

***Design-Integrated Local Industry Revitalization Strategies:
Discuss the "T22 Local Industry Revitalization via Design Project"***

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Abstract

Since 2019, the Taiwan Design Research Institute (TDRI) has been spearheading the "T22 Local Industry Revitalization via Design Project," employing design thinking and cross-domain collaboration to foster local innovation. Commencing with the "Ceramics Production Area - Yingge," followed by the "Urban Agricultural Production Area - Beitou," the "Stone Production Area - Hualien," and "Manufacturing in Changhua," TDRI is dedicated to revitalizing local industrial chains. Leveraging professional teams from both domestic and international organizations, the institute collaborates to address challenges within local industries. This study delves into the T22 strategy, focusing on the role and potential impact of TDRI within the "Design to Revitalize Local Industries Program." Recognizing design as a cross-disciplinary and integrated approach, it is deemed pivotal for the innovation and sustainable development of local industries. By examining the practical application of T22 in the industry, the study hones in on potential mechanisms driving the upliftment of local industries. The analysis reveals that: (1) Guided by design thinking, TDRI prompts local industries to reevaluate market needs, subsequently creating innovative solutions aligned with consumer expectations. (2) Fostering competitiveness among industries stimulates healthy competition and joint development, promoting diversified growth in the local economy. (3) Assisting industries in adapting to environmental changes enhances their global competitiveness. (4) Promoting innovation and sustainable development in local industries serves as a reference for government administration, facilitating collaboration between the industry and design sector through the program's success stories.

Keywords: Local Industry Revitalization, Social Design, Design Integration

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1. Introduction

Under the influence of globalization and modernization, local industries are not only tied to economic considerations but also to social issues. Social design is an integrative concept that provides powerful tools to deeply understand and improve the relationship between local industries and cultural governance, emphasizing local characteristics.

This paper explores the observation of local industries from the perspective of social design, delving into the relationship between the two, the challenges they face, and the opportunities they create.

In the realm of business and society, design plays a critical role. For industries, design is not just a structured creative process but also a competitive tool that gives companies or businesses a unique advantage. Thus, design is seen as a transformative force with the potential to meet a wide range of social needs.

Compared to large enterprises, local industries face more risks and uncertainties. They are also relatively weaker in handling crises. Therefore, activities such as process innovation and new product development are key to sustainable survival. Excelling in efficiency, cost, and transformation determines the innovative development opportunities.

2. Background and Motives

This study focuses on the Taiwan Design Research Institute's (TDRI) recent initiative, the "T22 Regional Revitalization Project" in Taiwan. It investigates the impact of design strategies on local industry innovation and sustainable development. When promoting the T22 project, TDRI integrated local industries, local governments, and local tourism resources to support its efforts. The project introduced strategies such as "One Star Locality," "Local Industry Academy," "Cross-Industry Collaboration," and "Open Factory" leveraging marketing guidance and international channel expertise. They organized lectures, workshops, and meetings with relevant stakeholders, aiming to cultivate local shop CEOs, encourage collaboration among businesses in the same region and industry, build community solidarity, and promote joint product development. This approach aims to strengthen the local supply chain, encourage industries to open their factories to the public, allowing people to engage in the manufacturing process and build trust in the brand.

Therefore, this study uses the Tai Hwa Pottery in Yingge, New Taipei City, as a case study. It involves data collection and interviews with project managers to identify the pain points, and opportunities, in local industry governance. The goal is to provide concrete recommendations and enhance the understanding of the role of design in the development of local industries.

3. Case Study

The literature review covers topics related to local industry revitalization, regional regeneration, social design, and design thinking. It aims to contribute to a deeper understanding of the research focus.

3.1 Introducing Design Into Local Industry

The current global market is trending towards product similarity competition. Both theory and practice emphasize that product homogeneity significantly reduces the intensity of competition concerning horizontal acquisitions or collaborations within concentrated industries. However, introducing a measure of product similarity within the industry helps rationalize existing data. This process provides new evidence on whether horizontal acquisitions enhance the market power of the acquiring party and its industry while potentially increasing competitors' market power. Consequently, most studies focusing on the anti-competitive effects of horizontal acquisitions highlight the relationship between "industry concentration" and measures addressing these impacts. They rarely consider whether the industry has similar or differentiated products. Existing theory and practice indicate that when industry concentration and product similarity both increase, horizontal mergers are particularly effective in enhancing the market power of existing companies (Fathollahi, M., Harford, J., & Klasa, S., 2022).

