

EMPIRICAL STUDY ON THE DIGITAL CONVERGENCE STRATEGY AND PATENT ACTIVITY OF TAIWANESE MEDIA GROUPS

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ABSTRACT

This study explores the strategy, innovative approach and patent activity of the UDN Group and the Want Want China Times Group, two of the largest media groups in Taiwan, in the digital convergence era. In the era of digital convergence, drastic changes to industry boundaries and media positioning have exposed media groups to the risk of patent infringement. The groups with larger end-user market will probably become the patentee's target for charging royalties. However, neither of the two groups views patent rights as a strategic asset in either R&D or acquisition. Patent rights are not highly valued by the media industry in Taiwan. Therefore, it is imperative for media groups to consider patent risk and infringement liability when developing new products and services or when outsourcing technology. This study recommends that the leader in content service should monitor closely patents and develop a patent portfolio that focuses on data conversion, and cross-media data transmission and presentation. This type of portfolio may serve as a defensive measure in the short-term and as a patent niche to differentiate itself from other media groups in the long-term.

Keywords: Digital convergence, media, patent, UDN Group, Want Want
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I. Introduction

The development of digital convergence has caused structural changes in the media industry, which have blurred industrial boundaries, as well as altering the positioning and the core of innovation of a media group. The drastic changes in industrial boundaries and media positioning have exposed media groups to the risk of patent infringement. For example, the New York Times and CBS were accused of patent infringement by Helferich Patent Licensing in 2010 and 2011, respectively.² It appears that patent-holders have already targeted media groups. The patent litigations that are common in the information technology industries are spreading to media industries.

Media not only provides content services but also possesses the characteristics of convergence. In the trend of digital convergence, significant change in media market structure becomes visible in Taiwan. Taiwan's media have coped with the impact of digital convergence by adopting cross-media management and group management. The United Daily News Group (hereafter referred to as the UDN Group) has attracted a great deal of attention by combining print media, the Internet, mobile phones and e-books to provide cross-media content services.³ The China Times Group is considered the first and fastest corporation to expand the boundaries of its media business⁴; after it's acquired by the Want Want Group⁵, its business scope is expanding even more aggressively, including newspapers, magazines, cable and broadcast TV stations, as well as information companies (hereafter referred to as the Want Want China Times Group).

What are the patent strategies of Taiwan's media in the digital convergence era? The purpose of the patent system is to encourage, protect and utilize innovative science and technology, and to promote industrial

² See Chantal Tode, *NBA The Latest to Face Patent Infringement Suit over SMS Activities*, MOBILE MARKETER, Jan. 27, 2012, <http://www.mobilemarketer.com/cms/news/legal-privacy/11986.html>; see also M•CAM, *Power Of The Pen: Intellectual Property Analysis of Helferich Patent Licensing*, PATENTLY OBVIOUS, Jan. 23, 2012, <http://www.m-cam.com/patently-obvious/power-pen-intellectual-property-analysis-helferich-patent-licensing>.

³ Sheng-Fen Lin [林聖芬], *Shu Wei Chong Ji Xis De Bao She Jing Ying Guan Cha [數位衝擊下的報社經營觀察]*, in 2011 CHU BAN NIAN JIAN XIN WEN CHU BAN YE [2011 出版年鑑新聞出版業] 155, 155-61 (The Executive Yuan's Government Information Office 2011) (in Chinese).

⁴ See Lin, *id.*; see also Bing-Hong Chen [陳炳宏], *Mei Ti Ji Tuan Hua Yu Gi Nei Rong Duo Yuan Zhi Guan Lian Xing Yan Jiu [媒體集團化與其內容多元之關連性研究]*, 104 MASS COMMUNICATION RESEARCH 1, 3-4 (2010) (in Chinese).

⁵ A conglomerate manufacturing, distribution and sale of rice crackers, dairy products and beverages, snack foods and other products; see also Want Want Home page, <http://www.want-want.com/en/about/>.

development.⁶ Since patents are a critical factor in the technological and industrial development, in the innovation activities of Taiwan's media, how the strategy of digital convergence of a media group is affected by patents?

This research intends to study how the role of patent is played in the digital convergence strategy of Taiwanese media. As explained by Yin that "a case study is an empirical inquiry that investigates a contemporary phenomenon within its real-life context,"⁷ this case study will describe how digital convergence strategy is developed and implemented in Taiwanese media to explore the role of patents at the group level. This study examines the following three research questions. (1) How patents are considered in the innovation activities or research and development (R&D) of the media group? (2) How patents are considered in technology outsourcing while developing and implementing the digital convergence strategy of the media group? (3) How patents are considered in the merger or acquisition processes while implementing the digital convergence strategy of the media group? Relying on empirical inquiries including in-depth interviews with high-level managers and patent analysis and supplemented with literatures, this study explores the strategy, innovative approach and patent activity of the UDN Group and the Want Want China Times Group in the digital convergence era in order to offer recommendations for building patent portfolios.

II. Literature Review

A. Digital Convergence

The concept of convergence, or the proposition that all modes of communication and information will converge into a digital nexus was raised in the mid-1970s.⁸ Negroponte, the director of the Media Lab at MIT, used a "teething rings" symbol since 1979 which showed three overlapping circles labeled broadcasting, publishing, and computers. The Media Lab foresaw the coming together of these three industries, which were previously completely distinct, and the intersections the richest and most promising areas.⁹ Negroponte's "teething rings" is considered one of the earliest expressions of the idea of convergence.¹⁰ However, telecommunication was missing in Negroponte's "teething rings". Pool used "convergence of modes" to

⁶ Art. 1 of the Taiwan Patent Act (2011).

⁷ ROBERT K. YIN, *CASE STUDY RESEARCH DESIGN AND METHODS* 13 (Sage Publications 1994).

⁸ Milton Mueller, *Digital Convergence and its Consequences*, 6 JAVNOST-THE PUBLIC 11, 12 (1999), available at <http://javnost-thepublic.org/article/1999/3/2/>.

⁹ STEWART BRAND, *THE MEDIA LAB: INVENTING THE FUTURE AT MIT* 10-11 (New York, Viking Press 1987).

