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LITTLE EARS IN THE BIG WORLD
THE DEVELOPMENT OF TVRO IN TAIWAN

BY

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A THESIS

Submitted to
Michigan State University
in partial fulfillment of the requirements
for the degree of

MASTER OF ARTS

Department of Telecommunication

1991

ABSTRACT

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Global communications via satellite has taken hold of its prosence today. It's application vary widely; from military intelligence, to meteorological monitoring and to entertainment (i.e. DBS). These applications (and many others) were initially afforded only by the developed countries. But with technological progress leading to more efficient and lower costs, satellite hardware, many developing countries were able to acquire this technology.

Taiwan is a case in point. Moreover, the Taiwanese case is quite a unique one; in the sense that an external factor (the Japanese satellite system) has created an impetus for Taiwan to consider having a DBS system to protect her TV industry and cultural sovereignty. The Japanese satellite system poses both a crisis as well as an opportunity for the Taiwanese government and TV station--depending on how they manage the situation.

This thesis traces the growth of TVROs in Taiwan which bore down to poor quality TV programming, leading to poor viewerships which in turn threatened the TV industry. With a significant Japanese imperialistic influence in the past coupled with current availability of Japanese programs (which is more populer), the cultural sovereignty appears to be at stake. In the first instance, it seems that merely improving the quality of TV programming would suffice. But upon further deliberation having a DBS system is deemed necessary to enhance the future prospect of the Taiwanese industry.

The Taiwanese case thus reflects at least two critical issues: First, technological advancement in satellite communication has made hardware affordable to developing countries. Second, how cultural sovereignty and a TV industry can be threatened by a more advanced medium.

This thesis is dedicated to
my parents

C. C. H.
&
Y. H. L.

ACKNOWLEDGEMENTS

Special Thanks to Dr. Joseph Straubhaar and Dr. Charles Steinfield

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I. INTRODUCTION

Taiwan is an island-country in the Pacific Ocean located 120 miles off the South-east coast of mainland China. This tropical island is leaf-shaped stretching 365 kilometers from north to south and varies between 100 to 145 from east to west. Although the land area is 3,600 square kilometers, 70% are rugged mountains making land a scarce resource for economic developments and housing a growing population.

As of July 1989, Taiwan has a population of about 20 million with a density of 550 per square kilometer. Of this 20 million, less than 5% are Taiwanese natives and the rest are predominantly Chinese who have contributed significantly to the economic growth and development of Taiwan.

The economy of Taiwan has been having a growth rate of about 9% in Gross National Product (GNP) over the past 3 decades. During these decades Taiwan has progressed from light and labour intensive industries to heavy industries. Currently, the economy is geared towards high-technology-base industries.

Accompanying this industrial progress is affluence. The per capita income of a Taiwanese has increased dramatically. For instance, in 1970 it was only about US $360. In 1985, it has increased to US $3,142 and by 1989 it almost reached US $6,715. This rise in affluence has increased the standard of living and more importantly, demand for leisure and recreation.

But in a land scarce island, space for recreation is fairly limited; prime land for recreation are also prized land for economic development and housing. Naturally, the population turned to public broadcasting. In particular, the television.

The first TV program was aired in February 1962. By 1970, there were three TV Stations. All of which are owned by various branches of the government. They are :

(1) Taiwan Television Enterprise, Ltd. (TTV)

TTV was inaugurated on April 28, 1962. In 1987 the weekly average telecast time was 80 hours 45 minutes.

(2) China Television Company (CTV)

CTV was inaugurated on September 3, 1968. In 1987 the weekly average telecast time was 81 hours 22 minutes.

(3) Chinese Television Service (CTS)

CTS was inaugurated on October 31, 1971. In 1987 the weekly average telecast time was 111 hours 49 minutes.

Prior to 1970, the TV industry in Taiwan although important maintained a relatively low profile. The primary role then was to deliver information and educational programs island-wide. Entertainment was secondary. This was because the standard of living was comparatively lower and there was little demand for mass-media entertainment. However, after 1970 with growing affluence, the TV industry took a turning point. There has been a growing demand for quality entertainment programs.

Furthermore, with the introduction of the video cassette recorder (VCR) in 1980, the industry face another competitor, i.e. pre-recorded video tapes. Currently, 70% of the population own VCRs. Before 1984, there was neither cable TV system or satellite transmitted programs produced domestically. The only sources of TV programs are from the three TV stations or pre-recorded video tapes.

As the VCR industry approaches the maturity stage of the product cycle and competition seems to level off, the TV industry is confronted with a "foreign competitor" forcing Taiwan to further develop the TV industry and stay competitive. In 1984, Japan launched the BS-2a--the world's first Direct Broadcast Satellite (DBS) service receivable nationally.

DBS is one of the most modern and advance technology for transmitting broadcasting signals directly to individual television households. Because the footprint from BS-2a covers the island of Taiwan and the geography of Taiwan does not create any signal reception problems, the people can receive the signals simply by installing small satellite dishes. They call these funny looking dishes that can bring alternative television programs transmitted through Ku-band satellite frequencies "Little Ears" which resembles the "Big Ears"--those big satellite dishes that receive C-band satellite signals.

But in 1984, because Taiwan was still under Martial Law it was illegal for the public to set up "Little Ears" at home. However, in 1987 the government in Taiwan has ended her forty-year Martial Law on the island which henceforth, lifted the restriction on the establishment of political organizations and new print media. Communication channels with her counterpart, People's Republic of China (PROC)[1], are opened up as well. In this climate of political reform and a healthy average annual economic growth of 9% in recent years,[2] people in Taiwan are searching for a more diverse and richer media environment for their leisure and recreation. This they found through "Little Ears".

Thus, it comes not as a surprise that within two months ever since "Little Ears" are legalized, more than 100,000 units have been installed on roof-tops all over Taiwan. The development of these "Little Ears" in Taiwan, as in any new technological introductions, have significant impacts on the Taiwanese society and the broadcasting industry : the three TV stations have lost a significant fraction of their viewers while the government is confronted by the so-called "DBS spillover" problem.

Naturally, several issues are worth to deliberate; the first one is: **"What factors influenced the growth of Little Ears in Taiwan? "** The factors that could have influenced the growth of "Little Ears" are related to Taiwan's growing affluence which gives access to DBS technology and dissatification with the current program standards. Her past affiliation with Japan recent political reformations do seem to be contributing factors as well.

Next, **"What problems will be brought to Taiwan by the spillover form Japan's DBS service? "** this growth appears to threaten the economics of the TV industry. There is also considerable concern over the cultural sovereignity and whether the governing requlations deserve certain changes to accomodate a new medium. And finally from above **"What are the prospects for the future development of TV enterprise in Taiwan? "** will be addressed.

The methodology of this research paper is qualitatively analytical. The paper examines the existing empirical and research data collected by various market research companies and some academic

literatures. Discussions are based on evaluating what has happened and thence, predict what may happen in both positive and normative approaches.

Since this paper concerns the development of Television Received Only (TVRO) in Taiwan and with the fact that Direct Broadcast Satellite (DBS) is a relatively new technology gaining consumer acceptance only recently, together with Taiwan just gaining the attention of alert international business conglomerates, a literature review of DBS and some information about Taiwan has to be in order. Hence, the author will begin this paper with a brief but yet concise literature review of the development of DBS, spanning from Arthur C. Clarke's idea to present day satellite communications; general background about Taiwan and the development of TV industry in the past 26 years together with Taiwan's imperialistic cultural affiliation with Japan will serve as the backdrops leading to the present day situation.

Next, the author will trace the development of "Little Ears" in Taiwan beginning with the current TV media aspects in Taiwan and the factors influencing the growth of "Little Ears" : The political reform, economic growth, the past and present social and cultural affiliation with Japan, and the programming constraints faced by Taiwanese TV stations.

Having "Little Ears" taken root in the households, the author then discuss the impacts they have had in Taiwan, namely, the economic impact on the existing TV industry, the threat to cultural sovereignty and challenges confronting the present media regulations. With these impacts in mind, the author next provides constructive suggestions that the Taiwanese TV industry can adopt in determining its future prospects. Three distinct suggestions are specified although a combination is not impossible : Establishing a set of DBS policy, developing cable TV system(S) and improving TV programming.

Finally, the author concludes that the reception by "Little Ears" via the Japanese BS-2a is not a crisis unless the Taiwanese authority continues with the current policy of "no policy". Instead, the author viewed these "crises" as challenges such that if they are well managed,

will launch Taiwan into a new era in Telecommunication.

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Chapter I

1. For example, people in Taiwan are now free to visit their relatives in the Mainland China and Mainland Chinese who are not members of the Communist Party are able to visit the island for attending international conferences and activities. See United Monthly, no. 73, August 1989, p. 25-29. For the history of modern China and the historical relationship between Taiwan, Republic of China (ROC), and PROC, see Colin Bown, Revolution in China, 1911-1949, London, Heinemann Educational Books, 1974, and chiu Hungdah, ed., China and the Taiwan Issue, New York, Praeger, 1979.

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II. LITERATURE REVIEW

Even with U.S., renowned for her advanced technology, Television Receive Only Antennas (TVRO) are still new in the telecommunication industry with only limited scholarly research on this subject. Since this paper focusses on " The development of TVRO in Taiwan", the relative literature will be summarized in five areas:

(1) Literature on the development of DBS and TVRO in general.
(2) Literature on the General Background about Taiwan
(3) Literature on the development of Taiwan's TV industry.
(4) Literature on "culture imperialism"

(1) THE DEVELOPMENT OF DIRECT BROADCAST SATELLITE IN GENERAL

The Development of Satellite Communication Systems

"SPACE IS UPON US--THE AGE OF SPACE," David O. Woodbury wrote in 1958. Making up words and getting people to use them is harder than many people believe. Vastly more prescient than David O. Woodbury was Arthur C. Clarke, the famous English science-fiction writer.[1] In 1945, Arthur C. Clarke wrote in Wireless World, a proposal for a global communications system utilizing manned space stations orbiting the earth at the same rate as the earth's rotation:

"An 'artificial satellite' at the correct distance from the Earth would make one revolution every 24 hours, ie it would remain stationary above the same spot and would be within optical range of nearly half the Earth's surface. Three repeater stations, 120 degrees apart in the correct orbit, could give television and microwave coverage to the entire planet" .[2]

Clarke's proposal was prompted in part by the inability of television signals to pass through the ground or bend around the earth. TV stations perched their transmitting antennas on towers, mountains,

and skyscrapers in order to increase their broadcast area, but even with such a boost their range seldom exceed fifty miles. One way to overcome this limitation, Clarke wrote, would be to place TV antennas in space. A satellite circling the earth a hundred miles above the ground--the lowest feasible orbit--would have an enormous broadcast range.

Once in orbit at this altitude, however, a satellite would take only ninety minutes to circle the globe and that would greatly limit its usefulness as a transmitting station. Television shows would fade in and out as the satellite zoomed past and viewers would have to adjust their receiving antennas constantly in order to keep them trained on the drifting signal. Clarke pointed out that at a much higher altitude--22,300 miles--a satellite's orbital period would be twenty-four hours, which is of course the same time that it takes the earth to turn on its axis. A satellite orbiting at this height directly above the equator would seem to hang motionless in the sky. Its signal could be received with a fixed antenna.

Satellites in this 22,300-mile orbit (now called the Clarke Belt) are often referred to as geosynchronous or geostationary. Clarke suggested launching three of them such that they would be evenly spaced above the equator. By using them to relay signals between stations on the ground, he wrote, it would be possible to send information almost instantaneously from almost anywhere to almost anywhere else.[3]

In 1955, J. R. Pierce, the Scientific Director of the US Bell Laboratories, expanded upon Clarke's theories. In particular, he defined the parameters for the utilization of space satellite for communications.[4]

The first communications satellites, launched more than a decade later, were anything but geosynchronous. *Echo*, built by Bell Telephone Laboratories and launched by the National Aeronautics and Space Administration (NASA) into a low orbit in 1960, was just a big metallic balloon that served as a mirror-off in which radio signals could be bounced.

Telstar carried the world's first intercontinental television

broadcast--a shot of an American flag waving over the AT&T earth station in Andover, Maine.[5] This launched an explosion of activity that molded what we now know as the "Information Age". *Telstar* was an active satellite because it contained a device called a "transponder" to receive, amplify, and retransmit signals to earth. Although cosmic radiation destroyed Telstar's electronics only 226 days after launching, it paved the way for the whirlwind advance of domestic and international satellite communications.[6]

During the 1970's important experiments were underway that would provide information necessary for the development of an advance and successful commercial satellite communication system. One such experiment was the Communications Technology Satellite (CTS) Program, which was a joint U.S.-Canadian venture. It utilized the Canadian Anik series of vehicles, which were sent messages from earth to be retransmitted to 36 remote receiving stations. This ATS-65 satellite was used in experiments in both India and the Rocky Mountains. These proved that a spot beam from outer space covering 170,000 square miles could be received using only $2,000 worth of electronics. At least twenty of these powerful beams would have been needed to service all of the continental United States.[7]

Today, the experiments and the ensuing progress continue. More powerful and sophisticated satellites for broadcasting and for other special uses are constantly being developed as the basic technology is improved.

Direct Broadcasting System (DBS)

A communication satellite system is basically an electronic communication package placed in orbit around the earth. It can take on several different forms:

1. An uplink from a ground-based earth station to satellite, and a downlink from satellite back to ground.
2. A satellite crosslink between two satellite prior to a downlink transmission.
3. A satellite relay system involving earth stations, near-earth users,

(aircraft, ships, etc.) and satellite.[8]

The prime objective of the satellite is to aid communication transmission from one point on or near Earth to another. In modern systems this information most often corresponds to voice (telephone), video (television), and digital data.[9] Satellites used for video transmission direct to receivers are referred to as Direct Broadcast Satellite (DBS).

DBS is a special type of satellite communication system distributing television signals by transmitting them directly from a downlink satellite to the home over superhigh-frequency radio waves. Basically the system consists of a television repeater station in geostationary orbit, a ground station (earth station) that transmits program signals to the spacecraft, which is then received by the consumer terminals that subsequently convert the signals to a format compatible with existing television sets. (Figure 1)[10]

These system components are derived from existing equipment used for satellite distribution of television signals to homes, hotels, cable systems, and network stations. The DBS systems in addition to television, provides high-fidelity audio, teletext and other services as well.

