

Hsu, Wen-Yi

Conference Paper

Qualitative Analysis of Structural Holes in Emerging Media Industries: Evidence from Taiwan's OTT Industry

24th Biennial Conference of the International Telecommunications Society (ITS): "New bottles for new wine: digital transformation demands new policies and strategies", Seoul, Korea, 23-26 June, 2024

Provided in Cooperation with:

International Telecommunications Society (ITS)

Suggested Citation: Hsu, Wen-Yi (2024) : Qualitative Analysis of Structural Holes in Emerging Media Industries: Evidence from Taiwan's OTT Industry, 24th Biennial Conference of the International Telecommunications Society (ITS): "New bottles for new wine: digital transformation demands new policies and strategies", Seoul, Korea, 23-26 June, 2024, International Telecommunications Society (ITS), Calgary

This Version is available at:

<https://hdl.handle.net/10419/302473>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

Qualitative Analysis of Structural Holes in Emerging Media Industries :

Evidence from Taiwan's OTT Industry

Dr. Wen-Yi Hsu

Assistant Professor

General Education Center, National Taiwan Ocean University

Abstract

Structural hole theory can be used to explain the advantages of an individual or firms in the economic structure. From a network perspective, this study analyzes the relationship between local OTT operators in Taiwan, the relationship with large international OTTs, and the bridges or structural hole spanners. The researcher conducted semi-structured interviews with major players in Taiwan's OTT industry, and employs the grounded theory approach, systematically inducting and analyzing data. Based on the perspectives of local OTT operators describing the main competitors in the Taiwanese OTT market, the research identifies major international OTT, particularly Netflix, as the hub and structural hole spanner. This study maps 'Taiwan's OTT industry structural holes', and further explore whether Taiwan's local OTT operators are able to act as bridges or structural hole spanners.

This research found that relationships among local Taiwanese players are loose, with most situated at the periphery of the industry network; Netflix serves as a network bridge. Netflix occupies the central position in Taiwan's OTT industry network as a structural hole spanner. Netflix benefits from being a structural hole spanner., while local Taiwanese players do not form mutually beneficial partnerships. The connection between local Taiwanese OTT players and international operator increasingly exhibits reinforced structural holes. The existence of structural holes in Taiwan's OTT industry and the possibility for local operators to gain advantages. This study also proposes types and analysis of structural holes in Taiwan's OTT industry and analysis of structural holes for local OTT operators in Taiwan. This underscores the limited key resources of local operators. Overall, there is no significant advantage for domestic operators. To remain competitive, local OTT operators must seek new opportunities within these structural holes

Keywords: OTT, center-periphery theory, structural hole theory, qualitative structural analysis,

*This study is part of the research results of the special research project of the National Science and Technology Council "5G Generation: Taiwan OTT TV Industry Ecological Imbalance Dilemma and Balance Opportunities: Network Ecological Perspective" (Project Number: NSTC 112-2410-H-019-013)

Introduction

According to the latest data in December 2023 in Taiwan, the top three most people paying for OTT subscriptions are global OTT services: Netflix (44.8%), Disney+ (15.2%) and iQiyi (2.2%). In comparison, local telecom operators' OTT platforms Hami Video (2.2%), FriDay Video (2.2%) and MyVideo (0.6%) have a combined market share of less than 5%, while local emerging OTT platforms KKTV (1.5%), LiTV (0.9%) and CatchPlay (0.5%) the total market share is not even 3%. 2022 National Cultural Conference suggested that Taiwan's TV and film industry has experienced an ecological imbalance. Although Netflix has influenced the local OTT industries in terms of the way people consume media and the industry structure, Taiwan's local OTT firms still regard global OTT as ideal partners for cooperation.

As the influence and chain reaction of global OTT services on the media markets of various countries continue to expand, all countries urgently need to analyze structural asymmetry from an ecological perspective and propose feasible solutions. “OTT-specialized firms in the UK, Germany, France, Japan, and South Korea did not expand subscribers to the same extent as those in the US.... Local OTT players, especially those in Europe and Asia, might need to be more strategic in coping with US-based firms’ expansion” (Park & Kwon, 2023). In Thailand, although global OTT platforms have replaced home video or DVD markets in the traditional film industry’s value chain, Netflix are seen as opportunity rather than threats (Ramasoota & Kitikamdhornsee, 2021). In South Korean, a study explored their perception of Netflix in terms of the opportunities provided, and the challenges posed to the South Korean media industry (Nam, Ro & Jung, 2023). Research analysis shows that Netflix, Disney+ and global OTT platforms pose the biggest threat to many countries because they have huge funds and technology, turning local content producers in various countries into outsourcers (subcontractors) (Kim, 2022). In Mexico, a research examined the structural conditions of the Mexican audiovisual system in which Netflix is immersed and argues that Netflix has understood the key areas to break the market value chain allowing it to gain global dominance (Gómez & Larroa, 2023). These aforementioned analysis show that the reason why global OTT services can gain an advantage in the OTT industry structure of many countries. Local players do require global OTTs to provide resources, and there is no similar cooperation among local players to achieve such a competitive advantage

Competitive advantage usually means a profit rate higher than the market average (Grant, 2005; Besanko et al., 2010). For example, the larger the user scale, the greater the value generated by the transaction; another example: the number of complementary goods and services is greater. The more, the greater the value generated by the transaction (Katz & Shapiro, 1985; 1986). However, Afuah (2013) emphasizes that size is not the only issue, but the feasibility of transactions, members' centrality, structural holes, and structural holes in the network's structure, etc. (Park, S., & Kwon, Y., 2019).

According to theory, strong bonding and bridging networking relationships are required among industry network nodes. Relational approaches can be used to observe these relationships and

understand their benefits, while structural approaches can be used to understand the different kinds of connections among network participants and their positions within the network (Mateo López-Mora, Gil-López, San Román López, & Sierra Gómez, 2024).

Structural holes theory (SH) exist in social networks when there is a lack of a direct contact or no direct connections (ties) between two or more entities (Burt, 1992). From this perspective, the lack of connections (ties) are regarded as structural holes; those who act as bridges or brokers to fill these holes are called "structural hole spanners" (Lou & Tang, 2013). According to the structural hole theory, social structure is a key factor in determining investment return. The connection with different communities in the social network increases the social capital that players can use in the competitive field. A closed network with homogeneous and repeated information will not bring this advantages (Lin, et al., 2022). In short, structural holes refer to bridges between communities or groups, and structural hole spanners occupy this position are considered to have network advantages in social networks.

The market share of the local OTT industry is getting smaller and smaller. Failing to have a competitive advantage and even facing difficulties, the local OTT firms still regard Netflix, Disney+ and global OTT platforms as ideal partners for cooperation. This study examines the industrial ecosystem structure of interaction relationships among operators from the perspective of local OTT operators impacted by large international OTT platforms. It focuses on local OTTs' perceptions and interpretations of the network, as well as descriptions of their relationships with other operators (Schiller et al.,2023).

The purpose of this study is to explore the critical impact of large international OTT platforms threatening the ecological structure of Taiwan's local OTT industry from a network perspective and to discuss the relationship between Taiwan's local OTT operators, the relationship with large international OTTs, and the bridge or structural hole spanners in Taiwan's OTT industry. By expressing the views of local OTT players on global OTT services, this study not only enhances the overall understanding of the impact on the local OTT and media industries, but also provides a reference for countries in similar situations.

Theory

Center-periphery Theory

According to the application of the "center-periphery theory" in social network structure analysis (Friedman, 1966), central nodes exhibit tight connections while peripheral nodes are more loosely connected. Central nodes play a dominant role within the network, whereas peripheral nodes are marginalized (Jia & Benson, 2018; Li et al., 2021). According to theory, enterprises at the core of a network can integrate the network members' dispersed but interconnected resources (Mingrui He, Min Mei, & Handan Zhang, 2023). On the other hand, firms have loose links and limited cooperation, which leads to structural holes. As mentioned in the theory, structural holes exist between two or more previously disconnected participants. Actors positioned within these structural

flaws can operate as "bridges," also known as "brokers" (Kwon et al., 2020).

Strong bonding and bridging networking relationships are required among industry network nodes. As the most influential organizations are often the "bridges" linking innovative measures and resource providers (Crossley, 2010; Olmedo, van Twuijver, & O'Shaughnessy, 2021a), they possess the highest control over the flow of resources (Hanneman & Riddle, 2005; Georgios, Lucas, van Twuijver, & O'Shaughnessy, 2023). Entities positioned remotely in industry networks, affecting their ability to access resources and knowledge sources, are naturally influenced (Bosua & Evans, 2017). Therefore, the question explored in this study is as follows:

RQ1. From a network perspective, what is the relationship between Taiwan's local OTT operators and the relationship with large international OTTs?