¹⁰ See Mueller, *supra* note 8, at 12.

describe that a process is blurring the lines between media.¹¹ Convergence of modes is blurring the lines even between point-to-point communications such as the press, telephone, and telegraph, and mass communications such as the press, radio, and television.¹² The force behind the convergence of modes is an electronic revolution. In every medium, no matter it is electrical, like telephone and broadcasting, or traditionally nonelectrical, like printing, symbols in computers and the transmission of those symbols electrically are being used at crucial stages in the process of production and distribution.¹³ Lind summarized the popular image of convergence in which the four industries including information technology, telecom, media and consumer electronics were expected to merge into one big blob “the converging industries.”¹⁴ The old industry barriers were torn down and where everybody would compete with everybody.¹⁵

Dowling, Lechner, & Thielmann defined “convergence” in a strategic management context by distinguishing the dimensions of convergence.¹⁶ From the technology dimension, digitalization and data compression enable the growing integration of functions from formerly separate products or services or the new functions from the emergence of hybrid products. From the needs dimension (demand), functions fulfill needs of customers which can also merge and develop from different areas. From the industry and firm dimension (supply), different activities along or across traditionally separated value chains may be merged by “management creativity” such as the creation of new businesses, acquisition or the constitution of strategic alliances and networks.¹⁷

In addition to scholars’ definitions, the Organization for Economic Co-operation and Development (OECD) and European Commission have observed and defined the scope of convergence for the purposes of policy-and/or regulatory-making. During the time that “information industry” was the leading growth sector of the advanced industrial economy, OECD in 1992 defined convergence as blurring of technical and regulatory boundaries between sectors of economy.¹⁸ Convergence between communications and

¹¹ See ITHIEL DE SOLA POOL, *TECHNOLOGIES OF FREEDOM* 23-54 (Belknap Press 1983).

¹² *See id.*

¹³ *See id.*

¹⁴ See Jonas Lind, *Convergence: History of Term Usage and Lessons for Firm Strategists*, in *PROCEEDINGS OF 15TH BIENNIAL ITS CONFERENCE*, BERLIN (2004).

¹⁵ *See id.*

¹⁶ See Michael Dowling, Christian Lechner & Bodo Thielmann, *Convergence-Innovation and Change of Market Structures between Television and Online Services*, 8 *INT’L J. OF ELECTRONIC MARKETS* 31 (1998).

¹⁷ *See id.*

¹⁸ OECD, *Telecommunications and Broadcasting: Convergence or Collision? No. 29*;

broadcasting was viewed as occurring in three levels: networks, services and cooperation organizations.¹⁹ According to European Commission's Green Paper, the common expression of convergence is that the ability of different network platforms to carry essentially similar kinds of services, or the coming together of consumer devices such as the telephone, television and personal computer.²⁰ Convergence could be seen at three different levels: technology, industry, and services and markets.²¹

Although scholars and organizations use different descriptions or definitions for convergence, there is a common notion that technology is the driving force. Technology-driven convergence is leading to economic or market convergence and regulatory convergence, such as inter-industry merger and relaxation of cross-ownership of media; as convergence process evolved, economic and regulatory convergence reinforces technology convergence.²²

B. Change of Media Market Structure

Driven by technology convergence, publishing is brought in to the electronic environment.²³ Bane et al. suggested that the structure of consumer multimedia industry was changing from three discrete vertical businesses, telephone, television and computer, to five overall horizontal industry segments of multimedia value chain: content, packaging, processing, transmission, and terminal.²⁴ Mueller illustrated the vertical structure of media in 1950, which telephony, telegraphy, broadcasting, motion pictures, publishing, documents, and cash flow were all vertically integrated chains linking a specific kind of content, distribution network, and terminal.²⁵ There were some cross-linkages between these vertical chains.

see also OECD, OECD DIGITAL ECONOMY PAPERS, No. 5 11-14 (OECD Publishing 1992).

¹⁹ See *id.*

²⁰ EUROPEAN COMMISSION, GREEN PAPER ON THE CONVERGENCE OF THE TELECOMMUNICATIONS, MEDIA AND INFORMATION TECHNOLOGY SECTORS, AND THE IMPLICATION FOR REGULATION [COM(97) 623 final-Not published in the Official Journal] (European Commission 1997), available at http://europa.eu/legislation_summaries/information_society/internet/124165_en.htm.

²¹ See *id.*

²² E.g., POOL, *supra* note 11; Bruce Garrison & Michel Dupagne, *A Case Study of Media Convergence at Media General's Tampa New Center*, in EXPANDING CONVERGENCE: MEDIA USE IN A CHANGING INFORMATION ENVIRONMENT CONFERENCE, Nov. 6-8, 2003.

²³ See POOL, *supra* note 11, at 42.

²⁴ David J. Collins, P. William Bane & Stephen P. Bradley, *Winners and Losers: Industry Structure in the Converging World of Telecommunications, Computing, and Entertainment*, in COMPETING IN THE AGE OF DIGITAL CONVERGENCE 159-200 (David Yoffie ed. 1997).

²⁵ See Mueller, *supra* note 8.

However for the most part they operated as separate systems. The segregation of services took place primarily at the input and output terminal. Final distribution to users involved application-specific devices that could neither communicate with devices from other content-carrier chains, nor convert information into and out of other formats.²⁶ Comparing to the three vertical media businesses described by Bane et al which composed of telephone, television and computer, Mueller's illustration further included physical distribution as one of the vertical media businesses.

Mueller also illustrated the five horizontal industry segments of a convergence media environment suggested by Bane et al.²⁷ The vertical structures of traditional media are breaking down, and traditional media is replaced by a converged digital media market composed of five horizontal segments: (1) Content creation and production; (2) Service packaging; (3) Transmission; (4) Software; and (5) Terminals (hereafter refers to the five-horizontal-segments model).²⁸

As scholars identified the five horizontal industry segments and called it the "value structure" of industry, similarly European Commission also illustrated the "value chain" of convergence in which activities, including content supply, tailing and branding, platform and connectivity, delivery, and access control, occur.²⁹ The value chain extends from content creation through content packaging, service provision and final delivery to customers. European Commission also suggested that the value chain is a useful concept for analyzing the behavior of firms and markets in the light of convergence.³⁰

C. Patents as Indicators

Patent for technological innovation is one of the most notable and important intellectual property rights. Patent is a protection and reward by the government to the inventor the exclusive right for a period of time to preclude other persons from practicing the claimed invention without the patentee's prior consent³¹; in exchange, the inventor discloses the invention so that the new knowledge is available to the public. Griliches found a strong relationship between patent numbers and R&D expenditures of corporations, implying that patents are a good indicator of differences in inventive activity across different corporations.³² Especially, in the absence of detailed R&D

²⁶ *See id.*

²⁷ *See id.*

²⁸ *See id.*; *see also* Collins et al., *supra* note 24.

²⁹ *See* EUROPEAN COMMISSION, *supra* note 20, at 1-2.

³⁰ *See id.*

³¹ Article 58-1 of the Taiwan Patent Act (2011).

³² Zvi Griliches, *Patent Statistics as Economic Indicators: A Survey*, 8 J. OF ECONOMIC LITERATURE 1661, 1661-707 (1990), available at <http://www.nber.org/chapters/c8351>.

data, the plentiful and searchable patent data can be used as an indicator of both inventive input and output. Cautiously, Griliches noted that not to over-interpret small and even sizable differences in patent numbers, especially in the time dimension. Nevertheless, patent statistics remain a unique resource for the analysis of the process of technical change.³³

European Commission suggests that a count of patents is one measure of a country's inventive activity and also shows its capacity to exploit knowledge and translate it into potential economic gains. Therefore, indicators based on patent statistics can be used to assess the inventive and innovative performance of a country.³⁴ OECD uses patent as one of the indicators to help addressing science and technology policy issues.³⁵ Scholars use patent analysis methods and the information of patent data, also called patent bibliometrics or patentmetrics, to study innovative ability or competitiveness of countries.³⁶ Empirical studies indicate that patent measures reflect the volume of companies' research activity, and consequently associated with future performance of R&D-intensive companies in the capital market.³⁷

The result of patent analysis or patent mining can be used for competitor monitor, technology assessment, R&D portfolio management, and human source management. The result of patent analysis can also be used to identify and assess potential sources for the external generation of technological knowledge, especially by means of mergers and acquisitions.³⁸

III. Materials and Methods

³³ See *id.*

³⁴ European Commission, *Patent Statistics*, http://epp.eurostat.ec.europa.eu/statistics_explained/index.php/Patent_statistics.

