The Intellectual Structure of Creative Industries Studies in 2003–2012: Invisible Taiwan

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Abstract—This study explores creative industries studies by analyzing 20,345 citations of 999 articles published in SCI and SSCI journal in web services area between 2003–2012, These amount database conducts citation and co-citation analysis to identify the most important publications, scholars, and research themes in the creative industries and then maps the intellectual structure of creative industries studies between 2003–2012. In this study the author adopted bibliometric [1], social network and tag clouds analysis techniques to investigate the intellectual pillars of the web services literature. The results of the mapping can help identify the research direction of creative industries and helps profile the invisible network of knowledge production in creative industries and provides important insights on current research paradigms of creative industries studies.

Index Terms—Creative industries, intellectual structure, bibliometric, tag clouds, paradigms

I. INTRODUCTION

Creative industries referred to as the cultural and creative industries, often means to integrate with the cultural and creative industries in Taiwan. The word "culture" has many different definitions. Broadly speaking refers to people living together in a society that have similar habits, customs, and beliefs. Narrow sense which means the "art" is through the people to create new types of product. Whether narrow or broad cultural and creative that is both cultural join each country, ethnic group, and individual creativity, to given cultural style and value.

According human history the industrial development policies for the cultural and creative face first creative industries driven by England premier Tony Blair, Labour Cabinet in 1997, the same period, the aftermath of the Asian financial crisis in South Korea, under the auspices of the South Korean President Kim Dae-jung also began from film and digital cultural content industry began to develop other industries and the establishment of the culture content Agency and Promotion Act of cultural content. Similar practices, including Australia, New Zealand and European countries.

The Creative Class now comprises nearly forty million Americans, or more than 25% of all employed people. The choices these people make have already had a huge economic impact, and in the future they will determine how the workplace is organized, what companies will prosper or go bankrupt, and even which cities will thrive or wither [2].

The other hand, the positive approach of Taiwan's creative

industries, the Executive Yuan in May 2002 in accordance with the "Challenge 2008: National Development Plan" determine the development of cultural and creative industries plan began to actively promote research and development.

2013, the 85th Annual Oscar for Best Director in the fierce competition was by Taiwanese director Ang Lee, "Junior PI fantasy drifting" (Life of Pi). This is Ang Lee won the Oscar for best director for the second time, again defeating Hollywood director Steven Spielberg. This is the common pride to all of Taiwanese, because the film's shooting scene was in Taichung City of Taiwan. Via Ang Lee's film introduce Taiwan to the global. This fact let us can't ignore the marketing power of cultural creative industries to the national image.

II. STUDIES OF ACADEMIC LITERATURE

Among various quantitative methods developed in the last three decades, citation and co-citation analysis is the earliest and the most commonly accepted method. While researchers from different fields practice citing in various ways and for various reasons, Chandy & Williams (1994) contended that citations are the explicit linkage between articles with common elements [3].

There are a number of techniques that can be used to study a body of literature. Most frequent is the simple literature review where a highly subjective approach is used to structure the earlier work. Objective and quantitative techniques have recently become popular with more databases available online for use. These techniques adopt author citations [4] to examine the invisible knowledge network in the communication process by means of written and published works of a given field. These techniques are attractive because they are objective and unobtrusive [5]. Several studies have used the bibliometric techniques to study the literature of management research. For example, Etemad [6] identified the most influential authors and studies in electronic commerce field by using citation analysis; Ramos-Rodriguez and Ruiz-Navarro [7] examined the intellectual structure change of strategic management research by conducting a bibliometric study of the Strategic Management Journal. To the best of our knowledge, no similar study has been conducted on the current research of knowledge management. Therefore this study aims to fill a gap in knowledge management literature by applying citation and Tag cloud analysis to a representative sample of recent research on creative industries collected by the Science Citation Index and Social Sciences Citation Index.

In this study also use Tag cloud to reveal the most research key words in creative industries. Tag clouds have proliferated

over the web in the past decade. One of the most exciting recent developments in web science is social network that enables users to easily annotate web content using free form keywords [8]-[9]. They provide a visualization of a collection of simple texts by visually depicting the tag frequency by font size. In use, tag clouds can evolve into the associated data source over time. Results in this study can be provided valuable references for academic circles and related industries.

