

COWORKING SPACES IN CHINA: DEVELOPING A NEW STRATEGY OF REUSING INDUSTRIAL HERITAGE PROPERTIES UNDER SHARING ECONOMY

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KEY WORDS: Coworking spaces, industrial heritage properties, conservation, sharing economy, Shanghai

ABSTRACT:

This paper investigates the spatial pattern and operating mechanism of coworking spaces based on existing practices in Shanghai with focus on the rising phenomenon of industrial heritage-based coworking spaces. The geographical distribution of the coworking clusters along the riverside of Huangpu River was analyzed refer to the abundant industrial properties remains, due to some historical reasons in modern history as well as local contribution in advancing creativity to support cultural-led regeneration. On the basis of the spatial analysis and value interpretation of those coworking spaces which retrofitted from industrial heritages, the paper proposes a conservative strategy in presenting the cultural and social value of the industrial heritages in coworking context, through the provision of underpinning urban identity and cultural meaning with contemporary social working style. To conclude, we discuss the applicability of the conservation-based strategy by highlighting its attributes in community base and corresponding advantages in cultivating conservation awareness grassrootly and innovatively in workplace, hoping to shed lights to further enhancement on exploring the urban philosophies under current governmental policies and political emphasis of sharing economy and urban renewal in China.

1. INTRODUCTION

With the rapid development of international and communication technology and digital industrial revolution in recent decades, the world is undergoing a paradigm shift to the era of e-commerce and internet economy. During past ten years, the world has seen a significant increase in internet-based revolutionized companies, such as Airbnb, Uber and Hellobike. Their attempt not only attracts young generations with heavy internet reliability world widely but also engage the general public in daily life through the habit-forming products, which consequently raised a global concern in sharing economy and its subsidiary products. Among all its products, coworking space – a 'third place' features high autonomy, strong social network, and knowledge-based community (Moriset, 2013) – becomes an inevitable outcome of modern office work mode in the internet era. With its prominent attributes in interactive attitudes as well as the advantages in both non-profit and profit-making business model (Kojo and Nenonen, 2016), it was soon sought after by the vast majority of symbolic knowledge related industries, especially for those creative startups and entrepreneurs who requires high flexibility and hybrid working mode since it first appeared in 2005 (Neuburg, n.d).

As an emerging product of the huge revolution in working habits and office environment in modern context, coworking spaces are rapidly accelerating and soon became a global phenomenon, with annual growth rate of 24.2% cropping up in the majority of large cities (Coworker Mag, 2018), and that in China has also entered a new era with many real estate leaders launched their coworking office brands since 2014 (Shan, 2020). At the same time, there witnessed a natural tendency in coworking industry towards modern industrial heritage properties, especially in industrial plants and ancillary warehouses, that the coworking companies are prone to refurbish the coworking spaces on former vacant industrial properties. Some argue that it just a gimmick to further improve its attractiveness, while others determine its validity in terms of both spatial advantage and future trend on sustainability.

To figure out its status in China and provide a more promising outlook in future development both in conservation context and in economical provision, the paper aims to demonstrate the interrelationship between coworking industry and the reuse of industrial heritage properties in a broader sense. More importantly, it is necessary to understand why and if these reconversions in coworking industry are suitable also for conserving the identity and the physicality of the industrial heritage. Specifically, the paper is guided by the following research questions:

- (1) Why in coworking industry see a notable increase in retrofitting industrial heritage properties in terms of physicality;
- (2) What is the role of the industrial heritage properties in the coworking service chain;
- (3) How to balance the economic development and heritage conservation through heritage-based coworking spaces?

Thus, the structure of the reminder of the research is organized as follows: the first section starts with the spatial analysis based on 89 Shanghai cases after careful field survey of 13 with its purpose in investigating the geographical distribution relates to the urban pattern and spatial features. Then the traditional and conservative coworking models of the industry were compared to better understand the operating mechanism as to optimize urban resource utilization. Next, informed by literature review and typical practices, this section demonstrates the conservation-based strategy and discusses the role of the industrial heritage properties in different stages of the whole lifecycle in coworking service chain. After that, the strategy will be also presented in conservation context to illustrate its value and feasibility, and conclusions are drawn together with its challenges and practical suggestions on future development.