³⁵ OECD, OECD work on patent statistics, <http://www.oecd.org/sti/ipr-statistics>.

³⁶ E.g., Chun-Chieh Wang, Dar-Zen Chen & Mu-Hsuan Huang, *Technological Innovative Capacity of Taiwan and South Korea from 1987-2006-A Perspective of Patents*, 5(2) NCCU INTELL. PROP. REV. 31, 31-51 (2007); Mu-Jun Wang [王睦鈞], *Tou Shi Tai Wan Zi Tong Xun Ji Shu Guo Jia Jing Zheng Li* [透視臺灣資訊技術國家競爭力], 32(7) TAIWAN ECONOMIC RESEARCH MONTHLY 43 43-52 (2009) (in Chinese).

³⁷ See Zhen Deng, Baruch Lev and Francis Narin, *Science & Technology as Predictors of Stock Performance*, 55(3) FINANCIAL ANALYSTS J. 20, 20-32 (1999).

³⁸ E.g., Holer Ernst, *Patent Information for Strategic Technology Management*, 25 WORLD PATENT INFORMATION 233, 233-242 (2003); Po-Ching Lee & Roger Kang, *Cong IC Zhi Zao Ye Zhi Zhuan Li Zhi Biao Tan Qi Ye Chuang Xin Jing Zheng Li* [從IC製造業之專利指標談企業創新競爭力], 208 ACCOUNTING RESEARCH MONTHLY 67, 67-72 (2003) (in Chinese); Po-Ching Lee & Roger Kang, *Ru He Yun Yong Zui You Xiao Lu De Zhi Hui Jin Kuang-Liao Jie Zhuan Li Jia Zhi Chuang Zao Qi Ye Li Ji* [如何運用最有效率的智慧金礦瞭解專利價值創造企業利基], 204 ACCOUNTING RESEARCH MONTHLY 85, 85-92 (2002) (in Chinese).

A. Purposive Sampling

The UDN Group and the Want Want China Times Group were selected as research objects purposively for the following reasons. First, both are founded as traditional newspaper media, and are the top two newspaper groups in Taiwan. Second, both are undergoing transformation through digital convergence but with different approaches worthwhile for a comparative study to explore the role played by patents in the digital convergence strategy at group level.³⁹

B. In-depth Interview

Problem-centered interview⁴⁰ with senior executives were conducted. Owen Lee,⁴¹ director of UDN.com, and Nan-Hong Lin,⁴² general manager of CTV Infotech, were interviewed. Preliminary study was done by collecting and analyzing secondary data of both groups, including company/group profiles from each of the official websites, literatures and news. Preliminary study also included patent search, in order to develop questions and interview guidelines. Interviews were recorded following by postscripts.

C. Converged Media Environment with Four Horizontal Segments

Please refer to Figure 1, which illustrates four horizontal segments of the converged media environment proposed by this study. Modifying the five-horizontal-segments model for the converged media environment, this research uses four-horizontal-segments model to present the value structure of the converged media environment.⁴³ (1) Content: the creation and

³⁹ See YIN, *supra* note 7, at 14. Case study can include both single- and multiple-case studies. While some scholars have used such term as the comparative case method for multiple-case studies, Yin suggests that single- and multiple-case studies are in reality two variants of case study design.

⁴⁰ See Andreas Witzel, *The Problem-centered Interview*, 1(1) FORUM: QUALITATIVE SOCIAL RESEARCH Art. 22 (2000), available at <http://www.qualitative-research.net/index.php/fqs/article/view/1132/2522>.

⁴¹ Interview by research team of this project with Owen Lee, Director, UDN.com, Taipei (Jan. 29, 2011).

⁴² Interview with Nan-Hong Lin, General Manager, CTV Infotech, Taipei (Feb. 25, 2011).

⁴³ Without detailed definitions for the segments, in another article from the same research project, Chen and Tsai used four horizontal segments including content provider, editing and packaging, transmission, and terminal to analyze the converged media value net. See Mei-Ching Chen & Niann-Chung Tsai, *The Study of the Transition of Taiwan Media Group's Value Net under Digital Media Convergence*, in CONVERGENCE IN MEDIA MARKETS, INTERNATIONAL TELECOMMUNICATIONS SOCIETY ASIA-PACIFIC REGIONAL CONFERENCE, Taipei (International Telecommunications Society 2011).

production of content, which may originally be non-digital but eventually be encoded in digital format. In general, content is the material that consumers value for its information, entertainment, or exchange value. For example, movies, television programs, newspaper, book, music, photos, games, and the information on Web.⁴⁴ (2) Platform: On the platform, content is branded, packaged, assembled, and/or bundled into a product or service based on specific business model. The platform is the implementation of business models with software and hardware. The frontend of the platform is the product or service of digital content; the backend of the platform may be referred to “server”. (3) Transmission: Transmission refers to physical structure or carriage for transmit digital data.⁴⁵ It can be wire line or wireless, territorial or non-territorial, to form various fixed and mobile networks with different standards for data transmission. Fixed network includes telephone line system, cable TV systems, or, more generically, optical fiber or co-axial copper cable. Mobile network includes various wireless networks. (4) Terminals: Local devices for input and output of signals and information, e.g. phones, TVs, PCs, tablet PCs, etc, also referred to “client.”⁴⁶ In order to access the product or service provided by the platform, terminals may require downloading application software (‘app’) from the server.

⁴⁴ See Mueller, *supra* note 8; see also Collin, *supra* note 24, at 181.