Structural Holes Theory

Structural holes refer to gaps in social networks where certain individuals lack direct connections or relationships with others. From a holistic network perspective, there are vulnerabilities in the network structure (Zhu, Zhu, & Bao, 2018). According to Burt (1992), non-redundant relationships lack both direct and indirect redundant connections. Groups without connections form voids in the social structure, which are considered structural holes. Individuals who bridge these gaps or act as intermediaries, known as "structural hole spanners" (Lou & Tang, 2013), play a crucial role. Theoretically, occupying a bridge position in the network can lead to benefits by promoting collaboration across different domains (Lin, Zhang, Gong, Chen, Oksanen, & Ding, 2021). What if firms occupy structural holes in the Taiwanese OTT industry, benefiting from accessing a greater variety of resources and information, synthesizing more potential viable approaches, and better coordinating various tasks across different communities (Lin et al., 2021). Therefore, the question explored in this study is as follows:

RQ2. In Taiwan's OTT industry, what are the structural hole bridging (network perspective) and the structural hole spanners?

Those occupying hub positions typically possess the ability to design and construct various self-centered, complex linkages, effectively facilitating the integration and coordination of resources within the network (Ye et al., 2021). They have the capability to design and manage network relationships that are different and larger than those of other enterprises (Ye et al., 2020). Therefore, the question explored in this study is as follows:

RQ3. What role does structural hole bridging (network perspective) play, and the types of structural holes in Taiwan's OTT industry?

According to theoretical frameworks, as structural holes solidify, it becomes increasingly challenging to supplant the roles of existing bridging entities. Consequently, successful bridges are more likely to persist in occupying positions that yield informational benefits and control interests (Lin et al., 2021). What if large international OTTs benefits from occupying a network bridge position in Taiwan, it does not, through the role of structural hole spanner, promote collaboration

among different local industry sectors. Literature suggests "bridging structural holes" as a potential solution (Liu & Xi, 2023). For local OTT operators to possess conditions conducive to structural holes, they must actively seek out and assume roles that can serve as "bridges." To remain competitive, local OTT operators must seek new opportunities within these structural holes (Van Wijk et al., 2008; Zang, 2018; Cheah & Koay, 2023). The research question is as follows:

RQ4. Are Taiwan's local OTT operators able to act as bridges (from a network perspective) or structural hole spanners?

He et al. (2023) recommended that businesses adopt various development measures based on structural characteristics and take steps to create new structural holes, increase heterogeneous connections, and establish long-term cooperative trust relationships. Theoretically, when network participants hold different norms or viewpoints and lack mutual understanding and trust, structural holes emerge in the network (Burt, 1992). Therefore, what is most needed is trust. According to theory, cohesion can generate trust and minimize adverse behaviors within and between companies. Networks with fewer structural holes and cohesive structures are more conducive to corporate exploration of external connections (Zang, 2018; Cheah, C. W., & Koay, K. Y., 2023). In addition, it is necessary for the government to continue promoting market-oriented R&D investment mechanisms to enhance resource integration, risk diversification, and uncertainty reduction. This is especially important for operators who can produce sizable economic gains, as it fosters collaboration between regional upstream and downstream operators (Ai & Wu, 2017).

Methods

Structural hole theory can be used to explain the advantages of an individual or firms in the economic structure. To analyze how actors are embedded in social structures, network research is increasingly using **qualitative methods**, the development of a method for qualitative structural analysis is urgently needed (Herz, Peters & Truschkat, 2015). From a network perspective, this study analyzes the relationship between local OTT operators in Taiwan, the relationship with large international OTTs, and the bridge (network perspective) or structural hole spanners. We further explore whether Taiwan's local OTT operators are able to act as bridges (from a network perspective) or structural hole spanners.

Research shows that qualitative data is a prerequisite for in-depth understanding of network properties (Georgios Chatzichristos et al., 2023). In the framework of social network analysis, one of the most important aspects is to explore the overall quality of the network (Chatzichristos, Olmedo, van Twuijver & O'Shaughnessy, 2023). Network structures have social and cultural foundations that need to be understood in an "exploratory" way. , not limited to quantitative measurements (Knox, Savage & Harvey 2006), qualitative tools can provide insights into the importance of nodes and the content of the connections between nodes, that is, the "structure and story of the network" (Luxton and Sbicca 2021, p. 165), which is in line with the purpose of this study; quantitative methods are not enough to reveal the mechanism by which social networks shape, emerge, and influence social and

organizational processes (Dubini & Aldrich 1991). Therefore, more and more scholars use SNA. Qualitative methods were used to obtain rich research findings (Crossley 2010).

Herz, Peters & Truschkat (2015; 2021) proposed a data collection and analysis process for qualitative social network analysis (QSA), mainly using interviews as a data collection method. Interviews are a powerful tool for collecting network data, allowing researchers to interact with respondents and explore responses (Jones et al., 2017). According to the QSA execution steps of Herz et al. (2015), an in-depth interview method was adopted, and two sets of data were obtained for each interview, including structural hole diagrams and interview records. This research was officially launched after passing the academic ethics review in June 2023; in-depth interviews and data collection were conducted from August 2023 to May 2024.

Case selection

Based on the aforementioned related theories and literature, the researcher **conducted semi-structured interviews** with major players in the OTT industry, including telecom OTTs (Hami Video, friDay Video, MyVideo), emerging OTT platforms (CATCHPLAY+, LINE TV, PTS+, etc.), TV channel operators and content providers (PTS, Vidol/closed operation on November 2023, etc.), multiple-system operator (KBRO, TBC, etc.). The interviewees were mainly general managers, vice presidents and OTT directors of various companies, including business, R&D, technology, management and other departments. This study also interviewed the cultural policy management unit (Taiwan Creative Content Agency), OTT-related associations (Taiwan OTT Association, New Media Entertainment Association, etc.), scholars and experts.

Data collection

Qualitative network approaches can provide in-depth study of the behavioral and relational characteristics of participants, and the use of "semi-structured interviews" can help interviewees provide information from a self-centered network perspective to understand its network relationships (Edwards, 2010; Marin & Wellman, 2011). Individual interviews allow interviewees to be more open-minded and speak freely on specific topics, and to explore their motivations, beliefs, attitudes, opinions and behaviors. Before arranging the interview, the researcher inquired about willingness to participate via email and phone, and provided an interview outline and informed consent form for the research participants, indicating that the entire research interview was recorded and later transcribed into a verbatim text, and the interviewee information was anonymously coded. Presented so as not to be identified; it will be explained again on the day of the interview that the "Research Participant Informed Consent Form" will be signed by the interviewee in person. (In-depth Interviews with OTT Industry Representatives: Table 1)。

Table1: In-depth Interviews with OTT Industry Representatives

Represe ntative	Industry Type	Industry/Company /OTT Experience (years)	Date	Represe ntative	Industry Type	Industry/Company/ OTT Experience (years)	Date
A	Telecommun	19/19/9	2023.09.05	J	Content	36/26/8	2024.03.29

B	ications	20/18/14	2023.08.17	K	Production/	20/20/5	2024.02.23
C		20/20/10	2023.08.09	L	Copyright Sales/Content Distribution	15/24/10	2024.03.15
D	Emerging	20/2/7	2023.08.31	M	Related	15/14/6	2024.03.15
E	Video Platforms	25/16/9	2024.03.08	N	Industry Association	25/10/10	2024.02.23
F	Cable TV	32/32/5	2023.09.22	O		16/6/7	2024.03.22
G	Providers/Br	29/4/3	2023.09.22	P	Public Sector	1.5(Public Sector)/30/6	2024.03.01
H	oadband	20/18/14	2023.08.17	Q		32(Public Sector)/22/11 (OTT Research)	2024.03.29
I	TV Channel	19/16/7	2023.07.26	R	Expert	5/14 (Academic)/11(OTT Research)	2024.03.29

Note: This table is compiled and organized by the study.

Each in-depth interview (including drawing structural holes in Taiwan's OTT industry) takes about 2 to 3 hours. Based on the perspectives of local OTT operators describing the main competitors in the Taiwanese OTT market, the strengths and weaknesses of their relationships with foreign operators, their priority partners, and the analysis of central network roles, interview questions are as follows: (1) What is the relationship between Taiwan's local OTT operators and with large international OTT operators from a network perspective? (2) In Taiwan's OTT industry, what are the structural hole bridging (network perspective) and the structural hole spanners? (3) What role does structural hole bridging (network perspective) play in Taiwan's OTT industry? (4) What are the types of structural holes in Taiwan's OTT industry? (5) Are Taiwan's local OTT operators able to act as bridges (from a network perspective) or structural hole spanners?