Moreover, products with local characteristics, including local produce and cultural values, gradually become unique local specialties. This uniqueness often attracts consumer preference and attention to product development. Such products provide a unique and differentiated experience (Lin, 2007; Moalosi et al., 2007). Therefore, "the more local, the more international" becomes a market marketing strategy where traditional industries inject local characteristic elements into their products to create self-expressive market strategies. Products with local characteristics may also make the production area a potential unique market, establishing a unique image in the market (Dillon, 2008).

3.2 Verifying Social Design Using Design Thinking Models

Japanese social designer Yusuke Kakei defines social design as "the act of using human creativity to seek solutions to complex social problems."

Shih Yu-Hua (2022) mentioned that sociological research might end with analyzing the current situation, identifying problems, and discussing and focusing on certain issues through thesis analysis and discourse. In contrast, social design borrows research methods from social sciences and observational perspectives on power structures to initiate the early exploration process. Therefore, incorporating "design" emphasizes methods for solving problems or innovatively transforming existing issues. Liu Yu-Cheng (2020) also believes that sociology tends to reflect on the past, criticize the present, and imagine the future, while social design focuses on solving current social problems and further practicing and changing society. Starting from the concept of social design, it highlights the value of social design.

Papanek, V. (2013) argued that previous industrial design was merely for consumer products, advocating that designers should serve society as a whole and the groups in need. Whiteley, N. (2020) explored green consumption and feminism, discussing design from this perspective, thereby linking these fields to sociological viewpoints to examine social design. This also reflects the production and consumption patterns of capitalism.

In social design, "creative thinking" is an essential part of the design process. Through continuous innovation and prototyping, designers strive to find the best solutions (Huang Shi-Hui, 2023).

Žáková et al. (2015) proposed four different levels of design intensity. The first level involves products with no design, where production almost doesn't involve design, and the enterprise lacks professional designers. The second level sees design as a decorative styling task that designers or other professionals can accomplish. The third level treats design as a process, influencing product development from the beginning. The fourth level considers design as an innovative method, where designers collaborate with owners or managers to transform the entire enterprise or achieve basic consumer market goals. Comprehensive thinking helps designers understand the impact on and recognition of the entire system environment, including environmental and social aspects. By linking aesthetics and functionality through design, they create more attractive designs that establish an emotional connection with users.

3.3 Regional Development for Revitalizing Local Industries

In the trend of global regional competition, shaping regional identity can stimulate local economic development. However, regional development is not solely about the economic development of a single area. For national development, strategies based on local identity, environment, and tourism economics should be combined with local emotions and homeland awareness (Wang Zhi-Hong, 2012). Moreover, from the perspective of enhancing regional competitiveness through cultural industries, cultural assets and local resources can promote the sustainable development of the local economy (Santagata, 2002). Therefore, revitalizing local industries requires familiarity with the local area and timely intervention by design teams or designers. This can stimulate local personnel's cognition and ideas about their local industry. Designers can help solve local industry problems and act as catalysts for change, using design knowledge to create new business markets and redefine support for traditional local industries through field research and literature (Tung, 2012). Introducing design strengthens cultural governance concepts within industries, clarifies humanistic contexts, and showcases the depth and strength of industrial culture.

3.4 Industry Strategies Guided by ESG

In the era of globalization, society is shifting towards a knowledge-based model. Harris, M. (2000) emphasized three concepts of sustainability. First, "economic sustainability" refers to the ability to continuously produce goods and services, ensuring sustainable government development. Second, "environmental sustainability" involves ecosystems, including biodiversity and environmental stability. Finally, the concept of "social sustainability" is defined as achieving equality and providing social services such as health and social education (cited in Bawono & Rahmana, 2021). Emphasizing design should focus on sustainable development, promoting industries to achieve economic, social, and environmental triple benefits. Industry strategies guided by ESG (Environmental, Social, Governance) focus on environmental protection, social responsibility, and corporate governance.

4. Research Design

4.1 Research Objectives

4.1.1 To analyze the perspectives of local industry strategies promoted by the Taiwan Design Research Institute (TDRI) through the T22 Project.