2. LITERATURE REVIEW

2.1 Coworking in Shanghai: from creative cultural clusters to coworking spaces

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Nowadays with the support of the smart city technologies and the political concern on internet industries development, in China there nurtures a positive environment in turn to strengthen the intrinsic connection between innovated working mode and urban life. Coworking, a new force in office leasing market which suits for diverse working scenarios has also experienced a dramatic transformation with urban regeneration in the past decade (Officezip, 2018) from creative cultural clusters to coworking spaces (Wang and Loo, 2017). At its beginning stage in Shanghai, creative cultural clusters were initially heritagized by a group of artists (Pinard, 2016), before it regarded as enablers of social inclusion and community participations within historical districts through official certification by Shanghai Creative Industries Centre (SCIC). According to Delsante, it recalls citizens of the urban identity and its memory through sustaining the original architectural fabric and introducing community-based activities accompanying art productions (Delsante and Bertolino, 2015; Pinard, 2016), which reveals the citizens' essential need on mentally support from the place-based interlocking memories under the urban regeneration narratives of further exploration and development among different industries.

On the other hand, the novel trend of sharing economy at the same time brought office-property industry a huge transformation from the basic free knowledge-sharing mode to current desk-sharing mode (Sundsted et al., 2009), redefined the meaning of office rental and collaborative working. In this context, the commune coworking model are well-structured with greater efficiency and mobility in knowledge exchange and cross-sector collaborations through coworking services, including telecommuting equipment, information-sharing platforms, and open activities (Spinuzzi, 2012).

2.2 Develop coworking services with urban regeneration philosophy

Owing to its extraordinary attributes in generating different forms of value to adapt social change, coworking spaces in China were then functioned as a spatial fix for the national economic transitional crisis (Luo and Chan, 2020). Guided by the local government, the coworking industry attaches great importance to the cultural foundation of constructing smart city through creating a city-scale dynamic node of a network structure to revival vacant commercial spaces (Manika, 2020) and community activities and micro-interventions to exert positive impact on urban patterns and spatial transformation (Mariotti et al., 2017).

At the meantime, some scholarly observations of the numerable successful adaptive reuse cases transformed from industrial buildings to coworking spaces in the first-tier cities in China (Li, 2018; Zhang et al., 2018) provides us several reasonable hypotheses concerning the doubt why coworking services are enjoying tremendous popularity among creative industries and Internet companies. Most of them believe that it either due to the fact that the coworking services are more catering to present office market demand with the community-based knowledge spillover (Luo and Chan, 2020), or relates its unique architectural structure to navigate the non-traditional employment arrangements (Rossitto and Lampinen, 2018). On the opposite side, there also some voice argue that the rehabilitation and reuse projects were just an implicit consent of political intention to develop real estate rather than its ostensible motive. It has shown signs in the former researches which were generally paid much attention to coworking spaces concerning

social-economic interaction and business management field, but ignoring its core value in cultural development (Pinard, 2016).

Therefore, the essay will develop a methodological and conceptual strategy in this context to investigate the feasibility of revitalizing the historic neighborhood by discovering the cultural meaning of coworking community, and provide some practical suggestions on a network-based view for urban industrial heritage conservation in the modern urban renewal background.

3. COWORKING SPACES AND INDUSTRIAL REMAINS IN SHANGHAI

3.1 Geographical Distribution in Shanghai

Several consultant companies have provided some open access statistics regarding the development of coworking service market, revealing the fact that coworking spaces within mainland China were located preferentially in first-tier cities and few other cities where sees dramatically growth in cultural industry, such as Chengdu, Guangzhou and Beijing (CBRE, 2019; Colliers, 2017). While Shanghai, due to its earliest perception of the market and its political need in "cultural construction" with the government support both financially and operationally, it has soon entered a fast-expansion era and overwhelmed others in market share over the last few years. According to the statistics of the Comparecamp company, the demographics shows the remarkable change in coworking users from freelancers in the beginning to reach nearly half of them were small-to-medium sized enterprises (Zuckerman, 2020). And the total area of coworking spaces has also undergone a considerable increase from 183,000 m² in 2015 to 3,063,000 m² in 2019, and that in Shanghai has constitutes 34.12% of the total (Mu et al., 2020), indicating the leading position of Shanghai in the flexible workplace market.

