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REPRESENT INFORM CONNECT

Thailand in View

A Market Report for CASBAA Members

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1 Executive Summary

1.1 Pay-TV environment

The subscription TV market experienced a downturn in 2014 as a result of twin events happening almost simultaneously: the launch of DTT broadcasting in April 2014 increased the number of free terrestrial TV stations from six to 24 commercial and four public TV broadcasters, leading to more intense competition; and the military takeover in May 2014 both created economic uncertainty and meant government control and censorship of the media, prohibiting all media platforms from publishing or broadcasting information critical of the military's actions.

The ripple effects of 2014's events continue to be felt by the industry two years after. By 2015/2016, the number of licensed cable TV operators had decreased from about 350 to 250 because of the sluggish economy, which suppressed consumer demand and purchasing power, market competition from satellite TV, and perceived unfair treatment by the National Broadcasting and Telecommunications Commission, whose very broad "must carry" rule created a large cost burden on operators (particularly those that still broadcast on an analogue platform).

Based on interviews with industry leaders, we estimate that in 2015 the overall pay-TV market contracted by three percent with an estimated value of around US$465 million compared to US$480 million the previous year. Despite the difficult environment, TrueVisions, the market leader, posted a six percent increase in revenue year-on-year. The company maintained its leading position by offering a wide variety of local and international quality content as well as strengthening its mass-market strategy to introduce competitive convergence campaigns, bundling TV with other products and services within True Group. These efforts expanded the company's customer base, and at the same time brought solid revenue growth despite impacts from competition and the weak economy. At the end of 2015, TrueVisions had 3.1 million customers including monthly subscribers to its premium and standard packages, as well as FreeView and Free-to-Air box customers.

CTH, TrueVisions' biggest competitor, was the talk of the broadcasting community in 2013 and was perceived by many industry insiders to mount an effective challenge to TrueVisions, thereby creating strong competition never previously seen in Thailand's pay-TV history. Having secured broadcast rights in Thailand, Laos and Cambodia for the much-coveted English Premier League for three consecutive seasons from 2013/14 to 2015/16, CTH was thought to be in a position to use the soccer tournament as its centrepiece and drive consumer take-up.

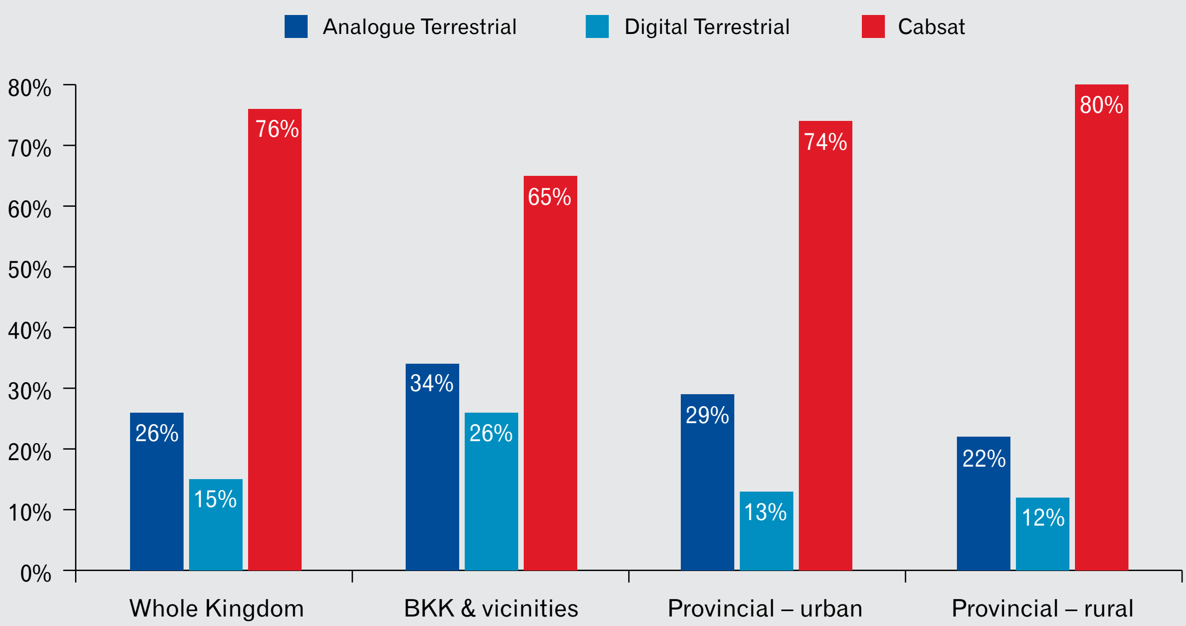
However, CTH failed to meet expectations despite forging a number of business partnerships with major players including GMM Grammy, RS, and even TrueVisions at one point. The company's most recent strategy involved going solo – cutting off all provincial cable operators who were previously in its network. Again it did not work. In June this year, CTH management announced that the company was undergoing a complete restructuring and by September 1 withdrew from the pay-TV industry, citing its inability to withstand the economic slowdown.

Cable & Satellite TV households & penetration rates: 2015-2016

As of end of December 2015, cable and satellite TV penetration rate stood at 73 percent, and terrestrial TV (analogue and digital) was 27 percent according to Nielsen's survey.

In 2016, Nielsen revised its presentation of TV penetration rates by platform. The following diagram presents most recent data from Nielsen (as of June 2016). The launch of DTT a couple of years ago has enabled a number of households to have connections to multiple TV platforms.

TV Penetration Rates By Platform As At June 2016



Source: NBTC as quoted from Nielsen

There are 415 licensed TV network operators in Thailand today. *(NBTC, May 2016)* They are further classified by geographical coverage as follows: national, 40; regional, 58; and, local, 317. Two regional operators hold two licences each making the total regional licences at 60, and overall total at 417. However, not all licensed local cable operators may be operating now, as discussions with industry insiders indicate that only around 250 are active.

An estimated 30 percent of Thai cable operators today have fibre-to-the-home capability. These are the larger operators offering 200-300 channels to customers in urban centres. The rest still transmit signals on analogue platforms that may carry 60-80 channels. With pressure from regulators to go digital (and carry all the licensed DTT channels), the biggest challenge faced by these analogue network providers is switching to digital transmission which requires huge investments beyond the financial capability of small cable operators.

Content for the pay-TV industry comes from a mixture of local and international sources. Leading Thai production houses selling quality local content to cable operators include GMM Grammy, Kantana, Next Step and Workpoint.

Foreign content suppliers include Universal, Disney, Fox International Channels, Sony, Discovery, DreamWorks, the Time Warner group, and Zee-TV, along with regional production houses for Chinese, Korean, Japanese, and more recently, Indian movies, drama series, game shows, musical variety shows, and entertainment programming.

Other pay-TV platforms, such as mobile TV and IPTV, have developed more slowly than expected. Only two licensed IPTV service providers, TOT IPTV and 3BB, are 'visible,' while newly-licensed IPTV operator, Advanced Wireless Network (AWN), a subsidiary of leading mobile operator AIS, officially launched its AIS Fibre fixed line broadband service only in May 2016. While video consumption on 3G and 4G wireless networks is growing, there is not yet a specific licensing scheme for mobile broadcasting. (The NBTC indicates one may be forthcoming over the next year.)

Number of licensed TV channels by type of operator and genre

CONTENT	NUMBER OF LICENSED CHANNELS			
	CABLE	SATELLITE	IPTV	TOTAL
Type 2 – news and current affairs	41	57	4	102
Type 3 – children, youth, family, senior, handicapped and marginalized	2	31	-	33
Type 4 – education, religion, culture, science, technology, environment, promotion of vocation	1	46	-	47
Type 5 – sports, travel and health promotion	2	57	-	59
Type 6 – entertainment	103	260	7	370
Total	**149**	**451**	**11**	**611**

Note: No licenses issued for Type 1 – general
Source: Television Broadcasting Business Licensing Bureau, NBTC (May 2016)

1.2 Free-to-Air satellite TV

There are now 451 satellite TV channels licensed to operate (NBTC, May 2016). Despite the volatility of the market in the past two years, more than 60 percent of 23 million TV households in the country today still watch satellite TV using a set top box. PSI, Thailand's biggest satellite dish and set top box supplier, claimed to have sold 19 million dishes over the last decade, pointing to a satellite TV penetration rate of more than 80 percent (assuming that all customers were still using the equipment). Challenged by the nearing saturation point of the satellite dish market, PSI recently diversified its business to becoming an OTT box supplier and service operator, while also maintaining its existing service as a satellite TV platform aggregator.