4.1.2 To analyze the impact of introducing design into local industries.

4.1.3 To explore the importance of design in the application of local industry strategies.

4.2. Methods & Materials

Based on the research objectives, this study conducts an investigation of existing local industries through literature review and field surveys. Data is collected by interviewing project managers from the Taiwan Design Research Institute (TDRI) and the manager of the Yingge Tai Hwa Pottery. The aim is to clarify the changes local industries face after implementing innovative design. By using grounded theory to analyze the interview data, the study organizes the data and examines the respondents' perspectives on the impacts and effectiveness of design implementation. The goal is to develop a mechanism for tracking these impacts and results. Furthermore, the findings are expected to influence and assist public sector decision-makers in understanding the strengths and weaknesses of policy promotion, providing feedback for future design innovation investments and evaluating potential design methods.

5. Findings of Research

5.1 Operational Status and Management Strategy of Tai Hwa Pottery

Tai Hwa Pottery established in May 1983, specializes in the production of imitation antique hand-thrown ware, bisque, and monochrome glaze ceramics, primarily for export to Hong Kong and the United States. In 1988, the company established the "Brilliant Art Studio" to focus on colored porcelain techniques, specializing in traditional styles such as famille rose, doucai, and Japanese Kutani ware. These products are exported to Japan, Italy, the United States, France, and the United Kingdom, which means that Tai Hwa Pottery's operational customer base has always centered on high-priced art ceramics. However, as the company mainly engages in OEM, its self-developed products have not been able to reach the level of art pieces. Instead, they become cultural and creative products or are combined with designers' dual-brand collaborations. However, these often follow trends and stagnate after the hype dies down. The brand manager noted that for the same design, some people might think there is no need to buy the designer version since it is the same thing and will prioritize price as an important consideration.

"So sometimes it turns out that even though the designer's work looks beautiful and attractive, consumers do not buy it. Therefore, transforming it into sales and benefiting the industry is quite challenging."

5.2 The Impact of Industry Structure on Cooperation Among Peers

Tai Hwa Pottery focuses on porcelain art pieces within Taiwan's ceramic industry, with prices higher than those of typical ceramic sellers. However, through the T22 Project, Tai Hwa Pottery has begun to consider cooperation and exchange with other local industry

players. Lu Jia-Wei also noted that the era of fighting alone is over, and mutual cooperation among peers to promote the common brand of Yingge ceramics is crucial in this era.

The T22 Project embodies the comprehensiveness of business operations for Tai Hwa Pottery, fostering inter-enterprise cooperation. Each business in the Yingge industry has its own customer base, but to integrate and respond to market ecological changes to create new opportunities, it is essential to understand one's market orientation. The T22 Project introduced some concepts of cooperation, stating,

"In the past, there was no cooperation. Now, you need to cooperate anew, and apart from emotional factors, you need to point out a new market direction that compels cooperation. So, the real situation is still the changing circumstances slowly affecting the locality "

For Tai Hwa Pottery, the concept of a group effort under T22 is like a spark. Through collective cooperation, they are beginning to see changes in Yingge and a glimmer of hope. The T22 Project emphasizes the spirit of mutual prosperity, and the cooperation model is undergoing transformation. Previously, due to the large volume of single orders, individual manufacturers found it difficult to complete production independently, necessitating cooperation. However, with changes in economic conditions and a reduction in order volume, individual manufacturers may face new challenges.

5.3 Impact and Renewal Brought by the Next Generation's Succession

The T22 Project has prompted Tai Hwa Pottery to consider establishing better interaction models between different generations, achieving cross-generational integration of knowledge, experience, and values. This helps family businesses better cope with changing times, achieve generational inheritance, and sustainable development. Through the T22 Project, Tai Hwa Pottery participated in significant activities and exhibitions in Yingge. While previously the focus was on the recognition of their own products, the involvement of T22 has broadened the brand's reach, attracting customers beyond the traditional client base. This has undoubtedly helped Tai Hwa Pottery to expand its influence and promote the brand positively. The new environment poses challenges for successors who need to continue operations amidst this evolving cooperative model. Particularly because past cooperation models are no longer applicable, re-establishing cooperative relationships requires going beyond emotional factors and finding new market directions. *"These second-generation successors of ceramic businesses each have their unique techniques, such as celadon, glaze, and molds. By integrating these, they can better meet the high demands for design and product forms, thus enabling cooperation."* Facing the market direction of group efforts forces the cooperation of Yingge ceramics' second-generation successors, creating a synergistic effect in the competitive market.