Frequency Bands

Satellite communications employ electromagnetic waves to carry information between ground and space. The frequency of an electromagnetic wave is the rate of reversal of its polarity in cycles per second (now defined to be units of Hertz). Alternating current in a copper wire also has this frequency property, and if the frequency is sufficiently high, the wire will become an antenna radiating electromagnetic energy at the same frequency.

A particular range of frequencies is called a frequency band, while the full extent of all frequencies from zero to infinity is called the spectrum. In particular, the radio frequency (RF) part of the electromagnetic spectrum permits the efficient generation of signal

power, radiation into free space and reception at a distant point. The most useful RF frequencies lie in the microwave bands (between approximately 300 MHz and 300,000 MHz) although lower frequencies (longer wavelengths) are attractive for certain applications.

An RF signal on one frequency is called a carrier and the actual information that it carries (voice, video, or data) is called modulation. A carrier with modulation occupies a certain amount of RF bandwidth within the frequency band of interest. If two carriers are either on the same frequency or have overlapping bandwidths, then radio frequency interference (RFI) may occur. To the user, RFI can look or sound like background noise (which is neither intelligible nor particularly distressful), or it could produce an annoying effect like herringbone patterns on a TV monitor. When the interfering carrier is comparable in power level to the desired (wanted) carrier, the interference effect would be classed as harmful, a condition similar to the radio jamming encountered in the shortwave broadcast band.

A typical satellite band is divided into separate halves, one for ground to space links (the uplink) and one for space to ground links (the downlink). This separation is reflected in the design of the satellite microwave repeater to minimize the chance of downlink signals being re-received and thereby jamming the operation of the satellite, but considerable care must be exercised in assigning frequencies, since links can run in any direction between microwave relay towers.[11]

C-Band

The frequency band which is known as C-band was the first part of the microwave spectrum to be used extensively for commercial satellite commuication. Another common designation is 6/4 GHz which identifies the nominal center of the uplink frequency band (5.925 to 6.425 GHz) followed after the slash mark (/) is the nominal center of the downlink frequency band (3.700 to 4.200 GHz). The uplink-downlink convention is not an industry standard and others have reversed the order to express the numbers in ascending order.

In the early years (1965 to 1970), C-band microwave hardware was obtainable from other applications such as terrestrial microwave, tropospheric scatter communication systems (which use high power microwave beams to achieve over-the-horizon links) and radar. No breakthrough in contemporary technology was necessary to take advantage of the technical features of C-band.

C-band had, at the outset, a principal adventage over bands which are either higher of lower in frequency. Hence, it represents an optimum requiring less signal level to provide good quality communications. Equipment technology and availability were factors in the favor of C-band. To this day, C-band remains the dominant frequency band for commercial satellite communication, even as higher bands (i.e., Ku) come into greater use. This is because the equipment has been made very inexpensive (relatively speaking) because of competition and high-volume production.

Ku-Band

The frequency band that has done more to interest new users of satellite communication is Ku-band; it is a part of the spectrum lying just above 10 GHz. Portions of Ku-band that are not shared with terrestrial radio has some advantage over C-band, particularly for direct services using earth stations with small diameter antennas. The precise uplink and downlink frequency ranges allocated by the International Telecommunication Union (ITU) vary to some degree with the region of the world.

There are effectively three sections of Ku-band which have been allocated to different services on an international or domestic basis. The most prevalent is the Fixed Satellite Service (FSS), which is the service intended for one or two way communication between fixed points on the ground. All of the C-band frequencies and the bulk of Ku-band are allocated to the FSS for wide application in international and domestic communication. However, the sharing of these frequencies with terrestrial radio services is mandated by ITU regulations. Consequently part of Ku-band is subject to the same co-ordination and siting difficulties as C-band.

A portion of the Ku allocation for FSS which is not shared with terrestrial services is refered to as 14/12 GHz (uplink range is 14.00 to 14.50 GHz and downlink range is 11.70 to 12.20 GHz). The availability of 14/12 GHz is limited to Region 2 which is composed of North and South America and can only be used for domestic communication services. North America, in particular, has seen wide introduction of 14/12 GHz while no such satellite are currently serving South America. Power levels from these satellite are not subject to the same restrictions as at C-band, although there is an upper limit to minimize interference between satellites.

Ku-band satellite operations in the rest of the world (i.e., Regions 1 and 3) are restricted to the 14/11 GHz shared allocation. In some instances, a Region 1 (Europe and Africa) or Region 3 (Asia) country can make 14/11 GHz appear like 14/12 GHz simply by precluding domestic terrestrial services from the band. However, terrestrial radio services in adjacent countries are not under their countrol and therefore, international coordination must still be dealt with in border areas.

A third segment of Ku-band, referred to as 18/12 GHz, is allocated strictly to the Broadcasting Satellite Service (BSS). As with the 14/12 FSS band in Region 2, the BSS band is not shared with terrestrial servcies. Its intended purpose is to allow television and other direct-to-home transmissions from the satellite. There are two regulatory features of this band which make direct broadcasting to small antennas feasible. The first is that, without sharing, the satellite power level can be set at the highest possible level. Adjacent satellite interference could be a problem in a common coverage area, but this is precluded by the second feature: BSS satellites are to be spaced a comfortable nine degrees apart. In comparison, while there is no mandated separation between FSS satellite, a two-degree spacing has become the standard in the crowded North American orbital arc.

The operational advantages of 14/12 and 18/12 GHz lie with the simplicity of locating earth station sites (without regard to terrestrial radio stations) and the higher satellite downlink power levels permitted. The latter results in smaller ground antenna diameters

than C-band.[13] So, besides the differences in power outputs between C-band and Ku-band, passbands and transmitting wavelengths are totally dissimilar, so are the radiators that deliver electromagnetic energy either across the earth's surface or beyond the stratosphere/ionosphere to the Clarke Belt which is 22,300 miles above our planet.

Activity will continue, obviously, in the C-band to a large extent for some time to come but the Ku-band has become a major attraction due to the three times higher frequency transmit and receive lengths, less expensive equipment and much-smaller-diameter radiators.[14]

TVRO

In recent years satellite antennas or "dishes" have become a common sight. They are the "eyes" of the communication system that now allow more than one hundred and twenty video channels to be received by a television set anywhere on a continental land mass. These are part of the same revolutionary technology which makes it possible for national and even global computer networks to exchange information or for a small radio station to broadcast worldwide.

These earth receiving stations are the first highly visible sign that many consumers have of the changes ahead. In the short life of the satellite communication industry, costs of "earth stations" have been dramatically reduced. Less than 20 years ago purchasing a satellite receiving station could require in excess of a million dollars. Now these "earth stations" are so inexpensive and simplified that even a competent "do-it-yourself" can receive signals in his backyard from dozens of satellites orbiting more than 22,000 miles away in space.[15]

There are two types of Earth Station--those that receive only and those that can both receive and transmit. Receive-only stations are used principally for the reception of television signals emitted by satellites. They are usually known as Television Receive-Only (TVRO) Stations. They are also used for receiving data and other forms of information that can be displayed visually or in printed form. For two-way links between users, such as telephony, video-conferencing and computer tie-ups, the stations at each end of the links are

provided with both transmission and reception facilities.[16]

TVRO stations detect the very weak signal received from space and extract the original message much like uplinks working in reverse. A TVRO must be of adequate size and quality to capture and sufficiently concentrate the faint signal from a distant satellite and it must also be accurately aimed toward these spacecraft so that other messages and noise from unwanted terrestrial and satellite sources are barely detected.[17]

Arthur Clarke's idea of a satellite was materialized after fifteen years through the launching of *Echo*. Ever since, the development of satellite communication systems have been rapid. Developing in pace with satellite communication system is DBS which makes use of similar technology of satellite communication. More significant is the fact the the DBS hardware (TVRO) are made affordable to consumers--even in developing countries such as Taiwan.

(2) GENERAL BACKGROUND ABOUT TAIWAN

1. The Land

Taiwan, a leaf -shaped island straddling the Tropic of Cancer is about 200 kilometer (120 miles) off the eastern shores of the China mainland. Strategically located in the East China Sea, midway between Japan and Korea to the north and Hong Kong and the Philippines to the south, with a land area of 36,000 square kilometers (13,900 square miles), Taiwan is about the size of Netherlands in Europe.

About two-thirds of the island is covered with lushly forested mountains. Since most of the island is covered by mountains and hills, there is little flat land for economic pruposes. Most of the flatlands is along the west coast; a few limited flatlands exist along the east coast. More than 80 percent of Taiwan's population, cities, farms and industries are located in these flatlands.[18]

2. The People

The population of Taiwan stood at 20.0 million people in 1989. Population growth has been at a rate of about 1% a year over the past 5 years. The population density was 550 per square kilometer in 1989. This gives Taiwan the second highest population density in the world. Due to Taiwan's geography, more than 80 percent of the population is distributed along the west coast. The Taipei area, which includes Taipei municipality and Taipei county in the northern part of Taiwan, has 5.3 million people and is the highest concentration of people. The majority of Taiwan's Chinese populace traces there ancestry back to Fukien province in mainland China.[19]

3. The History

Taiwan has a long and colorful history. First mentioned in Han Dynasty chronicles over 2,000 years ago, Taiwan was later claimed in the name of the Emperor of China by the seafaring eunuch and magistrate Cheng Ho in 1430. During the 17th century, when the Manchus invaded China and toppled the Ming Dynasty, Taiwan became an island of refuge for patriotic Ming loyalists, led by the great Ming hero Koxinga, who ousted the Dutch from their colonial settlement in southern Taiwan and established the island's first Chinese government. Koxinga's heirs resisted Manchu rule for half a century, before the island was finally incorporated as a prefecture of the Chinese empire in 1684. In fact, Peking never manage to establish effective control over the feisty, prosperous island.

In 1895, Taiwan was ceded to Japan as booty in the wake of the Sino-Japanese War. For 50 years it remained under the yoke of colonial Japanese rule, until the end of World War II, when Taiwan was restored to Nationalist Chinese control in 1945. In 1949, when the communists gained control over the Chinese mainland, President Chiang Kai-Shek led his divisions across the Taiwan Straits, establishing the provisional capital of the Republic of China in Taipei.[20]

4. The Economy

Over the past three decades, Taiwan has changed from an agricultural to an industrialized economy. Foreign investment, mostly

from overseas Chinese, the United States, Japan, and Western Europe, helped introduce modern, labor-intensive technology to the island in the 1960's, but now the emphasis is changing from production of "light industry consumer goods for export to more sophisticated capital and technology-intensive products.

Today, Taiwan ranks among the top twelve trading countries in the world and is America's fifth largest trading partner. Japan is her largest supplier of imports and the second largest export market. It ranks as the second wealthiest nation in all of Asia and enjoys one of the highest living standards in the entire Far East.[21]

(3) THE DEVELOPMENT OF TAIWAN TELEVISION INDUSTRY

The Historical Development

Proposals for the establishment of television stations in the Republic of China were first heard as early as 1947. But it was not until May 6, 1957 that the first demonstration of television broadcasting was held in Taipei. It took another four years before the first television station was born. The pioneer in this new field was the experimental National Education Television Station, which went on the air on February 14, 1962.

As of the end of 1975 there were three commercial television networks in the Republic of China. These are the Taiwan Television Enterprise (TTV) which inaugurated on October 10, 1962, China Television Company (CTV) which went on the air on October 31, 1969, and the Chinese Television Service (CTS) which became operational on October 31, 1971, when it took over the National Education Television.

TTV is a joint venture of the Taiwan Provincial Government and private Chinese and Japanese interests. China TV is owned by the ruling Komintang, private radio stations and other private investors. CTS stocks are owned by the Ministry of National Defense, Ministry of Education and private investors. Although the government and the ruling party are major owners of the these networks, they are run purely as commercial enterprises.

In reviewing the development of the television enterprise in Taiwan, the following features need to be discerned:

Establishment of the Experimental Station

The National Education Television Experimental Station started operation on February 14, 1962 when the Fourth National Education Conference was being held in Taipei. The development may be divided into two stages. The first stage covered the period from February 14, 1962 to November 30, 1963. During this stage, pure teaching programs accounted for only 30 percent of the air time while the remaining 70 percent of the slots were devoted to semi-entertainment programs. The allocation of air time was designed for a dual purpose: to experiment with television teaching on the one hand and to cultivate public interest in TV on the other. The second stage began on December 1, 1963 after its experimental period was over. From then on the air time was equally divided between teaching programs and social education programs. They later included language instruction, newscast, publicity of government measures and public service.

An important feature in the growth of Taiwan's television enterprise is the gradual shift from international cooperation to self-reliance. The television enterprise in this country had to rely heavily on the import of technology and know-how when it took its first fumbling steps. Once the initial obstacles were overcome the enterprise was able to make steady progress nationally.

In fact, the television enterprise in Taiwan stressed self-reliance right from the beginng. For example, the original transmitter for the National Education TV Station was manufactured by the professors and students of the Institute of Electronics of National Chiaotung University, while the station itself was jointly designed by the Institute and the private TV Engineering Workshop. The transmitter had a power output of 100 watts. In December 1963 the station acquired a 1000-watt transmitter manufactured by the same Institute. It was not until 1964 that the station procured a 2000-watt transmitter from the United States.

This acquisition simply reflects the fact that the electronics industry and relevant technology in Taiwan were still in the infant stage when the island's first television station went on the air and although the young television enterprise desires self reliance (more will be discussed later), there is a still a need to seek foreign assistance.[22]

Inauguration of the Taiwan Television Enterprise

The Taiwan Provincial Government was the prime mover behind the first commercial television network, TTV, in the country. A preparatory committee was formed under the provincial administration in February 1962. The committee decided the following principles regarding the establishment of the yet-to-be-born television station:

1. Foreign investment should not exceed 49 percent of the total capitalization, with the rest to come from domestic sources.
2. Foreign cooperation would be sought for the establishment of plants to assemble receiving sets.
3. The Taiwanese side would retain full control of program policy.
4. Prospective foreign partners would be approached for technical assistance and personnel training.
5. The new company would be run as private business enterprise.