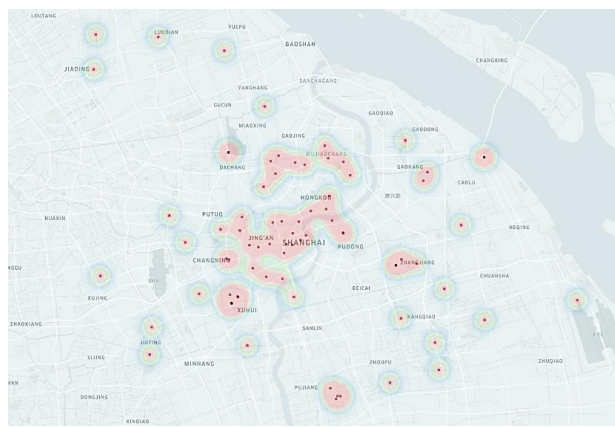


Figure1. main urban agglomerations of coworking spaces in Shanghai

In other words, Shanghai was selected as the case city due to its great dedication in recent years on exploiting industrial heritage assets to reform its economic structure towards knowledge-based economy (Wang and Wang 2018), and the fact that creative industry act as a traditional solution for urban regeneration and heritage conservation (Delsante and Bertolino, 2015). Thus we have collected spatial data of 89 Shanghai coworking spaces on Baidu map and conducted relative spatial analysis to examine its impacts on urban pattern and to define the main urban agglomerations. As the figure 1 indicates, the locational distribution of coworking spaces in Shanghai was characterized by following factors:

- (1) adjacent to universities and institutes, where cutting-edge technology and innovative approaches are easier to access and efficiencies arise from cost savings and competitive working mode;
- (2) near the urban center and central business districts to take advantage of intensive commercial activities and geographical convenience;
- (3) in neighborhoods of existing creative clusters where has high ratios of Creative Industry Clusters' designated by the municipal government.

3.2 Basic structure of business model

According to Ali's research (Gao, 2016), a traditional service model is shown as the left part of fig.2 with three levels to move forward from initially collecting personal and public resources to finally managing it as a network. Generally, when industries seek chances to explore public resources under sharing economy context, its first step is to look for and utilize the personal resources in terms of space, time, properties, money and service. And the second step is to categorize and merge those resources mentioned above for the establishment of composite service. Specifically, the simplex personal resources were characterized, upgraded and integrated into composite service where both urban and village public resources was opened up for the coming escalation. It can be considered as a new way of allocating the public resources through which the municipalities and coworking service industry with its affiliates together produce innovating solutions for the existing discourses of balancing the urban public resources.

In Shanghai, it is widely acknowledged the phenomenon that urban public resources were accumulated and shared in spatial dimension, with simultaneous social investments in construction of design and manufacturing workshops, open laboratories for hardware development and product design, and information sharing platform introduced in 18 creative industries clusters. For instance, the recent "Shanghai Haina Town project" (海纳小镇) was launched to establish a collaborate public service system, aiming to enrich the supply of internet-based cultural and creative industries with new initiatives (Wang and Ding, 2021). Besides, to further improve its recognition, the municipals also plan to push forward cultural and creative sectors through official-lead events such as "Shanghai International Chuangke competition", "Pujiang Innovation Forum" and "Entrepreneurship Pujiang" (Shanghai Municipal People's Government, 2016)

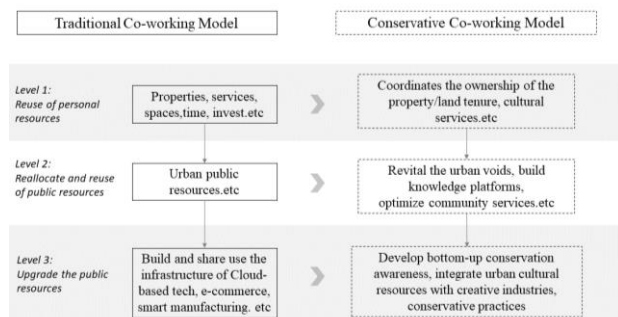


Fig 2. Traditional and conservative coworking model of office industry under sharing economy (resource: Gao, 2016)