⁴⁵ See *id.*

⁴⁶ See *id.*

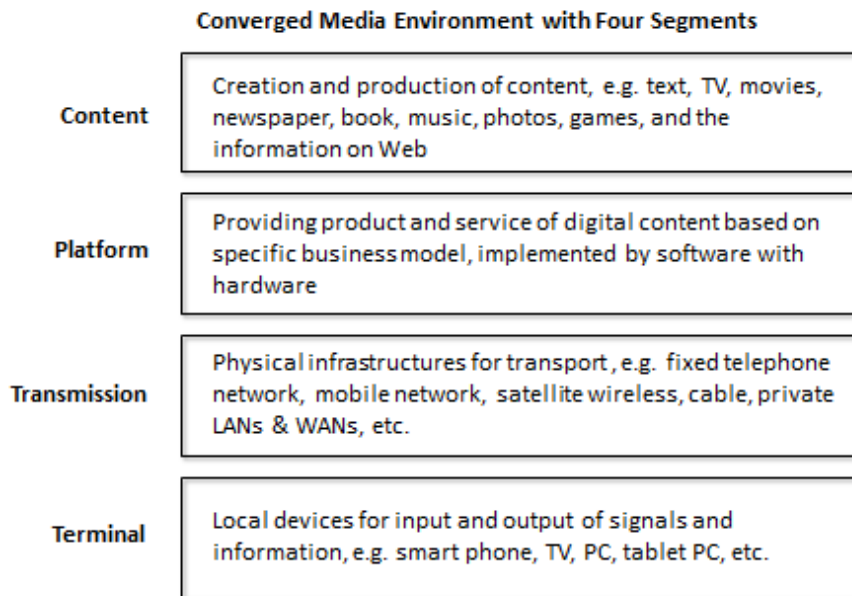


Figure 1: Four horizontal segments of the converged media environment (Modified from Mueller, 1999).

D. Patent Analysis

Patent analysis composes patent search and interpretation for managerial and/or technological purpose.⁴⁷ Patent search was conducted by using on-line patent databases provided by official patent offices in Taiwan (www.tipo.gov.tw), China (www.sipo.gov.cn), and the United States (www.uspto.gov). Each company/subsidiary of both groups was searched for issued patents and patent applications by May, 2012 and search result was analyzed at company level as well as at group level. Quantitative results include number of patents and number of applications for each group. Qualitative results include invention claimed and International Patent Classification (IPC) of each patent and/or application.⁴⁸ Patent strategy for each group was interpreted by analyzing quantitative and qualitative results of patent search as well as answers to ad hoc questions during in-depth interviews.

⁴⁷ See Lee & Kang, *supra* note 38.

⁴⁸ Because search results reveals that there are only few patents, complicated patent indicators such as technology cycle time, citation indicators, etc., are not used in this analysis.

IV. Result and Discussion

A. UDN Group

1. Transformation begins with the Internet

The UDN Group began as newspapers, the “United Daily News”, in the 1951 and expanded to the publishing, communication, advertising and Internet businesses. Its newspapers include the United Daily News, Economic Daily, United Evening News, Upaper, World Journal,⁴⁹ Universal Daily News,⁵⁰ and China Economic News Service. Its publishing and communication enterprises include Linking Publishing, Unitas, Aquarius Publishing, udnDigital, udn.com, udnjob, and Min Sheng Culture & Communication Ltd. As regards the marketing and advertising sector, the group has United Marketing Research Co., North Advertising Business, Central Advertising Business, and Southern Advertising Business. Other logistics sector includes Lei She Color Printing and Tian Li Transportation.⁵¹ In addition, Gold Media, the sub-media group of UDN Group, has core business in exhibitions and events.⁵²

The cross-media transformation of the UDN Group involved two stages, beginning with the Internet and then transforming to digital media gradually. The first stage was the preparation period, which lasted from 2000 to 2007. During the booming of the Internet in 2000, udn.com was established, primarily providing on-line content and services. The second stage, commencing in 2008, was to adopt the strategic module of digital convergence. For the UDN Group, the decrease in profits from newspapers and the trend of digitalization were existing factors in the macro-environment, but the catalyst for stimulating the digital convergence strategy was the financial crisis in the end of 2007. Lee stated:

Although our newspapers were already losing money before 2007, it was still under control. However, as the financial crisis swept across the globe in 2007 and 2008, the whole media business found itself in a catastrophic situation. As a result, the financial crisis was a significant driver as we deliberated digital convergence. We concentrated on strategic planning for six months in 2007. After the resolution was approved by the board in 2008, a drastic transformation had commenced.

⁴⁹ The World Journal is published in New York, Los Angeles, San Francisco, Chicago, Dallas, Vancouver and Toronto and distributed throughout North America (http://www.worldjournal.com/pages/about_us-e).

⁵⁰ The Universal Daily News is published in Thailand.

⁵¹ UDN Group Home Page, <http://www.udngroup.com/2c/index-5.jsp> (in Chinese).

⁵² Golden Media Group Home Page, <http://www.gmg.tw/introduction.html> (in Chinese).

2. Sustainable development in the newspaper business and the future of multimedia

Please refer to Figure 2 illustrating the two-fold mode of digital convergence strategy of the UDN Group; also refer to Figure 3 illustrating the positioning and business scope of the UDN Group in the converged media environment. Since 2008, the UDN Group has been achieving its strategic goal of digital convergence in a two-fold mode: first, sustainable development in the traditional newspaper business; second, the transformation to the future of multimedia. The traditional business model of newspapers is circulation and advertising. However, given the changing business environment, the UDN Group could no longer rely on income from those two revenue streams. Therefore, it adopted the strategy of business diversification by providing peripheral services to support the core newspaper business, such as sponsoring performances by the Cirque du Soleil, the Miller exhibition and an exhibition on mammoths. Following the success of small-scale events, the group began holding large-scale events with excellent results. More than 90% of the UDN Group's events have been profitable; therefore they support the core business. In recent years, the non-operating income from the events held by Gold Media, owned by UDN Group, has surprised competitors and earned their admiration.⁵³ Lee stated:

Our second fold is to transition to the future of multimedia. Actually, the future of multimedia is a question mark, since we have no idea what it will look like in the end. Since the transition is our goal, what kind of multimedia ability does this group lack? We have the ability to generate content, namely words and graphics. We also have personal networks, brands and on-line technology, namely udn.com ... however we lack the ability to use video to generate content or to tell stories. A saying within the company is "use video to tell story." We began to think that there are more than 500 journalists and 200 editors in this group, is it possible to train those 700 to 800 colleagues' way of thinking to switch from 2-D to 3-D and video?

⁵³ See Lin, *supra* note 3.

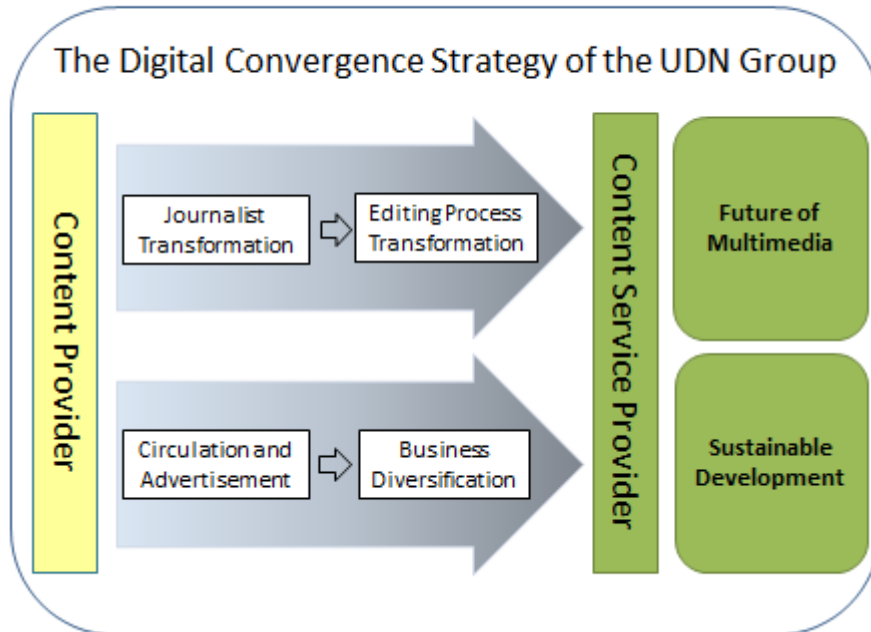


Figure 2: The digital convergence strategy of the UDN Group.