5.4 Integration of Customer Base and Adjustment of Product Positioning

Previously, Tai Hwa Pottery also collaborated with designers and artists, including well-known and experienced Taiwanese designers. However, through the T22 Project, they had more opportunities to meet young designers, leading to a focus on product rejuvenation, with a noticeable trend of attracting a younger customer base. The promotion of the T22 Project has significantly helped the industry's ecosystem by building an organic ceramic industry chain through collaborative cooperation, sharing resources, and technical cooperation. Young

managers not only run their businesses with new concepts but also jointly manage the future of Yingge by establishing the "Tao Ciwa Generational Cooperation Association."

"We just want to do things well. Under such circumstances, this association was formed. We believe that young people, using their ideas and resources, can organize various activities related to the Yingge industry successfully."

This cooperation stimulates the new generation to recognize the power of change. By combining their ideas and resources, young people can collectively manage events well, which not only completes tasks but also strengthens cohesion through seamless cooperation among peers, thus making the industry ecosystem more robust.

5.5 Sustainable Innovation and Expansion of Successful Experiences

Through T22, people have noticed gradual changes in Yingge, as it has been in decline. This decline is not only on the sales end but also includes technical deterioration. Previously, many ceramic factories in Yingge closed down or relocated, replaced by inferior foreign ceramic products. Tai Hwa Pottery insists on its high-priced art porcelain route. However, facing a shortage of skilled personnel is currently their most urgent problem. Training and improving technical skills have always been challenges they must address. Therefore, the intervention of the Design Research Institute, besides introducing design concepts, also reflects on technical improvements and adjustments, leading to industry changes.

Lu Jia-Wei mentioned that the main impact of T22 on Yingge is local revitalization and regeneration. These two aspects can rejuvenate local industries. Currently, Yingge is their first and most successful implementation site. Therefore, Tai Hwa Pottery frequently reviews whether such cooperation projects will continue and if they can serve as a model for related cases in Taiwan.

Participants in Yingge who joined T22 collectively stated that when the Design Research Institute assisted in implementing the plan, they did not act as instructors dictating how these businesses should operate. Each industry and enterprise had its unique problems, so a one-size-fits-all approach was not feasible. Therefore, T22 has always played an accompanying role, avoiding excessive intervention and guidance, allowing industries to identify and solve their problems.

6. Research Results

According to the Taiwan Design Research Institute, Taiwan has always been a solid pillar of manufacturing, renowned worldwide for producing high-quality "MIT (Made In Taiwan)" products. Despite Taiwan's small size and dense population, it possesses strong industrial capabilities and excellent talent. However, with changing times, Taiwan's industries face unprecedented pressures for transformation and discontinuity.

In response to this transformation trend, the Ministry of Economic Affairs launched the "One Town, One Feature" plan in 1989, aimed at assisting SMEs to develop high-value-added cluster economies based on local characteristics combined with the knowledge economy concept. However, there is a clear gap between traditional manufacturing and innovation. Existing local support models typically target single cases rather than the overall development of the locality. Taiwan's manufacturing industry is mostly cluster-based and is

facing the challenge of "generational transition." Although the younger generation is willing to take over, they do not fully agree with the older generation's management methods and lack plans and directions for reform. Achieving transformation and innovation requires a well-thought-out plan and strong support for continued development.

Against this backdrop, the T22 Design Revitalization Local Industry Project offers a new solution aimed at promoting local revitalization. Based on Taiwan's 22 counties and cities, the project uses design thinking as its core to reintegrate manufacturing, marketing, and distribution resources, collaborating with professional teams domestically and internationally. Through such collaboration, T22 aims to assist local development, strengthen connections with the consumer market, help local industries overcome various difficulties, and create more value. This project is characterized by its comprehensiveness and forward-thinking, hoping to bring more momentum and development opportunities to Taiwan's industries.

6.1 The Value and Vision of Local Industry Transformation

The history of local industries in Taiwan can be traced back to the 1960s, when the economy was predominantly driven by OEM (Original Equipment Manufacturer) industries, forming uniquely characteristic industrial clusters in various regions. The rise of these clusters was primarily due to the relatively low labor costs at the time, which attracted a large influx of orders. However, with the improvement in living standards in Taiwan during the 1980s and 1990s and changes in the global economy, OEM orders gradually shifted to other regions, presenting industrial clusters with the challenge of transforming their business models. This necessitated local industries to seek new development directions to adapt to this transformation.