After finishing the redevelopment and upgrade of the public resources, it is also anticipated that the shared knowledge and multisectoral investments from bilateral partnerships was generated to proceed deeper collaboration. The final

achievements could land in some areas such as cloud storage, e-commercial, modern manufacturing infrastructure as well as other forms of internet-based technologies, pushing the limit of sharing economy in transferring the inconspicuous raw resources into new production material in modern narratives.

When applying the traditional model into the coworking industry, the three level can be interpreted as the right part of the fig.2. In initial stage, the coworking service companies mediate between different stakeholders to reach an agreement or reconciliation on land tenure, this can be an extremely long and hard process since most of the vacant properties now are involved as mixing state and collective land ownerships instead of private-owned (Qiu and Xu, 2017). In the later stage, coworking industries started to manage conservative but innovative practices that reflect the changing need of societies and communities. It offers a great provision through engaging the public participation and entrepreneur development in a free and open atmosphere and tries to bring forward a spatial fix to solve some social issues. Up till now, there has been a great deal of innovated cases and communities in urban planning were noted, particularly those in respects of revitalizing the forgotten urban villages and undistributed/vacant space (Zhu and Hein, 2020). At the meantime, these implementations coupled with the development of intelligent logistics has also brought a huge step forward in fostering a new working culture and long-term relationship on a single, cloud-based cooperative community. It enables the users to intervene the complete lifecycle at all process, including resource planning, shipment tracking, data monitoring, even the appointment scheduling (Wang et al., 2020). Ultimately, a broader tailor-made platform was built in the final stage to foster and promote the public awareness on heritage conservation and urban development among citizens and workers.

Through the bottom-up approach, individuals were awakened by different kinds of community-engaged activities to voluntarily cultivated the awareness of preserving the historical buildings to confront the developmental threats from external factors. In participating the social practices such as commune stories shop and landscape art design cocreations (Creater, 2020) organized by Creator Space (创邑), the urban resources was reassessed then optimized. And during the whole process of the conservative model, the self-autonomy and host awareness was created among not only the coworking service users but also extended imperceptibly to surrounding residents through social interactions.

3.3 Spatial characteristics

The sharing economy-oriented heritage rehabilitation bridges the gap between art and public through the space design of layout configuration and spatial relationship (Yang, 2021). Specifically, the design methods such as blurring the space edge, expanding the multifunctional layout, forming circular path and preserving the original texture to sustain the authenticity and improves the openness of industrial heritage properties to both users and the coworking industry in terms of architectural advantages.

3.3.1 Expanding the multifunctional layout: Among 89 Shanghai coworking spaces investigated in 2020, 11 were transformed or renovated from former industrial remains, and the number is still increasing. According to the results after the field survey in Jan 2020, for those coworking spaces that open before 2016 its area is usually below 2000 m², whilst those after are occupying bigger area and even are reaching 3000~5000 m² averagely. The margin part is mostly assigned to open spaces or workplace for multiple use (mainly for entertainment and

recreation) instead of cubicles, revealing the fact that the so-called "ancillary space" which easily ignored in the past now regain its importance for its multiple function to feature different working options.

It is quite often to see the users spend their fraction time during working hours in multipurpose space (pantry, gym, recreation space, etc.) that were transferred from the old seldom-used area in almost all cases. In order to achieve flexible layout and well satisfy the requirements of both work and leisure activities, coworking service companies are more likely to retain certain amount of multipurpose space by arranging movable boundaries, typically through large screen, light furniture and light dividers. By moving or folding the adjustable partitions, the geometrically conversion in shape simplified the function switching process from one to another in a short period and make the whole process possible to be reversible.