In the trend of cross-media through merger and acquisition, the UDN Group naturally considered acquiring a television station, but after evaluating the high cost of acquisition, it realized that it would be impossible to gain a profitable return on investment. Finally, the decision was made to rely on internal transformation and resource integration to fulfill its goal of multimedia. The first move was journalist transformation. More than 200 journalists were selected for the first group and received one year of training. Employing the stick-and-carrot approach to promote the KIP (Key Performance Indicators) and reward mechanism, by the end of 2009, the UDN Group produced about 80 video clips of news during weekdays, more than the capacity of a TV station; 50-60 clips were produced during the weekends.

The second move was the transformation of the editing process. First, the group established a video department in 2010, to set the operating procedure as a TV station to provide on-line video news, a re-edited tablet newspaper. Second, in 2010, the UDN Group gathered the editing departments of “three newspapers and one doc-com”, the United Daily News, Economic Daily, United Evening News and udn.com, while moving the headquarter to Xizhi

in New Taipei City, to symbolize the complete transformation of the traditional newspaper media into a content provider for multimedia. The UDN Group further declared that it would not only publish newspapers and on-line news, but also provide high quality video news for media devices such as TV, computers, mobile phones, and e-books that could be accessed at any time,⁵⁴ as shown Figure 3. The UDN Group demonstrated itself by broadcasting live the results and commentary of the 2011 presidential election through udn.com.

In content market operation, news is the cornerstone of the UDN Group, which covers a wide range of the horizontal market. Local news is often ignored by traditional TV stations, especially since television stations lack the mobilization and local connections possessed by print journalists. It is hoped that local journalists can act as “video commentators” and talk with anchors, which will show the unique characteristics of the print journalists and distinguish them from TV stations. In the vertical markets, the group operates in specific subject markets such as culture, literature and art through literature and art commentaries and substantial cultural activities on the UDN platform.

⁵⁴ Chen Lang Ren [陳浪仁] & Zheng Chao Yang [鄭朝陽], *Lian He Bao Xi Xin Zong Bu Qi Yong* [聯合報系新總部 啟用], Jan. 21, 2010, <http://blog.udn.com/wenxing/3713283#ixzz1lm9nSIIf> (in Chinese).

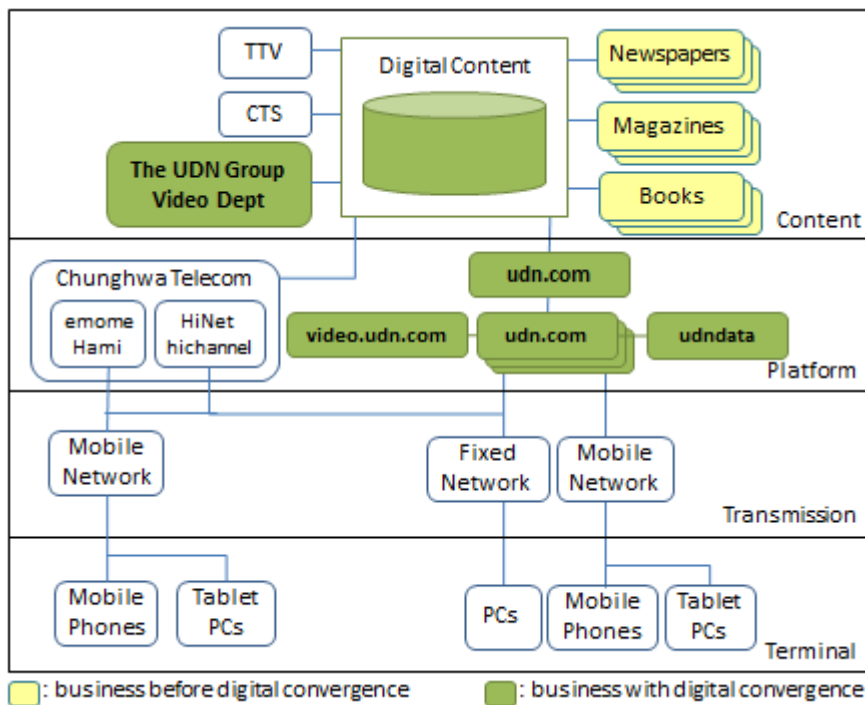


Figure 3: The positioning and business scope of the UDN Group in the converged media environment (Modified from Chen & Tsai, 2011).

3. Industrial co-competition and the positioning of content service providers

Content is the core for traditional newspapers and publishers. After the content has been digitalized, data aggregation and searches are provided by the database. The UDN Group further turned this digitalization ability into another business by assisting other publishers with digitalization and optimization of their traditional print media content, and cooperating with service providers such as Hami Bookstore of Chunghwa Telecom,⁵⁵ as shown in Figure 3. Regardless of whether it is the content or platform market, it has shown that the UDN Group has gradually transformed from “content provider” to “content service provider.” In the trend of digital convergence, the UDN Group’s industrial positioning of competition and cooperation (co-competition) is changing. Taking the development of e-books as example, although the group has three printing publishers, it actually cooperates more with other publishers in the e-book industry. Because each

⁵⁵ See Chen & Tsai, *supra* note 43.

reading devices may involve different technologies and standards, the general publishers are unable to convert all file formats and have neither distribution channel nor experience to sell their digital content. udn.com helps other publishers convert the content and sell it to the end users, including readers, libraries and enterprises.

Taking news as another example: the relationship between udn.com and portal websites such as Yahoo and PChome changed from cooperation to competition. The other example is databases business: udndata was originally the database for the UDN Group's newspapers but it now also provides a platform service for storing content from other magazines and video data from CTS and TTV. In the platform service, the co-opetition among the top three telecom companies is dynamic. Since telecom companies and even mobile phone companies provide platforms, it seems like they are in competitive relationship with UDN in the platform business. However, other companies may not be willing to use the platform provided by telecom companies, therefore UDN's platform service will play an important value-added role by helping other companies use the platform of telecom companies. Lee stated:

From 2000 to 2003, news content was licensed to portal websites free of charge. Although the portal websites claimed that they would share the profits with the news providers, the actual amount of money was rather small. From 2003, the main domestic news websites united and started to charge royalties to the portal websites. From 2003 to 2008, the portal websites bought news from different media, so the portals ended up becoming the main news websites. Frustrated by an unfair situation, from 1/1/2008, UDN ceased providing news to portal websites other than Hinet, since they already have a business relationship.