A few satellite TV channel operators have obtained licenses to also operate DTT channels, including MCOT Plc, RS Plc, Nation Multimedia Group, Workpoint and GMM Grammy. Workpoint now operates only a DTT channel, 'Workpoint TV', and has not applied for a renewal of its satellite TV license.

Most of the existing satellite TV channels provide entertainment content in various formats (musical, drama, movie, reality shows, etc.). Others fall under such categories as local documentaries, edutainment, home shopping, lifestyle, home & food, health and public service. More and more HD satellite TV channels are being offered to viewers.

Number of operators and TV channels

TYPE	NUMBER
Licensed pay-TV network operators (national)	40
Licensed pay-TV network operators (regional)**	58
Licensed pay-TV network operators (local)	317
Licensed cable TV channels	149
Licensed satellite TV channels	451
Licensed IPTV channels	11

**Two operators obtained 2 licences each (total number of regional licenses = 60)
Pay-TV includes cable, satellite and IPTV
Source: NBTC (May 2016)

1.3 New business models

In the cable and satellite pay-TV business, income is derived from subscriptions, sales of equipment, advertising and sponsorships. Every pay-TV operator aims at carrying lucrative sports programs especially soccer as nothing whets Thai TV viewers' appetite more than football. Several new sports offerings have been developed and promoted in recent years, including the indigenous Thai Premier League.

This year could see large cable operators also offering broadband internet services as a way of earning alternative income. The NBTC recently granted Type 1 Internet Service Provider licences to a group of 46 regional Thai cable TV network operators led by Dr. Varin Cholhan of Digital Petchabun Cable TV. Because the group lacked the technical capability to lay their own fibre optics cable, they forged an agreement with Interlink Telecom Plc, a licensed ISP, to do the infrastructure layout and manage the operations. The cable operators expect to offer a monthly service fee of THB590 (16 US dollars) for broadband access, the same fee major telecoms players charge to their customers.

1.4 OTT services

The OTT market in Thailand is still new, but with more than 10 operators – both local and foreign-based – now offering services, the market is gearing up for vibrant competition. Last year, the OTT service market for subscription video on demand (SVOD) or video on demand (VOD) – had revenues valued at around 500 million baht (approx US$3 million), according to the Managing Director of Mono Film, a homegrown video-streaming service provider. This year, he estimated subscriptions would more than double, as Thai consumers shift demand from DVD rental and as Internet-enabled devices become increasingly available.

SVOD service providers in Thailand are a mix of telecom operators, regional and international players (Hooq, Iflix, Netflix) and Thai entrepreneurs (MONO Maxxx, PrimeTime, HollywoodHD, Doonee).

Vicious competition is also coming from the pirate OTT sector, which is also growing rapidly, with many services offering premium sports and movie content in Thai-friendly interfaces.

Monthly subscription rates vary by operator. Today Iflix at 100 Baht per month for unlimited series seasons and movie titles offers the lowest rate, while Netflix at 420 Baht per month for Ultra HD experience for four screens charges the highest. In between are Hooq (119 Baht per month), Doonee (159 Baht per month), PrimeTime (199 Baht per month), and HollywoodHD (199 Baht per month for older movies; 300 Baht per month for newer titles).

1.5 Challenges facing the industry

In addition to the economic squeeze stemming from increasing supply of FTA TV channels and weak advertising demand, the industry is facing a number of other challenges:

REGULATORY IMPEDIMENT: MUST-CARRY RULE

One of the most controversial regulations the NBTC has put in place for cable and satellite TV operators is the must-carry rule which mandates all cable and satellite TV operators to broadcast all 36 commercial and public digital TV channels. In addition, the watchdog required all cable and satellite network providers to reserve channels 1 to 36 for digital terrestrial TV stations on their broadcast platform. This meant that the same channel numbering is now carried across all platforms.

Operators, including TrueVisions, cried foul and rallied against the seemingly unfair ruling by the regulator, which was intent on giving a leg up to DTT licensees. The cable and satellite broadcasters argued that the must-carry and channel numbering rules expanded DTT penetration from 7-8 million homes to nearly 20 million, which gave DTT operators a lopsided advantage. Cable and satellite TV operators feared losing out on advertising revenues as clients such as the big consumer companies could transfer the lion's share of their advertising budgets to DTT programs which can be now watched by practically all Thai viewers, whereas all other content suppliers must contend with more fragmented audiences. They also faced the loss of carriage fees or placement fees, with the regulator having commandeered the lowest-numbered (and most valuable) channel slots.

In the end, major cable and satellite TV operators had no choice but implement the NBTC must carry/ channel numbering rule; however, not every small cable operator is believed to have complied with the channel-numbering rule, especially those in the provinces using analogue transmission networks. In July this year, the NBTC was scheduled to inspect all small operators to find out if everyone was following the rule. The regulator issued a stern warning to operators that strong action will be taken against those that have not complied.

LACK OF LICENSING SCHEME FOR MOBILE TV AND OTT SERVICES

Despite the increasing popularity of multi-screen video consumption, the NBTC has not yet created specific licensing schemes nor content regulations for new TV-like services such as mobile TV. Similarly, OTT services are provided without an operator network, and therefore unlicensed under the current Thai law. In response to rapid technological advancements and strong competition among audiovisual media, it is crucial to apply a holistic regulatory scheme to oversee various cross-platform video services.

TECHNOLOGY CONSTRAINTS

The largest cable operators are already offering digital services, but some 70 percent of local cable operators are still operating on analogue networks, as they cannot afford the cost of digital equipment.

Their woes may be addressed to a degree by a new cooperative project with CAT Telecom. This project came out of an MOU in January 2016 between the telecom operators and the Association of Cable and Satellite Network Providers (CABSAT) consisting of 300 LCOs. Under the agreement, CAT will lay fibre optic cable to areas where LCOs have subscribers. Cable subscribers will use CAT's broadband internet and LCOs will be able to switch from analogue to using CAT's digital broadcast head-end – mutually benefiting both parties in the process.

PIRACY

As broadband internet access is rolled out to more people in more parts of the country, digital piracy has intensified. Widespread availability of social media has made piracy easier, especially for movies whereby page owners share web links of pirated movies, and more offensively, upload pirated contents and recruit paying customers to watch the streaming videos illegally.

Affected content owners such as the Motion Picture Association (MPA) in Thailand, Thai Entertainment Content Trade Association (TECA) and Thai Film Association have petitioned the government authorities to amend relevant sections of the Copyright Act and Computer Crime Act in order to allow copyright owners to petition courts to shut down pirate websites in Thailand.

In response, respective government agencies made amendments to the Copyright Act which were implemented in 2015, and also approved in principle in April 2016 a number of amendments to the Computer Crime Act.

Relevant amendments to the Copyright Act which were implemented in 2015:

- An amendment to criminalize unauthorized camcording in cinemas; and,
- An amendment to promote the dissemination of content online while protecting the interests of right holders by introducing rights management information (RMI) protection, technological protection measures (TPMs) and ISP's liability limitation.

In April 2016, the National Legislative Assembly (NLA) approved in principle amendments to the Computer Crime Act which outlaw spamming for the first time and give appointed committees the power to 'suppress the distribution of or remove computer data' even though the content has not been adjudicated as illegal. The bill is one of the series of laws in support of the digital economy initiative. (Industry insiders as well as the United States' Office of the Trade Representative (USTR) have criticized the amendments as lacking in clarity of the notice-and-takedown procedures, which may hamper their effective implementation.) So far, the impact of these measures has been limited, and there has not yet been effective enforcement against online pirates – even those operating in-country.

1.6 New TV audience measurement: Thailand getting ready to embrace multi-screen TV ratings

At the time of writing, AGB Nielsen Media Research Thailand ('Nielsen') remains the sole provider of TV audience measurement to the country's hundreds of broadcasting operators.

With the launch of DTT in 2014, Nielsen started to also monitor DTT platform performance with respect to audience measurements and advertising expenditure (in addition to analogue, cable and satellite TV services that were previously monitored). The company also plans to cover multi-screen and out-of-home viewing, but no dates have yet been announced.