At its later meeting, the committee decided to seek foreign cooperation in Japan, Europe and the United States. Finally, after one year's negotiation an agreement was reached with Fuji TV Company, Hitachi, NEC and Tokyo Shibaura (Toshiba) of Japan. An agreement was formally signed in Taipei and Tokyo in February 1962. Under the agreement, the Taiwanese side would own 60 percent of the shares and the four Japanese companies were to subscribe to the remaining 40 percent of the shares. Of the 60% Taiwanese investment, 49 percent would be put up by the Taiwan Provincial Government while the remaining 11 percent were underwritten by private investors.

TTV was officially inaugurated on April 28, 1962. On October 3, 1962, TTV started a week-long trial run with two hours of telecasting a day. On Oct. 10, the National Day of the Republic of China, TTV

formally went on the air. The first commercial television station in the country was thus born.

Seven years after its inauguration, TTV was rated as the top TV station in the South-East Asia in terms of engineering, programming, and experience of the working personnel even though it still had to rely on imported transmitters and cameras.[23]

Inauguration of the China Television Company

Six years after the establishment of TTV, the Republic of China acquired its second commercial network, the China Television Company (CTV). The CTV came into being on September 3, 1968. Earlier there had been scores of applicants seeking government approval for a new commercial network. The late president Chiang Kai-Shek directed all the applicants including private radio stations and private interests to pull their resources in organizing a new television company with the BCC as the senior partner. After negotiations, it was agreed that the BCC would put up 50 percent of the capital, the private radio stations 28 percent, and the remaining 22 percent were to be raised by other applicants.

A preparatory committee was formed on October 17, 1967. Eleven months later, China TV was formally inaugurated on September 3, 1968. China TV's goal was to have an island wide broadcasting network ready before it started operation. The company also decided to introduce color telecasting and satellite relay. Consequently, the company began soliciting capital and purchasing equipments in Japan, Europe and the United States.

China TV's relay stations in central and southern Taiwan were completed in Feb. 1970, and its island wide hookup was thus completed. A two way microwave transmission system comprising 9 microwave stations guaranteed stability of signals. The new five-studio building was completed in Sep. 1970. By 1971, the new studios were put to use one by one. All the facilities were manned by China TV's own staff personnel. It is the second commercial network in Taiwan established entirely with Taiwanese resources.[24]

Inauguration of the Chinese Television Service

In December 1968, the Ministry of National Defense and the Ministry of Education agreed to expand the National Education TV Station so as to make adult education available to more servicemen and the general public. In September 1970, the following principles were agreed concerning the projected television station.

1. The new network was to be built by the two ministries on the basis of the National Education TV Station to promote Chinese culture and adult education for both servicemen and civilians. It was to be operated as a business enterprise.

2. The network would be telecast in color.

3. The capital will be raised by the Ministry of National Defense and the Ministry of Education will contribute the facilities of the National Education TV Station as its share of investment.

The preparatory committee was officially inaugurated in August 1970. Following the advice of TTV, China TV, as well as local TV engineers, the new network decided to procure facilities from RCA and Amplex in the United States and from NEC in Japan. Delivery of the equipment and facilities began in April. The station was ready for operation. A test run of the facilities was successfully conducted on October 10 and the network was officially inaugurated on Dec. 31, 1971.[25]

In 1975, the three TV networks broadcast an average of 52 hours of programs a week, of which more than 45 percent are consisted of news, public service and educational and cultural programs. In other words, popular entertainment programs occupied less than 45 percent of the total programs times.[26]

The Growth of Television Industry in the Past 26 Years (1962-1988)

As we mentioned earlier, Taiwan established its first commercial broadcast television station in 1962 under a cooperative venture with some Japanese companies.[27] With only about 4,000 television sets then, Taiwan has come a long way. Presently 99% of the households have television and more than half of them have at least two or more

television sets at home.[28] There are three commercial television stations in Taiwan which are under a bureaucratic-commercial infrastructure with various governmental branches as major shareholders.[29] Although with the public authorities as co-owners, the three television stations: Taiwan Television Enterprise, Ltd. (TTV), China Television Company, Ltd. (CTV), and Chinese Television Service (CTS) are profit organizations depending on advertising revenues as the only source of income.

In order to maintain fair and reasonable competition, all three stations have joined the Radio and TV Enterprise Association of the Republic of China. They cooperate with all radio stations in the country with a common endeavour to improve the management of commercial programs. In addition, all three commercial TV stations are members of the Press Council of the Republic of China and accept the Moral Code formulated by the council. They are also members of the Television Academy of Arts and Science and abide by its self-discipline covenant which provides guidelines to business competition.

Progress comes from competition. As profit-seeking enterprises depending on advertising revenue for support, these stations are bound to compete with one another. During these 26 (1962-1988) years, the television enterprise in the Republic of China has registered rapid progress both quantitatively and qualitatively.

Engineering and equipment:

The entire country is now within the effective range of the transmission stations. Color telecasting has completely replaced monochrome broadcasting to meet the taste of viewers and satellite relays are being constantly used to provide fast and live coverage of major events to meet their demand. Even the studios are constantly upgraded with new special effects available. In terms of engineering technology and facilities, the television industry in this country is now the best in South-East Asia. (Table 1)[30]

Programming

The progress in programming is particularly impressive. There is much greater variety and sophistication in the production of programs. A large pool of performing talent has been built up. The development and rise of the drama serials are impressive if not phenomenal. Live telecasting has become common. Over 80 percent of the total air time is taken up by self-produced programs, probably one of the highest ratio in the world.[31]

In the initial weeks of its inception, TTV stayed on the air for five hours a day. Only two half-hour slots were assigned for entertainment programs. The remaining four hours were solidly occupied by educational and news programs. There was a modest increase of entertainment programs at the end of 1962 where they accounted for 34.56 percent of the total program hours. The lopsided stress on public service came to an end in 1969 when TTV encountered its first local competitor. Competition from China TV, the second commercial network in the country, forced TTV to beef up its entertainment programs. Even then, public service programs still accounted for 40 to 50 percent of the total program hours. (Table 2)[32]

(4) CULTURAL IMPERIALISM

As we have mentioned in the foregoing literature reviews, Taiwan's growth and development in the TV industry has been fostered initially by Japanese and American media technology and support. Naturally, the issue of cultural imperialism or media imperialism arises. Next, the author shall review some literatures on "Cultural Imperialism".

Vaguely defined by Schiller (1976), "Cultural Imperialism" is "the sum of process by which a society is brought into the modern world system and how its dominating stratum is attracted, pressured, forced into shaping social institutions to correspond to, or even to promote, the values and structures of the dominant center of the system."[33]

The idea of cultural imperialism draws heavily on the theoretical analogues of economic dependence. As such the theoretical perspectives of cultural imperialism are similar to the perspectives of

"economic dependent" and economic imperialism. Essentially, there are two perspectives : (1) Neo-Marxist perspectives (2) Non-Marxist perspectives.[34]

(1) Neo-Marxist perspectives of cultural imperialism

Nordenstrong and Varis (1973) argue that mass communication in capitalist societies, serves three major functions[35] : (1) to conceal class antagonism inside society and to compensate for the symptoms of aberration; (2) to illegitimize the conerete social alternatives to the existing order of society; and (3) to make profit as a branch of commercial industry. Extending these ideas to the international communication system, they maintain that the international streams of communication are " a manifestation of the ruling interests of the societies from which they originate and not a unanimous output of the nations involved." With the West, especially the US, being a leader in communication media products, Neo-Marxist theorists pointed accusingly that the West offers to the Third World countries with appealing western cultures and subsequently, dominating their cultural-communication structures.

The Neo-Marxists prefer to deal with "cultural imperialism" instead of "media imperialism". This preference is understood best in terms of their theoretical and idealogical orientations. Neo-Marxist have a more holistic view of the role of the media and are primarily concerned with the totality of dependence and dominance relationships by which stronger and weaker nations, and classes within nations, relate to each other.

"Media imperialism" is too constricting for Neo-Marxists because they regard it as "part of cultural imperialism". Boyd-Barrett's (1977) definition of "media imperialism" will serve to illuminate this point better.[36] He defined "media imperialism" as "the process whereby the ownerships, structure, distribution or content of the media in any one country are singly or together subject to substantial pressure from the media interests of any other country or countries without proportionate reciprocation of influence by the country so affected".

(2) Non-Marxist perspectives of Media Imperialism

No one disagrees that media are important components of culture but analysis that fails to differentiate the media, educational institutions, family, and so on may obfuscate more than illuminates. Hence, Non-Marxists seem to prefer to deal with "media imperialism" rather than the all-encompassing "cultural imperialism". Non-Marxist theorists also view that the American media conglomerates are exploitative but they differ from the Neo-Marxist view in that the Non-Marxist do emphasize the complex internal causes existing in individual recipient nations.

The Non-Marxist analysts (A) do consider the economies of scale of American media; (B) recognize the importance of national variance, the varience in media dependence itself, and complex internal dynamics variables; (C) maintain that each individual country is able to defend or counteract foreign media influences in the process of change; and (D) argue that international communication flow may result in both good and bad cultural influences on participating countries.[37]

(A) Economies of Scale

To non-Marxist, the imbalanced communication flow is largely a function of supply and forced pseudo-demand. From the supply or seller side, large and powerful countries, for instance, the US are well established in media industry and is in an advantageous position. Further, TV programming is a cultural product following economies of scale production methods and principles. This enabled US firms to price lower than local producers.

Besides, the norms of broadcasting in most countries are non-stop broadcasting. Thus, for smaller countries with lesser resources or talents to air local productions (which, without economies of scales are more expensive), they will turn to cheaper foreign imports to "fill in the slots".[38]

(B) Internal dynamics

Non-Marxist are more wiling to assign more weight to internal dynamics than Neo-Marxist, who insists on exploring the subject at a world-system level without concern for variances in political and social systems within and between recipient countries.

Katz and Wedell (1977), and Tunstall (1977) trace the social causes of television content homogeneity.[39] Both studies have shown large variations in kind and degree of media dependency as influenced by the interaction of internal variables such as media infrastructure, sociopolitical systems, cultural traditions, economic structure, and external variables i.e., those imposed influences by the "metropolitan" nations.

(C) Autonomous Internal Forces

Non-Marxist writers are more willing to recognize the possibility of autonomous internal forces and their potential role in the process of change. This position is closely linked with the analyses of the economies of scale and importance of internal dynamics variables on media dependency. The diffusion of innovations is a random process unless structural constraints are externally imposed upon it. (Rogers and Shoemaker, 1970)[40] The implication is that market forces would normally work to the advantage of the communication-developed or media-rich countries, if without interference.

But the fact is that the Third World nations may, and able to , take actions against further foreign exploitation and accomodating the media to local constraints and national needs. Katz and wedell (1977) observe that many Third World nations have come to a "sense of purpose" for TV in their countries around the early 1970's.

(D) Cultural Benefits

Non-Marxists have contended that international communication flow may also bring about both positive and negative effects on indigenous cultural growth. This position has two roots. One from the anthropological theory of cultural diffusion which says that alien cultures are absorbed by the natives to strengthen and rejuvenate the tissue and fabric of existing cultural heritage. The other is "product life cycle" which is a business model of multinational enterprise expansion. This model maintains that interactions with foreign media would make local learning of advanced technology possible so that recipient nations are better equiped to harness media to indigenous cultural development.[41]

However, there should be serious concern that if the foreign

inflows of media products are allowed to take place with no hindrance, they are likely to benefit the stronger parties more than the weaker parties. Hence, the latter may suffer from negative consequences' economically and culturally.

Conclusions

Media imperialism or, the broader perspective of cultural imperialism are terms adopted by critics in the 1960s and 1970s in analysing unequal media flows and structural differences of cultural productions in the world. But they are overly simplistic. Nations are now assymetrically interdependent. Meaning that countries now find that their relationships with each other vary and are unequal but yet possess variable degrees of power and initiative in politics, economics and culture. Structural context, problems and constraints, and how media are received by the audience in the context of existing cultures and subcultures that resist change must be examined.[42] And having done so, as Straubhaar did,[43] we will note that cultural industries show increasing aspects of independence and that audiences choose to receive international versus regional versus national television productions in an active way that tends towards the latter two when they are available because of cultural relevance or proximity. Also media importation tends to be within the same region, language and cultual frame of reference, when such programming is available.

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III THE DEVELOPMENT OF 'LITTLE EARS' IN TAIWAN

Although the growth and development of Taiwan's TV industry has been im.pressive and dramatic for the past 26 years, however in the last couple of years we saw a relative stagnation and even a decline in the industry's quest for upgrading their standards. Because of this stagnation together with competitive and technological factors, such as VCR, channel 4 and "Little Ears", the television industry is currently experiencing some critical problems. These will elaborated in this chapter.

CURRENT TELEVISION MEDIA ASPECTS IN TAIWAN

According to a media viewing behavior study conducted in 1989 by an advertising agency in Taiwan[1]; besides the three commercial television channels people in Taiwan receive their television programs from other sources such as prerecorded video cassettes, the fourth channel and television receive only stations(TVRO). (Table 3)

This is not a surprise at all. These competitors are able to penetrate into the market and gain significant market share because the media consumers' wants are not satisfied by the three local stations. With respect to "Little Ears"; the availability of technology enabled consumers to receive foreign programs at an affordable cost. Currently the television industry in Taiwan is faced with low viewership. In fact, this was felt when the VCR was introduced and become noticeable when the fourth channel and TVRO gained momentum in their penetration.

The Penetration of Video Cassette Recorder (VCR).

Video cassette recorder (VCR) with its varied functions such as time-shifting, viewing non-broadcast professional material and producing home video...etc., is becoming a very important source for Taiwanese to use as a substitution for TV programs. It is not even within 10 years (1981-1989) , Taiwan already has a roughly 79% VCR penetration rate and it is still growing.[2]

According to the survey by United Advertising Agency, VCR is the major competitor of the existing broadcast television stations which have lost a significant number of viewers to VCR use on some important broadcast hours such as the weeknight 9:00 to 11:00 prime hours and Saturday afternoon 2:00 to 4:00. (Table 4)[3] Since VCRs in Taiwan are mainly used for the viewing of prerecorded video tapes, with the convenience of corner prerecorded tape rental stores, the low rental charge caused by fierce competitions and the inexpensive price of VCRs, the competitive force from the VCR sector is expected to continue as a threat to the existing television industry in Taiwan.