The relationship with the top three telecom companies is a co-opetition, thus there is no "it must be..." situation. It will be a good niche if they are willing to buy the content or pay for the marketing. Even though they sometimes compete with us, we are still willing to sell them content. Therefore, we will not refuse to cooperate with anyone. We even cooperate with the China Times and Next Media; we sell database to Next Media!

4. udnDigital began to file patent applications

Please see Table 1, the number of patents of media groups in Taiwan, China and the United States. As the patent search result shows, UDN Group does not have any patent in Taiwan, the United States or China. Nevertheless, there are two of the udnDigital's patent applications published.

“Communication apparatus capable of interacting with printed medium” was filed in June 2006; “Mobile communication apparatus capable of serving as a gateway for the A/V playing system” was filed in August 2006. Both of the patent applications were related to utilizing communication networks to transmit images with IPC H04M telephonic communication. Both applications were not allowed for patents.

Taking media as its core, udnDigital was established in 2004. The mission is internally to implement digitalization, and externally to develop convergence services, and media, information and telecommunications products.⁵⁶ The two above-mentioned patent applications present the achievements in research into the utilization of communication devices to transmit and process video data. Despite the rejection of these applications, the filings show that its positioning and mission are complying with the digitalization of UDN Group.

Table 1: The number of patents of media groups in Taiwan, China and the U.S. (Searched by May, 2011).

Media Group	Taiwan	China	U.S.	Total
UDN Group	0	0	0	0
Want Want China Times Group	3	0	0	3

Table 2: Patents of InforTimes of Want Want China Times Group (Searched by May, 2011).

Patent type/ Patent #	Title	IPC	Inventor	Filling Date
				Issue Date
Utility/ I319534	A system for creating keyword hyperlinks which are related to words on the webpage	G06F 017/4 0	Zhang, Zhi-Hong [張志弘] & Cai, You-Jie [蔡有杰]	2005/07/29
				2010/01/11
Utility model/ 157278	High speed information broadcasting ethernet system	G06F 013/4 0	Huang, Wen-Zhi [黃文治]	1990/07/30
				1991/05/01 (2000/07/01 terminated)
Utility	High speed network	H04L	Huang,	1990/01/04

⁵⁶ udnDigital Home Page, <http://www.udndigital.com.tw/udndigital/aboutus.htm> (in Chinese).

model/ 137567	telephone information broadcasting system	012/0 0; G06F 003/0 0	Wen-Zhi [黃文治]	1990/07/01 (2000/05/01 terminated)
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B. Want Want Chine Times Group

1. The formation of a cross-media group

China Times Group, established in the 1950s as a newspaper named “Credit News”, includes the China Times, Commercial Times, China Times Weekly, iGirl, InfoTimes, Chinatimes.com, Chung Tien Television (CtiTV), China Television (CTV), Shang Xun Culture Publishing (CTU), China Times Publishing, Media Sphere Communications, Times International Advertising, Apollo Survey & Research, and CTS Travel Service.⁵⁷ The core of the China Times Group was publishing and news in the early stage. After acquiring CtiTV and CTV, the cross-media group was then formed. Its operational scope includes the Internet, newspaper, TV, publishing, travel, advertising and events.

As the financial crisis swept the world, the China Times Group was acquired by the Want Want Group⁵⁸ in 2008, and is commonly named as the Want Want China Times Group. Moreover, the Want Want China Times Group is planning to acquire China Network Systems (CNS), a cable TV multi-system operator, which has nearly a quarter of cable TV users in Taiwan.⁵⁹ In the media convergence industry, the Want Want China Times Group produces content including publishing, newspaper, e-paper, database and CtiTV and CTV. As regards the transmitter, with the goal of connecting to the end users, it expanded from wireless TV broadcasting to the cable TV system. Please see Figure 4, illustrating the positioning and scope of the Want Want China Times Group in the converged media environment.

⁵⁷ China Times Inc. Home Page,

<http://www.chinatimes.com/vgn/about-us/chinatimes-group-01.htm> (in Chinese).

⁵⁸ Chen Feng Ying [陳鳳英], Lin Ying Qiu [林瑩秋] & You Zi Yan [游子彥], *Zhong Guo Shi Bao Yi Zhu Le* [中國時報易主了], 1049 BUSINESS WEEKLY (2008), available at <http://www.businessweekly.com.tw/webarticle.php?id=34935> (in Chinese).

⁵⁹ Chen Bing Hong [陳炳宏], *Wang Wang Bing Gou An De Si Da Yi Ti* [旺旺併購案的四大議題], Aug. 20, 2011, NEXTMEDIA, available at http://tw.nextmedia.com/applenews/article/art_id/33611007/IssueID/20110820 (in Chinese).

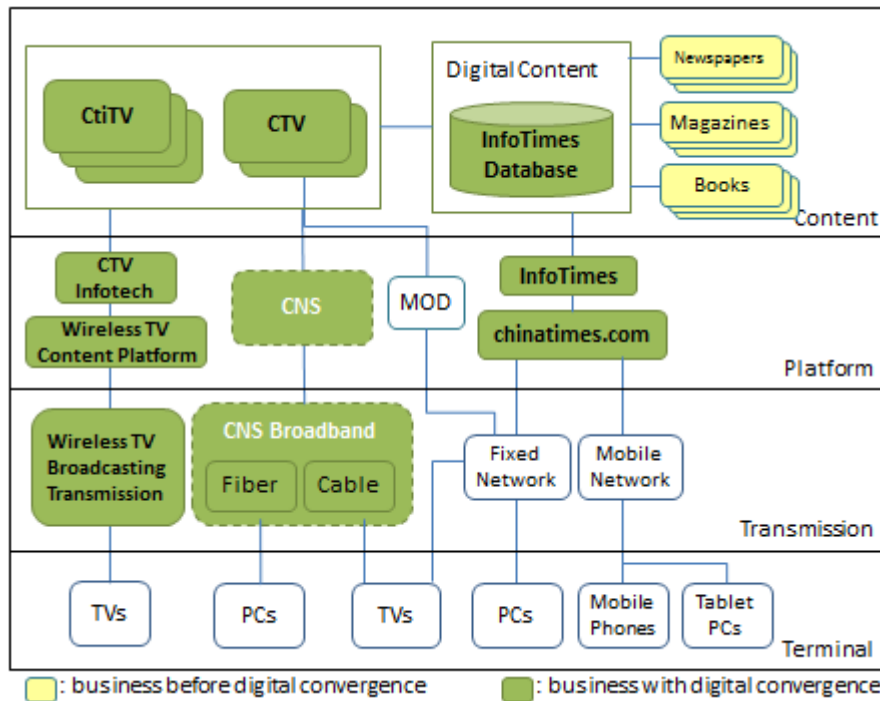


Figure 4: The positioning and business scope of the Want Want China Times Group in the converged media environment (Modified from Chen & Tsai, 2011).