Nielsen's monopoly in this field will end in 2017, as UK-based Kantar Media, in collaboration with Media Agency Association of Thailand (MAAT)'s Media Research

Advertising expenditures on free terrestrial TV and cable and satellite TV

Unit: Million Baht

YEAR	ANALOGUE TV	% GROWTH	DIGITAL TV	% GROWTH	CABSAT TV	% GROWTH
2013	69,249	1.7%	–	–	12,216	26.6%
2014	63,777	-7.9%	8,581	–	7,232	-40.8%
2015	57,526	-9.8%	20,930	143.9%	6,055	-16.3%

Source: The Advertising Association of Thailand (raw data from AGB Nielsen Media Research)

Development Association or MRDA prepares to provide multi-screen audience measurement services to clients in Thailand.

Kantar was reported to be mobilizing jointly with its local affiliate TNS Thailand, a local team of 100 employees to support its TV rating service. Once in place, it will take about a year to prepare for the measurement system to be fully set up – sometime in the second half of 2017.

As both audience measurement firms have proponents within the local broadcasting industry, it appears a competitive dynamic will subsist for some time to come.

1.7 The dawning of the digital TV Age

The introduction of digital terrestrial TV (DTT) broadcasting altered the free TV business dramatically as the NBTC implemented a sharp increase in the number of FTA terrestrial broadcasters, resulting in more players competing for eyeballs and advertisers during a period of economic downturn.

The NBTC in 2014 granted commercial digital licenses to 19 companies including the three private-sector incumbents to operate 24 digital TV stations in Thailand. Prior to April 2014, Thailand had six analogue terrestrial television stations with nationwide coverage, but only two commercial operators Channel 7 and Channel 3 dominated the TV broadcast sector, with combined market share of 80 percent during primetime. In addition to the 24 new commercial TV license operators, three existing public service stations – Channel 5 (Royal Thai Army), NBT Channel (Public Relations Department) and Thai Public Broadcasting Station (Thai PBS) were also licensed by the NBTC to transmit digital broadcast signals.

The NBTC allowed the simulcast of analogue and digital broadcasting for incumbent operators to give their customers time to prepare for the digital transition. To speed up the migration process and encourage people that are still watching analogue TV, the NBTC employed a subsidy scheme to distribute 690-baht coupons to 23 million households nationwide. The coupons can be used to buy a digital converter or a digital TV. However, consumer take-up of the subsidy offer has been limited, as millions of customers with digital satellite dishes saw no reason to buy new DTT boxes. As of mid-2016, out of 14 million coupons already distributed, only 8.5 million have been redeemed.

DTT has faced some major hurdles; one year after launch in mid-2014, the DTT industry's revenues were disappointingly below expectations while competition intensified. The further slowing of the economy in 2015 dampened consumer demand and purchasing power, forcing advertisers to temper their advertising budgets. Facing stiff competition, operators revamped their programs to focus more on popular drama and series in their second year of broadcasting.

Two years after launch, the DTT channels reached a 43 percent share of viewing, a marked increase over the previous year's rating of 29 percent. This has sent positive signals to the channel owners and the NBTC as well. Efforts by both parties to stimulate viewership ratings appeared to be working. In addition to programming upgrades by DTT operators, the regulator adopted policies to bolster DTT operators' market share (at the expense of other segments of the TV industry, specifically the cable and satellite subsectors). The NBTC not only stepped up the distribution of subsidy coupons but also enforced a very broad must-carry rule with channel numbering requirements that require all cable and satellite TV networks to assign channels 1 to 36 for all DTT stations. (As explained in Chapter 4, this had a highly negative effect on small cable operators.)

The NBTC also sought the cooperation of the four digital multiplex providers to implement the digital network expansion plan according to agreed time frames. As of June 2016, DTT broadcasting infrastructure covered 90 percent of the country, and by June 2017, it is expected that 95 percent of total households will have access to DTT.

Leading DTT channels in the latest top 10 TV viewership ratings (April 2016) by Nielsen are:

- Channel 7 HD, variety & entertainment, including news
- Channel 33 HD, variety & entertainment, including news
- Workpoint TV, variety & entertainment
- Mono Group, variety & entertainment (focus on international content)
- Channel 8, variety & entertainment, variety & entertainment (focus on music)
- One 31 HD, variety & entertainment (focus on drama series)
- MCOT HD, variety & entertainment, including news
- True4U, variety & entertainment

Nation TV ranks first among 6 news channels, 17th overall among 25 DTT channels.

1.8 Thailand's new digital economy

Thailand has 38 million internet users, 34 million Facebook users, 33 million Line users and 7.1 million Instagram users. Currently, there are 83 million mobile phones in usage in Thailand with 40 million smartphone users. *(NBTC, December 2015)*

In order to prepare the country for the new digital economy, the Thai government has developed a large scale program spanning a 20-year period that includes reshuffling government agencies to align synergies and produce a digital economy framework revolving around four aspects of development and five strategies. The four areas for development are: digital commerce, digital entrepreneurship, digital innovation, and digital content. The five strategies to ensure these four aspects are successfully implemented focus on hard infrastructure, soft infrastructure, service infrastructure, digital economy promotion and innovation, and digital society.

In support of the 'digital economy promotion and innovation' strategy, the military-backed government unveiled in January 2015 eight draft bills that aimed to underpin the digital economy. Some addressed challenges such as cyber security and consumer rights, while others tackled organizational and regulatory changes. The Ministry of Information and Communication Technology (MICT), for example, will become the Ministry of Digital Economy and Society (MDES). There would also be restructuring at TOT and CAT Telecom, state-owned telecoms companies.

The most significant organizational change which was proposed would see the NBTC cease operating as an independent regulator. Instead it will come under the scrutiny of a new Digital Economy Policy Committee, which will be responsible for setting guidelines and policy under the digital economy framework. The NBTC would still be responsible for spectrum allocation and overseeing issues around competition in the telecoms and broadcasting sectors. But the government would take over the management of spectrum auction funds, which would go into a Digital Economy Fund. The NBTC would also be required to allocate 50 percent of its licence fees to the Fund, supplemented by government seed money and donations.

In addition, a new computer crime bill aims to protect intellectual property and copyright, partly through new powers to order site-blocking of websites that are guilty of piracy.

During the second quarter of 2016, three bills pertaining to the MDES, NBTC and computer crime were submitted by the cabinet to the National Legislative Assembly (NLA) for further review and final approval. In June, the NLA passed the MDES bill into a law, paving the way for the establishment of MDES in September 2016, replacing the MICT. The new digital ministry will set up two ministerial agencies, namely the National Digital Economy Committee and the Digital Economy Promotion Agency, to take responsibility for the development of the digital economy. The incumbent Prime Minister will chair the National Digital Economy Committee.

Meanwhile the review of the NBTC bill and Computer Crime bill was expected to be completed soon.

2 TV Industry in Thailand

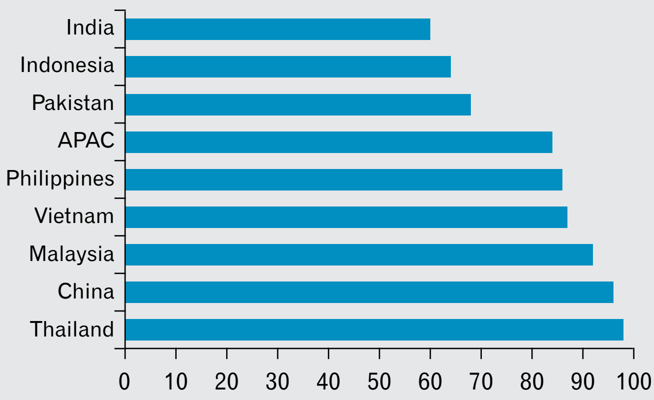
Television, the most powerful form of mass media in Thailand, has a high household penetration rate of more than 99% and a large share of total advertising spending. The popular delivery modes of TV services among Thai households include satellite DTH, free-to-air (FTA) terrestrial TV, cable TV networks, and broadband TV services through set-top-boxes (STB). Prior to the official launch of DTT in May 2014, Thai people could watch six national TV channels: three offered by state operators (Channel 5, Channel 9, and Channel 11), two by private operators under state-owned concessions (Channel 7 and Channel 3), and one by a public organization (Thai Public Broadcasting Service or Thai PBS, formerly ITV).