Before the interview, prepare B4 paper and pre-make company name labels of each OTT operator; during the interview, for each question, the interviewee will take the initiative to explain the link to the relevant company and describe its location on the map; for each question, both asked interviewees to describe and reflect on the connecting relationships and network patterns to form a narrative of the OTT industry network, their roles and status in the network, and the role relationships and status of other companies (Schiller et al., 2023). This study adopts the method of collating and mutually checking the interview data from more than three parties with different viewpoints. When the discussions of multiple parties appear to be repetitive or have similar opinions, it can be used as a judgment to confirm that the data is saturated; and at any time, dialogue can be carried out to deepen the relevant theories and accumulated findings of this study. Helps achieve theoretical saturation at the same time. The "visualization" of Taiwan's OTT industry structural holes described by each interviewee was confirmed with the interviewee and checked for consensus positions through the coding process. A total of 3,250 minutes of audio recordings were collected from in-depth interviews in this study, which were fully transcribed into verbatim transcripts. The researcher guided two graduate coders in coding to ensure inter-coder reliability (Babbie, 2016).

According to Goetz & LeCompte (1984: 211-232), the reliability and validity of this study are divided into external and internal (Reliability and Validity of This Study: Table 2).

Table 2: Reliability and Validity of This Study

Reliability/ Validity	Internal	External
Reliability	<ul style="list-style-type: none"> - Utilized participant-assisted data verification methods (Goetz & LeCompte, 1984: 217-220) - Interviewees reviewed and fully agreed with the "verbatim interview transcripts" - Data coding content (meaning) and size (scope) were consistent, ensuring high reliability between the researcher and coding assistants 	<ul style="list-style-type: none"> - Researcher has over 20 years of industry experience, familiar with relevant industry actual business decision-making levels, obtaining in-depth firsthand data - Based on theoretical literature, data analysis was conducted using grounded theory methods
Validity	<ul style="list-style-type: none"> - Interviewees' willingness and ability matched the research requirements - Anonymous numbering was used - Interviews were conducted in familiar or designated spaces as per interviewees' preference - Sufficient time was allocated for data collection without causing pressure - The researcher's questioning techniques and attitude enhanced interviewees' trust 	<ul style="list-style-type: none"> - Triangulation was used to compare and verify interview data from different companies and sectors within the OTT industry

Note: This table is compiled and organized by the study.

Data analysis

The researcher referred to Wang et al (2023) structural hole research and conducted data analysis through the coding method of grounded theory, adopting steps such as open coding, axial coding, and thematic coding (selective coding). Therefore, this study employs the grounded theory approach, systematically inducting and analyzing data. The process begins with open coding to shape concepts from interview transcripts, classifying similar concepts and categories into more abstract axial coding, and focusing on selective coding aligned with the research questions.

Open coding aims to analyze textual data with an open mindset to discover underlying patterns, themes, and perspectives without being constrained by preconceived assumptions. Axial coding, derived from open coding, refines these initial codes into more specific themes or categories, facilitating a more systematic understanding of the data. Selective coding further synthesizes and organizes axial codes, often forming the core themes or theoretical concepts of the entire study. Following these coding procedures, key resources for major firms in the local OTT industry were identified and categorized into four primary areas: platforms/brands, content, channels/users, funding, and marketing/global outreach. Based on the coding results, this study identifies five selective codes: (1) Relationships among local Taiwanese players are loose, with most situated at the periphery of the industry network; Netflix serves as a network bridge. (2) Netflix occupies the central position in Taiwan's OTT industry network as a structural hole spanner. (3) Netflix benefits from

being a structural hole spanner., while local Taiwanese players do not form mutually beneficial partnerships. (4) The connection between local Taiwanese OTT players and large international operators increasingly exhibits ‘reinforced structural holes’. (5) The potential for local Taiwanese OTT players to gain a competitive advantage.

Relationships among local Taiwanese players are loose, with most situated at the periphery of the industry network; Netflix serves as a network bridge.

The open coding of the raw data revealed that local OTT operators self-assess that they are unable to compete with Netflix in terms of platform/brand, content sources, channels/users, funding, and marketing/global outreach. These issues were categorized through axial coding into: "Local Taiwanese OTT operators mostly reside on the periphery of the industry network," "Netflix occupies the core position in Taiwan's OTT industry," and "Limited cooperation among local operators, with a tendency to connect with large international OTTs."

Data analysis indicates that Netflix occupies the central position within the network, functioning as a hub. Theoretically, companies at the center of a network have the capability to integrate the dispersed yet interconnected resources of network members (He, Mei, & Zhang, 2023). In contrast, local operators exhibit loose connections and limited cooperation, resulting in structural holes. As stated by the theory, structural holes exist between two or more previously unconnected participants. Actors positioned within these structural holes have the opportunity to act as "bridges," also known as "brokers" (Kwon et al., 2020), facilitating the exchange of capital, information, and other resources. This central positioning within a network starkly contrasts with organizations that have limited resources or occupy peripheral positions (Laumann & Knoke, 1987; Schiller et al., 2023). Based on the perspectives of local OTT operators describing the main competitors in the Taiwanese OTT market, the strengths and weaknesses of their relationships with foreign operators, their priority partners, and the analysis of central network roles, selective coding identifies that "Relationships among local Taiwanese players are loose, with most situated at the periphery of the industry network; Netflix serves as a network bridge" (Selective Coding Example: Table 3).

Table 3: Relationships among local Taiwanese players are loose, with most situated at the periphery of the industry network; Netflix serves as a network bridge (Selective Coding Example)

Axial Coding	Open Coding	Raw Data (Labeled)
Local Taiwanese OTT operators mostly reside on the periphery of the industry network.	Although local OTT operators have a certain market share in Taiwan, they struggle to compete with Netflix in terms of content, technology, and brand strength.	These well-known foreign platforms have strong financial backing and brand recognition. In content acquisition, local operators cannot compete at all, and even consider being featured on these platforms as a significant achievement. (C)
Netflix occupies the core position in Taiwan's OTT industry.	Netflix has a very strong bargaining power, significantly affecting local operators' content acquisition and investment strategies.	Even if the offered price isn't the highest in the market, everyone scrambles to collaborate with Netflix because it offers the greatest potential for internationalization. (P)

Limited cooperation among local operators, with a tendency to connect with large foreign OTT providers.	There is a competitive relationship among telecom operators, making cross-industry cooperation difficult and creating holes in the industry structure.	Reluctance to cooperate with other telecom operators because each other is seen as a competitor. (C) Emerging platform operators collaborate extensively with telecom companies at the foundational level, but not in business operations. (H)
---	--	---

Note: This table is organized and compiled by the author of this study.

Netflix occupies the central position in Taiwan's OTT industry network as a structural hole spanner.

The labeling of the original data indicates a high level of consensus among local Taiwanese operators regarding Netflix's central role within the domestic OTT industry network. Through open coding, an analysis of Netflix's impact factors in the Taiwanese market was conducted, leading to the axial coding of more specific themes or categories. These include: "Netflix's superior brand position and market share compared to local operators," "Taiwanese content relying on Netflix for international marketing," "Netflix's influence on the content acquisition and production costs of local operators," "Local content providers depending on Netflix for content acquisition to recoup investments and profits," and "The technological capabilities of local platforms significantly lagging behind Netflix."

The preceding analysis reveals that Netflix holds a pivotal position as a "bridge" within the Taiwanese OTT industry. From a competitive perspective, possessing heterogeneous resources naturally lends itself to advantages. However, this study approaches the issue from a social network standpoint, placing greater emphasis on the roles, connections, and relational network analyses of stakeholders. In other words, within the Taiwanese OTT industry, occupying a "structural hole spanner" position entails that the higher the level of heterogeneous resource connectivity, the greater the genuine advantage.

Groups without links create voids in the social system, known as structural holes. Individuals who bridge these gaps or serve as mediators, known as "structural hole spanners" (Lou & Tang, 2013), play an important role. In Taiwan, whether in content production relying on Netflix for content acquisition to recoup investments and profits, marketing for international outreach, or in terms of market share, funding, technology, and other resources, local players lag significantly behind Netflix. Selective coding reveals that "Netflix occupies the central position in Taiwan's OTT industry network as a structural hole spanner." (Selective Coding Example: Table 4).

