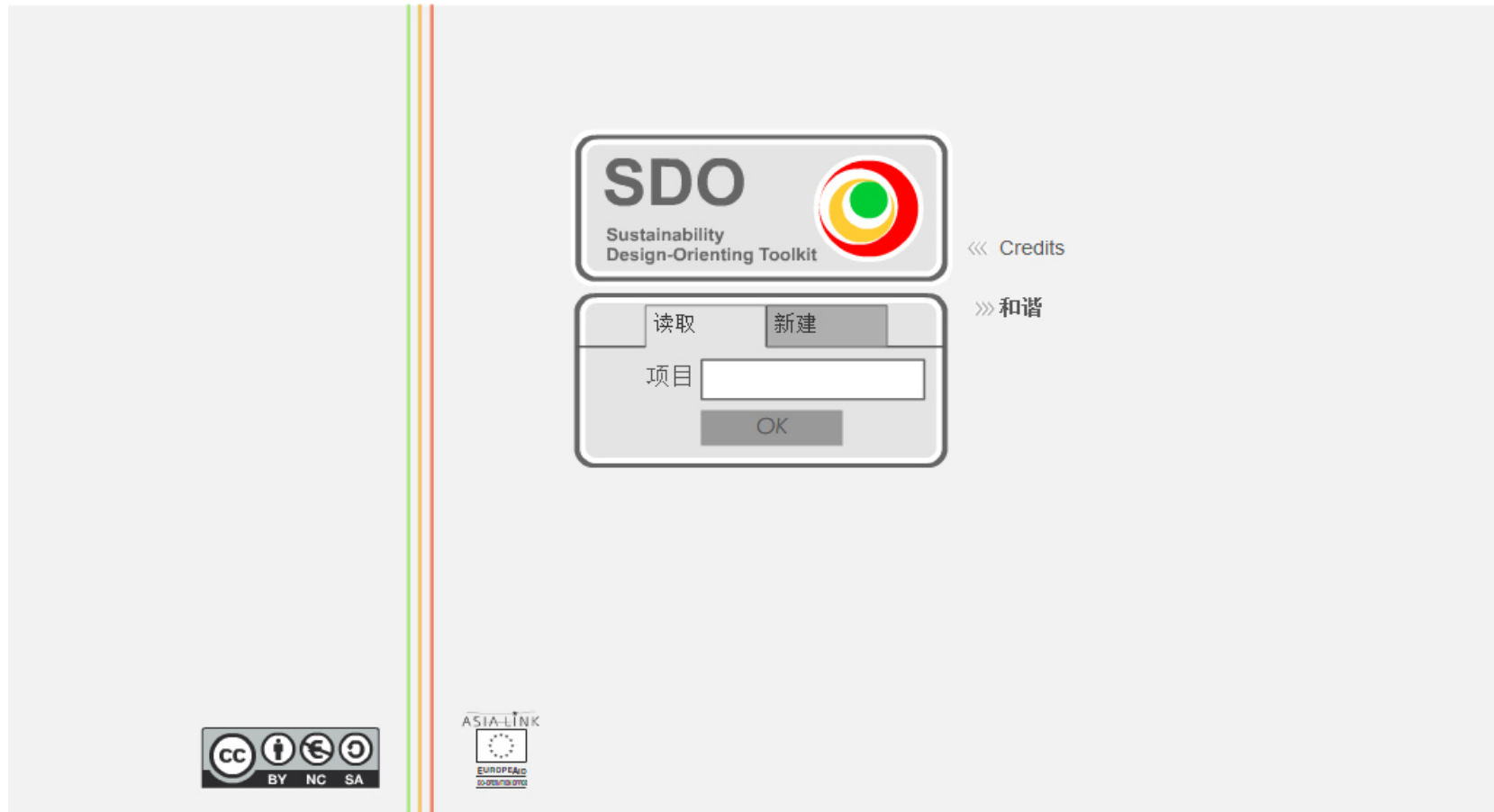
Everything Maintaining Mutually:

Do all waste end up in landfill?

Does the system produce high quantities of landfill waste at the end of service-life?

Do the production, packaging and support products produce big quantities of landfill waste?