Currently, the total FTA digital TV channels comprise 22 commercial TV services and four public TV services. Audience survey data indicates that FTA TV programming remains very popular.

2.1 TV Households

Thailand has about 23 million households (Nielsen, 2015), in which TV set penetration rate is nearing 100 percent, placing the country with the highest TV set penetration rate among selected APAC developing countries.

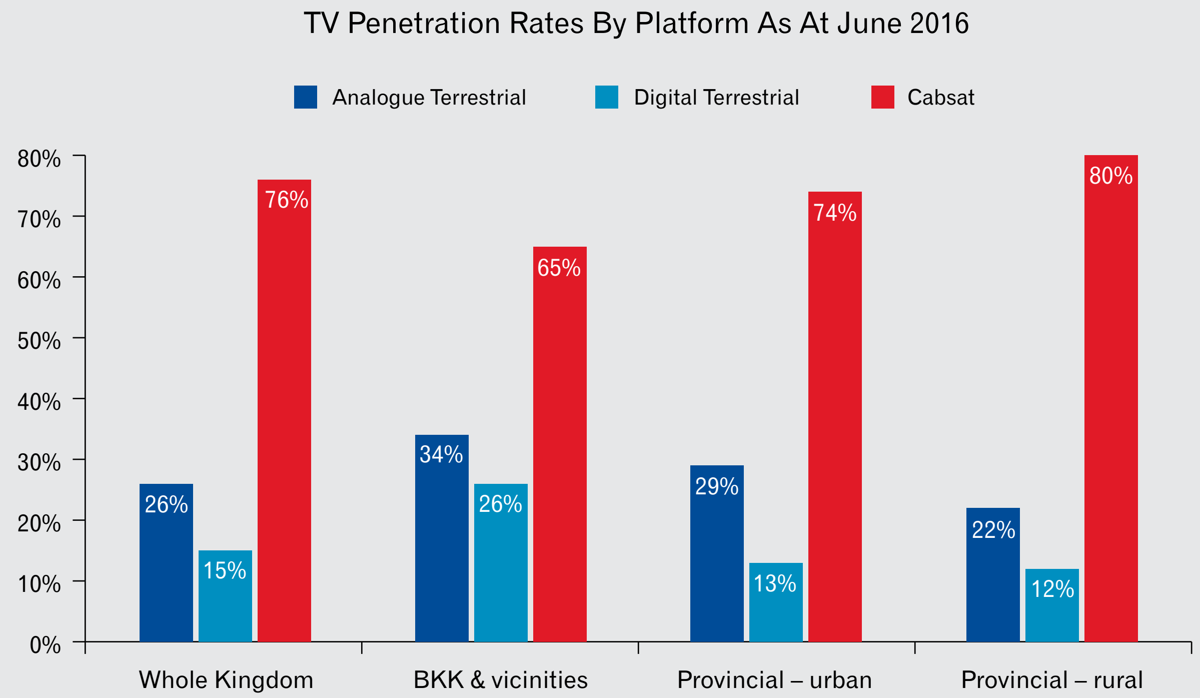
TV Set Penetration in APAC Countries (%)



Source: Credit Suisse

As of the end of December 2015, cable and satellite TV penetration rate stood at 73 percent of Thai homes, according to Nielsen's survey, and only 27 percent of homes were reliant only on terrestrial FTA broadcasts.

In 2016, Nielsen revised its presentation of TV penetration rates by platform. The following diagram presents the most recent data from Nielsen (as of June 2016). (The launch of DTT a couple of years ago has enabled a number of households to have connections to multiple TV platforms, so data adds up to more than 100%.)



Source: NBTC as quoted from Nielsen

CABLE AND SATELLITE TV HOUSEHOLDS

It is notable that despite the advent of DTT broadcasting, cabsat penetration continues to rise; according to Nielsen's latest estimates (June 2016), the national penetration rate of cable and satellite TV increased by 3 percentage points to 76% from its 73% level in December 2015.

It is also worth noting that a large proportion of cable TV households, primarily in non-urban areas, still receive analogue signals.

ANALOGUE TV HOUSEHOLDS

As of June 2016, only 26 percent of TV households had analogue terrestrial access.

DIGITAL TV HOUSEHOLDS

During the same period (June 2016), about 15 percent of total TV households had installed either a digital set top box or Integrated Digital TV (iDTV), to receive DTT broadcasts. In Bangkok, the number is higher at 26 percent; while outside Bangkok, iDTV ownership is lower at 12-13 percent of households. The number of digital TV households is expected to rise sharply by the end of 2016 as Digital Terrestrial TV (DTT) signals will reach more than 95% of Thailand's territory.

2.2 Terrestrial TV channels

The number of terrestrial broadcast services increased considerably – from the six incumbent broadcast services (3 public and 3 private) to 27 at the launch of the DTT platform in early April 2014. It is planned that the number of DTT broadcast stations will eventually reach 48 when all services have been licensed.

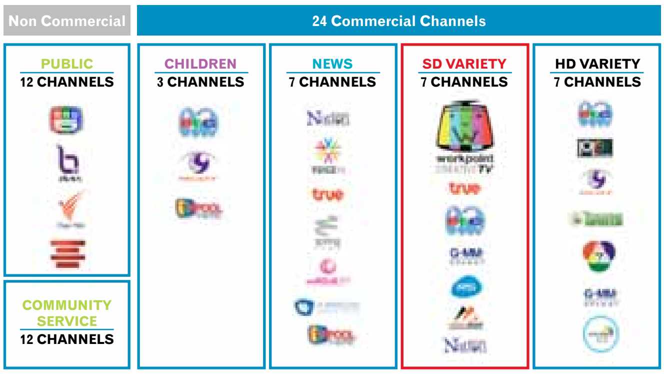
Under the original scheme, the NBTC planned to license, in addition to the 24 commercial channels, 12 standard-definition (SD) broadcasting channels for community-based service broadcasters; and 12 SD channels for public service broadcasters.
The NBTC awarded a total of 24 commercial DTT licenses to the winners of the auction held in December 2013. Of these, three incumbent private broadcast operators won six DTT licenses: BEC Multimedia/ Channel 3 (three), MCOT (two), and BBTV/Channel 7 (one). (The other three incumbent analogue operators were given public-service licenses.)

At present, only 22 commercial DTT channels are operational because 2 channels 'owned' by Thai TV Co., Ltd. stopped airing programs in November 2015, in view of heavy financial losses. (Significant factors in the high cost structure of Thailand's DTT channels include very high amounts bid at the 2013 auction for licenses, fees paid to broadcast network (multiplex) operators, and annual license fees paid to the NBTC.) With respect to Thai TV Co, the NBTC has maintained that the operators continue to be obligated to pay about US$ 45 million in license auction fees, plus VAT plus annual license fees. The matter is before the courts.

In 2014, Thai Parliament Television (TPTV) received a license as a Public broadcasting Service, for a 4-year term, with a main objective to broadcast news and information to promote a better understanding by the people of the government and the Parliament. TPTV is also broadcast on several platforms including cable and satellite TV, mobile networks and its own streaming website.

In addition, there are 3 simulcast channels, operated by Royal Thai Army (RTA), National Broadcasting Services of Thailand (NBT), and Thai Public Broadcasting Service (TPBS), on DTT channels 1 to 3. These broadcasters complied with existing laws to provide analogue public broadcasting services and would apply for public broadcasting service DTT licenses in the future. Simulcast broadcasting with analogue TV will end when the NBTC switches off the analogue system originally planned by 2023. (There is some discussion about moving up the analogue switch-off, at least in urban areas, as the mobile industry is pressing for reallocation of the former broadcast frequencies.) Earlier this year the NBTC announced that digital broadcasting deployment was expected to reach 90 percent of total households by July 2016, 93 percent by the end of 2016, and 95 percent by mid-2017.

As more than 70 per cent of Thai households watch free TV via cable or satellite, the NBTC announced that the DTT channels would be considered national broadcasting services and given preferential treatment. In that connection, the NBTC enforced a "must carry" rule requiring all cable and satellite TV platforms to broadcast all digital TV channels. In December 2015, the NBTC made an additional change to the rule issuing an administrative order to rearrange the digital TV channel numbers on cable and satellite in an attempt to set a single standard across all platforms. Under this order, all cable and satellite TV providers must reserve channels 1 to 36 for digital stations just as on a digital TV receiver.