3.3.2 Blurring the space edge: industrial properties normally are perfect for vertical optimization. Generally, through well-organized interlacing boundary which may created by reconfiguration of the furnishings and accessories such as lamps, curtains and transparent clapboards traditional floors and partition walls were replaced by means of blurring the vertical and horizontal space edge. Working spaces of different level were then connected by a common public space where the former abandoned space around entry, staircase and attic was enriched through challenging the original regularity and creating the spatial hierarchy combined its merits on tall clear height. At the same time, the open and spacious feeling within the workplace brought mentally relief to regular workers and freelancers and makes the users much easier to stay motivated and reduced anxiety even while working overtime nowadays.

3.3.3 Forming circular path: it is generally believed that informal communication was the key advantage of coworking spaces that overwhelmed other traditional office in regard of working mode (Wijngaarden et al., 2020). To create more opportunities and cooperation, physical contact is essential, thus spiral staircases are preferable by coworking companies in design of central atrium (case MixPace Mandela and WeWork Weihai Rd) where areas of different function were connected by intermediate space and interlocking paths which tend to be designed circular and continuous instead of the short and linear. Even though the "slight expansion" may to some extent squeeze the limited space depending on the shape and function of the existing building, the sense of spatial interlacing that brought by interior circular paths also visually open up the public space. More importantly, it serves to create more opportunities of face-to-face contact which may stimulates deeper business and trustful bound (Urry, 2002) and allows quicker and efficient communication of tacit knowledge (Wijngaarden et al., 2020).

3.3.4 Preserving the original texture: the 1 design method targets on conservation and reuse on the premise of protecting the time-worn traces in context of space, it tries to concretize the historical and age value of industrial heritage by preserving the original texture and structural features such as corbels in 1933 J3 Space, columns in Xintai Warehouse (新泰仓库) and roof truss in Xinfu Park project(幸福公园). Apparently, when it comes to rehabilitating and enlightening the unused space, it is an ingenious and common choice to use stone, wood and vintage decorations with green plants at the nook to coordinate its weathered surfaces and forms the atmosphere of comfort and peace, which in the long-term nurtures an individual the sense of belonging and self-identity. Meanwhile, the deliberately arranged exquisite artworks for coworking space exteriorly

enliven the whole working area with pops of vibrant hues, but in fact it echoes the spirit of both the young users and the nature of creative industries and provide users a mentally balance inside with harmonious spatial attempt. Furthermore, with the concordance the building itself can readapted the current urban settings and working states then making the individuals overcome creative burnout and unleash inspiration.

4. DEVELOPING A NEW CONSERVATION-BASED STRATEGY FOR INDUSTRIAL HERITAGE

4.1 The conservation-based reuse model in coworking industry

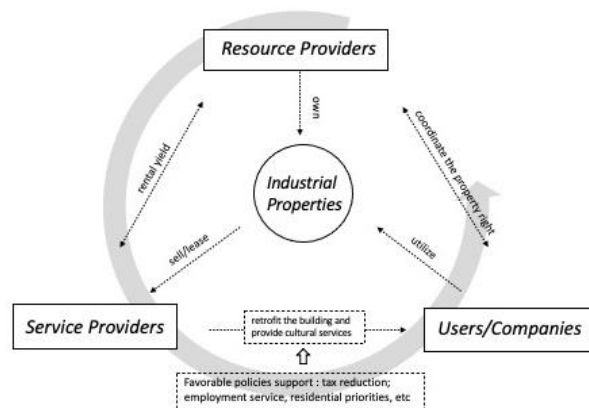


Fig 3. Adaptive reuse strategy integrated coworking service chain

Based on above architectural analysis, the research proposed a basic industrial heritage-centered framework with the integration of the coworking service chain. As fig.3 shows, it demonstrates the interrelationship between three main stakeholders from different stages with its focus on industrial heritage properties. The grey curved arrow indicates the overall direction and the process of managing the property in general cases, emphasizing the engagement of inter-rated goals of three main bodies by connotation.

The whole service chain normally starts from the resource providers seeking, investigating, and acquiring the land tenure of different categories. Before they outsource the right of establishment and management to the coworking service companies like We Work and Kr Space, the land and the property were considered as a resource to be optimally managed or exchanged. It usually accompanied by possible changes such as land lease, permit, and license to external entities who here all identified as "Resource providers" to coordinates the ownership and the land issue even in later stage. In this period, the condition and status of the heritage is supposed to be clearly investigated and documented with adequate anticipation in its possible function, suggesting it maintain a simple but adjustable condition to allow further enhancement in capable of tailoring to different users and companies, irrespective its volume and business.