4.4 Interface Design Development of Tentative Harmony Sustainability Design Orienting Toolkit



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项目记录

可持续性范围

天人合一

指针图

天人合一

project

- 菜单
- 项目模块
- 登出
- 保存
- 打印
- 帮助

项目名称

project

公司

设计师

满意单元

现有系统描述

案例研究描述1

概念描述

Project Information



项目记录

可持续性范围

天人合一

设置优先级

定位概念

检查概念

指针图

天人合一

project

菜单

项目模块

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保存

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帮助

天人合一 - 设置优先级

现有系统

案例研究1

案例研究2

目录

使用了一次性的产品包装或辅助产品吗? Are disposable products packaging or support products used?

持而不有 Holding without Ownership

优先级: 无 低 中 高

悠久持续 Long Lasting

优先级: 无 低 中 高

开源节流 Resources & Reducing

优先级: 无 低 中 高

平衡守定 Keeping Balance

优先级: 无 低 中 高

万物互维 Everything Maintaining Mutually

优先级: 无 低 中 高

师法自然 Learning from Nature

优先级: 无 低 中 高

Set priorities

project

☐ 菜单 ☐ 项目模块 ☐ 登出
☐ 保存 ☐ 打印 ☐ 帮助

天人合一 - 定位概念 系统 概念 案例

持而不有 Holding without Ownership 悠久持续 Long Lasting 开源节流 Resources & Reducing 平衡守定 Keeping Balance 万物互维 Everything Maintaining Mutually 师法自然 Learning from Nature

持而不有 Holding without Ownership

优先级:

The quality and functions of product possess must have the basis and conditions to meet the repeated usage.
产品质量和功能具有满足多次使用的基础和条件

The usage by more than one people should be taken into consideration.
考虑多人使用的情况

以便利的服务方式提供产品或系统的共享使用

Products, system repair and maintenance services can be provided even at night.
提供晚上的产品/系统维修和保养服务

Orientate concept

project					<input type="checkbox"/> 菜单 <input type="checkbox"/> 保存	<input type="checkbox"/> 项目模块 <input type="checkbox"/> 打印	<input type="checkbox"/> 登出 <input type="checkbox"/> 帮助
天人合一 - 定位概念		系统	概念	案例			
持而不有 Holding without Ownership	悠久持续 Long Lasting	开源节流 Resources & Reducing	平衡守定 Keeping Balance	万物互维 Everything Maintaining Mutually	师法自然 Learning from Nature		
<p>持而不有 Holding without Ownership</p> <p>优先级:</p> <p>提倡节制物质欲望，以满足使用代替占有物质资源，并且通过分享的方式来实现合理拥有和分担成本，与产品服务系统和可持续设计强调的共享理念不谋而合。</p> <p>Satisfying the material desires in a conservational way is advocated so that the material resource is not owned but used for purpose. Sharing is promoted so that the cost is splitted and possession is rationalized. This coincides with the concept of sharing highlighted in the product service system and the sustainable design.</p>							

Description

project					☐ 菜单	☐ 项目模块	☐ 登出
☐ 保存					☐ 打印	☐ 帮助	
天人合一 - 定位概念		系统	概念	案例			
持而不有 Holding without Ownership	悠久持续 Long Lasting	开源节流 Resources & Reducing	平衡守定 Keeping Balance	万物互维 Everything Maintaining Mutually	师法自然 Learning from Nature		
<p>持而不有 Holding without Ownership</p> <p>优先级:</p> <p>1. 上海政府: 组织开展 2009年度大型科学仪器设施共享服务评估与奖励</p> <p>The Shanghai government: 2009 large-scale scientific facilities sharing service evaluation and reward is carried out</p> <p>上海政府针对本行政区域内的公共服务平台的大型科学仪器设施管理单位提供奖励机制。</p> <p>Shanghai government aimed at awarding system for the instrument facilities management units of the public service platform within their respective administrative areas.</p> <p>对象范围</p> <p>Object</p> <p>评估对象为本市行政区域内加盟上海研发公共服务平台的大型科学仪器设施管理单位。</p>							