Thailand Terrestrial TV Stations Channel Line Up

CHANNEL NUMBER	NAME OF CHANNEL	LICENSE TYPE & CATEGORY
1	Channel 5 (Royal Thai Army)	HD / Public service
2	NBT (Public Relations Department)	SD / Public service
3	Thai PBS	SD / Public service broadcaster under new legislation since 2008
4 – 9	Unassigned	SD/Reserved for public broadcaster
10	TPTV	SD/Public (Government relations & promotion of democracy)
11 – 12	Unassigned	SD/Reserved for public broadcaster
13	Channel 3 Family	Kids & Family
14	MCOT Family	Kids & Family
16	TNN24	News & Documentary
18	NEW TV	News & Documentary
19	SPRINGNEWS	News & Documentary
20	BRIGHT TV	News & Documentary
21	VOICE TV	News & Documentary
22	NATION TV	News & Documentary
23	Workpoint TV	SD General
24	True4U	SD General
25	GMM	SD General
26	NOW	SD General
27	Channel 8	SD General
28	Channel 3 SD	SD General
29	MONO 29	SD General
30	MCOT HD	HD General
31	ONE Channel HD	HD General
32	Thairath TV	HD General
33	Channel 3 HD	HD General
34	Amarin HD	HD General
35	Channel 7 HD	HD General
36	PPTV HD	HD General

Channels 4-9 and 11-12 are reserved for public service licenses (not yet awarded)
Channel 15 (family channel) and Channel 17 (news channel) ‘owned’ by Thai TV stopped broadcasting in November 2015. The NBTC later revoked the two licenses in February 2016.

Recent developments and plans by DTT channel operators for 2016

Company	DTT Channel	Developments and plans
Bangkok Broadcasting and Television (BBTV)	Channel 7 HD	• Ranked number one in audience share, but hurt by the arrival of more players in digital TV; audience share fell by 17.3 percent in April 2016 over the same month in 2015 • To defend current share, BBTV is preparing a new line-up of top-tier TV shows in four categories: variety and game shows, prime time dramas, news programs, and telecasts of top-tier sports events
BEC Multimedia	Channel 33 HD Channel 3 SD Channel 3 Family	• Ranked 2nd in viewer audience shares • Channel 33 reported highest digital TV revenue in 2015 of 1.8 billion baht amongst 22 commercial DTT operators (according to NBTC) • Channels 3 SD & 3 Family contributed 415 million baht
Workpoint Entertainment	Workpoint TV	• Ranked 3rd behind only Channel 7 and Channel 3 in viewer audience shares • Will provide more sports content and drama series this year, including drama series based on Phan Thai Norasing, a historical figure from the Ayutthaya era • Plans to spend 600 million baht next year to improve content for the channel, which will mostly consist of new game shows and variety programs produced by business partners. • Ad rates will remain at 200,000 baht/minute on prime time, and 30,000 baht/minute on non-prime time
Mono Group	Mono29 TV	• Ranked 4th in audience shares • After relying heavily on imported content in the past Mono29 will focus more on producing local content while holding full rights to the content provided via its website, mobile app and other platforms • Spending 800 million baht for new drama content
RS Plc	Channel 8	• Ranked 5th in audience share • Will produce more content focusing on TV dramas and entertainment to be aired seven days a week
GMM Grammy	One Channel HD	• Ranked 6th in share of viewership • Raised ad rates by 30%; 120,000 Baht/minute during prime time, 35,000-40,000 Baht/minute for other time slot • Expects 70% increase in ad revenue to 1.8 billion baht in 2016 (based on Q1 growth of 50%) • 800 million baht budget for improving content
	GMM25	• Ranked 12th in share of viewership • Newly created GMM Bravo, content creation operating unit, aims to optimize the use of the group's music resources to produce TV drama series • With a budget of 150 million baht, 10 drama series inspired by music and lyrics will air during 'super' prime time slot (8.30-10.30 p.m.), with each running 13 episodes • Budgeted 1.2 billion baht in 2016 to produce high quality drama series

Company	DTT Channel	Developments and plans
Bangkok Media and Broadcasting	PPTV	• Ranked 14th in viewer ratings • Uses premium sports content to project its high-profile sports channel image: 'Home of world class football coverage'
Amarin Television	Amarin TV	• Ranked 15th in audience share • Investing 800 million baht in 2016 to produce new entertainment content and adjust its business operations • Will spend 70 million baht on road shows and ads on social media to build awareness of the channel
NBC Next Vision (Nation Multimedia Group)	Nation TV	• Ranked 17th among 25 DTT channels, and first among six news channels • Will spend more than 100 million baht to revise programming to move beyond being a news station by adding documentaries, movies and drama series • Acquired Nova, a U.S. documentary series, for 100 million baht; also bought Hollywood movies and documentaries from other content producers • Partnering with MVTV and JKN Global Media to buy their drama series for broadcast on Nation TV
DN Broadcast	New TV	• Ranked 20th in audience shares • Will keep its format as a documentary channel • To improve content, investing 800 million baht in 2016 (mostly from Next Step)
True Group	True4U TNN24	• Ranked 8th in viewer ratings • Ranked 21st in viewer ratings

TV ratings/audience shares as of April 2016 out of 25 DTT channels
Source: AGB Nielsen Media Research

2.3 Pay-TV

Thailand has many pay-TV operators at national and local levels. TrueVisions is the only national cable and satellite TV operator, belonging to True Corporation which also offers broadband services, mobile telephony, electronic cash and payment services, and digital content. Aiming at the high-end market, TrueVisions was the first to broadcast HDTV in Thailand through a smart STB, in order to differentiate its services from other broadcasters and add value to its content and branding.

Another operator, CTH Plc was established in 2009 as a content aggregator for the pay TV industry feeding a bouquet of some 16 channels to more than 200 local cable operators that have their own base of subscribers nationwide. The company was substantially restructured in 2012. With the entry of new investors, the original cable shareholders were reduced to a minority share. At the end of that year, it was announced that the company had acquired the rights to Thai broadcast of the English Premier League for the next three years, and the company said it intended to distribute this content and a large number of other channels via an upgraded national digital cable network.

In 2013 the company faced difficulty in expanding its cable network upcountry and opted to introduce satellite DTH receivers to attract more subscribers to watch live broadcasts of EPL football matches. By 2015, CTH was ending its relationships with cable operators and relying increasingly on DTH. In November 2015 it was announced the company had gone completely to DTH distribution. However, it was unable to create a workable business model and a further major restructuring and cessation of many DTH services was announced in mid-2016. The company will exit the pay-TV industry on Sept. 1, 2016.

As of April 2016, there were 415 cable, satellite and IPTV network operators licensed to operate in Thailand. (NBTC)

(For more detail, see Chapter 4 – Pay-TV Market Environment.)

3 Advertising Spending

3.1 First quarter 2016

Thailand's advertising spending saw a decline during January to March of 2016, dropping by almost 9 per cent to 26.73 billion baht (US$743mn) from 29.24 billion baht (US$812mn) in the same period last year – as a result of spending cuts by major companies on mainstream media channels such as television, radio, newspapers and magazines, according to Nielsen Thailand. This reflected poor overall economic sentiment in the first quarter.

The media research company suggested that the figures indicated there was no sign of recovery, and matters were getting worse, as the spending decline in the first two months was 6.73 per cent compared with the January-February period last year. In March, ad spending via major media outlets including television, radio, newspapers, magazines and in-store media fell across the board.

Ad spending declines were posted in the first quarter of 2016 for analogue, cable/satellite and digital TV, newspapers and magazines.

- Advertising on analogue TV decreased by 13.2 per cent to 12.5 billion baht (US$347mn); cable/satellite TV fell by 4.4 percent to 1.24 billion baht (US$34.4mn); and digital TV slipped by 9.5 percent to 4.48 billion baht (US$124.4mn).
- Ad spending in newspapers saw a drop of 13.78 per cent to 2.51 billion baht (US$69.7mn), while spending on magazines went down to 744 million baht (US$20.7mn), a huge drop of 26 per cent.