Table 4: Netflix occupies the central position in Taiwan's OTT industry network as a structural hole spanner (Selective Coding Example)

Axial Coding	Open Coding	Raw Data (Labeled)
Netflix's superior brand position and market share compared to local	Local platforms lack attractive platform brands, making users less willing to use domestic	Netflix's brand strength is increasing, and its user base is growing. It could potentially lower the pricing to a very low level, but this is detrimental to Taiwan's industry. (B)

operators	platforms. Foreign platforms like Netflix have strong brand power and user bases in the Taiwanese market.	Currently, only Netflix has made its platform a user habit. Domestic users rarely use local OTT platforms, leading to the "marginalization" of local operators. (I)
Taiwanese content relying on Netflix for international marketing	Original content is a key factor in overcoming barriers to global market expansion. Current Taiwanese content exports rely heavily on funding from foreign platforms.	For telecom operators, a company that can create original content IP serves as a bridge or intermediary to fill gaps (structural holes). (C) Taiwanese content often fails to generate overseas traffic and still depends on Netflix for international sales. (B)
Netflix's influence on the content acquisition and production costs of local operators	Due to lack of competition, Netflix has become the largest content buyer in the Taiwanese OTT industry. Netflix has brought about industry upgrades, driving a significant increase in production costs for Taiwanese dramas.	Previously, there was competition from Disney, but now Disney is no longer in the game, and HBO is not buying recently, so the only buyer in Taiwan now is Netflix. (B) Netflix has driven the industry upgrade in this country. Wherever Netflix goes, production costs have increased five to ten times in the past five to ten years. (P)
Local content providers depending on Netflix for content acquisition to recoup investments and profits	Local operators rely on foreign platforms to purchase their content. Even if successfully sold to Netflix, it may not necessarily generate sufficient profits as Netflix rarely buys global rights.	When it comes to dramas, Netflix is almost the only one who can make Taiwan's content providers come close to breaking even, but they are not willing to pay that price every time. (J) Local content may not always fetch high prices because Netflix rarely buys global rights. The reality is that everyone will prioritize Netflix. In the end, local OTT operators still aren't making money. (C)
The technological capabilities of local platforms significantly lagging behind Netflix	Netflix has a leading position in UI and technology. Local operators suffer from a shortage of technical talent.	Netflix has currently achieved the pinnacle of UI. (I) In terms of salary structure, engineers are unaffordable. The streaming technology talent hasn't been in place yet. (I)

Note: This table is organized and compiled by the author of this study.

Netflix benefits from being a structural hole spanner, while local Taiwanese players do not form mutually beneficial partnerships.

During the open coding phase, local OTT operators pointed out that Netflix has its own global subscription payment base and does not need to rely on local players' platforms, channels, content supply, or even technical support. Additionally, Netflix's bargaining power is very strong and has a significant impact on local operators' content acquisition and investment. The aforementioned data analysis indicates that Netflix occupies a structural hole in the Taiwanese OTT industry, benefiting from accessing a greater variety of resources and information, synthesizing more potential viable approaches, and better coordinating various tasks across different communities (Lin et al., 2021). Theoretically, occupying a bridge position in the network can lead to benefits by promoting collaboration across different domains (Lin, Zhang, Gong, Chen, Oksanen, & Ding, 2021).

Nevertheless, axial coding summarizes that "Resources from local Taiwanese OTT operators are not essential for Netflix" and "Local OTT operators fear unstable repercussions from the disappearance of their relationship with Netflix." In other words, those occupying hub positions typically possess the ability to design and construct various self-centered, complex linkages, effectively facilitating the integration and coordination of resources within the network (Ye et al., 2021). However, while Netflix benefits from occupying a network bridge position in Taiwan, it does not, through the role of structural hole spanner, promote collaboration among different local industry sectors. This is inferred through selective coding as "Netflix benefits from being a structural hole spanner., while local Taiwanese players do not form mutually beneficial partnerships" (Selective Coding Example: Table 5).

Table 5: Netflix benefits from being a structural hole spanner., while local Taiwanese players do not form mutually beneficial partnerships (Selective Coding Example)

Axial Coding	Open Coding	Raw Data (Labeled)
Resources from local Taiwanese OTT operators are not essential for Netflix	Foreign platforms have their own global subscription-paying base and do not need to rely on local operators' channels or content supply to maintain their platform operations and subscription numbers.	Foreign well-known OTT platforms (Netflix) can still thrive without purchasing content from Taiwan, as they can support their platforms equally well, and subscriber numbers remain stable. This is because what truly drives their user growth is Korean dramas. (C)
	Netflix has higher autonomy and control over content and is not dominated or influenced by local operators.	The demand for Taiwanese dramas on Netflix is negligible because the proportion of Taiwanese dramas on their platform is very low, less than 1%. (D)
Local OTT operators fear unstable repercussions from the disappearance of their relationship with Netflix	Telecom operators lose competitors.	For telecom operators, Netflix is simply a platform to be listed on, reducing competition and one less platform to compete for users.
	However, for content producers, this means losing a major buyer, which may affect the industry's development as content cannot go global.	However, for content producers, losing the largest buyer and the inability to take content global are significant concerns. (C)

Note: This table is organized and compiled by the author of this study.

The connection between local Taiwanese OTT players and large international operators increasingly exhibits reinforced structural holes.

During the open coding phase of this study, it was discovered that, while there are some connections between local OTT operators and large international OTTs, most interviewees see these connections as transactions rather than true collaborations; they primarily consist of film acquisition transactions, with the relationships frequently characterized by asymmetry. Therefore, the axial coding further summarizes this as "the connection between local Taiwanese OTT operators and international operators predominantly resides in a disadvantaged position." For instance, while local Taiwanese content may not have global demand, providing high-quality content localized to Taiwan

and Asia to large international OTT platforms, especially Netflix. While this appears to promote the upgrading of Taiwan's film and television industry, in reality, the high production costs, decreasing volume of content purchased by Netflix, and lowering prices have resulted in local platforms being unable to afford content purchases and content producers struggling to recover costs. Additionally, with the aid of various factors, such as those mentioned above and technological advantages, Netflix has optimized the user experience and evolved into the mainstream OTT platform in Taiwan.

Data analysis confirms theories indicating that occupying a leading role typically involves mastering crucial technical knowledge, exerting dominance in partner selection, technology and knowledge transfer, and influencing development processes (Guo et al., 2021). Local Taiwanese OTT operators not only fail to gain competitive advantages but, according to the perspective of "reinforced structural holes," Netflix, as a structural hole spanner, enhances cohesion and exclusivity (exclusion to others) within Taiwan's industry network. If further strengthened, the cohesion and exclusivity facilitated by Netflix's position as a structural hole spanner will make it even more challenging for local operators to replace its existing role in bridging connections. This phenomenon is summarized through selective coding as "The connection between local Taiwanese OTT players and international operators increasingly exhibits reinforced structural holes" (Selective Coding Example: Table 6).

Table 6: The connection between local Taiwanese OTT players and international operators increasingly exhibits reinforced structural holes (Selective Coding Example)

Axial Coding	Open Coding	Raw Data (Labeled)
The connection between local Taiwanese OTT operators and overseas entities predominantly resides in a disadvantaged position	Overseas entities price their content high, but their purchase volumes are limited, making it difficult for Taiwanese operators to recoup their high production investments. They are often forced to increase production standards to meet the demands of overseas entities, but struggle to recover costs when selling to local entities, leading to a mismatch between production and distribution.	Netflix's strategy is subject to change. So you see that dozens of Taiwanese dramas just stagnate and cannot be sold. (E) There was a rush to sell to Netflix, which led to the entire market's production standards being dictated by Netflix. But the possibility of Netflix buying for exclusive broadcasting is probably only about 5%. (P)
	Overseas entities may enjoy special preferential conditions, leading to unfair competition.	Chunghwa Telecom, in order to collaborate with Netflix, exempts Netflix from paying any telecommunication facility fees. The primary cost for local operators lies in data centers and traffic fees. If we had the same conditions as overseas entities, we wouldn't be in the situation where almost every company is still incurring losses, as is currently the case. (O)
	Taiwanese telecom companies are restricted by government regulations and cannot freely engage in overseas investments or operations.	Taiwanese telecom companies cannot operate overseas or invest abroad freely due to government regulations; they need to be approved by the NCC. (P)

Note: This table is organized and compiled by the author of this study.

Taiwan's OTT industry structural holes

The literature indicates that cohesion within industry networks is highly significant, with basic cooperative relationships already existing among local OTT operators, including joint ventures or co-production of content and joint content procurement being the most common. Data analysis reveals that the most prevalent type of connection among domestic operators is content collaboration, specifically joint ventures and co-production. For instance, MyVideo collaborates with Public Television Service (PTS) on approximately four to five projects annually, while Hami Video and PTS collaborate on drama projects, and friDay Video also engages in partnerships with PTS. Specifically, PTS's primary connections with telecommunications companies predominantly revolve around content acquisition. Conversely, collaborations within the inner circle mostly involve joint ventures, particularly in film production, with a focus on drama.

In fact, the direction of cooperation among local operators tends to slightly favor or lean towards Netflix, which benefits the bridge role of Netflix in enhancing its overall network performance and evolving into a dominant core player. While the three major domestic telecommunications are considered the most financially powerful and influential among domestic OTT operators, they have indicated that collaboration among platforms is unlikely, and other conditions do not allow them to become key players with stronger dominance in the network. Moreover, there are numerous emerging domestic platforms, many of which are small in scale, and some are even marginalized within the industry. Local operators have not actively promoted tightly integrated networks among themselves, and when cooperation fails to yield expected results, relationships are promptly terminated. As a result, there is a lack of significant integration and stronger local key players among a cluster of small, homogeneous OTT platforms. This leads to structural features that point to weaknesses in Taiwan's OTT industry and prevent overall industry network performance from improving.