This transition indicates that industrial clusters can no longer rely solely on a single business model but must face more diversified development challenges. The transformation challenges encompass not only productivity shifts but also profound changes in business models and market positioning. To address these challenges, local industries need to pursue more competitive and sustainable development models.

In recent years, with the rapid development of the global economy, the rise of emerging technologies, and consumers' continuous pursuit of quality and innovation, local industries no longer focus solely on price competitiveness but increasingly emphasize value creation and brand building.

6.2 Innovative Design Thinking for Sustainable Operation

In the process of exploring solutions, the T22 project team noticed that Taiwan has accumulated numerous cases in local revitalization and industrial transformation. These cases span multiple levels, from central government to individual participation, forming a wealth of practical experience. However, it is recognized that these efforts often display fragmented characteristics, lacking overall coherence and coordination. Individual participation cases might be attempts to promote local revitalization, but they often lack a professional and effective design thinking model despite the enthusiasm. At the government level, there are some budget-based subsidy programs, but they are often constrained by annual budgets, making it difficult to meet the needs of cluster-based revitalization.

Although the government has also actively proposed various industry upgrade plans and technology transformation policies to promote the integration of local industries with technological development, pushing for smart manufacturing, green industries, and other emerging field projects, these policies, while helpful in enabling local industries to more effectively respond to transformation challenges and incorporate innovative elements to enhance competitiveness, also require dedicated units for collaborative assistance. Such measures are more likely to successfully drive local industries towards a more vibrant and sustainable future.

6.3 Changes in Innovative Industry Business Models

Given the current decline of local industries, the Taiwan Design Research Institute has set the goal of transforming regional industrial clusters. Each year, different plans are promoted to facilitate gradual changes with comprehensive support and multi-faceted intervention. The aim is regional transformation, which distinguishes itself from other isolated or annual plans by employing a variety of methods to pursue overall synergy. Faced with changes in new business models, proactive deployment is essential. These transformations not only concern economic benefits but also emphasize social and environmental sustainability. By offering customized, high value-added products and services, local industries can stand out in the highly competitive market. The T22 plan clearly focuses on timing, comprehensiveness, and a long-term, gradual transformation approach, reflecting a well-considered, holistic strategy aimed at achieving success in regional transformation.

Additionally, beyond changes in the operational structure of industries themselves, customer demands are also evolving due to broader environmental changes. Starting decades ago with the shift of orders to China or Southeast Asia, and more recently to India, the demand and competitive conditions for orders have become increasingly stringent. Global trends are now shifting towards emphasizing sustainability, environmental protection, and the enhancement of various production facilities. This means that the manufacturing industry faces higher standards and requirements, needing to comply with evolving global standards to meet rising expectations for product quality and production environments. Such changes not only affect the nature of orders but also prompt the manufacturing industry to readjust its production processes to align with market trends that increasingly prioritize sustainability and environmental values.

7. Conclusion

Tai Hwa Pottery has always had a clear industry position among its peers in Yingge. However, joining the T22 plan this time has also made them start to pay attention to the harmonious relationship between their peers, aiming to establish a complete industry chain through cooperation among peers. With the changing times, Yingge is also facing the challenges of second-generation succession, industry transformation, and internal system adjustments.

For Yingge, the shortage or instability of clay sources greatly affects prices and quality, which are imminent risks. The T22 plan is an important project for the transformation of Taiwan's manufacturing industry and the revitalization of local industries. Facing the pressure of traditional counseling models and the demand for local industry transformation, the T22 plan is based on the 22 counties and cities across Taiwan, with design thinking as the core, integrating multiple resources, dedicated to assisting the development of production areas,

strengthening the connection with the market, and creating more value. The T22 plan fully considers global market trends, especially the rise of sustainability and environmental protection, providing comprehensive solutions to meet modern market demands. Through in-depth analysis of the background of local industry transformation, the T22 plan has become a brand-new platform, providing more comprehensive and systematic support for the development of industrial clusters, bringing lasting and comprehensive revitalization opportunities to Taiwan's manufacturing industry.

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