The country's largest advertising spender, with more than 6 percent of the total, was Unilever (Thai) Holdings. It cut its spending in the first quarter by 38 percent, pulling out some 720 million baht (US$20mn) over the three-month period.

As a result, media and entertainment firms posted drops in revenue year-on-year partly due to declining advertising sales:

- BEC World, the parent company of Channel 3 analogue TV and two digital TV channels, by 20 percent
- MCOT Plc, a state-owned media enterprise operating Modernine TV, also by 20 percent
- GMM Grammy's digital TV business from its One 31 and GMM 25, by 35.5 percent
- Amarin Printing and Publishing, operator of Amarin HD digital TV channel, by 7.6 percent
- Nation Multimedia Group, operator of two digital TV channels, by 12 percent

In the second quarter, ad spending on digital TV was expected to improve. Media company GroupM predicted that digital and online media advertising will grow more than 30 percent during this period as advertisers shift to spending more on online channels, which are increasingly popular and influential, especially social media.

3.2 Year 2015

Advertising expenditure in Thailand was valued at 122.3 billion baht (US$3.4bn) in 2015 with a modest growth of 3.3 percent over the previous year's 118.4 billion baht (US$3.3bn) – according to Nielsen's annual media survey results released in early January 2016. The small growth in ad spending reflected the sluggish economy and weak consumption. Ad industry leaders believed that, already in 2015, the reported numbers understated weakness in adspend; key players were already seeing major declines in ad revenues. This trend began, they said, in 2014.

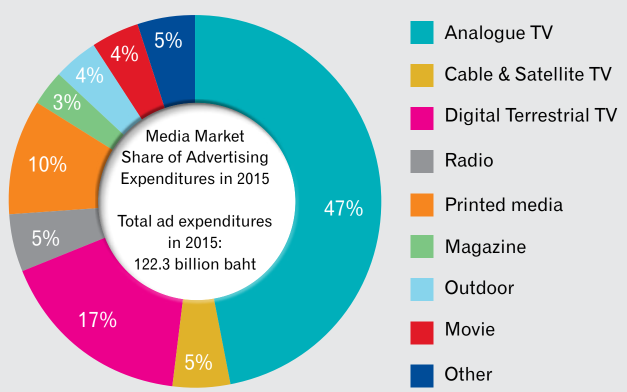
In Nielsen's view, media platforms including digital terrestrial television (DTT), radio, cinemas, outdoor media, transit and the Internet all experienced positive growth in their ad revenues.

- During 2015, DTT was consolidating, after establishing itself as a communications medium in 2014. Advertising spending via DTT surged by 143 percent to 20.9 billion baht (US$580.6mn) last year from 8.6 billion baht (US$238.9mn) in 2014.
- Out-of-home media such as cinema, outdoor and transit also posted growth in ad spending. Cinema ads and transit media ads increased by 18 percent and 17.4 percent, respectively, while outdoor advertising expanded by 7.3 percent.
- Spending on Internet ads rose by 11.4 percent (to one billion baht or US$27.8mn).

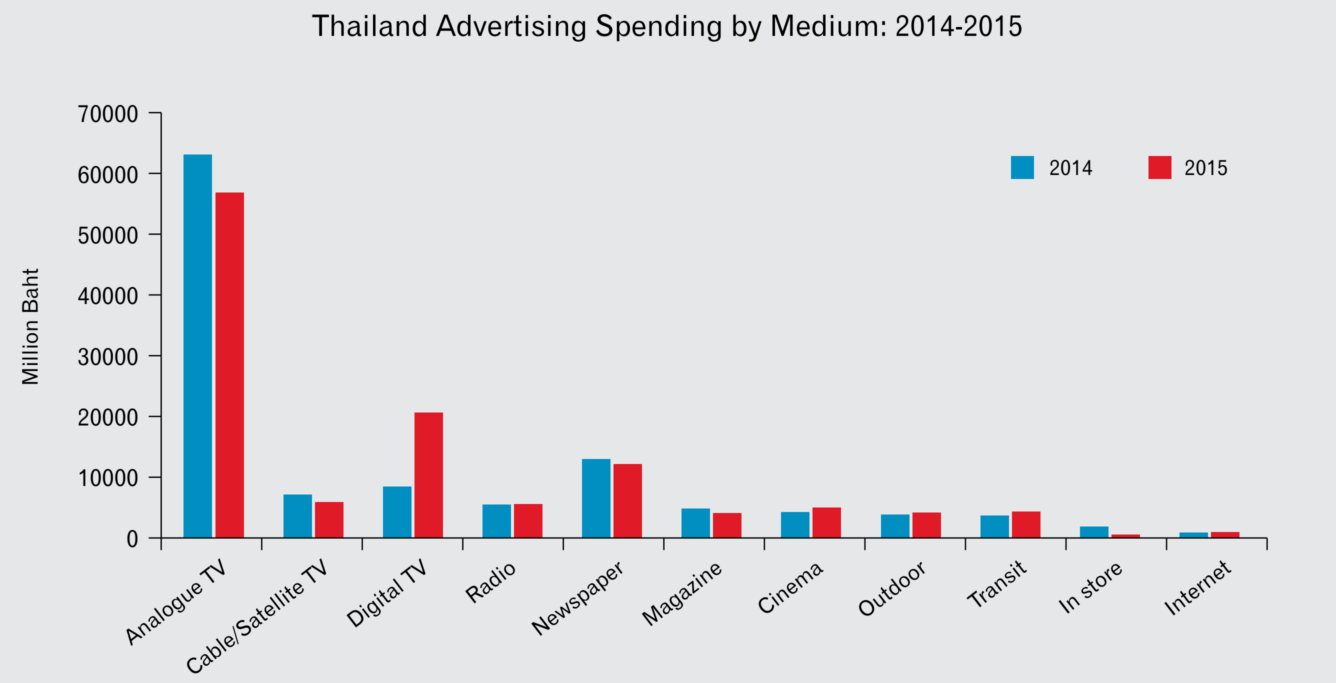
The rest of the media platforms all experienced declines in advertising spending last year:

- Non-DTT channels seemed to be hurt by the fierce competition in the television industry which saw advertising expenditures on both analogue TV (57.5 billion baht or US$1.6bn) and cable & satellite TV (6.1 billion baht or US$169.4mn) declining by 9.8 percent and 16.3 percent, respectively.
- Spending on magazine adverts fell by 14.3 percent to 4.2 billion baht (US$116.7mn); newspaper ad spending decreased by 6.4 percent to 12.2 billion baht (US$338.9mn)
- In-store media also showed decline in ad spending by 67.5 percent.

Thailand Advertising Spending Market Shares: 2015



Source: AGB Nielsen Media Research (Thailand) Ltd



Source: Nielsen (Thailand)

The top 10 advertisers in 2015, excluding classified and house adverts, accounted for 20.2 percent of total ad spending: Unilever (Thai) Holdings (6.2%), Toyota Motor Thailand (2.4%), Beiersdorf (2.1%), Office of the Prime Minister (1.6%), Advanced Info Service (1.4%), Total Access Communications (1.4%), Procter and Gamble (1.4%), Coca-Cola (1.3%), L'Oreal (1.3%) and Tri Petch Isuzu Sales (1.1%).

Historically television rakes in at least 60 percent of the country's total ad spending. Channel 7 and Channel 3 remain in steady control of the lion's share of TV ad spending, while new digital TV channels such as Workpoint, Mono and Channel 8 have witnessed a growing market share. Thailand's television space has become overcrowded with the high number of DTT channels added since 2014. However, there is a growing interest in e-commerce and TV shopping using digital TV resources, especially among foreign operators from Japan. This trend is expected to drive higher ad spending on DTT platform in the coming years.

4 Pay-TV Market Environment

4.1 Summary

4.1.1 Subscription TV

Thailand's pay television business comprises cable TV, satellite TV, IPTV, mobile TV and OTT services. Newer technologies such as IPTV and mobile TV are still underdeveloped and have not made a significant contribution to the overall industry structure. OTT services offering VOD/SVOD have gained momentum over the past couple of years, and are estimated to have reached a value of 100 million baht (US$3 million) in 2015. They are predicted to increase ten-fold this year – as global, regional and local players numbering more than ten now jostle aggressively for market shares.

The subscription TV market experienced a downturn in 2014 in view of a vital shift in the terrestrial broadcasting industry and a major political disruption during the year, both of which impacted negatively on existing cable and satellite broadcasters.