Examples

project

指针图 - 天人合一



概念检查



案例研究1

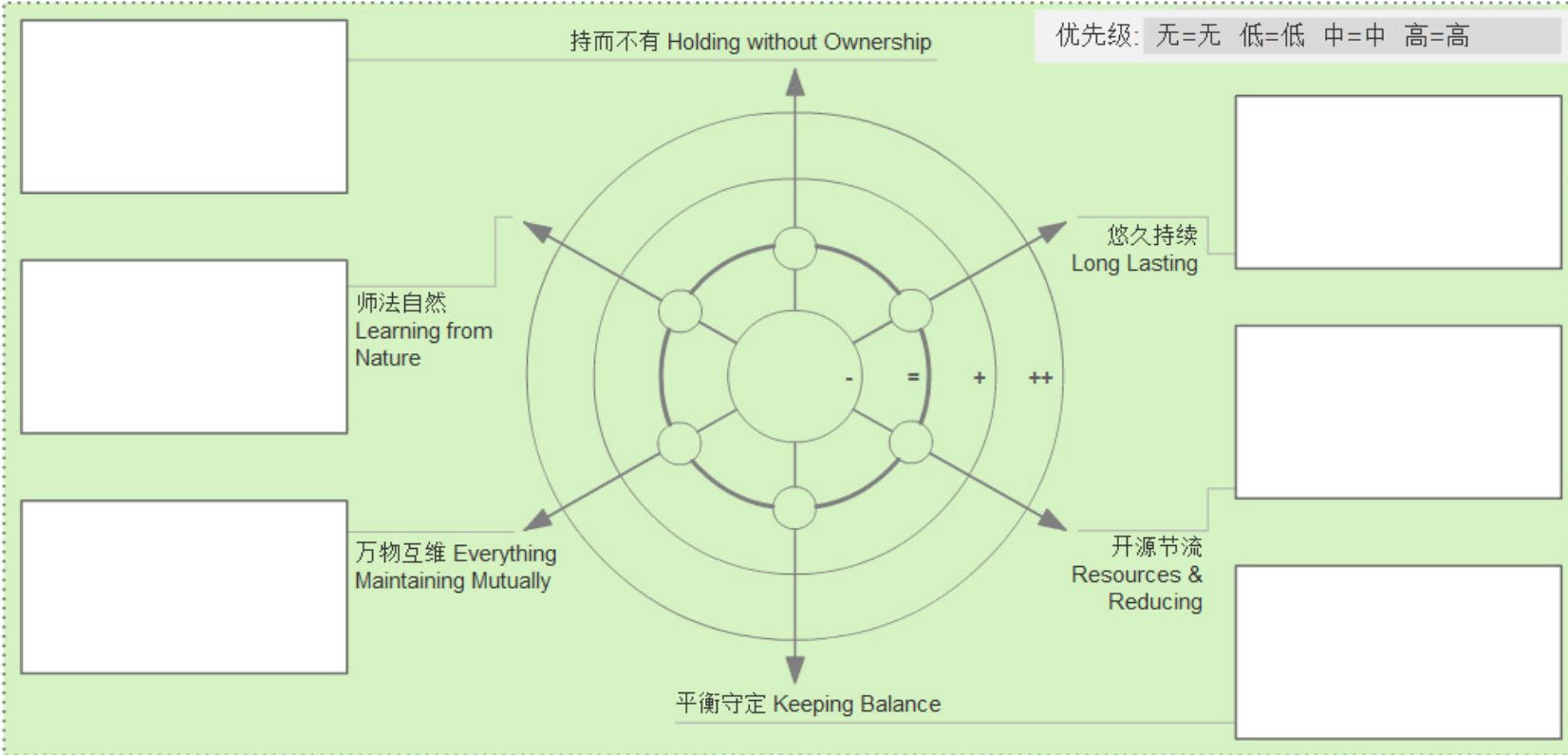


案例研究2

菜单
 保存

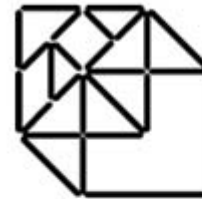
项目模块
 打印

登出
 帮助



Check concept

4.5 Design Simulation of Harmony Sustainability Design Orienting Toolkit



江南大学设计学院
School of Design
Jiangnan University

Project:

In order to exam the tool, we sent this tool to the Design students of JiangNan University School in China to help then with the school mobility project as a simulation.



项目记录

可持续性范围

天人合一

指针图

天人合一

School Mobility Service Syst

菜单
 保存

项目模块
 打印

登出
 帮助

项目名称

School Mobility Service System

公司

School of design ,Jiangnan University

设计师

Tianshi Shen . Yang Wang

满意单元

现有系统描述

案例研究描述1

概念描述

Empty text area for system description.