Among these, the connection between Chunghwa Telecom and ELTA TV has accumulated over many years as a frequent, long-term, mutually beneficial, and complementarily cooperative model with potential for collaboration and differences in industry expertise. The true benefits of other content-related connections—such as vertical integration of content production and domestic telecom OTTs with cable systems—remain to be assessed; at the moment, they only make up a little portion of OTT revenue. Further observation is needed regarding telecom operators' investment in content production companies to address deficiencies in content creation and distribution. For example, it is unclear whether Far EasTone can strengthen its OTT platform friDay Video by distributing content with Netflix and obtain more content resources through Mission Entertainment, thereby benefiting both parties. Regarding the ties between rising OTT platforms, they are primarily concerned with joint content acquisition and content production. The operators themselves admit that there is still a lack of evidence for larger collaboration benefits.

Due to the lack of cooperation among the three telecom OTT platform operators, they rely on overseas platforms, particularly Netflix, as connectors. For instance, Chunghwa Telecom acts as a

channel and collaborates with several emerging platforms to feature their content. Far EasTone and Taiwan Mobile, on the other hand, have better relationships with cable TV operators for channel cooperation. Although PTS sells content to both Netflix and the three major telecom platforms simultaneously, it struggles to bridge the structural hole gap due to its dependency on Netflix as the structural hole spanner, which affects whether Netflix is willing to invest in first-run rights. PTS's connections with the three major telecom operators mainly revolve around drama co-production (Figure 1: Structural holes in Taiwan's OTT industry Taiwan's OTT industry structural holes)..

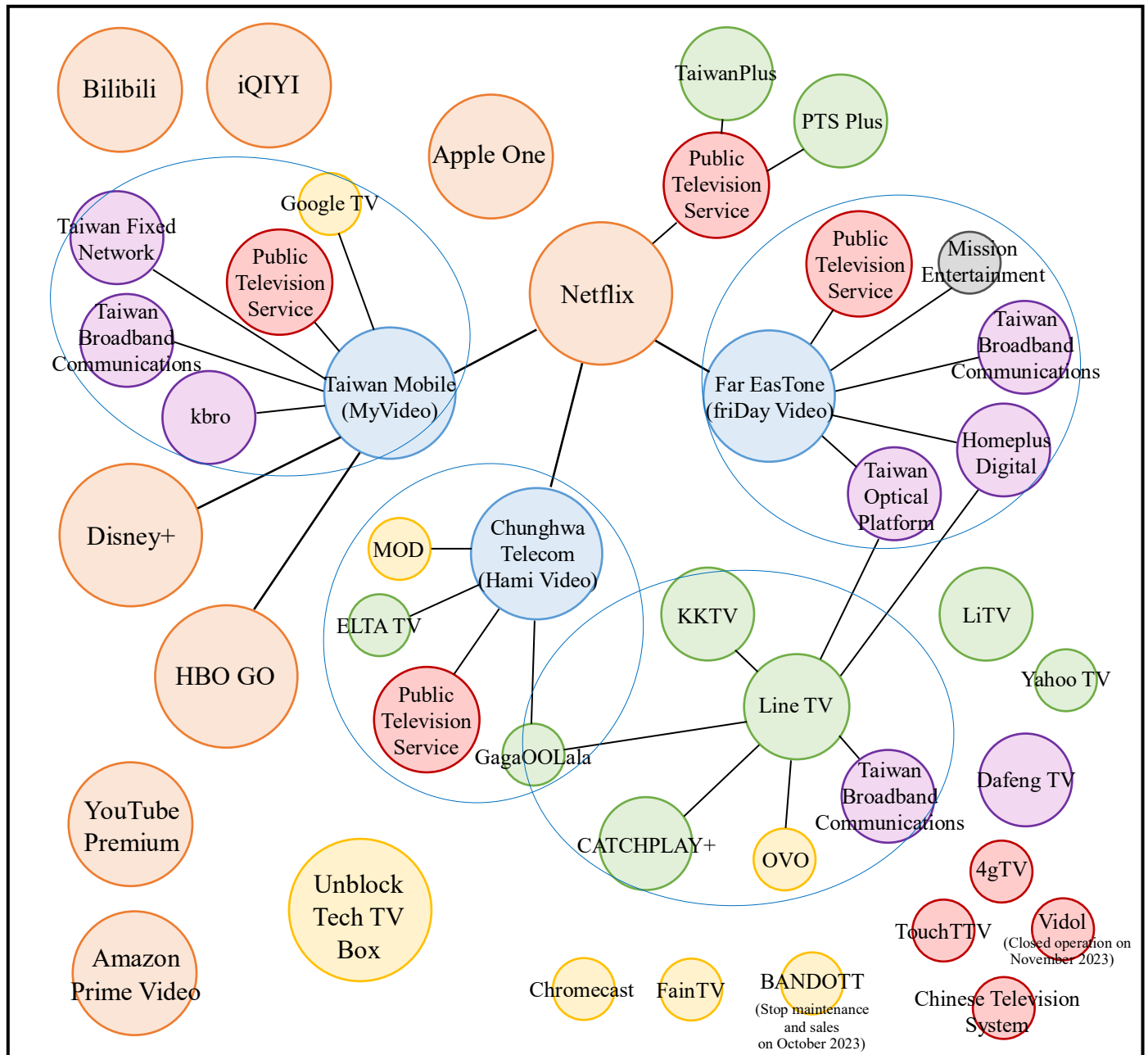


Figure1: Taiwan's OTT industry structural holes

Note: This figure is organized and compiled by the author of this study. The industry categories are marked as overseas operators (orange), telecommunications (blue), emerging platforms (green), cable TV (purple), TV channels (red), set-top boxes (yellow), and

content producers (grey).

However, despite the technical assistance and increased active user base resulting from these collaborations, the high copyright fees and challenges in financial balance remain significant hurdles, especially as most of the content is second- or third-run, offering minimal benefits to the telecom operators. Additionally, while emerging platforms collaborate more closely with each other, the limited audience and original content still restrict the effectiveness of their collaboration. Furthermore, their focus on purchasing overseas content rather than investing in domestic content development offers little support for the local industry's growth.

Moreover, based on the coding procedure, this study concurrently uncovered that piracy operators such as Unblock Tech TV Box offer free access to both domestic and international content, a challenge that government regulation has yet to effectively address. The profound impact and disruption on local operators are considerable. Many operators estimate that there are approximately four million piracy set-top boxes in Taiwan. Despite not occupying a central position in the industry network, these piracy operators exert significant influence, surpassing the scale of telecom operators' OTT services. The largest piracy operator, Unblock Tech TV Box, boasts a user base even larger than that of MOD and, in some cases, exceeds the total number of cable TV set-top boxes. This creates a negative "structural hole" in the domestic OTT industry landscape.

The Existence of Structural Holes in Taiwan's OTT Industry and the Possibility for Local Operators to Gain Advantages.

This study examines the industrial ecosystem structure of interaction relationships among operators from the perspective of local OTT operators impacted by large international OTT platforms. It focuses on participants' perceptions and interpretations of the network, as well as descriptions of their relationships with other participants. The research identifies major international OTT operators, particularly Netflix, as the key hub and structural hole spanner (Schiller et al., 2023). To remain competitive, local OTT operators must seek new opportunities within these structural holes (Van Wijk et al., 2008; Zang, 2018; Cheah & Koay, 2023).

During the open coding phase, the study categorizes the lack of connections or gaps in Taiwan's OTT industry. The axial coding identifies at least four different dimensions of disconnectedness: "structural holes due to the imbalance between production and sales," "structural holes caused by the lack of global-scale capital among local players," "weakness of local platforms leading to expanded structural holes," and "structural holes in the OTT industry resulting in piracy actors becoming bridge roles." Literature suggests "bridging structural holes" as a potential solution (Liu & Xi, 2023). Considering issues like the imbalance between production and sales, insufficient local capital, weak platforms, and rampant piracy, policy emerges as a crucial factor. Policies that could help address these structural holes include initiatives such as the Taiwan Creative Content Agency's (TAICCA) "1 plus 4 - T-content plan" and three major telecom operators' respective 3 billion NTD funds aimed at encouraging local content production and collaboration with international operators. Furthermore,

efforts to enhance competitiveness by fostering collaborations between local and international operators, such as the partnerships with Japan's Kadokawa Group and Korea's CJ Group in 2024, are also highlighted. The selective coding for this study is summarized as "The Existence of Structural Holes in Taiwan's OTT Industry and the Possibility for Local Operators to Gain Advantages" (Selective Coding Example: Table 7).