III. METHODOLOGY

The citation data used in this study included journals, articles, authors, nations. Based on the objective of this study, the authors explored the intellectual structure of web services between 2003 and 2012. This time period was chosen because contemporary web services studies of the last ten years represent the most update and probably also the most important research on web services. Citation and co-citation analysis is the main method for this study.

First, the databases were identified as the sources of web services publications. Then data collection and analysis techniques were designed to collect information topic about articles, journals, authors and nations on web services research.

As information and information systems become increasingly valuable and information technology advances at a fast pace, only creative and innovative companies will be able to survive the competition in the new millennium, by utilizing the emerging information technologies and innovative management methods.

In this study the author expect to explore the creative industries in trends of Taiwan. So next paper the author will summarizes the government policies, progress, organization and obstacles in the development of Taiwan's DCI and compares these subjects with other countries, including the United States, EU countries, Japan, and Korea…etc. The author predicts that Taiwan's creative industries opportunities and challenges will be just around the corner.

IV. RESULTS

Table I presents the top 20 cited NATIONS in creative industries during 2003~2012, in the before and the after 5 years, there were changed obviously of the highest number of citations of the top 20 countries, make comparisons because the first 5 year period, Taiwan's creative industries study is seventeenth; then the recently 5 years period, has been promoted to sixth, it shows Taiwan social science researcher has noticed this area, and the manpower has increased dramatically the past 5 years invested in the cultural and creative industries.

According the WOS download between 2003- 2012 years, scholars have published in SSCI and SCI cited the most number of papers, the author found that five years ago in Taiwan is number 17, after five years, has been promoted to the first seven, the author find the two stages of the top six countries did not change, but the rank of position in the name list reveal that Taiwan is promoting. This display

considerable significance for scholars of Taiwan's cultural and creative industries. Looking the Table I, the cultural and creative industries more famous is about the United States, Australia, England, Canada, Germany, Sweden, and the seventh is Taiwan.

TABLE I: TOP 20 CITED NATIONS IN CREATIVE INDUSTRIES IN 2003~2012

Articles	Frequency	Articles	Frequency
2003~2007		2008~2012	
USA	93	USA	157
ENGLAND	36	AUSTRALIA	90
AUSTRALIA	23	ENGLAND	87
CANADA	13	CANADA	32
GERMANY	12	GERMANY	31
SWEDEN	8	SWEDEN	25
NETHERLANDS	6	*TAIWAN*	24
FRANCE	6	NETHERLANDS	24
JAPAN	6	SPAIN	19
PEOPLES R CHINA	5	ITALY	16
DENMARK	5	NEW ZEALAND	16
NEW ZEALAND	5	SCOTLAND	15
SWITZERLAND	5	PEOPLES R CHINA	14
ITALY	5	SOUTH KOREA	12
SCOTLAND	4	FRANCE	9
INDIA	4	FINLAND	7
TAIWAN	3	NORWAY	7
SPAIN	3	SINGAPORE	7
WALES	2	INDIA	7
BELGIUM	2	LITHUANIA	6

TABLE II: 999 RECORDS TOPIC = (CREATIVE INDUSTRIES)

Field: Research Areas	Record Count	% of 999
BUSINESS ECONOMICS	404	40.440 %
GEOGRAPHY	134	13.413 %
ENVIRONMENTAL SCIENCES ECOLOGY	100	10.010 %
ENGINEERING	95	9.510 %
PUBLIC ADMINISTRATION	75	7.508 %
COMMUNICATION	73	7.307 %
URBAN STUDIES	73	7.307 %
CULTURAL STUDIES	57	5.706 %
SOCIOLOGY	54	5.405 %
SOCIAL SCIENCES OTHER TOPICS	50	5.005 %

Timespan=2003-01-01~2012-12-31
Database=SCI-EXPANDED, SSCI.

Via WOS Results Analysis display that the top 10 research areas reveal that the creative industries studies more than 50% focus on business economics and geography issues, but the culture studies is only 5.706 %. Therefore, in the study of

creative industries research, there is still a large space to effort in the culture field.