The Fourth Television Channel

Another competitor, although illegal and with limited penetration, is worth mentioning. It is similar to a miniature cable television service that serves only a limited area and smaller community in each system. People in Taiwan call it "The Fourth Station" service area which is only limited to certain neighborhoods wired by the service providers. With a one-time installation fee of around NT $5,000 (US $200) and monthly payment for NT$ 1,000 (US $40),[4] subscribers can receive four channels which include two Japanese NHK channels transmitted through the DBS named BS-2a, and the other two channels with movies from Hong Kong and other Western countries.[5]

Under the current regulation, such cable system is illegal. Nevertheless, 6.3% of households in the Taipei metropolitan area subscribe to this channel.[6] Even with the understanding that it is illegal , the audience in Taiwan is still willing to subscribe to the alternative television service. This phenomenon certainly demonstrates the consumers' desire and need for more alternative television services in Taiwan. With the realization of such problem, the Government Information Office (GIO), a regulatory agency which carries similar functions to those of the Federal Communications Commission (FCC) in the U.S., has recently formed a task force to study and plan the construction of an island-wide cable television system and its technical, economic, and regulatory implications.[7] More will be discussed in later chapter.

According to a survey conducted in 1984 (Table 5)[8], only about 20% of the television riewers in Taiwan indicated that they were satisfied with the programs provided by the three commercial television stations. In a more recent survey, knowing that it is customary for Chinese to stay home with their family during the New Year vacations, a survey on the television programs was conducted in 1989. This survey revealed that only 9% of the viewers have positive opinions on the content of the programs (Table 6)[9]

Yet in a 1989 island-wide survey on media consumption patterns, it was found that 82% of the population watch television instead of engaging in other activities.[10] Clearly, the current programs supplied by TTV, CTV and CTS are not at the stage to meet the consumers' demand.

The foregoing mentioned competitors to the TV industry have had a successful entry into the media market because they provided better quality programs than those aired by the local stations. Nevertheless the thirst for world news and information on world sporting events were not quenched. For this, the consumers turned to the "Little Ears" that brought to their home what is beyond Taiwan--the **Big World**.

"Little Ears" in Taiwan

Taiwan has approximately 4% penetration of Ku-band television receive-only earth stations in the Taipei metropolitan area.[11] With the legalization statement made by the government in November 1988[12] and the decline in price of dish hardware, the trend of installing "Little Ears" for receiving alternative television programs from abroad is expected to continue. In contrast to "Little Ears", "Big Ears" which are still declared illegal under the current regulation have very limited penetration (roughly 0.7% in the Taipei metropolitan area).[13] They are mainly owned by luxurious hotels providing American network programs and especially, international news and sports programs to international business travellers and tourists. As "Big Ears" are becoming widely known for their abundant channels and varieties of Western programs, the general media consumers are

becoming more interested in purchasing this kind of earth station. Nevertheless, the price of a "Big Ear" is still too costly for an average household. A "Little Ear" package range from NT $18,000 (US $720) to NT $24,000 (US $960) while a "Big Ear" package costs almost twenty times as much ranging from NT $350,000 (US $14,000) to NT $400,000 (US $16,000).[14]

The satellite dish hardware service is now a very competitive business in Taiwan. Some companies even provide their customers with free satellite television program guides.[15] There are actually only two channels available at this time--NHK-1 (channel 15) and NHK-2 (channel 11). These two DBS channels are provided by the Japanese NHK public television network containing mostly educational, information/news, and sports programs that are broadcasted mainly in Japanese.[16]

Thus, "Little Ear" owners in Taiwan are receiving foreign programs solely from the Japanese public television system and the government legalized such conduct. So far, both governments seem to agree that the Little Ear situation is basically a satellite signal spill-over and not a program pirating issue and thus allow it to continue. But legitimating the use of "Little Ears" does not mean an establishment of policy. The government in Taiwan has opened up the market without actually formulating any regulatory framework for the operation of the market. The legal impact of such transborder television signals will be discussed in details later.

In a survey which was conducted by Rain Maker Industrial Inc., a media market research company carrying tasks similar to those of the A.C. Nielsen Company in the U.S., close to 70% of the households in the Taipei metropolitan area are familiar with "Little Ears" and 4% of the households have "Little Ears". About 17% of this 4% household have an annual income over US $46,000 which is the upper income households in Taiwan (Table 7-A). And among the non-owners interviewed, about half of them expressed the possibility for installing "Little Ears" in the near future (Table 7-B). When asked for the reasons for purchasing "Little Ears", about 44% of the "Little Ear's" owners indicated that the desire to watch something different from

other countries is the main motive. Eleven percent indicated that it is useful for learning a language, and about 6% just being aware of other programs from the three channels (Table 7-C).[17]

As stated earlier, Taiwan does not have its own DBS at this time. However in 1985 a task force was mustered to study the feasibility of having a DBS system.[18] Last year, the government has given high priority in the agenda on plans for Taiwan to develop her own space satellites.[19] It is still uncertain when media consumers in Taiwan be able to receive programs from their own DBS.

The cause of decline in viewership in local programs is apparent--the media consumers' wants are not satisfied. Of the three main alternatives, the one that is more complex and raises more complicated issues, whose growth is most rapid and has the greatest impact on the TV industry is the "Little Ears". In particular, there are several factors that gave a strong impetue to the growth of "Little Ears". This will be discussed next.

FACTORS INFLUENCING THE GROWTH OF "LITTLE EARS" IN TAIWAN

Although it is prohibited to set up "Little Ears" at home prior to 1987 (because of the Martial Law), many Taiwanese still took the risk-purely out of curiosity. There is an ancient saying which goes as follows:

"Buddhist monks who come from afar are always better at reciting sutras".

Synonymously, people who come from distant lands have better talents to offer than local talents. In other words Taiwanese thirst for new things and it is this curiousity for new things that is responsible for the minuscular growth in this prohibition period.

Furthermore, the flat roof-top of Taiwanese homes are often filled

with solar energy panels, water tanks, pigeon coops or storage sheds which provide good hiding places for these 90-120cm wide receivers.

But after 1987 the growth of "Little Ears" was attributed by political reform, ecnomic growth, social and cultural affiliation with the Japanese in the past and present, and the Taiwanese TV programming itself.

Political Reform

When the Martial Law was lifted, the government after facing several harsh criticisms from the opposition party decided to liberalize several regulations and policies so as to maintain her popularity with the people. One regulation which is significant to this paper is the liberalization of the media environment as well as the media content.[20]

Under this reformation, "Little Ears" is not prohibited but at the same time it is not legalized. The new government actually made a policy of "no policy". Naturally demand for these small dishes sky-rocketed. This demand is also fueled in part by the attraction of the Olympic Games in Seoul.[21] Through the "Little Ears" a full and live coverage of the Games could be received via the Japanese DBS system. The three Taiwanese TV stations did not provide full coverage and viewers had to be contented with the "excerpts". Thus with "Little Ear" a viewer has more freedom and variety of programs to choose from .

However, there are still limitations regarding how much control over media contents should the government let go on the satellite dish issue. As mentioned before, under the current policy, the receiving of C-band satellite signals is regarded as an unlawful conduct. It is speculated that because of the availability of C-band television signals from STW-1 and STW-2 satellites which transmit programs from northern China to central and southern China by Taiwan's counterpart, PROC, the government in Taiwan is reluctant to open up the "Big Ears" market. In addition, since there are many more television signals currently transmitted through the C-band frequencies, if the C-band reception becomes legitimate domestically, without the initial

settlement on the allocation of royalties of the programs originally intended for another country, it would certainly create a problem of pirating over this form of intellectual property. And this is not what the government would like to see.

Economic Growth

Taiwan is no longer considered a third world country but classified as a Newly Industrialized Country (NIC)--one of the four "Little Dragons" in Asia.[22] With a GNP growth rate averaging about 9% annually over the past three decades (Figure 2), a trade surplus of US $1.6 billion[23] and a gradual transition from a labor-intensive industrial economy to more sophisticated technology-intensive industrial operations, people in Taiwan are experiencing a fast changing society with rising income, higher standard of living, and more leisure time for media consumption.[24]

The personal consumption pattern in Taiwan has been greatly influenced by its macro-economic development. In 1968, 44.4% of total spending by an average family was on food; by 1988 the figure had dropped to 27.7%. As people spend relatively less on food, they are devoting a larger proportion of their rising incomes to housing, education and leisure-time activities (Figure 3). With the availability of the hardware (DBS and satellite dishes) and the software (television programs from Japan), the desire to consume and the ability to pay for it, the television audience in Taiwan turns to this new medium.

Besides, based on the Rain Maker's survey, there was a very interesting situation; when asked about the motive for purchasing "Little Ears", about 11% of the respondents indicated "to flaunt wealth" (Table 7-C). Inevitably, Taiwan is experiencing the common phenomenon of increasing materialism during its recent economic growth.[25] Having something others do not is synonymous with prestige and prestige implies higher social status. The purchasing of "Little Ears" do not only provide an alternative media choice, but are also symbol of social status and prestige.

The Past and Present Social and Cultural Affiliation with Japanese

In 1895, Taiwan was ceded to Japan as one of the spoils of the Sino-Japanese War. For almost fifty years (until 1945), Taiwan remained part of Japan.[26] Taiwanese have mixed feelings over this domination. According to a survey[27] conducted by the Republic of China Public Opinion Research Foundation in 1988, concerning the good qualities of Japanese they include loyalty, cooperative, hard-working, responsible, polite, law-abiding, trustworthy and interms of business deals, reliable in keeping contracts and maintaining quality products or design and excellent marketing skills. Negative impressions are clearly rooted in historical experience with descriptions like warlike, ambitious, and cruel.

With a history of Japanese domination, not surprisingly, the Japanese influence was quite extensive. This influence is reflected in the present households.

From the point of view of economics, Chinese clearly feel Japanese economic power. When asked whether Japan dominates the Taiwan market, 46 percent answered "heavily dominates" and 31 percent answered "dominates." The higher the education level, the more strongly this feeling was held. on the other hand, 14 percent said Japan "heavily obstructs" access to its own market for Taiwan products, with 35 percent saying "obstructs."

Many factors influence this economic imbalance, but it is not strange from the point of product use and quality evaluation. 82 percent of respondents had used a Japanese product, while 64 percent believe that Japanese manufactured products are of high quality (with only 1.5 percent replying "poor quality"). However, 67 percent said they did not give preferential consideration to Japanese products when choosing; this may reflect a certain bias against such products.[28]

As for Sino-Japanese relations, the replies indicate that most respondents have a good understanding of the historical relations between the two countries. However, respondents took a positive view of construction on Taiwan during the Japanese occupation period, with 4 percent saying it was "very helpful" and 49 percent

"helpful." As for whether or not young people are being "Japanized," about 42 percent expressed "concern" and 36.3 percent "no need for concern", those were roughly even. (Table 8)

When asked, "How many Japanese speakers in Taiwan?" about 40% said that someone in their household could converse in Japanese. This is because many of the older people who were educated under the Japanese education system still speak Japanese and are sentimental to Japanese culture. Due to such nostalgic complexion, the Japanese programs provided by NHK are welcomed by the old generation in Taiwan.[29]

In recent years there is yet another source of Japanese influence. Since the beginning of 1980 Japanese fashion and popular music have entered the Taiwanese market. These particularly attracted the trendy younger generations. This phenomenon is evidenced by the rapid rise in enrolment in the Japanese language, increase in demand for Japanese publication and audio-video tapes.[30] To stay trendy requires latest update from Japan and this of course is met by the "Little Ears"

Taiwan's TV Programming

As mentioned previously, the audience in Taiwan seem to be unsatisfied with the current programs provided by the three commercial television stations. Just what kind of television programs are available to the general public?

A content analysis of the three television channels' weekday program schedules show that variety shows, news, and soap operas are the major types of programs offered during the most-watched prime hours (Table 9).[30] In fact, the audience does not really have many choices over the "types" of programs but only different versions at different scheduled times to choose from during this broadcast period.

Furthermore, the demand for international programs by Taiwanese viewers are not met by the three TV stations. It is a legal constraint inposed by the Taiwanese authority rather than a marketing inadequacy. The regulatory agency of the industry, i.e., Government Information Office (GIO), has specifically laid the programming

guidelines under four content classifications. The first classification pertains to newcasts, and publicity of government policies and orders. The second classification pertains to education and culture. The third classification concerns public service and the last one provides guidelines for entertainment.[31]

An examination on the weekly average time and percentage of these program types during the year of 1987 was conducted (Table 11).[32] The number of news and public information programs aired by CTS and TTV are about the same whereas CTV has less. For the education and culture programs, TTV has about 27%, CTV has around 22% while CTS has 31%. Furthermore, according to the public service programs, the three stations has almost the same percentage.

The entertainment programs is the heaviest type program for all; TTV has about 40%, CTV has 46%, and CTS has around 35%. Even with CTV's slight lead in entertainment programs and CTS's educational and cultural programs the three stations basically provide similar proportions of types of programs. Such phenomenon is probably due to the GIO's program control provisions which stipulate that the percentages of time allocation to television newscasts and public information programs will be no less than 20%, for education and culture programs no less than 20%, public service programs no less than 10%, and no more than 50% entertainment programs.[33]

The 1988 Seoul Opympic Games is a case in point that the Taiwanese viewers' demand for international programs are not satisfied. In a survey conducted by the China Evening News concerning the broadcasting of the 1988 Olympic Game between Taiwan's three TV stations and Japan's NHK. About 58% of the respondents preferred NHK, and only 8% of the respondents answered domestic TV stations (Table 10). This preference is due to the fact that NHK provided a full-live coverage of the international event which none of the local stations did because of the legal contraint imposed on the three stations.

Since the profit-making goal is fundamental for the current Taiwan television infrastructure, such content regulation seem to be contradicting the established system. The market-driven commercial

television system and the degree of control over media content desirable by the government may be able to coexist, however, due to the limitation of the available broadcasting frequencies in use, the general media consumers may have to pay for the consequences of such philosophical dispute. At this time, the price is the unsatisfied television viewers who decided to turn to a basically foreign medium for alternatives.