Table 7: The Existence of Structural Holes in Taiwan's OTT Industry and the Possibility for Local Operators to Gain Advantages (Selective Coding Example)

Axial Coding	Open Coding	Raw Data (Labeled)
Structural holes due to the imbalance between production and sales	TAICCA launched the "1 plus 4 - T-content plan," encouraging local content production and international distribution through government investment and tax incentives. The government encourages local content production and foreign cooperation, simultaneously attracting investment through tax incentives and investment funds to enhance Taiwan's content international influence.	Through government subsidies, investment, and tax reduction, these three policy tools are deployed simultaneously to reduce private sector risk. (P) The Ministry of Culture is now implementing measures to increase investment in Taiwanese content while also encouraging foreign investment or joint ventures with foreign content production companies. This aims to expand the pool of funds in Taiwan and provide opportunities for Taiwanese content to go abroad. (J)
Structural holes caused by the lack of global-scale capital among local players	New collaboration models with Japan's Kadokawa Group and South Korea's CJ Group aim to enter overseas markets by distributing Taiwanese content internationally, breaking the reliance on Netflix.	To distribute a Taiwanese drama overseas, you can use different distribution methods, such as selling to Fuji TV in Japan, CJ in Korea, or Astro in Malaysia. Last year, we set up a fund of 1 billion TWD each with Japan's Kadokawa and Korea's CJ for Taiwanese content. (P)
Weakness of local platforms leading to expanded structural holes	Taiwan's inability to consolidate into a large platform leads to attempts to find overseas partners for joint ventures and co-productions.	The domestic OTT platform market in Taiwan is too small, and there are too many players. If they can't make money, they will inevitably reduce, and in the next year or two, several will go bankrupt. (P)
Structural holes in the OTT industry resulting in piracy actors becoming bridge roles	Piracy results in revenue not reaching content creators, affecting the industry's healthy development. Pirated set-top boxes make it difficult to track infringement, involving technical, international, and legal issues.	All the content I produce is being consumed by others, but the revenue doesn't return to the top-level content creators because it goes to the pirates. (N) It's just a box that introduces the signal to a website, where another group of people operates an overseas website. It's difficult to provide evidence in court to establish the relationship. (R)

Note: This table is organized and compiled by the author of this study.

Discussion and Conclusion

Regarding competitive advantages, in Taiwan's OTT industry, funding ranks as a crucial and prioritized resource. Having a branded platform is an important resource for gaining an advantage, but it cannot solely rely on distribution channels. Crucial content is necessary to truly possess a

competitive edge. Taiwanese users predominantly favor large international OTT platforms, particularly Netflix. Telecom operators boast significant user bases and channels, yet they face challenges in competing for high-quality exclusive content rights due to financial constraints. In recent years, telecom companies, television channels, and emerging OTT platforms have actively engaged in content production. Even with exclusive original content, large international OTT platforms play a crucial and important role in overseas distribution. However, local operators' key content is mostly controlled by structural hole spanner Netflix. Moreover, local content is not the winning key for Netflix locally. As a result, platforms with advantages, which truly lead to content investment and acquiring exclusive rights, are mostly large international OTT platforms. Domestic operators lack significant platform recognition, market share, and industry scale, and most of them lack brand-building capabilities. This underscores the limited key resources of local operators. Overall, there is no significant advantage for domestic operators.

Types and Analysis of Structural Holes in Taiwan's OTT Industry

This study synthesizes and analyzes the formation of structural holes between local and foreign OTT operators. Drawing on the aforementioned theories, it emphasizes the strengths and weaknesses of various resource relationships and their interactive impacts, examining the disparities in various structural holes. The structural hole identified as "structural holes caused by the lack of global-scale capital among local players" is primarily due to the advantage international operators (such as Netflix) have in resource allocation. The "structural holes due to the imbalance between production and sales" are also linked to Netflix's dominant brand value and marketing capabilities. Regarding the "weakness of local platforms leading to expanded structural holes," the key issue lies in the fragmented, small, and numerous natures of local platforms, which have historically lacked integration and platform brand establishment. Additionally, the issue of "structural holes in the OTT industry resulting in piracy actors becoming bridge roles" underscores the challenges in effectively implementing relevant policies and regulations in Taiwan.

Regarding the "structural holes caused by the lack of global-scale capital among local players," the disparity between local and global capital is primarily manifested in the dominance of international operators players like Netflix in resource allocation within the Taiwanese OTT industry. Leveraging their substantial funds and global subscriber base, these international operators wield significant resource allocation authority, resulting in higher network centrality. While local players possess certain capital, they cannot rival Netflix in terms of capital scale and resource allocation. Given the prioritization of capital in OTT industry resources, the government's utilization of a triple policy approach combining subsidies, investments, and tax reductions after the passage of the Investment Tax Credit Regulations could mitigate risks for private enterprises, encouraging more active investment in audiovisual content production, representing one viable direction. In reference to the "structural holes due to the imbalance between production and sales," high-quality content stands as a critical resource within the OTT industry landscape. International operators like Netflix

act as bridges, connecting various resources, making them the largest content buyers and most popular platforms in the Taiwanese OTT industry. Moreover, they possess significant advantages in marketing overseas. Many local players rely on foreign platforms to help them expand internationally. Despite the government's current implementation of corresponding policy measures, such as the "1 plus 4 - T-content plan," aimed at promoting the internationalization and marketing of local content, industry players believe that its effectiveness still requires observation over the next two to three years. However, there are concerns regarding policy promotion neglecting to strengthen local OTT platforms and their resource connections, thereby exacerbating the further expansion of structural holes. Essentially, the insufficient strength of local platforms has led to an increased widening of structural holes. Especially noteworthy is the robust brand value and user base enjoyed by overseas entities such as Netflix in the Taiwanese market, while local platform brands have sustained long-term lower attractiveness and usage rates. This situation is likely to exacerbate structural holes (RSH), increasing communal solidarity and exclusion of outsiders (Burt, 2015). According to theoretical frameworks, as structural holes solidify, it becomes increasingly challenging to supplant the roles of existing bridging entities. Consequently, successful bridges are more likely to persist in occupying positions that yield informational benefits and control interests (Lin et al., 2021). As for "structural holes in the OTT industry resulting in piracy actors becoming bridge roles," cultural policy institutions acknowledge the difficulty in addressing this issue due to the nature of pirate set-top boxes as devices, for which responsibility for the content they carry is elusive. Depending solely on industry self-regulation has eroded local players' confidence in government enforcement. Currently, aside from products like the "Unblock Tech TV Box," there are thousands of pirate websites. Industry players criticize the elevation of piracy industries to bridge or central industry roles as a failure of government duty. Furthermore, the unequal treatment between local and overseas players resulting from related policies, including the Company Act, exacerbates the situation. For instance, in the case of Netflix operating in Taiwan without properly establishing a subsidiary but enjoying additional legal and tax advantages, it creates unfair competition for local players (Table 8: Types and Analysis of Structural Holes in Taiwan's OTT Industry).

Table 8: Types and Analysis of Structural Holes in Taiwan's OTT Industry

Structural Hole Type	Conditions for Overseas Operators	Conditions for Local Operators	Advantages and Disadvantages
Resource Allocation Authority	Netflix possesses significant capital and strong bargaining power. Overseas platforms have their own global subscription bases, independent of local players' channels or content supply, sustaining platform operations and subscription numbers.	Telecommunications and cable system operators have a certain amount of capital but cannot compete with Netflix.	With Disney+ gradually withdrawing from the Taiwanese market and HBO not primarily focusing on Taiwan, Netflix enjoys high centrality in the Taiwanese OTT industry network, acquiring strong resource advantages. Conversely, local players have lower intermediary centrality and weaker control over network resources.

Acting as Bridges to Connect Different Resources	Due to the lack of competitors, Netflix is the largest content buyer in the Taiwanese OTT industry.	Local content providers, such as PTS, often rely on overseas platforms to invest in content to recoup their investment.	Netflix's presence has led to an industry upgrade, significantly increasing production fees for Taiwanese dramas. However, selling content to Netflix does not necessarily generate profits, as they rarely purchase global rights
	Overseas players can enjoy special preferential conditions, leading to unfair competition, such as Chunghwa Telecom waiving Netflix's facility fees.	There exists competition among telecommunications operators, making cross-industry cooperation difficult and resulting in structural holes in the industry.	Collaboration among local players is limited, relying on overseas platforms as structural hole connections.
Marketing Capabilities for International Expansion	Even though Netflix's and Disney+'s content investment amounts are not the highest in the market, they can meet the maximum potential for internationalization for industry players.	Taiwanese content struggles to independently market overseas and often relies on Netflix for funding and platform placement.	TAICCA's "1 plus 4 - T-content plan" encourages the production and international distribution of local content through government investment and tax incentives. However, the marketing effectiveness of subsidized content remains insignificant.
Platform Brand Value	Netflix possesses a strong brand presence and user base in the Taiwanese market.	Local platform brands lack attractiveness and have low usage rates.	Netflix and Disney+ have become habitual choices for Taiwanese consumers, and telecommunications operators collaborating with them may divert subscribers from their own platforms.
Continuous Technological Improvement of Platforms	Netflix leads in UI technology.	Local platforms face a shortage of technical talent and slow development updates.	Despite being outmatched in UI technology by overseas platforms, there is still an opportunity to excel through niche content, such as ELTA TV.