- 项目记录
- 可持续性范围
 - 天人合一
 - 设置优先级
 - 定位概念
 - 检查概念

- 指针图
 - 天人合一

School Mobility Service Syst

- 菜单
- 保存
- 项目模块
- 打印
- 登出
- 帮助

天人合一 - 设置优先级

- 现有系统
- 案例研究1
- 案例研究2

目录

有部分系统(比其他系统)使用寿命更短吗? Do some parts of the system tend to wear out more easily (than others)?

持而不有 Holding without Ownership
 优先级: 无 低 中 高

悠久持续 Long Lasting
 优先级: 无 低 中 高

开源节流 Resources & Reducing
 优先级: 无 低 中 高

平衡守定 Keeping Balance
 优先级: 无 低 中 高

万物互维 Everything Maintaining Mutually
 优先级: 无 低 中 高

师法自然 Learning from Nature
 优先级: 无 低 中 高



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现有系统

案例研究1

案例研究2

目录

aa

持而不有 Holding without Ownership

改进: - = + ++

悠久持续 Long Lasting

改进: - = + ++

开源节流 Resources & Reducing

改进: - = + ++

平衡守定 Keeping Balance

改进: - = + ++

万物互维 Everything Maintaining Mutually

改进: - = + ++

师法自然 Learning from Nature

改进: - = + ++

持而不有 Holding without Ownership

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开源节流 Resources & Reducing

平衡守定 Keeping Balance

万物互维 Everything Maintaining Mutually

师法自然 Learning from Nature

持而不有 Holding without Ownership

优先级: 低

欢迎毕业生捐赠

The quality and functions of product possess must have the basis and conditions to meet the repeated usage.

产品质量和功能具有满足多次使用的基础和条件

The usage by more than one people should be taken into consideration.

考虑多人使用的情况

以便利的服务方式提供产品或系统的共享使用

Products, system repair and maintenance services can be provided even at night.