What do the alternative satellite channels offer then? A content analysis on the satellite television program guide indicated that on NHK-1 (channel 15), over 80% of the 24-hour air time is devoted to the news and sports programs and on NHK-2 (channel 11), over 40% air time is devoted to education/cultural programs and more than 20% for entertainment programs (Table 12).[34]

In addition, a close examination on the individual programs provided by the two NHK channels revealed that there are wide coverage of world class sporting events, such as Tour of France, Wimbledon Tennis and constant international news reports (NHK-1 even carries reports from CNN, BBC, and world known concerts, art exhibitions, and so on. All these are rarely available on the three Taiwanese television stations (Table 13).[35]

Though there is a language difference on these programs, the opportunities of receiving something "different" and "big" is still very attractive. Furthermore, with sports events, language is not an important factor in the understanding of the the programs, and for international news, the gratification of getting instant information on what's happening around the world offsets the inconvenience in reasoning the news report. In essence, not entertainment, but the live report of "big sporting events and quality news/informational programs are probably the major programming attraction driving the purchase of "Little Ears."[36]

In summary, the development and popularity of "Little Ears" in Taiwan is a result of political reform which liberalized the media environment. Affluence through economic growth enabled the people to acquire "Little Ears". Cultural and social affiliations in the past with Japan also played a role. The rigid programming criteria led media

consumers to seek satisfaction by receiving the Japanese spilled-over transmission. Although, "Little Ears" do benefit and satisfy the media consumers' wants, they do have some impact on Taiwan which the author will disscuss next.

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IV IMPACTS OF "LITTLE EARS"

The broadcasting industry like any other technology--based industry is highly affected by technological progress especially in the production process and transmission of signals. Furthermore, any technologicy progress in one aspect seldom remain neutral in its influence. It usually has an impact on the industry, related infustries and the society in general. The TVRO is a cas in point. Although the development of "Little Ears" in Taiwan is still in their initial growth stage, they have already created some impacts on the Taiwanese TV and related industries, broadcasting regulations and cultural sovereignty.

Impact on the Existing Television and Related Industries

Even since the introduction of the "Little Ears" the three television stations have lost some ratings. In a survey (Table 14)[1], "Little Ears" owners indicated that they watch DBS programs most often during the prime broadcasting hours, i.e. 7:00pm to 11:00pm. Possibly the ratings will fall further when more "Little Ears" gradually increase. The critical issue, of course, lies in the future of TV commercials or advertisement.

Presently, NHK-1 and NHK-2 are non-commercial public television services, there is no direct competition for television commercial sales between the local stations and the Japanese channels except the fact that the advertisers and the television companies have experienced a slightly shrinking number of viewers. As the Taiwanese living standard and purchasing power are on the rise, there is an excessive demand from advertisers for television commercials in the industry and such demand is expected to continue.

Currently the "Little Ear" medium does not seem to place any significant threat to the advertising sector of the domestic stations. The real problem, however, will come when people in Taiwan are able to receive commercial television signals from Japan. This will happen in the near future. As it is one Japanese commercial television

company, JSB, is planning to participate in the upcoming DBS, BS-3, for transmitting signals through out Japan under a service system combining commercials and subscription charge.[2] In this case, it would be impossible for Government Information Office (GIO) to execute its control over the amount and content of advertisements as it has for the three television stations before.[3] This will place the three Taiwanese stations at a gross disadvantage. In fact the three stations are expecting a shift in advertisements revenue from their stations to the Japanese stations once the latter becomes operational.

With the requirement of subscription fees, the issue of whether "Little Ears" owners in Taiwan also have to pay and how will they pay for it will arise. Furthermore, confusion exists as to how will the government, the satellite dish industry, and JSB (or other commercial television companies transmitting signals through the Japanese DBS) deal with the copyright issue, ie, how are they going to figure out the allocation of royalties for use of the DBS programs that are originally intended to be delivered only in Japan?

From the other point of view since Taiwan has a fairly high VCR penetration and the use of VCRs is recognized to have impacted the traditional broadcast television viewing, the influence of "Little Ears" over VCRs will be discussed next.

In order to attract advertisers to place advertisments with the Taiwanese stations, the stations first need to attract viewers. To do so they need to upgrade their programs and all three stations are in dire need for major upgrading. Presently, the author observed that there has not been any significant change in the programming of the three stations. This foreign competition is definitely an impetus to the Taiwanese TV industry to re-shape itself and perhaps for the regulating agency (GIO) to reconsider her inflexible regulations.

Also, in the same survey it was found that the availability of "Little Ears" did somehow contribute to the trend of improving picture quality of video tapes in the VCR industry. Furthermore, in the survey "Young people and their orientation to the mass media : An international study--Taiwan",[4] the most popular prerecorded video tapes in Taiwan today are those detective-action, kung-fu,

science-fiction, horror-films and romatic comedies. These types of program are not offered in the NHK channels and thus the Japanese DBS programs should not create any immediate competitive force to the VCR industry. The largest prerecorded video tape duplicator in Taiwan, Era Company, announced that due to the competition generated from the high quality television pictures available on "Little Ears", it is going to invest on new processing facilities for the duplication of quality prerecorded video tapes.[5]

Beside the legal and technical impact on the TV industry, there is the issue of cultural sovereignty that the authorities have to contend with. Culture is not static. Culture changes over time. One culture may influence another and at the same time may be influenced by others. Acculturation is most effective through the mass media--in particular the television. This explains why certain contries practices strict censorships. But with the TVRO ability to receive foreign transmissions, essenticlly what is or maybe regarded as undesirable by the authority is not within the control of the government. So in Taiwan today issues are raised over the cultural sovereignty.

Concerns over Cultural Sovereignty

Since Japan launched its BS-2 DBS in 1984, the island of Taiwan has been facing an unintentional spillover problem which refers to an accidental transmission of television signals between countries at border areas.[6] Underlying the problem of spillover is that the form and content of the broadcast system in a country is an aspect of national sovereignty and an invasion to such informational sovereignty creates a threat to the country's domestic television system as well as the culture integrity. In essence, the communication policy-makers in Taiwan are facing a dilemma of how to satisfy the public's demand for television viewing alternatives without too many sacrifices in the nation's cultural identity. The fear of such cultural dependency is even intensified due to the historical influence Japan has had on the island.

A close examination on the program types provided by the Japanese NHK-1 and NHK-2 revealed that only very limited programs are Japanese-cultured per se, most of the television programs are focused

on international and educational subjects. Though the situation may change as soon as the Japanese commercial television system starts offering entertainment-oriented programs on BS-3 DBS, it is believed that at the present time the threat of cultural dependency is at its minimum.

But, considering the homogeneous television culture in the world media development today,[7] with the already existing social and cultural affiliation with Japan, an extensive fear on the issue of cultural invasion or media imperialism appears to be the main threat from. media technology. For instance, in recent years, several phenomena have created a strong feeling for Japanese culture, the boom in Japanese language schools, the success of the bookstores is evidence of the rapid rise in Japanese publications, demand for Japanese video tapes sky-rocketed, and the younger generation is now heavily criticized for being affected by the new Japanese youth culture and even its social values. With such popularity of the Japanese publication, the influx of Japanese television programming through VCR rental stores, and the number of "Tokyo kids" running around Hsimenting, the fear that this later generation will be more likely "Japanalized".[8] Either from the historical review or from the examination of the current cultural flow, the cultural affiliation between the Japanese media contents, which, are accessible through the installation of "Little Ears".

Challenge to the Existing Media Regulation

Since 1976 the operation of broadcasting industry in Taiwan is governed by the Broadcasting and Television Law (BTL) and the Enforcement Rules Formulated in accordance with the BTL. Pertinent to our discussion are Articles 18, 19, 21 and 28 of Chapter 3. Under Chapter 3, Article 18 of the Enforcement Rules, the government laid out the minimum and maximum percentages of the four program categories permissible during the broadcast hours.

In Article 21, the government indicated that except newscast all the TV programs are required to be examined by the GIO before they can be broadcasted. And finally, Article 19 and 28 of the BTL spelled

out the limitation of a maximum of 30% imported programs among all television programs aired and the requirement of GIO's authorization for the importation of any foreign program.[9]

The reception of television signals from NHK-1 and NHK-2 has certainly posed challenges to these regulations. In formulating policies to regulate this new medium the government has to consider how the DBS signals are going to be classified. For example, are the DBS signals to be classified as the common carrier or within the traditional broadcasting regulatory framework?

Sometimes, it is inevitable to have contradictory policies when a new technology is developed. However, without building a regulatory framework to compromise the old and the new technology, as the new one develops and the old matures, the challenge is going to be more overwhelming in the future.

Presently, with the government adopting a policy of "no policy", it is actually a situation of the government losing control and creating contradictions to the existing communication laws.

The other related issue concerns international copy-right laws. This issue will definitely be raised once the Japanese Satellite Broadcast (JSB; a commercial satellite television company), participate in the upcoming DBS, BS-3. For example, JSB may demand that Taiwan be responsible for part of the royalties for their broadcast.[10] Without an initial settlement on the allocation of royalties of the programs originally intended for another country, it would certainly create a problem of pirating. At the same time they may demand subscription fees from the Taiwanese consumers.

From the Taiwanese government point of view, the content of the Japanese broadcast may not be desirable and one that she does not have control over. To the extreme the Taiwanese government may regard the Japanese broadcast as an invasion of Taiwan's sovereignty.

From this discussion, it is clearly seen that the present policy of "no policy" adopted by the Taiwanese government is not an end but a very temporary one. From the author's point of view, the Taiwanese government have to have at least a skeletal framework of regulations implemented before JSB operationalize the BS-3 satellite. This will

give the Taiwanese government an upper hand in a forthcoming complicated problem.

In summary then, "Little Ears" exist in Taiwan because they receive the spilled-over signals from the Japanese BS-2a which stemmed from technological advancement in TV signal transmission. The growth and popularity of "Little Ears" led to significant loss in local programs viewing which in turn affect the advertising revenues of the TV stations. Another negative impact concerns cultural sovereignty. The "over-identification" of the younger generation with the Japanese threatens the nation's cultural identity. Moreover, a challenge is a posed to the existing media regulation which indeed needed major re-evaluation because of changes in technology and consumers' wants.

Without doubt, the Taiwanese TV industry is presently plunging into a crsis. But the situation is not altogether hopeless. The future prospects of the industry depends on the concerted effort of all the various bodies in the industry in upgrading their standard and making new changes so as to compete aggressively with their present and future competitors.

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V. THE FUTURE PROSPECTS OF THE TELEVISION ENTERPRISE IN TAIWAN

As indicated before, the quality of the current TV programs in Taiwan is generally recognized to be unsatisfactory. This has led to the initial growth and demand for "Little Ears" in Taiwan. It is estimated that there are more than 200,000 households in Taiwan who own "Little Ears" today. The figure is expected to increase more rapidly when JSB operationalizes BS-3.

Even the "Big Ears" which can receive programs from other parts of the world including U.S., European countries and Russia, although handicapped by its higher price, are gaining more acceptance. Also, on the 7th of April 1990, Hong Kong has launched her own satellite[1]--AsiaSat I--whose northern footprint covers China, Taiwan, Korea, Nepal and Western Japan. This new satellite opens another set of channels for "Big Ears" owners. Furthermore, with the anticipation that the price for "Big Ears" would gradually decrease once this product matures, demand for "Big Ears" will increase as well.

The popularity and growth in demand for these receivers together with a lack of sound regulations from the authorities certainly pose a great danger to Taiwan's media environment. The existing and potential problem caused by the growth and development of the DBS medium has to be resolved before the situation eventually becomes a crisis. The author has a few suggestions:

1. Establish a DBS System and a Set of Policies

Since Taiwan has become an important member of the international economic community, she needs a telecommunication facility with a global orientation. It is essential for Taiwan to develop an integrated international information system that is speedy and accurate.

Since the establishment of such system is largely dependent on a country's own information network infrastructure, the author suggests

that the development of Taiwan's own DBS system is the most direct and effective avenue for building its prosperity in the future global communication society. At the same time, with such DBS television programming transmission capacity, better signal reception as well as more programming opportunities are possible for the television audience in Taiwan.

Furthermore, almost every developed countries are heading in the direction of DBS system, so Taiwan with its economic ability, should be following the trend and develope her own DBS system and policies suitable for its unique social and economic environment.

From the author's view point, at least there are three advantages for Taiwan to develope her DBS television programming services:

(1) Improving Television Reception. The reason why Japan launched the DBS service is to improve its reception problem for some 620,000 television households located on remote islands and other rural areas.[2] With Taiwan's geography, a DBS system would substantially improve the signal reception. Furthermore, there are additional functions which can be served by such DBS system. For instance in :

Tele-education. The education quality has been evaluated to be lower in the eastern mountainous areas and the island communities outside of the main island of Taiwan due to the lack of facilities and teachers.[3] By utilizing the DBS system, it is possible for these communities to share the instructors, teaching material and curriculum planning resources with the schools in the main islands. Another area is in:

Tele-medicine. Small community clinics, remote island, and mountainous community hospitals may benefit from a medicine network transmitter by the DBS system to assist in emergency situations as well as training and on-job education provided by big and more resourceful hospitals on the main island of Taiwan.[4]

(2) Promoting Taiwan's technological and cultural image

Prior to 1975, most Chinese television programs in South-East asia were produced in Taiwan. However, after 1975 and especially in the mid 1980's, we see a drastic shift towards Hong Kong-produced TV programs and video tapes because by using technically advanced special effects and equipments, Hong Kong has produced better quality programs. Not suprising she has carved out a large market share in Asia and has been maintaining this position up till today.

Besides, Hong Kong has launched "AsiaSat I". She has been hailed as having a technological superiority in broadcasting over Taiwan and is moving towards a new regional market--the DBS market in the South-East Asia.[5]

Taiwan needs to establish a DBS broadcasting service to promote her image in broadcasting and to compete effectively with Hong Kong. As it is, Taiwan is already late in the competition even though her conception of a DBS system was earlier, but then there is still another reason that warrants Taiwan to have a DBS system which sill be discussed next.

(3) As an instrument to prevent cultural invasion

Also, to deal with the fear of cultural invasion generated from imported media programming services, establishing Taiwan's own DBS broadcasting services may provide an effective cultural invasion counter solution.