The Table II above shows the nature of the concept of cultural and creative industries still on the traditional economic and industrial structure of the production chain: the value of the most intuitive way to assess the cultural art effects still give an economic multiplier of a city, both of the arts and cultural activities terms are sightseeing district or museums. Creative Industries real worth lies in the occurrence of new consumer field. City not only fight for individual consumption only, are also fighting for the working capital of industrial investment, and a variety of service industries, especially high-value, high wisdom intensive industries. But the author ignore the cultural function of cultural and creative industries, that to humanism strategy, culture and the arts can alleviate social problems and improve humanity. More broadly, government cultural construction purposes, that is united multi-ethnic culture, compatible with minority cultures.

TABLE III: TOP 10 CITED JOURNALS IN CREATIVE INDUSTRIES IN 2003~2012

Journals	Frequency	Journals	Frequency
2003~2007		2008~2012	
STRATEGIC MANAGE J	184	STRATEGIC MANAGE J	524
RES POLICY	174	RES POLICY	386
ADMIN SCI QUART	120	ACAD MANAGE J	368
AM ECON REV	119	*URBAN STUD*	326
ENVIRON PLANN A	107	ENVIRON PLANN A	322
ACAD MANAGE REV	100	ORGAN SCI	321
ORGAN SCI	96	ADMIN SCI QUART	307
MANAGE SCI	91	ACAD MANAGE REV	268
REG STUD	88	REG STUD	244
AM J SOCIOL	86	*J ECON GEOGR*	223

The Table III shows that the creative industries academic journals, the most cited journals and the most academic authority journals, compared of these two stages, the first 5 years of the two periodicals have delete two periodicals of "*MANAGE SCI* "and "*AM J SOCIOL* ", and after 5 years replaced "*URBAN STUD"* and "*J ECON GEOGR"* These figures on the cultural and creative researchers also have a interesting finding, that the recent five years cited increased nearly three-fold, which shows the latest five years the academic study of creative industries have a significant increase in the quality and quantity progress and transformed.

The author find that from Table4 the most cited authors in the two periods in addition to Scott AJ, Florida Richard, and Grabher G keep are still in the top 5, there appeared another new highly cited authors in the recent 5 years of top 10 authors. We figure out this phenomenon can present the new paradigm has been shifted.

TABLE IV: TOP 10 CITED AUTHORS IN CREATIVE INDUSTRIES IN 2003~2012

Authors	Frequency	Authors	Frequency
2003~2007		2008~2012	
Scott AJ	50	**Scott AJ**	161
Grabher G	44	**Florida Richard**	159
NAGARAJAN K	39	**Grabher G**	120
Florida Richard	35	Pratt AC	102
Gibson C	26	Peck J	99
GRILICHES Z	24	Markusen A	98
ELIASSON G	22	Florida R	97
TEECE DJ	22	Gibson C	85
COHEN WM	20	Florida R.	85
Nelson R. R.	20	Caves R.	73

TABLE V: TOP 10 CITED ARTICLES IN CREATIVE INDUSTRIES IN 2003~2012

Articles	Frequency	Articles	Frequency
2003~2007		2008~2012	
Florida Richard, 2002, RISE CREATIVE CLASS	31	Florida Richard, 2002, RISE CREATIVE CLASS	152
Scott A., 2000, CULTURAL EC CITIES	15	Peck J, 2005, INT J URBAN REGIONAL, V29, P740, DOI 10.1111/j.1468-2427.2005.00620.x	68
Schumpeter J., 1942, CAPITALISM SOCIALISM	14	Caves R., 2000, CREATIVE IND CONTRAC	60
TUSHMAN ML, 1986, ADMIN SCI QUART, V31, P439, DOI 10.2307/2392832	14	Scott A., 2000, CULTURAL EC CITIES	40
COHEN WM, 1990, ADMIN SCI QUART, V35, P128, DOI 10.2307/2393553	14	Markusen A, 2006, ENVIRON PLANN A, V38, P1921, DOI 10.1068/a38179	38
Caves R., 2000, CREATIVE IND CONTRAC	14	Garnham N., 2005, INT J CULT POLICY, V11, P15, DOI 10.1080/10286630500067606	35
HENDERSON RM, 1990, ADMIN SCI QUART, V35, P9, DOI 10.2307/2393549	13	DCMS, 1998, CREAT IND MAPP DOC	34
Pratt AC, 1997, ENVIRON PLANN A, V29, P1953, DOI 10.1068/a291953	13	Florida R., 2005, CITIES CREATIVE CLAS	32
Schumpeter J. A., 1934, THEORY EC DEV	13	McRobbie A, 2002, CULT STUD, V16, P516, DOI 10.1080/09502380210139098	30
Nelson R. R., 1982, EVOLUTIONARY THEORY	13	Landry C., 2000, CREATIVE CITY TOOLKI	28

There still a interesting discover that the Table 5 will be from 2003 to 2012, cutting for the first five years and five years after two periods, the contrast between these two stages, the journal published papers in the top ten most cited articles, the first is Florida Richard, 2002, RISE CREATIVE CLASS [10].