2. Content digitalization and convergence

The start of the group's transformation from print media into e-media was InfoTimes, established in 1989. InfoTimes originally operated financial database collaborating with data sources such as Taiwan Stock Exchange. InfoTimes's product and service then expanded from financial database to www.chinatimes.com and database services and it became an integrating cross-media digital platform for digital content management and digital marketing after it merged with China Times Network Technology in 2008.⁶⁰ In the area of digital content, the Want Want China Times Group provides e-papers and databases. In addition, it has a wealth of video resources since it owns CtiTV and CTV. The content convergence has shown a synergistic effect by the combination of texts from the database and video from TV stations, and cooperation between the news department and the program department within a TV station and even among TV stations. Lin stated:

⁶⁰ InfoTimes Home Page, <http://www.infotimes.com.tw/new2/index.htm> (in Chinese).

Stories are taken from the database. Whenever we (CTV) want to discuss a topic, we always check to if there is an existing story related to the topic. Once the story exists, then a business model appears. We may combine the text from the database with the video from TV stations. Let's say that a popular news program needs stories about old-time celebrities, and CTV has more stories than Cti-Enter. Therefore, Cti-Enter will search the content from us and produce by itself. We can use that piece of work after they finish producing and broadcasting, since we provided the data. This symbiotic relationship enables us to cover each other.

The task of group's digitalization has been carried out by CTV Infotech. CTV Infotech was established in 1999, responded to the intense competition that broadcast TV confronted from satellite TV and cable TV, as well as the rapid pace with which information technology extended the range of influence.⁶¹ CTV Infotech is charged with the mission of informationalization and digitalization, including digital engineering and innovative research within the department, across several departments and even across several TV stations. Take the news department as an example: the document and editing management system developed by CTV Infotech is able to support functions such as interviewing, editing, broadcasting, storing, accessing and drawing. Since video has been digitalized and the files have been formatted, it overcame a restriction that two people could not use the same roll of film simultaneously. Following the management of network rights, all of the work can be completed while sitting in front of a computer.

As to the broadcasting of programs, CTV has already employed the centralized control automatic broadcasting system, so that from the news department to program department can automatically broadcast programs. Among TV stations, CTV and CtiTV have different production processes, but they are expected to use the same standard in order to achieve the group's plan for convergence through a single, large platform. Digitalization can greatly benefit the group's back-stage management. Since the management of production and broadcasting has been enhanced, it is expected to improve the management of video assets. Lin stated:

Therefore, if file formatting has been standardized, then one file can be edited by more than ten people at the same time. During important events such as elections, a torrent of information will pour in. One person is in charge of broadcasting, another is in charge of total arrangement, while a third is in charge of

⁶¹ CTV Home Page, <http://www.ctv.com.tw/opencms/jsp/ctv.jsp> (in Chinese).

documentaries. The division of labor ensures that the work is performed with astonishing speed, wow! The finished products all emerge together.

3. Challenges and perspectives

Given the trend of convergence, from the China Times Group to the Want Want China Times Group, there are many challenges. First is “shift of destiny.” Whenever a management team changes, rule of thumbs changes. Take CTV as an example: it was originally owned by the Kuomintang (KMT) party, then bought by China Times Group, and then owned by Want Want Group after China Times Group sold to Want Want Group. CTV switched from political party-owned to privately-owned, from the video field to the journalism field, from the media industry to the food industry. These ownership changes also brought about changes in the management's decision-making process. Lin stated:

After CTV was sold by the KMT, the torch was first passed to Chien-hsin Yu from China Times Group, so it was media-oriented. We all understood that there is great difference between newspapers and TV. As the company switched from political party-owned to privately-owned, I observed a huge gap. Now, the group is owned by Want Want, which produces food. However, CTV is not the only case in the world. Many high-tech companies end up under the ownership of traditional industries, e.g. Pan American Satellite Corp., a well-known satellite communication company. Thus, these takeovers produce drastic “shift of destiny.”

In the field of media, we start our thinking with an idea called platform. Platform thinking cuts through the industry's game rules, causing major changes. The average person can easily discuss platforms, but will encounter numerous obstacles, such as differences between cable TV law and broadcasting TV law, if they try to execute the concept. [Besides,] in TV broadcasting, CTV is the only listed media company. Since it has so many tasks mixed together, it is hard to integrate.

Second, different types of media are regulated by different laws and regulations. Meanwhile, legal amendments cannot keep pace with the speed of technological development and convergence, which impedes the application of many innovative technologies. CTV Infotech has conducted research projects, such as tele-text, MHP (multimedia home platform) and handheld TV, but the regulations of wireless TV, cable TV and telecommunication may not be consistent. Legal limitations hinder the promotion and application of these technologies. On the other hand,

technical standards are progressing rapidly. If the R&D results are not implemented in time, their results become obsolete, since technology and standard are changing so rapidly.

Nevertheless, CTV Infotech has accumulated engineering and R&D capacity to keep pace with recent technological advances. From B2B to B2C, from set-up-box, digital TV to mobile TV, it sketches out the perspective of a digital life. Lin stated:

We first digitalized internally, and then turned it into a tool for change. We executed digitalization for building contact windows, for creating a B2B inside our own group or an outside B2B. The final goal is B2C ...all of these preparations have a single objective, the acquisition of the largest audience possible.

“Life is convergence”. The most significant aspect of digital convergence is how to make people enjoy information as fast and accurately as possible. A flexible, motivated nation requires citizens who can act quickly and concisely. The information that you receive must be correct, or the wrong decision would be made.

4. InfoTimes and patent activity

Please see Tables 1 and 2. Table 2 shows the patents of Want Want China Times Group. In the Want Want China Times Group, among Taiwan, China and the United States, there are only three Taiwan’s patents granted to InfoTimes, as shown in Tables 1 and 2. All of these three patents are related to electronic data processing, with IPC G06F. In 1990, a year after InfoTimes was established, a utility patent application titled “High speed information broadcasting ethernet system” and a utility model patent application titled “High speed network telephone information broadcasting system” were filed. Both were issued patents but terminated in 2000.

The only patent alive is Pat. No. I319534 “A system for creating keyword hyperlinks which are related to words on the webpage”. It was filed by China Times Network Technology in 2005,⁶² and later assigned to InfoTimes since China Times Network Technology was merged by InfoTimes. After four and half years of examination process, I319534 was issued in 2010. This invention creates a locator system that matches hyperlinks with keywords in the content to place specific advertisements on the webpage to increase the amount of advertising links, in order to attract more visitors to click on the particular advertisement, thus creating

⁶² Besides, China Times Network Technology filed another application titled “Content marketing system and operation method therefor” in 2007, which is not allowed.

advertising revenue. The content provider may perform alternative pre-determined implementation process to reduce the server's burden.