There are tremendous controversies surrounding the issue of launching Taiwan's own communication satellites. Those who oppose the idea say that Taiwan with a small land mass, has a low frequency of satellite utilization, and since her needs for channels can be adequately handled by international satellite organizations, it is not economical or feasible to spend so much money on developing a satellite of her own. It was estimated that to launch a DBS would cost Taiwan about NT $10 billion (approximately $400 million in the U.S. dollars). This point is propounded by by Wang Chi, dean of the

graduate school of journalism at National Chengchi University. He pointed out that from the standpoint of telecommunications requirements, Taiwan indeed does not need to spend such a large sum on developing her own satellite.[6] Hsiung James C., professor of the department of mass communication at TamKang University, has suggested that a cooperative developing scheme with other countries is more appropriate.[7]

Despite the opposition from the academic field, National Science Council member Teng Chi-Fu believes that the value of commercial applications is certainly one factor to consider. He contended that " in future, many private companies--especially multinational corporations-- are going to use satellites to set up their own telecommunications networks and it is a market with a lot of potential."

From a technological stand point, "the ultimate goal of developing a satellite is to drive related industries and spur technological upgrading," said Tseng Fan-Teng, vice-director of the Telecommunications Training Institute in the Ministry of Communications, who first advocated developing a satellite as early as ten years ago in Taiwan.[8]

There is also the possibility of a cooperative venture between Hong Kong and Taiwan. Technically and economically it is a feasible idea but this idea did not evolue (in fact was not even discussed) because both countries have been competitors from the beginning. There is also the political issue to contend with . By 1997, Hong Kong will be no longer under the British sovereignty but become part of Mainland China which is the political foe of Taiwan since the end of the Second World War.

Based on these arguments the generally accepted notion is for a satellite system. As a result, the chairman of the National Science Council, Hsia Han-Min, revealed in early July, 1989, that Taiwan will launch its first low-orbit satellite in three to five years. And premier Lee Huan made a clear promise on the undertaking in his final report

to overseas scholars at the 1989 National Development Seminar that the DBS launching project will be executed.

A suggestion for the DBS system

The development of a DBS system can be divided into the construction of the DBS software and hardware. The regulation of the hardware facility, the DBS transmission and receiving equipments should fall into the jurisdiction of the Telecommunications Bureau, while the software of the system including the programming production and planning would be under the television stations' and the Information Bureau's responsibility. Both tasks are expected to encounter difficulties judged by the current status of the television industry in Taiwan.

Pertaining to the hardware development, the GIO would possibly encounter economic, technological, and frequency appropriation obstacles in its effort to establish the facility and obtain internationally designated frequencies. It is anticipated that renting transponders and cooperate with other neighboring countries in developing cooperative regional DBS systems would be more feasible for Taiwan presently.

As for the development of DBS software programming, the three television stations should form a consensus in exploiting quality and attractive programs to compete with imported programs under the guidance and supports from the GIO.

In summary, the three bodies of the media environment, ie, the GIO, the Telecommunications Bureau and television stations need to coordinate in the planning process as their functions are closely linked together and the success of a DBS system is essentially depending on the overall planning, administering and implementation carried out by the three parties.

2.Develop A Cable Television System

As indicated before, with the already widespread of "Little Ears" in

Taiwan, it is difficult to prohibit the use of satellite dish equipments either technically or politically. Some researchers sauch as Tung-Tai Lin,[9] James C. Hsiung, and Kuo-Chou Lai[10] have suggested to develop a cable television system on the island to counter the undesirable medium system already existing. This is a lesson learned from the European experience.

In 1980's European countries also had a similar problem when the Russian DBS programming spill-over and was received by some European people unintentionally. It was also difficult for the government authorities to stop the undesirable reception of these Russian programs at that time. The European communities finally counter the problem by aggressively developing their own DBS system as well as establishing or improving existing cable television services to counter the foreign signals. By utilizing the cable television headend system as a gatekeeper, these European countries were able to deliver the television signals, foreign or domestic, through a certain content control process.[11]

These researchers who are in favour of a cable system have suggested the authority in Taiwan to review the European experience in solving the "Little Ears" dilemma. It is anticipated that besides legalizing the "Little Ears" medium, the authority should also aggressively develop its own DBS broadcasting service, and at the same time, start planning an island-wide cable television system which may selectively deliver television programs from recorded available foreign DBS programmming (after the negotiation on the copyright issue), domestic DBS programming, as well as cable-specific and existing broadcasting programming to the subscribers.

Under such system infrastructure, the audience would be offered with more programming choice in comparsion to the traditional broadcasting system which is limited by the available frequency spectrum. In addition, the development of cable television services would provide a narrowcasting programming opportunity for the minority taste audience who are left unserved under the traditional

broadcasting system which limits its production goal to produce the most common denominator programming.

With the implementation of a cable television system in Taiwan it create opportunities for more independent producers with the availability of multiple channels and subsequently, stimulate competition, variety and improvement in the quality of television programs. Thus, viewers would be divested to local channels and the threat of a cultural invasion generated from extensive viewing of foreign programming would be drastically reduced.

It is clear that cable television services can be a strong competitor to DBS services when one examines the history of the American multichannel media industries. The United States is one of the most advanced countries in developing DBS systems but cable television services have had a much higher penetration and gained much more popularity in comparison to its DBS counterpart. As the American cable industry entered the new decade, it has reached a threshold penetration of 50%. In comparison, the DBS service which was started in 1981 when the FCC which had required a license to install a TVRO lifted that requirement,[12] has not really taken off after a decade of evolution.

Although the media environment in Taiwan is obvisouly different from the American market-driven system, the establishment of an island-wide cable television system would likely provide an attractive and feasible alternative television programming delivering system for the audience in Taiwan. Furthermore, these muti-channel alternatives have a competitive edge--it is broadcasted in mandarin unlike the DBS foreign programs which are mostly broadcasted in foreign languages. Even though the cost of implementing such a system is expected to be colossal, but considering the economic, social and technological infrastructure implications for the future information society, such a cable system development.

As a matter of fact, there is a task force established by the GIO for studying the possibility of implementing a cable television systems in

Taiwan. But, no substantial suggestions have been reported so far from the task force.

In essence, DBS and cable television systems have their own disadvantages as well as advantages. A well planned infrastructure which incorporates the two into a complementary telecommunication system should be the best proposal for Taiwan today.

3. To Improve Television Programming

As mentioned briefly earlier, the lack of quality programming and variety of programming is one of the main reasons for the people in Taiwan to purchase "Little Ears". Thus, one area that the TV industry must pay particular attention to is to improve both quality and quantity of television programming in Taiwan.

In discussing the programming issue, the author would approach the problems from three different perspectives:

(1) The balance of programming types. The first president of the BBC network, Lord Reith, once pointed out that television is a cultural business which should keep a balance in providing information, education, and entertainment programs to the public. Most of the democratic developed countries in the world also use such information-education-entertainment balancing standard in planning their public television system. Nevertheless, the commercial television system in Taiwan has been predominated by revenue-driven entertainment program for years. It was not until 1984, a public television station was established to provide the audience in Taiwan with more cultural programming alternative. In general, even including the educational and cultural programming furnished by the public television station, the entertainment programming type is still prevailing in the overall offering of the television programs in Taiwan today. The balance of programming types needs to be readdressed in planning the new telecommunications system on the island. In particular, more

international news and information coverage is needed.

(2) The problem of programming quality. It is understandable for entertainment programming type to predominate the television content in a commercial broadcasting system as is the case in Taiwan. However, entertainment programming does not mean low quality programming. Unfortunately, the two are almost synonymous in the Taiwanese media today. The current major content approaches of entertainment programming include: (a) variety shows (b) game shows (c) Kung-Fu drama or Chinese puppet show. All these programs seem to aim at attracting the largest possible number of audience. The game shows produced are one of very low quality; the variety shows are filled with low taste comedian jokes; violent acts dominated Kung-Fu movie with very simple plots. Lately, even puppet shows are filled with violence. According to the 1989 Chinese New Year television viewers' behavior conducted by Rain Maker Company (Table 6), only 9% of the interviewees were satisfied with the entertainment programs provided by the three commercial stations during the new year period. Over 20% of the audience criticized that the available entertainment programsare boring, repetitive and of very low quality. Some audience even suggested that the television stations should import more foreign television programs to replace these distasteful shows.

(3) The program sources. There are four major kinds of program sources in Taiwan: (a) self-produced programs which are produced by and broadcasted by the individual television stations (b) simulcasting programs--produced by other stations but are universally broadcasted in all stations (c) imported porgrams including cartoons, drama series, and theatrical or made-for-TV movies (d) independently produced programs including semi-independent and totally independent programs.

A self-produced program is proposed, developed, and produced by

a television station's own production division. On the other hand, a semi-independent program is produced by a station's contracted independent producers, while a totally independent program is developed and produced by independent production houses, independent producers, advertising agencies or even a certain advertisers' account executive. Since these television programs are produced outside of the stations and have no direct production connection or supervision from any television stations' programming development divisions, they are called independently produced programs.

The creation of such independent programs, especially the advertiser-supported independent programs, is evolved from the following forces:

(1) Station advertising competition: In competing for advertising dollars, the three commercial stations are facing pressures from big account advertisers and allowing such advertiser-produced programs is a good business practice to build good station-client relationships.

(2) Conflict between marketing and production: Station producers often have different program production ideology with the station marketing department and its advertising clients. As a result, the advertisers are unsatisfied and looked for alternatives to their own production units.

(3) Advertising agency interference: Advertising agencies are becoming more familiar with telecasting and thus desiring to be more involved with the production process. When there is a conflict of interest,they first interfere with the station production, then they may boycott the program, or finally decide to produce their own programs to best coordinate with their overall promotion plans.

(4) Budget cutting: The three commercial stations are all facing budget cutting due to losses in the recent years. Independently produced programs, either semi-or totally independent, can help to reduce the programming production cost. Furthermore, by

broadcasting the advertiser-supported productions,the stations can generate broadcasting time as well as commercialspots revenues and even sell more block commercial spots to the advertisers. Such business practices are welcomed during this period of station financial difficulties

In general, it is expected that the programming content of those advertiser-related programs would not only be easily influenced by the involved advertisers (or agencies), but are actually directly controlled by these advertisers (or agencies). Furthermore, since the three commercial stations merely execute the actual "broadcasting" process of these programs and collect the broadcasting fees and commercial spots charges for the broadcasting of these programs, they are not participating in any script writing, editing, or production process of the indepedently produced programs. Thus, the stations do not have the responsibility nor the authority to control the quality of these programs.

Nevertheless, according to the survey done by James Lee, among the three commercial stations in Taiwan, the Taiwan Television Station has devoted approximately 52% of its programming time to the independently produced programs and only 23.7% of its programs is self-produced in the station. The China Television Station has a slightly own independent program percentage. Independently produced programs account for 40% while self-produced programs account for 33%. Finally, the Chinese Television Station has approximately 52% of its programming independently produced while only 22.6% is produced in the station. With such overwhelming percentages of programming which is developed outside the stations and very often under the influence of advertisers, how can the three stations control and further improve the quality of their programming? It is understandable that the general audience prefers the imported television programs which are free of such production pitfalls.

The author has three suggestions concerning the issue of programming quality:

(1) the three television stations should reduce the amount of broadcasting time of the advertiser-supported independently produced programs either through self-regulation or governmental limitation. Inaddition, a screening procedure and production standard system should be activated for both programs produced inside and outside of the stations.

In particular, for the self-produced programs, a detailed production quality control system should by established for every stage of the production process. And for those independently produced programs, an evaluation system with specific guidelines should be developed to screen out the programs which are of unacceptable quality or content. The British Independent Broadcast's evaluation system is a very good example for such screening procedure. With 100% independently produced programs, the IBA established a very good program screening process to select programs (except news programs) to be broadcasted in the network under some predetermined picture, script, and overall content standards.[13] Such critical quality control system has resulted in the acquisition of consistently well produced programs for the British network.

(2) A better programming balance of the informative (news), education and entertainment programming types should be readdressed to all the stations.

(3) To improve the news and cultural programming in both quality and quantity aspects so as to fulfil the goal of television as a cultural business.

The latter two suggestions implies that GIO has to review her

current policies and regulation. For example, the GIO has to relax the 30% maxium air-time for foreign movies. This relaxation is necessary so that the three stations can air more foreign programs and remain competitive.

From the above discussions, we can see that the future prospects of the Taiwan TV industry depends on the functions of the three key bodies. The GIO which screen and recommend domestically produced movies and foreign movies to be broadcasted. The Telecommunication Bureau should be held responsible for the DBS facilities and transmission and co-ordination with other countries for DBS relays. As for the DBS software programming, they come under the purview of the three stations. Besides, these defined responsibilities there is a need for close co-ordination and mutual support among these three bodies. This is particularly important for an inexperience country that is dealing with a modern technology.

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VI CONCLUSION

Summary and Conclusion

In the early 1960's, space fiction Arthur Clarke said, "What we are building now is the nervous system of mankind. The communications network, in which the satelites will be modal points, will enable people to flicker like lightning back and forth across the face of this planet. They will be able to go anywhere and meet anyone, at any time, without stirring from their homes....all the museums and libraries of the world will be extensions of this new rooms."[1]

This quotation reflects two key points. First, the domination of satellite communication in the future (which we are experiencing now). Second, the inqusitive nature of human beings to know about the world and people around us.

Pertaining to the first issue--the domination of satellite communication--it is particularly important to modern and developing countries. In this "Global village" era, information and the speed of obtainning these information are critical. The transfer of such information is only possible through satellite communication presently.

Taiwan is a developing country and has been seeking technological advancement for more than three decades. This is reflected in her industrialized program. In this decade she is facing a new challenge in one area that she has never experienced before--that of satellite communication.

When Authur Clarke made that speech in the early 1960's, Taiwan has just started her first TV station. From a humble beginning with the emphasis of TV as a medium for education and government information, Taiwan's TV industry has shifted towards information and entertainment. This shift resulted from higher literacy levels developing more informational programs and affluence information lead to more leisure time; thus, demanding more entertainment

programs.

Because of the GIO rulings and organization of the three stations together with the subsidiary production units the demanding viewers are not satisfied. This explains why when VCRs and pre-recorded video cassettes were introduced in the early 80's, their demand mushroomed. because they have provided another alternative for leisure. Because of the eminence of pre-recorded video tapes, they provided an impetus for upgrading (although minimal) to the three TV stations.