This short article summarizes recent advances in our

thinking about cities and communities, and does so particularly in light of themes advanced in my recently published book, *The Rise of the Creative Class* [11], which focuses on diversity and creativity as basic drivers of innovation and regional and national growth. This line of work further suggests the need for some conceptual refocusing and broadening to account for the location decisions of people as opposed to those of firms as sources of regional and national economic growth. In doing so, this article hopes to spur wider commentary and debate on the critical functions of cities and regions in 21st–century creative capitalism.

Fig. 1. Tag clouds in key word of web services (2003-2007)

Fig. 2. Tag clouds in key word of web services (2008-2012)

Fig. 3. Tag clouds in key word of web services (2003-2012)

With comparisons of 3 Tag Cloud Figs above, the Fig. 1 displayed in 2003-2007 five years period, the creative industries research keywords were: creative, industries, design, industries, innovation, management. And the Fig. 2 shows that in the 2003-2007 five-year periods, the creative industries research keywords revels that "design" gradually taken seriously and replaced by two words of "policy" and

"culture". And the Fig. 3 shows the keywords cited frequencies. This discovery can offer guideline of our research.

The following at the bottom of our scope and authority responsible for Taiwan's cultural and creative industries

1) Following the authority in the Council for Cultural Affairs)
   - Visual arts industries
   - Music and performing arts industries
   - Cultural performances Facilities industries
   - Process industries
2) Following the authority in the News Bureau
   - film industries
   - Broadcast television industries
   - Publishing industries
3) Following the authority in the Ministry of Economic Affairs
   - Advertising industries
   - Design industries
   - Designer fashion industries
   - Architectural design industries
   - Creative life industries

The aim of this article is to critically examine the notion that if the creative industries maybe or maybe not forms research trends in Taiwan.

V. CONCLUSION

Matthew7:24-25"Therefore whosoever hearth these sayings of mine, and doeth them, I will liken him unto a wise man, which built his house upon a rock: And the rain descended, and the floods came, and the winds blew, and beat upon that house; and it fell not: for it was founded upon a rock."

The metaphor is perhaps one of man's most fruitful potentialities. Its efficacy verges on magic, and it seems a tool for creation which God forgot inside one of His creatures when He made him [12].

The author cite the paragraph of this chapter of the Bible, is to describe this method of information management, the foundation of academic research, as a new generation of scholars in 21st century information when working on a new academic field of study, it is necessary to the results of research in this area in the past. Quickly grasp and reference the most powerful discourse, to further explore the topic you want to study from the best journals so only to avoid a repeat of previous studies topics are discussed, and also extends the theory model transfer, so-called standing on the shoulders of giants, the accumulated wisdom of our predecessors, will be let scholars can climb higher!

This study adopted bibliometric, social network and tag clouds analysis techniques to investigate the intellectual pillars of the web services literature. By analyzing 20,345 citations of 999 articles published in SCI and SSCI journal in web services area during 2003–2012, this study conducts citation and Tag cloud analysis to identify the most important journals, articles, authors, and research themes in the creative industries and then maps the intellectual structure of creative industries studies during 2003–2012. The author observed

the paradigms of creative industries research in 2003–2012 in order to explore Taiwan creative industries.

To approach these issues in a more objective manner, a generic model of invisible network of knowledge (INK) is proposed in this paper that can be used to map the intellectual structure in the creative industries area. With citation and Tag cloud analysis this model is able to explore the intellectual structure of any existent field, delineate its knowledge network, and further portrait its knowledge diffusion process. The invisible network of knowledge is defined in this paper as a set of interlinked invisible nodes represented by the publications with their frequency of citations as well as the correlations of different publications. Each set of such nodes serves a specific purpose for the study of creative industries or any other field of interest. Follow this path and take this method to explore the trend of Taiwan's cultural and creative industries, and this will be the development of research route.

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