Note: This table is organized and compiled by the author of this study.

Analysis of Structural Hole Conditions for Local OTT Operators in Taiwan

Regarding whether local OTT operators possess conditions conducive to structural holes, firstly, they must control key industry resources and have allocation rights. Currently, through government policies such as "subsidies + investment + tax reduction," there is indeed assistance in enhancing financial capabilities. However, government subsidies are limited, and with production costs continuously escalating, operators may still face challenges in recouping investments if there is no improvement in the industry structure. Secondly, local operators must actively propose solutions to bridge different resources. Some suggest leveraging the combined strength of funds established by TAICCA and the three major telecommunications companies. By focusing on high-quality international cooperation content and simultaneously encouraging or promoting the integration of

overseas platforms, operators urge proactive measures rather than waiting until the local OTT industry is in dire straits before integration efforts, which would then be too late. Theoretically, when network participants hold different norms or viewpoints and lack mutual understanding and trust, structural holes emerge in the network (Burt, 1992). Therefore, what is most needed is trust. Yet, it can be extremely challenging when there are conflicts of commercial interests among operators or insufficient incentives for integration. It urgently requires unity and mutual trust among operators, along with certain policy support. With regard to the ability to market internationally, the ongoing cooperation between TAICCA, Japan's Kadokawa Group, and South Korea's CJ Group presents an opportunity. Nonetheless, some operators are concerned that overseas partners may not actively promote Taiwanese content to Japanese and South Korean markets. Additionally, while government encouragement of collaboration with foreign entities to enhance Taiwan's international content influence is a feasible direction, challenges arise when collaborating with foreign entities. Premium content may face challenges in being showcased on international platforms, and the inability to retain high-quality content on Taiwanese OTT platforms hampers brand establishment. Addressing infringement by piracy actors on platform content and resources requires local operators to continuously improve platform technical expertise and capabilities. Still, the complexity of the piracy industry chain and issues surrounding legal determination pose significant challenges (Table 9: Analysis of Structural Hole Conditions for Local OTT Operators in Taiwan).

Table 9: Analysis of Structural Hole Conditions for Local OTT Operators in Taiwan

Structural Hole Conditions	Solutions	Challenges
Resource Allocation Authority	Government intervention with a combination of subsidies, investments, and tax reductions to mitigate private sector risks.	Limited government subsidies may not cover the increasing production costs, potentially leading to inadequate cost recovery for local operators.
	Government subsidies prioritize local content on platforms and restrict exclusive content deals with foreign platforms.	Government could impose clauses in subsidy contracts mandating content providers to offer content on free platforms. However, this may not align with commercial logic as high content production costs are unlikely to be solely covered by government subsidies.
Acting as Bridges to Connect Different Resources	Encourage domestic platform consolidation through government and telecom company funds to enhance competitiveness and resource utilization efficiency.	Commercial interests of each operator may hinder consolidation efforts. For instance, telecom companies may compete for market share and leadership positions, making cooperation difficult, and OTT operator mergers cannot exceed one-third of the market share.
	Establish a government-led overseas platform for funding support and management to facilitate local content entry	Establishing and operating platforms require substantial financial investment, while government resources are limited, leading to

	into international markets, operating jointly with foreign data center operators (All OTT Subscriptions in One Pack).	potential funding shortages for operators. The quality and quantity of Taiwanese content may not be sufficient to support the operation of large-scale integrated platforms.
Marketing Capabilities for International Expansion	Collaborate with Japan's Kadokawa Group and South Korea's CJ Group in a new model to enter overseas markets, distributing Taiwanese content internationally through distribution channels to break the reliance on Netflix.	Overseas partners may not actively promote Taiwanese content to Japanese and South Korean markets.
Platform Brand Value	Government encourages local content production and foreign collaboration, while attracting investment through tax incentives and investment funds to enhance Taiwan's international content influence.	Despite collaboration with foreign entities to be showcased on different platforms, it may still be challenging to enhance the brand influence of Taiwanese local OTT platforms.
Continuous Technological Improvement of Platforms	Platform technology and content production should be developed simultaneously. Prevent piracy actors from downloading content and resources from their platforms.	Many operators currently rely on outsourcing technology, potentially leading to continued loss of control over resources if internal technical talent is not developed. It's challenging to track infringement by piracy boxes, involving technical, international, and legal determination issues.

Note: This table is organized and compiled by the author of this study.

Facing the scenario where large overseas OTT platforms occupy structural holes in the industry, this study explores potential solutions and challenges. According to social network theory, an efficient network should allow rapid access to other nodes through the shortest paths; evidently, the Taiwanese OTT industry is not currently an efficient network. Local OTT operators aiming to be structural hole spanners must overcome various challenges, including financial constraints, conflicts of commercial interests, overseas market expansion, and technological challenges. According to theory, strong bonding and bridging networking relationships are required among industry network nodes, which can be observed through relational approaches to understand their advantages, while structural approaches help comprehend the types of connections among network participants and their positions within the network (Mateo López-Mora et al., 2024). Taiwanese local operators need to continuously strengthen their resource capabilities, actively seek mutually beneficial cooperation domestically and internationally, establish trust, and assume the role of bridging connectors. According to theory, cohesion can generate trust and minimize adverse behaviors within and between companies. Networks with fewer structural holes and cohesive structures are more conducive to corporate exploration of external connections (Zang, 2018; Cheah, C. W., & Koay, K. Y., 2023). He et al. (2023) suggested that companies should adopt different development measures based on structural characteristics and take actions to construct new structural holes, increase heterogeneous connections, and establish long-term cooperative trust relationships to avoid the short-termism and

opportunism effects brought by structural holes. Past studies have found that strong government support is a crucial safeguard for the development of innovative networks. It is necessary for the government to continue promoting market-oriented R&D investment mechanisms to enhance resource integration, risk diversification, and uncertainty reduction. especially for those operators capable of generating significant economic benefits, encouraging cooperation between local upstream and downstream operators (Ai & Wu, 2017). Leveraging policy support, resource investment, and coordination functions can contribute to the sound development of the OTT industry. Initiatives like the Taiwan Creative Content Agency's (TAICCA) "1 plus 4 - T-content plan" and the telecom giants' respective 3 billion NTD funds, which are intended to promote local content production and collaboration with foreign entities, are examples of policies that maybe aid in filling in these structural holes.

Limitation and future

This study mainly describes industrial relations from the perspective of local OTT operators in Taiwan. It is recommended that in the future, based on the findings of this study, it can be explored from the perspective of international operators. In addition, based on the literature, the structure hole map of Taiwan's OTT industry constructed in this study mainly presents a macro perspective, explaining characteristics such as industrial structure and interactive relationships. If future researchers are interested, they can further explore the solutions of different types of structural holes.

Reference

- Afuah, A. (2013). Are network effects really all about size? The role of structure and conduct. *Strategic Management Journal*, 34(3), 257-273. <https://doi.org/10.1002/smj.2013>
- Ai, C. H., & Wu, H. C. (2017). Cross-regional corporations and learning effects in a local telecommunications industry cluster of China. *Journal of the Knowledge Economy*, 8, 337-355. <https://doi.org/10.1007/s13132-015-0263-6>
- Besanko, D., Dranove, D., Shanley, M., & Schaefer, S. (2010). *Economics of Strategy* (3rd ed.). Wiley.
- Bosua, R., & Evans, N. (2017). Extending social capital through online social networks (OSNs) in rural Australian SMEs. *ICIS 2017 Proceedings*, 26, 1-17.
- Burt, R. S. (1992). *Structural holes: The social structure of competition*. Harvard University Press.
- Burt, R. S. (2015). Reinforced structural holes. *Social Networks*, 43, 149-161.
- Chatzichristos, G., Olmedo, L., van Twuijver, M., & O'Shaughnessy, M. (2023). Support Networks for Social Innovation: Insights from Ireland. *Journal of Social Entrepreneurship*, 1-21. <https://doi.org/10.1080/19420676.2023.2192229>
- Cheah, C. W., & Koay, K. Y. (2023). Health-based crisis: How do firms weather the storms using the structural hole-bridging strategy? *Journal of Business & Industrial Marketing*, 38(11), 2417-2430. <https://doi.org/10.1108/JBIM-09-2021-0458>