In the later stage, on grounds of both foreign and domestic capital investments combined with governmental support, developers and the run-operators have gradually became mature and gained stable rental income as reward. According to those investigated, in coworking spaces a series of office-supporting services such as Alibaba Cloud, WPS together with its superiorities in reasonable layout and high-quality working

space, have synchronously resulted in rapid development of settled enterprises, which in turn intensified the competence in the coworking service industry. During this period, the service providers not only experiment with a full-service practice of extensive service chain including ICT services and all kinds of advisory services, but also creates a knowledge spillover community with its office-sharing arrangements merits and policy support. Moreover, it is the stage that the government can interact more active and properly through market regulations and relative policies, such as tax reduction and favorable employment service in both city-level and district-level. The actions on the one hand provide more grounded guidelines to effectively manage idle industrial resources, on the other hand set more grounded targets on future improvement of the quality of public services, and encourage closer social interactions in concerning communities.

It is obvious that under this framework, heritages were managed in a more promising status with an inseparable combination to responsibility system among heritage itself, owner, and users. Obtaining the basic property management skills provided by the service chain, the tight and perfect connection between the property owners and service providers together offer a dynamic balance to better adapt the changing socio-cultural environment. In order to achieve that, the strategy is practiced at calling out for community-based opportunities to sensitize citizens to conservative and revival issues in their daily work. In fact, the interventions would more or less tap into the collective wisdom of those who endowed with strong intentions to utilize or make profit of it. In this sense, it also benefits from engaging those with a historical perspective, insights into how the area functions, and an understanding of what is meaningful for locals, it will help to create a sense of ownership and better ensure the success of public space projects.

However, the long-term impact of the socio-cultural interventions in the "public realm" on the urban is still unknown, but there is no doubt that the cultural and economic gains produced during the mutual-promoted and restricted relationships of the stakeholders' are not available in past traditional production relations. And it is undeniable that it has become an indispensable key factor in sustainable urban renewal and an inevitable discussion under the internet-based sharing economy context.

4.2 Role of Industrial Heritage Properties: Fostering Creativity, Productivity, and Sustainability through Coworking Spaces Under Sharing Economy

4.2.1 Maintain Historical Symbolic Value to Foster Creativity: Over the past decades, China has gone through a huge economic reconstruction from industrial economy to current knowledge economy since the significant proliferation of technologies and intellectual capabilities (Powell and Snellman, 2004). The continuous information modernization has also brought synchronous advancement on forms of innovated industries due to its inherent characteristic on creativity. While in the coworking service industry, the new production mode and production relationship has drawn more attention on its basis principally on cultural-intensive activities that contribute to the aesthetic value and cultural implication (Dul and Ceylan, 2011). Specifically in the heritage oriented coworking spaces, the meaning of historical symbolic value can be occasionally interpreted as nostalgia through the spatial conservative re-creates of original elements such as texture and ornaments, which altogether creates an initial emotional link between the past memories and modern lifestyle. On the other hand, the

dialectical view on interconnection between the history and modernity might arouse the sentimental longing before it is processed and affects the ideas flow. It prompts for digging deep inspired emotion and extends it into a motivational working environment, which further networks local resources from diverse industries ranging from art, business to local people under an open community vision. Thus, through valuing the intangible assets, the mental inclination would contribute as enabling factors to stimulate innovation during multidisciplinary practices and ultimately leads the users to be productive in creative output.