提供晚上的产品/系统维修和保养服务





指针图 - 天人合一

欢迎毕业生捐赠废旧自行车
Welcome the graduate to donate the worn out bicycle

师法自然
Learning from Nature

可进行废旧自行车回收
Recycles the worn out bicycle

持而不有 Holding without Ownership

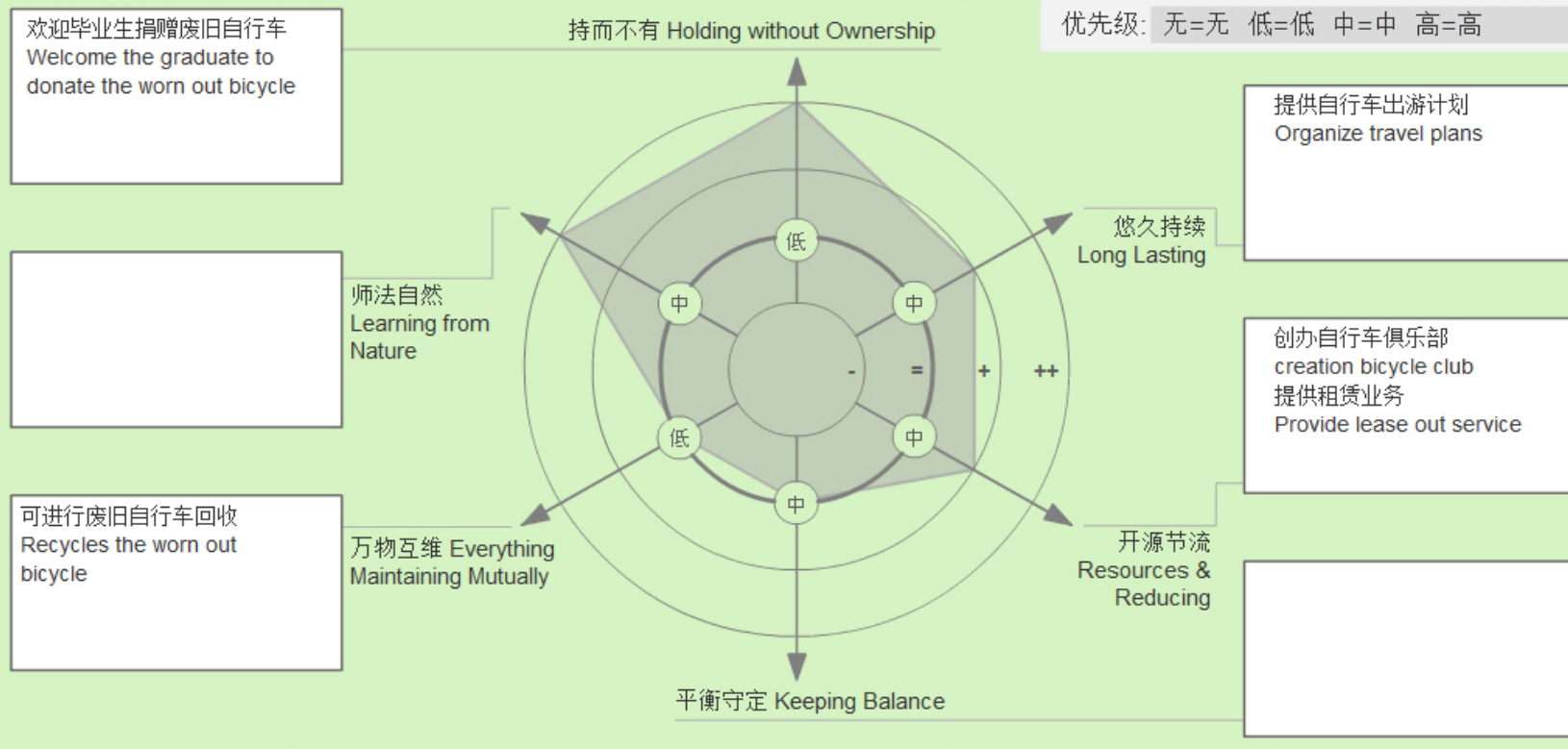
优先级: 无=无 低=低 中=中 高=高



提供自行车出游计划
Organize travel plans

创办自行车俱乐部
creation bicycle club
提供租赁业务
Provide lease out service

开源节流
Resources & Reducing



concept

The system is bicycle-based mobility solution in campus. It collected and reused the abandoned bicycles in a club where new students member can rent then again.

It's an easy solution to students and optimizes the bicycle resource in campus.

CHAPTER 5 RESEARCH EVALUATION

5.1 Key finding

During the research, a number of problems appeared, the most important of which is the difference between traditional Chinese and Western concepts of sustainability.

The core of the ancient Chinese sustainability concept is Harmony, the relationship between nature and human is very important.

The western concept of sustainable development can be reflected from the Criteria, shows more clearly in terms of directional.

Because of this difference, during the transformation of the "Harmony Sustainability Design Orienting Toolkit", problems caused by such a difference. For example, Chinese Criteria, guidelines are more focused in a "Long Lasting" and "Resources & Reducing"

After the transformation based on the existing SDO system, the product will appear less directional.

5.2 Overall evaluation

By the results of Design Simulation, this "Harmony Sustainability Design Orienting Toolkit" showed that it can be successfully used to achieve the desired functionality as a normal design guide. Perhaps there are still some shortcomings, but from the point of view of research, it meets the requests to a sustainable design guidelines tool, although there is still chance to be further developed.

To review the whole research, it was a difficult integrated cross-cultural Interdisciplinary study, from the literature studies in the beginning to the design verification(simulation), it all reflected the fusion of oriental and occidental cultures and thoughts, beyond the scope of philosophy, culture, modern design, computer science and other different fields, both traditional oriental philosophy and western scientific methodology.

However, introducing the Western way of thinking and sustainable design tools to China and other emerging markets has a very big significance in the sense of research, the methodology based on cross-cultural comparison of change and development is very necessary and feasible.

CHAPTER 6 CONCLUSION

What's Next

In the next step of this work, we need to give a professional evaluation of this tool, to introduce and promote it to the design faculties in China and the scholars who engaged in research of sustainable development, to make a theoretical assessment.

The research of "Harmony Sustainability Design Orienting Toolkit" is not over, more experiments are needed to verify whether it is truly up to the standard design guidelines for sustainable development study.

In addition, the existing "Harmony" guidelines and Checklist need to be further modified to achieve a more accurate standard.

In our further research , we still need to think about the sustainability issues about the system. In the background of China, whether if we still need other design methods and design tools to improve China's sustainable development in addition to the design guidance tool from western countries such as "Sustainability Design Orienting Toolkit", that is what we are thinking about and what we will design for in the future.