By the end of 1984, just as the VCR approached maturity and competition seems to level off, the TV industry faced another competitor which is more dynamic and technologically advanced--TVRO--more widely known in Taiwan as "Little Ears".

The "Little Ears" in essence, captures the spill-over signals from the Japanese satellite BS-2a. The popularity and growth of "Little Ears" in Taiwan reflects the second key point in Authur Clarke's quotation ie., the inquisitive nature of human beings to know more about the world and people around us. This is because program from NHK -1 and NHK-2 via the DBS are mainly international news-information and sports. It is mainly the curiosity to know what is beyond Taiwan that lead to illegal installations even during the Martial Law years.

Not surprising with the lifting of Martial Law in 1987 (a critical political reform) and the adoption of "laissez-faire" by the reformed government together with a distinguishing economic growth of Taiwan during this period and accompanying affluence, the demand and popularity of "Little Ears" blossomed.

Beside this political reform and economic well being, the cultural affiliation with Japan in the past also has a significant influence. This cultural affiliation in the past has a significant impact especially for the older generation who had undergone Japanese education system and culture and therefore, welcome Japanese programs. With a taste of better programs via the "Little Ears", the already poorly rated

Taiwanese programs received harsher criticisms. This caused even greater diversions form locally produced programs to foreign channels.

Naturally then, this diversion will have a negative impact on the advertisement revenues of the TV industry which is the critical source of revenue for the TV stations. Presently, the three stations have felt a decline in advertisement revenue and this decline is expected to plunge further once JSB participates in the upcoming BS-3. In fact, the "Little Ears" has given an opportunity and a extremely valid reason for the TV stations to upgrade their needs to improve programs and for the GIO to seriously consider her inflexible regulations. Another negative impact of "Little Ears" is that of acculturation. As it is Taiwan has a history of Japanese affiliation. With the availability of DBS hardware -- to receive Japanese programs, the cultural sovereignty of Taiwan is at stake.

The first challenge faced by the Taiwanese authority is the establishment of a DBS system. It is feasible for Taiwan to have a DBS system considering that she has become an important member of the international economic community. Taiwan need a telecommunication facility with a global orientation.

A system is not complete without a set of operating policies and regulations. The current policy of "no policy" is not a solution whether short or long term. There is an urgent need for the Taiwanese government to draft out a practical set of policies and accompanying regulations before the Japanese launch the BS-3 satellite with JSB participating in it.

Another prospect or challenge is for Taiwan to develope a cable television system. Taiwan can learn from the European experience in the 1980's whereby the cable TV services is used as a complementary system to combat undesirable reception of the Russian TV systems. The cable system also provides opportunities for independent producer, stimulates competition and creates variety in TV programs.

Last but not least, the TV industry need to improve both the quality

and quantity of television program in Taiwan. Presently, low quality entertainment programs dominate Taiwanese programs. There is a lack of international information or news and other quality programs that the Taiwanese viewers thirst for. In addidtion, local TV stations and producers need to upgrade their programs and productions as well.

At first sight, it seems that since the launching of DBS-2a Taiwan is faced with an informidable crisis. But, as the old Chinese saying goes, "Crisis comes with opportunities as well" the situation in Taiwan is not hopeless. Instead it` poses challenges to the future prospects of the TV industry in Taiwan and if these challenges are well managed they will launch Taiwan into a new era in Telecommunication in line with the developed countries and reap the benefits of this modern technology.

The Prospects for Future Research

This study traces the factors contributing to the growth of TVRO in Taiwan and its impacts. However, there are certain observations and areas in which the study has revealed and worthy of further research but are beyond the scope of this study.

The first observation, as noted in the last section, is that the Japanese programs via the NHK BS-2a, not only appealed to the older generations (who were under the Japanese imperialistic rule) but also the younger generations. In fact, the latter is influenced more than the former. A research on the impact of the TVRO on the social strata is definitely challenging.

Since the aim of establishing a DBS system, from the point of view of the Taiwanese government is to counter Japanese media influences while at the same time, reap the benefits from the DBS and enhance her cultural presence in South-East Asia via TV transmissions, a research must be conducted to determmine if the DBS system above is sufficient for the deternence. As mentioned in the study, a combination of cable TV and DBS may be the optional means to do so.

Next, a research is necessary as certain the competitive effects of Hong Kong's DBS on Taiwan and South-East Asia. As noted in this study, culturally Hong Kong and Taiwan are similar and both countries are aggressive rivals in seeking to dominate the South-East Asian market with their TV productions. Each country has considered using DBS as a medium. The primary issue, hence, concerns first-mover advantage, ceteris paribus. It seems that Hong Kong has a headstart in developing a DBS system. Thus, a research on competitvie strategies is required before embarking on this colossal project.

Implications

From the study that the author have conducted, the growth of TVRO's has been contributed to primarily by the poor quality in TV programs and limited quantity of imported programs. It is of these two qualitative and quantitative aspects that drive viewers to turn to the more appealing Japanese DBS which provides both quality and more foreign programs. Furthermore, because Taiwan is experencing the common phenomenon of increasing materialism during its recent economic growth, the purchasing of "Little Ears" do not only provide an alternative media choice, but are also symbol of social status and prestige.

With respect to the quantity of imported programs, the TV stations have been contrainted by GIO regulations that specifically set the programming guidelines under four content classifications. For the entertainment classification we find that for the three TV stations the percentages range from thirty-five to forty-six percent only. Another constraint involves limiting the number of imported TV programs. Hence, viewers are to be contented with what is being aired by the three stations and in terms of production quality, there is not much foreign stimulus to spur competition and upgrading.

With the launching of the BS-2a by NHK, within a short period of time, the marks of the footprint of the BS-2a became noticeable.

Satellite dishes sprung up like mushrooms on roof-tops, local stations lost viewership and advertising revenues and , perhap most dreadful of all, cultural declination.

To dismiss the issue of cultural imperialism on the premise that Taiwan is not an under-developed country and hence will not be subjected to it is a fallacy. Taiwan is a unique case. Japan and the U.S. have made significant technological contributions in the formative years of the TV industry. There is a technological biase in adaptation. Furthermore, Taiwan has been dominated historically by Japan, and until today a tint of Japanese influence still persist.

The Author is convinced that ever since the growth of "Little Ears", "Japanization" of the younger generation is strong and distinct. (The interesting point to note is that these younger generations--youth and teenagers are not the ones who were under the political domination which their grandparents received.) This tendency raised concerns over the dilution of their native culture by the Japanese "pop" culture.

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Chapter VI

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TABLES

Table 1 : The Growth of TV Hardware				
Year	**1962**	**1978**	**1987**	**1988**
Station	2	3	3	3
Investment (US$1,000)	750	14,175	29,675	78,850
Transmission tower	2	24	38	38
Output power of transmitter	5.1 kw	128.8 kw	284.8 kw	336.8 kw
Studio	2	17	20	23
Camera	4	64	123	N
TV Program	B/W	color	color	color
Receive frame	North-Taiwan	Taiwan & remote-islands	national-wide	national wide

**Source :

1. Television Yearbook of the Republic of China 1962-1975, Taipei, Taiwan, 1976.
2. Television Yearbook of the Republic of China 1986-1987, Taipei, Taiwan, 1988.
3. Collected from three TV stations by the Author.

Table 2 : Composition of TTV Programs (1962-1969)						
mn/% year	news & inf.	edu. & cul.	pub. ser.	ent.	com.	ave. per week
1962	26.86%	26.94%	10.59%	34.56%	1.05%	2,275mn
1963	14.14%	21.72%	11.52%	47.07%	5.55%	2,560mn
1964	13.32%	16.50%	13.39%	47.37%	9.42%	2,740mn
1965	11.97%	15.15%	12.55%	49.83%	10.50%	3,050mn
1966	12.15%	13.08%	12.00%	50.00%	12.77%	3,210mn
1967	12.84%	11.49%	11.34%	49.25%	15.08%	3,350mn
1968	11.65%	11.55%	11.01%	49.68%	16.11%	3,720mn
1969	11.60%	11.24%	10.65%	53.83%	12.68%	4,180mn

**Source : Television Yearbook of the Republic of China 1962-1975, Taipei, Taiwan, 1976.

**mn=minute
inf.=information
edu.=education
cul.=culture
pub.=public
ser.=service
ent.=entertainment
com.=commercials

Table 3 : The Following Data Compare the Penetration of Video Media in Taiwan : (January 1989)	
TV	99.2%
VCR	79.0%
The Fourth Channel	6.3%
TVRO -- Little Ear (Ku-band)	4.0%
-- Big Ear (C-band)	0.7%

*N=649

**Source : United Advertising Company, A Report on the Audience Viewing Behavior of Alternative Media for Broadcast: Television. Taipei, Taiwan, 1989.

Table 4 : Viewing Habits of VCR Household by Day-part			
	Weekdays %	Saturday %	Sunday %
morning	2.3	1.8	36.3
afternoon	16.6	49.7	46.7
evening			
19:00--	20.0	14.5	12.6
21:00--	45.1	24.2	14.1
23:00--	20.0	15.2	8.1
Total	100.0	100.0	100.0

*sample size : 649

515 household with VCR

**Source : United Advertising Company, A Report on the Audience Viewing Behavior of Alternative Media for Broadcast: Television, Taipei, Taiwan, 1989.

Table 5 : The Degree of the Audience's Satisfaction with the TV Programs (1984)	
very satisfied	1.08%
satisfied	19.28%
unsatisfied	53.00%
very unsatisfied	6.73%
no comment	19.91%
Total	100.00%

Table 6 : The Degree of the Audience's Satisfaction with the TV Programs (1989)	
satisfied	9.0%
unsatisfied	28.0%
no comment	63.0%
Total	100.0%

Table 7 : Survey of the Demand for "Little Ears" in Taipei Metropolitan Area*

household annual income	have not TVRO %	have TVRO %
US$15,000	26.0	2.0
US$15,000--23,000	19.6	0.3
US$23,000--30,000	15.1	0.7
US$30,000--46,000	9.3	1.8
US$46,000	2.5	0.8
Rejected answer	21.6	0.3
TOTAL	94.1	5.9

*1. This survey was conducted by Rain Maker Industrial Inc., Taipei, Taiwan.

2. Data : 02/09/89-02/10/89

3. sample size : 900

612 respondents, about 68% are familiar with "Little Ears", 36% of the respondents has "Little Ears" at home.

4. To use 900 as base--the percentage of household with "Little Ears" is 36/900=4.0%

To use 612 as base--the percentage of household with "Little Ears" is 36/612=5.9%

(B) The Possibility of Non-owner to Install "Little Ear" in the Future			
HH annual income	**yes %**	**not sure %**	**no %**
US$15,000--	5.2	8.3	14.0
US$15,000-23,000	4.7	6.8	9.3
US$23,000--30,000	3.1	5.2	7.8
US$30,000-46,000	1.7	2.4	5.7
US$46,000+	0.9	0.7	1.0
Rejected answer	6.1	6.1	11.0
TOTAL %	**21.7**	**29.5**	**48.8**

(C) The Motive for Purchasing "Little Ears"		
Reason	**number**	**%**
To watch something difference from other countries	16	44.4
Apartment owned	5	13,9
To flaunt wealth	4	11.1
To learn language	4	11.1
To attract more customers (business needed)	3	8.3
To be aware of the programs from the three stations	2	5.6
More diversities	2	5.6
Total	**36**	**100.0**

Table 8 : What is your opinion about "Japanization" of young people in Taiwan?	
worried	42.0%
unnecessary to worry	36.3%
no opinion	12.5%
don't know	9.2%
Total	100.0%

*Source : Sinorama, Taipei, Taiwan, Dec. 1988/Jan. 1989, p. 19

Table 9 : Normal Weekday Program Schedules of TTV, CTV and CTS

TTV	CTV	CTS
6:20 Cartoon	12:00 Midday news	5:00 Educational programs
6:30 Special Report on Current Affairs	12:30 Puppet Show	11:40 Midday News
----------	1:00 Drama series	12:30 Government Program
11:35 Agricultural News	2:00 Woman's Program	1:00 Educational programs
12:00 Variety Show	4:40 News	4:00 Sports Reports
12:30 Midday News	5:00 Cartoons	5:30 Children's Programs
1:00 Educational Programs	6:00 Children's Programs	6:30 Soap Opera
2:30 TTV News Report	7:00 Chian Review (introduction of Mainland China)	7:00 variety Show
3:00 Variety Show	7:30 Evening News	7:30 Evening News
3:30 Chinese Opera	8:00 Soap Opera	8:00 Soap Opera
5:00 Cultural Program	9:00 Nature Films	9:00 Educational Drama
5:30 Children Programs and Cartoons	9:30 News Magazine Program	9:30 Variety Show
6:30 Game Show	11:00 Cultural Program	11:00 Imported Program
7:00 Variety Show	11:30 Latenight News	
7:30 Evening News	12:00 Imported Program --Dynasty	
8:00 Soap Opera		
9:00 News Magazine Program		
9:30 Variety Show		
10:30 TTV World Report		
11:00 Variety Show		

Table 10 : The Taiwanese Preference of the 1988 TV Broadcasting Olympic Game between Domestic TV Station and NHK

Preference	Percentage
Domestic Stations	8%
NHK	58%
Not sure	16%
No comment	18%
Total	**100%**

Table 11 : Weekly Average Time and Percentages Devoted to Program Types Among TTV, CTV and CTS in 1987

Types of Programs	TTV %	CTV %	CTS %
News & Public Information	22.70	19.91	22.57
Education & Culture	26.79	21.98	31.04
Public Service	10.97	12.08	11.75
Entertainment	39.54	46.03	34.64
Total minute (100%)	4,845	4,882	6,709

Table 12 : Weekly Time and Percentages Devoted to Program Type on NHK Channel 11 and 15		
Types of Programs	**NHK-1 Channel 15 %**	**NHK-2 Channel 11 %**
News & Public Information	44.79	18.85
Education & Culture	4.29	41.78
Public Service	3.07	8.81
Entertainment	0.00	23.47
Sport	47.85	7.09
Total minute (100%)	**9,780**	**10,160**