Firstly, the launch of DTT broadcasting in April 2014 saw the number of free terrestrial TV stations increasing from six to 24 commercials and four public TV broadcasters, paving the way for more intense competition in the already crowded market. Secondly, the coup d'état which took place the following month shook the broadcasting industry hard as the military junta issued draconian orders controlling the broadcast media – directing print as well as TV, radio, cable and online media operators not to publish or broadcast any information critical of the military's actions.

As a result, instead of growing by 12 percent as forecasted by industry consultants earlier, service and advertising revenues were estimated to have plummeted by 18 percent to about US$480 million in 2014 from the previous year's estimate of US$590 million.

The ripple effect of 2014's events continued to be felt by the industry two years after. By 2015/2016, the number of licensed pay-TV operators had dropped by nearly 25 percent, as between 50-100 small local cable operators (LCOs) folded due to the dire state of the economy limiting the propensity to consume (thus homeowners stopped subscriptions), stiff market competition from satellite TV, and the unlevel playing field created by the NBTC's must-carry rule, which levied large cost burdens on the small operators (particularly those that still broadcast on an analogue platform).

4.1.2 Leading Operators

In 2015 the overall market contracted further by three percent with an estimated value of around US$465 million, despite a six percent expansion of TrueVisions' reported income of 9.5 billion baht during the same year over 2014. Last year, TrueVisions strengthened its pay-TV leadership position by continuing to provide a wide variety of local and international quality content as well as beefing up its mass-market strategy by introducing competitive convergence campaigns, bundling with other products and services within True Group. These not only expanded the company's customer base but also resulted in solid revenue growth despite the effects of competition and the economy. At the end of 2015, TrueVisions had 1.4 million monthly subscribers to premium and standard packages, and 1.7 million FreeView and Free-to-Air box customers.

Until mid-2016, the other side of the 'divide' was CTH, TrueVisions' erstwhile closest rival. CTH had emerged from a recapitalization process in 2012 with deep enough pockets to challenge TrueVisions' content leadership. Indeed in 2013, CTH was the talk of the broadcasting community as a challenger which could create competition never seen in Thailand's TV business. Having secured broadcast rights in Thailand, Laos and Cambodia for the much-coveted English Premier League for three consecutive seasons from 2013 to 2016, CTH was aiming to build a profitable business model using the soccer tournament as its centrepiece. To everyone's disappointment, however, CTH failed to deliver.

- Within about a year's span in January 2016, CTH announced that it would close down CTH Z – apparently having been unsuccessful in creating new revenue streams and thus missing income targets by hundreds of millions of baht. At around the same time, CTH also hinted at terminating collaborations with PSI (leading FTA satellite TV platform aggregator) and RS (operator of Sun Channel pay-per-view platform). These all happened within the first quarter of 2016, when CTH finally announced it would end all partnerships with GMM Z, PSI and RS. In the end, CTH promised to pay compensation to all affected customers.
- By the end of June 2016, CTH had announced it would discontinue pay-TV programming. It was also reported that top company executives had resigned en masse, purportedly to pave the way for new faces to take the helm of its ailing business.

For the industry as a whole, the great bulk of revenues in 2014-2015 were derived from subscriptions and installations, as well as carriage fees. Income from advertising and sponsorships stood at around US$223 million in 2014 and US$188 million in 2015, a big 16 percent drop in ad billings as many players dropped out from the scene according to Nielsen. (*Note: US$ figures calculated based on a fixed exchange rate in 2014, so as not to distort the Baht equivalent. If adjusted to actual exchange rate, 2015 value = US$178 mn falling by 20% year-on-year*) The fall in ad revenues was reflective of the general negative sentiment towards the country's economy where consumer giants Unilever, P&G and Coke, to name a few, cut down their advertising and promotion budgets.

4.1.3 Smaller Operators

There are 415 licensed TV network operators in Thailand today. (*NBTC, May 2016*) They are further classified by geographical coverage as follows: national, 40; regional, 58; and, local, 317. Not all licensed local cable operators may be operating now, as discussions with industry insiders revealed only around 250 are active.

An estimated 30 percent of cable operators today have fibre-to-the-home capability. These are the larger operators offering 200-300 channels to customers in urban centres. The rest still transmit signals on analogue platforms that may carry 60-80 channels. The biggest challenge faced by these analogue network providers is switching to digital broadcasting which requires huge investments beyond the financial capability of most small cable operators.

Leading local production houses which sell quality local content to cable operators including GMM Grammy, Kantana, Next Step and Workpoint.

Foreign content suppliers include Universal, Disney, Fox International Channels, Sony, Discovery, DreamWorks, Warner Brothers and Zee-TV, along with regional production houses for Chinese, Korean, Japanese and recently, Indian movies, drama series, game shows, musical variety shows, and entertainment programming.

Other pay-TV platforms, such as mobile TV and IPTV, have developed slower than expected. NBTC has discussed a possible licensing framework for mobile broadcasting, but has not yet made a move in that direction. Only two licensed IPTV service providers, TOT IPTV and 3BB, are 'visible,' while newly-licensed IPTV operator, Advanced Wireless Network (AWN), a subsidiary of leading mobile operator AIS, officially launched its AIS Fibre fixed line broadband service only in May 2016.

4.1.4 Free-to-Air satellite TV

Thailand's free satellite TV industry grew rapidly after advertising was allowed in 2009, with hundreds of new indigenous channels springing up. That growth was not sustainable, however. In November 2015, data from the NBTC revealed that 258 satellite TV channels had ceased their operations mainly due to the rapidly changing media environment with the proliferation of dozens of new digital terrestrial TV channels and weak economic growth.

Most current figures show that there are now 451 satellite TV channels licensed to operate *(NBTC, May 2016)*. Despite the volatility of the market in the past two years, more than 60 percent of 23 million TV households in the country today watch satellite TV using a set top box. PSI, Thailand's biggest satellite dish and set top box supplier, claimed to have sold 19 million dishes, for a penetration rate of more than 80 percent (if it were assumed that all customers were still using the equipment). Challenged with the nearing saturation point of the satellite dish market, PSI recently diversified its business to becoming an OTT box supplier, while maintaining existing service as a satellite TV platform aggregator.

A few satellite TV operators have obtained licenses to also operate DTT channels including MCOT Plc, RS Plc, Nation Multimedia Group, Workpoint and GMM Grammy. Workpoint now operates only a DTT channel 'Workpoint TV' and has not applied for a renewal of its satellite TV license.

Most of the existing satellite TV channels provide entertainment content in various formats (musical, drama, movie, reality shows, etc.). Others fall under such categories as local documentaries, edutainment, home shopping, lifestyle, home & food, health and public service. More and more HD satellite TV channels are being made offered to viewers.

4.1.5 Business models

In the cable and satellite pay-TV business, income is derived from subscriptions, sales of equipment, advertising and sponsorships. Every pay-tv operator aims at carrying lucrative sports programs especially soccer as nothing whets Thai TV viewers' appetite more than football.

This year will see large cable operators also offering broadband internet services as a way of earning alternative income. The NBTC recently granted Type 1 Internet Service Provider licences to a group of 46 regional Thai cable TV network operators led by Dr. Varin Cholhan of Digital Petchabun Cable TV. Because the group lacked the technical capability to lay fibre optics cable, they forged an agreement with ISP Interlink Telecom Plc to do the infrastructure layout and manage the operations. The cable operators expect to offer a monthly service fee of THB590 (16 US dollars), the same fee the major telecoms players charge to their customers.

4.1.6 Challenges facing the industry

REGULATORY IMPEDIMENT: MUST-CARRY RULE

Perhaps the most controversial issue cable and satellite broadcasters have faced in recent months is the amendment made by the broadcasting regulator to its must-carry rule which mandates all cable and satellite TV operators to broadcast all 36 commercial and public digital TV channels. Carriage of so many "must–carry" streams is a huge burden for a small operator and in addition the NBTC added a channel-numbering condition. In December 2015, the NBTC started implementing the channel-numbering edict whereby all cable and satellite TV network providers must reserve channels 1 to 36 on their set-top boxes for digital terrestrial TV stations. There was open resistance by most operators, including TrueVisions, because the channel-numbering rule would distort each operator's marketing strategy (and potentially impede carriage fee negotiation). Large operators that broadcast on digital platforms have the capacity to carry from 200 to 300 (or more) TV channels. They normally group TV channels by genre (all sports channels, all family/kids channels, movie/drama channels, etc.), or by HD quality or other category grouping with their audience convenience in mind.