- Crossley, N. (2010). The social world of the network. Combining qualitative and quantitative elements in social network analysis. *Sociologica*, 1, 1-34.
- Dubini, P., & Aldrich, H. (1991). Personal and extended networks are central to the entrepreneurial process. *Journal of Business Venturing*, 1, 305-313.
- Edwards, G. (2010). Mixed-Method Approaches to Social Network Analysis. NCRM Working Paper. National Centre for Research Methods.
- Friedman, J. R. (1966). *Regional development policy: A case study of Venezuela*. MIT Press.
- Goetz, J. P., & LeCompte, M. D. (1984). *Ethnography and qualitative design in educational research*. Academic Press.
- Gómez, R., & Muñoz Larroa, A. (2023). Netflix in Mexico: An Example of the Tech Giant's Transnational Business Strategies. *Television & New Media*, 24(1), 88-105. <https://doi-org.proxyone.lib.nccu.edu.tw:8443/10.1177/15274764221082107>
- Grant, R. M. (2005). *Contemporary Strategy Analysis*. Blackwell.
- Hanneman, R., & Riddle, M. (2005). *Introduction to Social Network Methods*. University of California.
- Herz, A., Peters, L., & Truschkat, I. (2015). How to do qualitative structural analysis: The qualitative interpretation of network maps and narrative interviews. *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research*, 16(1), Art.9. <https://doi.org/10.17169/fqs-16.1.2092>
- Herz, Andreas/Altissimo, Alice (2021): Understanding the structures of transnational youth im/mobility: A qualitative network analysis. In: Global Networks.
- He, M., Mei, M., & Zhang, H. (2023). Evolutionary Stages and Paths of Innovation Networks in Industrial Clusters: Case Study of Nanchong Silk-Spinning Garment Industry Cluster (SSGIC). *Journal of Knowledge Economy*. <https://doi.org/10.1007/s13132-023-01219-7>
- Jia, J., & Benson, A. R. (2018). Random spatial network models with core-periphery structure. *Proceedings of the Twelfth ACM International Conference on Web Search and Data Mining*, 366-374.
- Jones, G. J., Edwards, M., Bocarro, J. N., Bunds, K. S., & Smith, J. W. (2017). Collaborative advantages: The Role of Interorganizational partnerships for youth sport Nonprofit organizations. *Journal of Sport Management*, 31(2), 148-160. <https://doi.org/10.1123/jsm.2016-0118>
- Katz, M. L., & Shapiro, C. (1985). Network externalities, competition, and compatibility. *American Economic Review*, 75(3), 424-440.
- Kim, S., Chae, S., Wagner, S. M., & Miller, J. W. (2022). Buyer abusive behavior and supplier welfare: An empirical study of truck owner-operators. *Journal of Supply Chain Management*, 58(4), 90-111. <https://doi.org/10.1111/jscm.12285>

- Knox, H., Savage, M., & Harvey, P. (2006). Social networks and the study of relations: Networks as method, metaphor and form. *Economy and Society*, 35(1), 113-140.
<https://doi.org/10.1080/03085140500465899>
- Kwon, S.-W., Rondi, E., Levin, D. Z., De Massis, A., & Brass, D. J. (2020). Network Brokerage: An Integrative Review and Future Research Agenda. *Journal of Management*, 46(6), 1092-1120.
<https://doi.org/10.1177/0149206320914694>
- Laumann, E. O., & Knoke, D. (1987). *The organizational state*. University of Wisconsin Press.
- Li, N., Huang, Q., Ge, X., He, M. Cui, S. Huang, P., Li, S., & Fung, S. (2021). A review of the research progress of social network structure. *Complexity*, 2021, 6692210.
<https://doi.org/10.1155/2021/6692210>
- Lin, Z., Zhang, Y., Gong, Q., Chen, Y., Oksanen A., & Ding, A.Y. (2022). Structural hole theory in social network analysis: A review. *IEEE Transactions on Computational Social Systems*, 9(3), 724-739. Doi: 10.1109/TCSS.2021.3070321.
- Lin, Z., Zhang, Y., Gong, Q., Chen, Y., Oksanen, A., & Ding, A. Y. (2021). Structural hole theory in social network analysis: A review. *IEEE Transactions on Computational Social Systems*, 9(3), 724-739. <https://doi.org/10.1109/TCSS.2021.3070321>
- Liu, J., & Xi, X. (2023). When brokers start to fill structural holes: The cultural contingency of how entrepreneurs leverage structural holes to facilitate knowledge transfer. *Journal of Knowledge Management*, 27(10), 2729-2753. <https://doi.org/10.1108/JKM-07-2022-0566>
- Lou, T., & Tang, J. (2013). Mining structural hole spanners through information diffusion in social networks. *Proceedings of the 22nd International Conference on World Wide Web*, 825-836.
- Lou, T., & Tang, J. (2013, May). Mining structural hole spanners through information diffusion in social networks. *Proceedings of the 22nd International Conference on World Wide Web*, 825-836.
- Luxton, I., & Sbicca, J. (2021). Mapping movements: A call for qualitative social network analysis. *Qualitative Research*, 21(2), 161-180. <https://doi.org/10.1177/1468794120927678>
- Marin, A., & Wellman, B. (2011). Social network analysis: an introduction. In J. Scott, & P. J. Carrington. (Eds.), *The Sage handbook of social network analysis* (pp.11-25). Sage Publications.
- Mateo López-Mora, T., Gil-López, Á., San Román López, E., & Sierra Gómez, A. (2024). Networks throughout an institutional transition: The case of the former Meliá touristic group (1932-1978). *Management & Organizational History*, 19(1), 57-79.
<https://doi.org/10.1080/17449359.2024.2315248>
- Nam, J., Ro, D., & Jung, Y. (2023). Netflix's presence: Investigating content producers' understanding of Netflix in the Korean media industry. *Telecommunications Policy*, 47(4), 102525. <https://doi.org/10.1016/j.telpol.2023.102525>
- Olmedo, L., van Twuijver, M., & O'Shaughnessy, M. (2021). Rurality as context for innovative responses to social challenges – The role of rural social enterprises. *Journal of Rural Studies*, 99, 272-283. <https://doi.org/10.1016/j.jrurstud.2021.04.020>

- Park, S., & Kwon, Y. (2023). Disentangling the effects on OTT platform performance of three strategies: Pricing, M&As, and content investments. *Telecommunications Policy*, 47(8), 102600. <https://doi.org/10.1016/j.telpol.2023.102600>
- Park, S., & Kwon, Y. (2019, June 16-19). *Research on the Relationship between the Growth of OTT Service Market and the Change in the Structure of the Pay-TV Market* [Conference presentation]. 30th European Conference of the International Telecommunications Society (ITS). Helsinki, Finland.
- Ramasoota, R., & Kitikamdhorn, A. (2021). The Netflix effect” in Thailand: Industry and regulatory implications. *Telecommunications Policy*, 45(7), 102156. Doi: 10.1016/j.telpol.2021.102156
- Schiller, M., Awad, I., Buijse, N., Chantre, M., Huang, Y.-C., Jonitz, E., van den Brink, L., & van Dordrecht, L. (2023). Brokerage in urban networks on diversity and inclusion: The case of Rotterdam. *Cities*, 135, 104219. <https://doi.org/10.1016/j.cities.2023.104219>
- Sun, L., Guo, Z., & Hu, L. (2021). Educational games promote the development of students’ computational thinking: A meta-analytic review. *Interactive Learning Environments*, 31(6), 3476-3490. <https://doi.org/10.1080/10494820.2021.1931891>
- Van Wijk, R., Jansen, J. J., & Lyles, M. A. (2008). Inter-and intra-organizational knowledge transfer: A meta-analytic review and assessment of its antecedents and consequences. *Journal of Management Studies*, 45(4), 830-853.
- Wang, X., Geng, X., & Wang, Y. (2023). Research on the network topology characteristics of unsafe behavior propagation in coal mine group from the perspective of human factors. *Resources Policy*, 85(Part A), 104020. <https://doi.org/10.1016/j.resourpol.2023.104020>
- Ye, D., Wu, Y. J., & Goh, M. (2020). Hub firm transformation and industry cluster upgrading: Innovation network perspective. *Management Decision*, 58(7), 1425-1448. <https://doi.org/10.1108/MD-12-2017-1266>
- Ye, D., Zheng, L. L., & He, P. X. (2021). Industry cluster innovation upgrading and knowledge evolution: A simulation analysis based on small-world networks. *Sage Open*, 11, 1-13. <https://doi.org/10.1177/21582440211031604>
- Zang, J. (2018). Structural holes, exploratory innovation and exploitative innovation. *Management Decision*, 56(8), 1682-1695.
- Zhu, J., Zhu, L., Bao, C., Zhou, L., Wang, C., & Kong, B. (2018). Top-k structure holes detection algorithm in social network. *Proceedings of the 2018 9th International Conference on Information Technology in Medicine and Education (ITME)*, 1064-1071.