Table 13 : Normal Weekday Program Schedules of NHK-1 and NHK-2

NHK-1 (Channel 15)	NHK-2 (Channel 11)
04:00 World News or Special Sports Event	04:00 Goodmornign Satellite
06:00 World News (U.S.A.)	04:30 Senior Citizen Program
07:00 World News (Europe and U.S.A.)	05:00 English Conversation
10:00 Tokyo Stock Market Financial News Report	06:00 NHK Morning News and Weather
10:50 World News	07:15 Family Programs
12:00 Japanese Wresting contest	08:40 Cooking Programs
14:00 Tokyo Stock Market Financial News Report	09:05 Family, Woman Program
14:45 World Weather Report	10:55 News and Weather
15:00 A Tour of Japanese Cultural and Social Introduction of Japan	12:00 Music
16:00 The Tour of France Bicycling Event	12:05 Soap Opera
17:00 Beat '89--movie, music	14;00 Japanese Wresting
17:30 World News speical-- CNN, A-2, ABC, ZDF, BBC	16:00 HDTV Experiment
19:00 American Professional	17:00 Children Program
20:45 Today's Japan	18:00 News and Weather
21:00 Sports (1989 Wimbledon Tennis)	18:30 orchestra Performance
02:00 World News	21:00 French Art-- Painting
	23:00 Beat '89
	23:30 Music
	00:30 Documentaries or Travelogs
	01:45 Educational Program
	02:30 Music
	03:00 Educational Program

Table 14 : The Preferences of Viewing Time for "Little Ears" (N=36, Multiple choices)

Time period	number	%
8:00 - 9:00 pm	25/36	69.4
9:00 -10:00 pm	17/36	47.2
10:00 -11:00 pm	10/36	27.8
7:00 - 8:00 pm	7/36	19.4
11:00 -12:00pm	4/36	11.1
1:00 - 2:00 pm	3/36	8.3
2:00 - 3:00 pm	3/36	8.3
3:00 - 4:00 pm	2/36	5.6

Table 15 : The Content Preferences of "Little Ears" Programs : (N=36)		
Type of programs	**number**	**%**
Variety shows	14	39.0
News	9	25.0
Series	7	19.4
Sightseeing of the Mainland China	4	11.1
Travelling	2	5.5
TOTAL	**36**	**100.0**

*Source : Rain Maker Industrial Inc., Taipei, Taiwan, 1989

FIGURES

FIGURE 1 : A DIRECT BROADCASTING SATELLITE SYSTEM

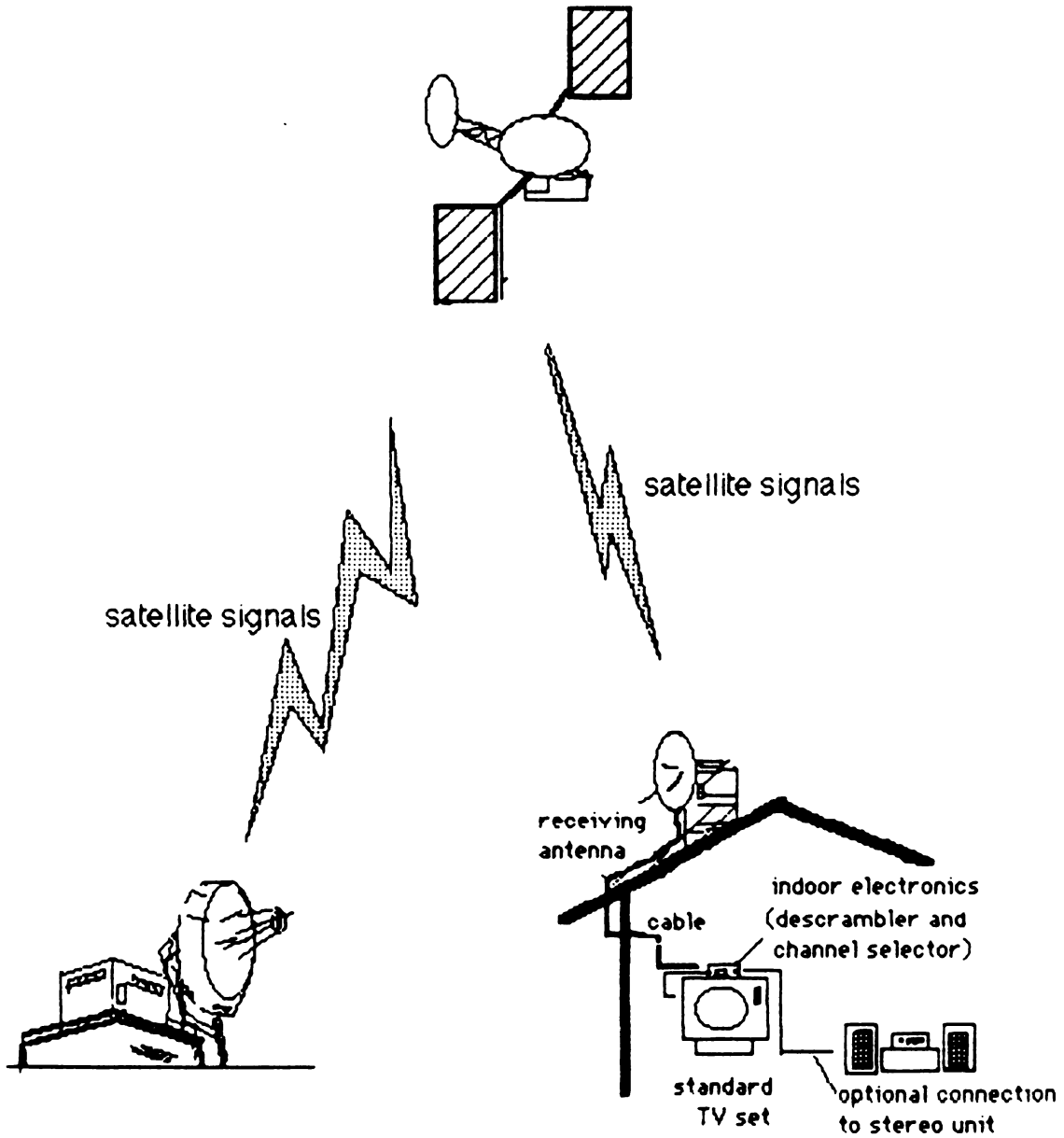
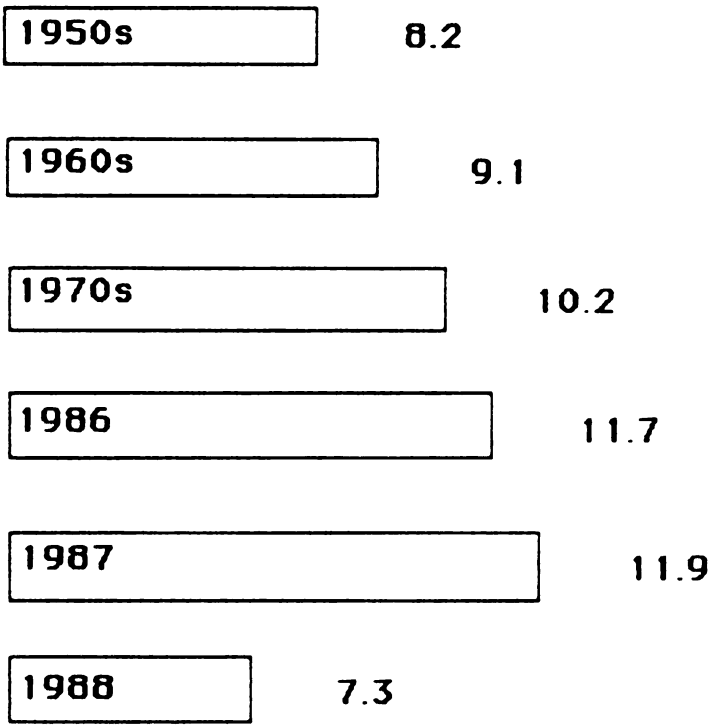


FIGURE 2: AVERAGE ANNUAL GROWTH IN TAIWAN (%)

(A) Gross National Product



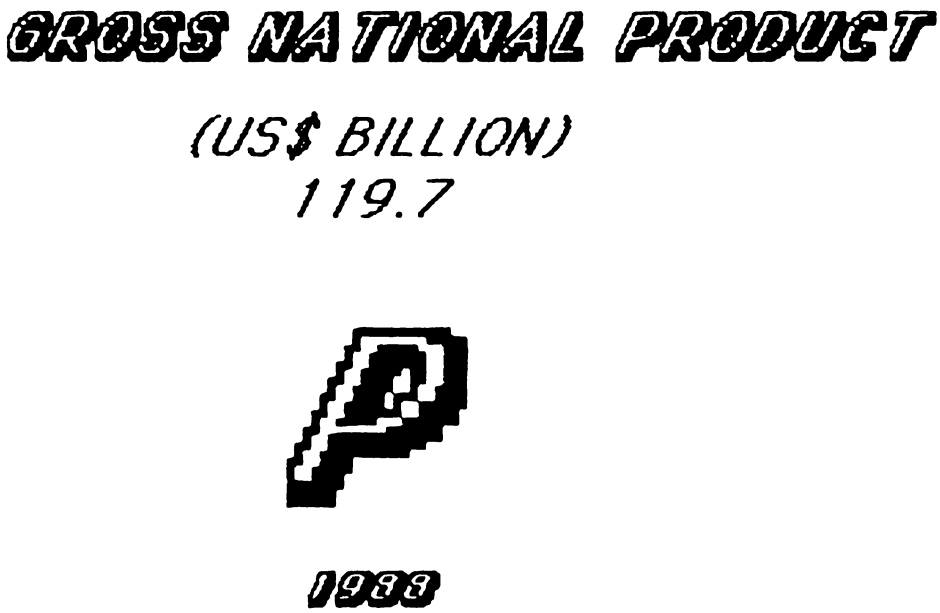


FIGURE 2: AVERAGE ANNUAL GROWTH IN TAIWAN (%)

(B) Per Capita GNP

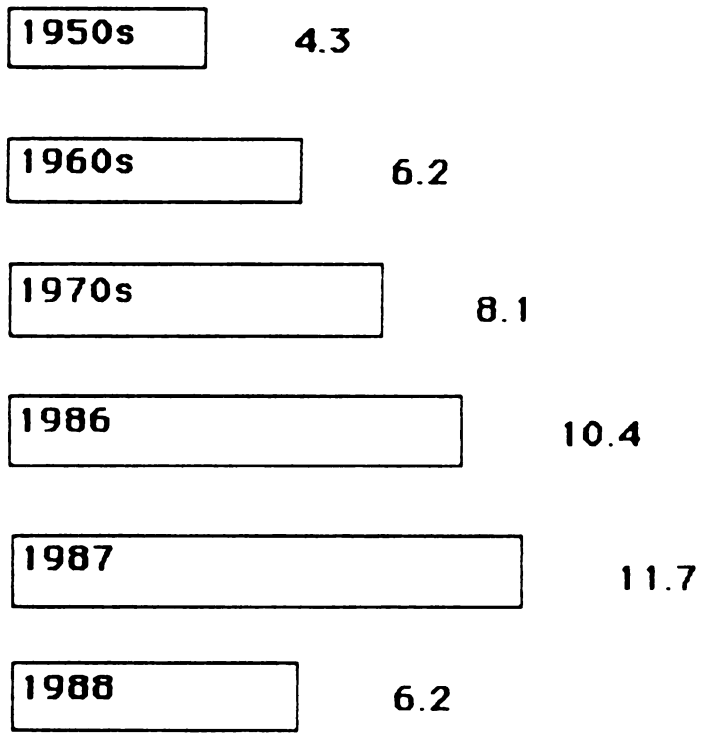
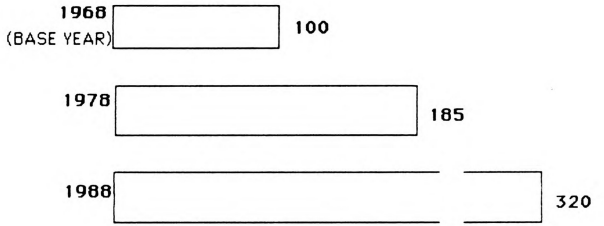
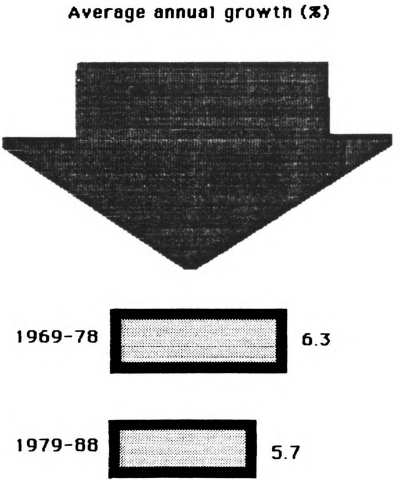


FIGURE 3. IMPROVEMENT IN STANDARD OF LIVING IN TAIWAN

(A) Changes in Level of Consumption





(B) Consumption Pattern (%)

B & T -- Beverages and Tobacco

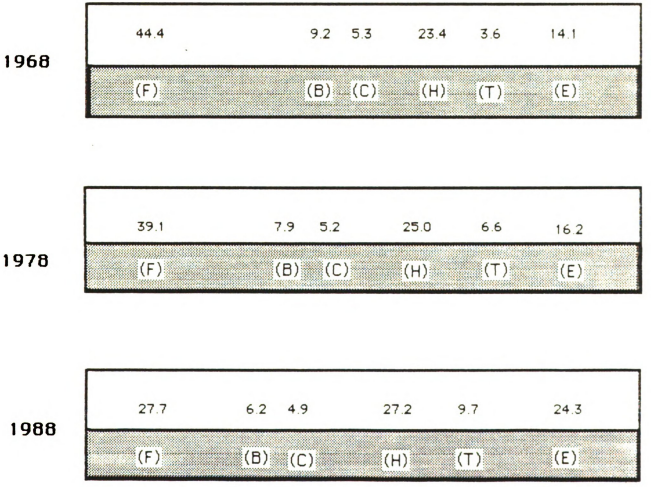
C -- Clothing

E -- Education and Recreation

F -- Food

H -- Housing

T -- Transportation



** Source:Taiwan R.O.C. Economic Development Council for Economic Planning and Development, 1989