4.2.2 Develop Cultural Ecosystem Service to Improve Productivity:

To retain a harmonious relationship between the natural ecosystems and human life, the concept of Cultural Ecosystem Service (CES) was introduced with its widely accepted definition as a bridge of culture and nature (Daily, 1997). It is a commonly held view that today CES was regarded as a possible solution for most cultural and ecological issues on urban level which encompasses several industries to improve and sustain the urban identity. According to Chan, maintaining CES in coworking industry can pave a way to improve users' productivity and public's mental health (Chan, 2012) and build a cross-sectoral knowledge-sharing community in all kinds of material expression aspects. Being one of the ten subcategories of CES classification system (Millennium Ecosystem Assessment, 2005), industrial heritage property has its natural advantages in developing cultural services for users of all stages. The cultural identity within the space is convinced capable of cultivating aesthetic inspiration and enrich their spiritual experience (Ulrich, 1983), such as the sense of belonging and acceptance. Along with the cultural value penetration of heritage, the characteristic of the high spatial autonomy collaboratively allows the users to coordinate the basic target in professional work and leisure desire in non-working hours. Accordingly, the drawbacks exist in the landscape conservation (Millennium Ecosystem Assessment, 2005) and social achievements (Wallace, 2007) part of the CES framework has also indicate some practical needs and opportunities in terms of shaping the cultural practices in environmental spaces. In this context, the coworking industry is capable of achieving assistance to explore deeper cultural value of heritage itself with integrating production resources from other industries, and improving economic appreciation by stimulating the social mobility of cultural capital.

4.2.3 Repurpose Urban Historical Space to Ensure Sustainability:

When it comes to the urban issues of redeveloping and revitalizing the historical spaces, the intrinsic value of the creative industry and that of the industrial spaces were considered as complementary counterpoints (Huang, 2018). Instead of consuming excessive energy and resources on building new blocks, these "abandoned areas" were perfect alternatives for asserting new functions to retain the historical setting, as it enables a simultaneously sustainable ecological movement which was intent on evoking the internal historical implications out of the visualized landscape. In the depicted scenarios, the modernity of creative industries and cost-effective targets ensures the survival of the urban historical spaces in some areas, but more importantly, set solid premises on carrying forward its vitality, conserving those vulnerable but precious historical landscapes where sees dramatic shift caused by recent challenges caused by gentrification and homogenization. Based on that, the renewal of historical industrial buildings is often suggested a wider range of urban interaction with the support of spatial flexibility and public engagement activities. In this context, advanced technologies including smart transportation system and intelligent communities are very likely and can be

easily integrated due to the geographical proximity, making it possible to eliminate the degradation and fragmentation of vacant urban voids and further potentially sustain a regional cultural identity.

5. CONCLUSION

With various products of sharing economy began gaining favor among all ages, the discredit and wonder forces us to question with these products whether they are just flash in a pan or not, which gives us a reason to investigate its function, operating mechanism and tendency with an eye towards long-term success in better implementation and applicability. The demonstration of both the physical and identity of coworking spaces nowadays is considered an crucial need for delivering positive insight on adapting the fast-changing working mode reform from face-to-face business to the vast online marketplace.

As a matter of fact, the phenomenon of the emerging heritage-based coworking spaces also suggests a "smarter" idea in cocreating knowledge community and sustainable urban planning under modern context. Thus the paper introduced the status quo of coworking spaces in Shanghai and determined its essential prerequisite as well as the potential effectiveness of the conservation-based strategy. Moreover, it draws attention to the architectural preferences in geographical proximity and convenience in the flexible layout of the coworking spaces in Shanghai. Through analysis of 13 practical cases, the basic workflow and correlating actors were distinguished and linked, which provides us a more holistic understanding to guide future practices. Finally, we discussed the interconnection between the economic development of coworking spaces and heritage conservation together with the feasibility in terms of aesthetic value and use value.

Additionally, the Covid-19 pandemic is certainly caused impact on current and the future development of coworking market in China. Consequently, further research will be developed under this context, and focus on how and what kind of interventions will response in its accessibility and adaptability relating to different types of industrial heritage from distinct areas and periods.

ACKNOWLEDGEMENTS

This work was funded by the China Scholarship Council and Changsha Municipal Bureau of Science and Technology project (File number kq1901022) of Changsha. Acknowledgements go to my teachers, colleges and friends for their kindly support from different stages.

The author would also like to thank Prof. Andrea Pane from University of Naples Federico II for his valuable suggestions on conducting the framework of the paper and Prof. Paolo Biscari from the PhD school of Politecnico di Milano who helped in the final revision of this paper.

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