V. Recommendations for Developing Patent Portfolios

A. UDN Group

The UDN Group does not have any patents. The main reason is that newspaper operators' traditional emphasis on copyrights which are directly related to the creation of words and pictures, rather than technological innovation, which is directly related to patent rights. Even if there is technological innovation, long prosecution process reduces the incentive to file patents. Since the UDN Group is transforming itself from a "content provider" to a "content service provider," the core intellectual property should expand from the content it produces to the techniques which produce the content. Therefore, the protection of intellectual property should expand from copyright to patent right.

Content is always the critical intellectual property for the UDN Group; content producers are valuable human assets who can create an endless supply of content. The specialty in telling stories is the UDN Group's core value. In the era of digital convergence, relying on internal transformation and resource integration, the UDN Group has achieved its belief of sustainable development in the traditional newspaper business, and its strategic goal of transforming to multimedia. Its specialty of telling stories is progressing from 2-D content production to digital content production and the platform services. Various forms of digital content, such as real-time video news, news database and e-book, are transmitted through a wide range of communication channels and cross-media devices to present optimized digital content.

Following the popular saying "content is king," the UDN Group not only cooperates with content providers such as TTV and CTS, but also cooperates with publishers that were traditionally considered competitors, thus accepting the changes caused by the digital convergence era. Moreover, "content is like water," it may fill any container, so the UDN Group utilizes a variety of channels and devices to present optimized digital content. The patent filing activity indicates its innovation capacity and result of R&D in the area of data transmission and presentation.

According to the above-mentioned core value and R&D, as to the patent portfolio and patent management, this study recommends that the UDN Group adopt intellectual property management including not only copyrights but also trade secrets and patents to protect its innovative research in cross-media data transmission and presentation. For those technological innovations which are not suitable for trade secret protection, consider filing patents. The value of patent may not be seen immediately; hence it requires

business assessment for patent filings. Besides, defensive publication of its technological innovation is another option which can prevent others from getting patents on the similar technology. Furthermore, these subjects such as cross-media data transmission and presentation should be placed in the scope of patent watch in order to avoid patent infringement. Since e-books and digital content platforms are existing services, the UDN Group should take the related patent risk and infringement liability into consideration while selling products, services or outsourcing technology.

B. Want Want China Times Group

In the Want Want China Times Group, there are three patents granted to InfoTimes. Although two of the information broadcasting system related patents were filed before 1990, it did not file any applications until the third one was filed in 2005 and was issued in 2010. Such patent activity does not reveal specific planning on developing a patent portfolio. The main reason is presumably that the media traditionally deems copyright to be the core of its intellectual property while technology R&D is not the main innovative activity.

The Want Want China Times Group, originating in the newspaper business, has stepped into the operations of content website and TV programs, and is expanding its dominion to the cable TV system. In the era of digital convergence, it grew its content market share through acquisitions. The goals of performing digitalization and development in the internet and platform were reached mainly to satisfy internal needs. It focuses its engineering power on solving configuration issues while outsourcing a variety of new hardware and software, and dealing with numerous problems related to data conversion. Government-sponsored funds are allocated efficiently to subsidize R&D and test projects like MHP and handheld TVs, those technical projects seemed mainly resulting in the enhancement of the R&D capacity but lack the application of patents as one of the output index for R&D. In the era of digital convergence, the Want Want China Times Group is moving from the digitalization stage into convergence stage, where the management of the internal B2B production has achieved the seamless production process, as well as the management of video assets. Moving towards the convergence stage, as to its strategic vision of “life is convergence,” more specific products and services are needed in order to realize its B2C goal and vision.

In the Want Want China Times Group, InfoTimes and CTV Infotech own the main R&D capabilities. Even though they conduct innovative R&D mainly to meet the demands of B2B within the group, they are actually able to accumulate patents as defensive weapons. This study recommends that the Want Want China Times Group may take InfoTimes and CTV Infotech as

the starting point for establishing a patent management system and developing a patent portfolio. In addition, it should take the related patent risk and infringement liability into consideration while outsourcing technologies or products.

VI. Conclusion

As the internet flourishes, the print media faces the hardship of a decline in circulation and advertisement. On the other hand, they are exploring the new business models of e-media. Following the financial crisis, the industry has fallen into the depth of depression. As for the UDN Group and China Times Group that both originated from the newspaper industry, the financial crisis was a significant turning point. The UDN Group determined to step towards to the digital convergence with internal transformation and resource integration. It has become a cross-channel and cross-device content service provider through two approaches, namely, through the sustainable development of the traditional newspaper business and the transformation into a multimedia corporation. The China Times Group faced with a change of management following its purchase by the Want Want Group. The Want Want China Times Group is stepping into cable TV multi-system operation to expand its dominion of digital convergence value network through acquisitions. With digitalization, it has accomplished the seamless process and improved efficiency in the back-stage management, which has demonstrated a synergistic effect in content convergence.

In the era of digital media convergence, none of the two groups view patent right as a strategic asset in their R&D or acquisition. There are four possible causes. First, in the media industry, traditional newspaper operators usually pay more attention to copyrights which are directly related to the creation of words and pictures, rather than patent rights which are directly related to technological innovation. Second, the R&D is intended mainly to meet the groups' internal requirements. They may lack an in-depth understanding of patent rights, which leads to the mistaken interpretation that there is no need to acquire patent protection for the internal use of innovative technologies. Third, even though there are R&D results, they file patent applications in a haphazard manner, and key abilities, such as patent search and patentability analysis, are still in the early stages for the groups, so they may fail to acquire patent rights. Fourth, the time for patent prosecution may be relatively longer than the life cycle for product/service in e-media; therefore, the media group may not see the benefit to acquire patents for its innovation.

While the business model of digital media convergence is becoming concrete, the barriers among traditional media and the industrial co-opetition relationships are gradually changing as well. Due to the variation of the

industrial barriers and the positioning of media, competition between media groups are no longer limited by the traditional media business. Patent war has spread from the information communication industry to the media industry. Along with this phenomenon, the groups with larger end-user market will probably become the patentee's target for charging royalties. In contrast, patent rights are not highly valued in the media industry. They do not have much experience dealing with patent-related issues and also lack patent assets as the defensive bargaining power and lack the resources required for fighting a patent war.

Moreover, a patent management system is needed. In particular, the digital content services are flourishing in the era of digital convergence; therefore traditional copyrights can employ technological applications and value-added content to create a larger market. The dominant content provider will no longer limit itself to merely providing content, but become aware of the improvement of its technology capacities. Regardless of whether it is market or technology considerations, media groups are exposed to a higher risk of patent infringement than before. Since there are two sides to every coin, media groups may obtain technological support and patent bargaining power through licensing. Therefore, it is vital to take patent risk and infringement liability into consideration when developing new product and service or outsourcing technology. This study recommends that the leader in content service should perform patent watch and develop patent portfolio on data conversion, as well as cross-media data transmission and presentation. Such a portfolio may serve as a defensive measure in the short-term and as a patent niche to differentiate itself from other media groups in the long-term.

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