Smaller LCOs have been affected more harshly because their analogue platforms can carry only up to 60-80 channels. With DTT channels free riding the first 36 slots they do not have room to manoeuvre other contents. In the past, channel 1 had normally been reserved for the LCO's flagship channel.

Today, not every single operator is believed to have complied with the channel-numbering rule especially very small upcountry cable operators with analogue broadcast systems. Operators who have complied believe the NBTC has unduly favoured DTT operators at the expense of cable and satellite operators. Now DTT channels have the unfair advantage of attracting more advertisers to their programs since they reach more TV households than cable or satellite TV without paying any of the network support costs. As one leading regional cable operator put it: "In the blink of an eye, the NBTC expanded DTT channels' viewer base from 7-8 million to nearly 20 million HH." The NBTC was scheduled to inspect in July 2016 all small operators to find out if everyone was following the rule. Strong action would be taken on those that did not.

A corollary to the channel-numbering rule is the NBTC's requirement in principle for all cable operators that still operate on analogue platforms to upgrade to digital broadcasting. Smaller LCOs view this condition as NBTC's way of easing them out of the television business.

TECHNOLOGY CONSTRAINTS

About 70 percent of LCOs still use analogue technology that limits capacity to 60-80 channels. Upgrading to digital equipment is too costly for most business owners, and future business prospects for such outdated systems are highly doubtful.

A silver lining might be on the horizon for troubled LCOs if CAT Telecom adheres to the MOU they signed with the Association of Cable and Satellite Network Providers (CABSAT) of providing digital connectivity to the areas where LCOs operate. (see p.7) The MOU was meant to provide mutual benefits to signatories: LCOs will have access to broadband internet which will digitize their broadcasting platforms while CAT will be able to tap LCOs' customer base to offer their broadband Internet services.

PIRACY

Digital piracy has intensified in the country with the rise of social media. Widespread availability of social media has made piracy easier, especially for movies whereby page owners share web links of pirated movies, and more offensively, upload pirated contents and recruit paying customers to watch the streaming videos illegally.

Affected content owners such as the Motion Picture Association (MPA) in Thailand, Thai Entertainment Content Trade Association (TECA) and Thai Film Association have petitioned the government authorities to amend relevant sections of the Copyright Act and Computer Crime Act in order to allow copyright owners to petition courts to shut down pirate websites in Thailand.

Small amendments were made to the Copyright Act in 2015, but they have not been effective in reducing online piracy. Continuing growth in digital piracy will threaten the health of Thailand's new media industries.

Piracy also remains a problem within the pay-TV industry, as operators of provincial TV systems still broadcast unauthorized content in an effort to retain customers. Movies and sporting events are particularly vulnerable to such piracy, although some provincial cable operators are reported to retransmit other types of channels as well.

4.2 Subscribers and Growth

4.2.1 Current number of subscribers and viewers

The most recent estimate of the total number of TV viewing households in Thailand stood at 23 million (Nielsen), while the NBTC uses 22.3 million.

During the past couple of years, the TV landscape in Thailand has witnessed a transformation with the advent of digital terrestrial television or DTT channels and the mushrooming of over the top (OTT) service providers delivering television or video-on-demand (VOD) on the Internet to a potential market of more than 67 million inhabitants. In 2015, there were 77.8 million 3G/4G mobile subscribers in Thailand who have the capacity for mobile broadband connectivity. Meanwhile only 6.4 million have fixed broadband Internet subscriptions or 9.5 percent of total population.

From Nielsen's survey (as of June 2016), about 76 percent of Thailand's 23 million TV viewing households (or 17.5 million) are connected to cable and satellite TV.

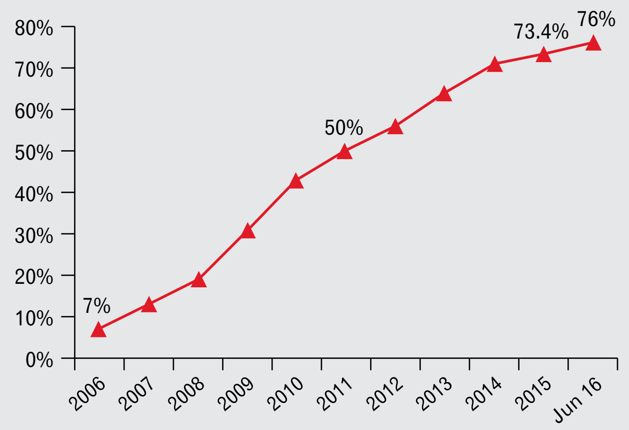
PLATFORM	SUBSCRIBERS	REMARKS
Local cable (analogue and digital)	1.5 million	Estimate for about 250-300 LCOs As of January 2016
Cable / DTH (TrueVisions)	3.1 million	1.4 million pay TV subscribers 1.7 million FreeView and FTA box subscribers As of Dec 2015 (TrueVisions)
Free-to-Air satellite TV	14 million	As of January 2016
IPTV	Approx 500,000	Estimate for 2015 (incl. TOT IPTV and 3BB)
Free-to-Air TV (analogue)	6 million*	As of June 2016
Digital Terrestrial TV	3.4 million	As of June 2016

The sum of subscribers to each TV platform is greater than 23 million as there are households that subscribe to or watch TV from multiple platforms.
* Homes having only FTA analogue reception
Sources: AGB Nielsen Media Research; NBTC; operators; and CASBAA estimates

4.2.2 Cable and satellite TV growth

The past decade saw an explosion of cable and satellite TV uptake in Thailand, increasing ten-fold from 7 percent penetration rate in 2006 to 76 percent in June 2016.

Cable and Satellite TV Penetration: 2006 to June 2016



Sources: AGB Nielsen Media Research and CASBAA estimates

The arrival of terrestrial-based digital television during the second half of 2014 created only a small ripple in the cable and satellite industry. Many people were observed to have stayed with cable and satellite platforms to watch free TV programs. DTT broadcasters still faced a lot of competition even from pay-TV operators. The argument then was that cable and satellite audiences were more fragmented because there were more choices on satellite platforms; besides, viewers tended to follow channels which offered best quality TV programs.

By the fourth quarter of 2015, however, more than 400 cable and satellite channels have folded up (258 satellite and 158 cable) due to a sluggish economy, as content owners found it difficult to shell out money to keep the channel going. In addition, DTT channels which offered 'good quality and interesting contents' have slowly but surely made inroads among TV viewers. On top of this, the 690 Baht-coupon set-top-box subsidy program rolled out by the NBTC for homeowners has made it much easier and 'affordable' for analogue TV households to access digital TV programs.

In view of the above, cable and satellite TV growth has slowed down to a single digit (4% in June 2016 compared with December 2015). In comparison, average annual growth between 2010 and 2014 was 18 percent.

GROWTH FORECAST

Faced with increasing competition from DTT operators, overall cable and satellite TV expansion is expected to remain stagnant next year. A majority of network operators are working very hard to keep their current customers from dropping out by offering new content as well as an enhanced TV viewing experience.

TrueVisions, for instance, was to introduce in July this year software and interface upgrades that would focus on video-on-demand (VOD) service – highly popular among Thai consumers who up until now access VOD mainly through OTT services and IPTV.

4.2.3 New technologies

MOBILE TV

Mobile TV and video services are chiefly delivered to users in Thailand using 3G and 4G (LTE) systems. Mobile operators agree that although live television services are offered on their mobile platforms, their actual usage is low when compared to the VOD services. The most popular VOD service is the 'catch-up' service of popular soaps. (These can also be downloaded while users have wifi connections, and viewed later. Live TV watching is limited by the fact that it consumes quickly a large part of the data bundle.)

Mobile cellular TV services are offered by three leading mobile operators (Advanced Info Service (AIS), Total Access Communication (DTAC), and TrueMove) via mobile Internet and mobile apps. At present, AIS and DTAC (which partner with major content providers such as GMM Grammy, The Nation Group, and Kantana Group) provide free TV programs and over 40 cable TV channels though mobile applications. Leading pay TV operator TrueVisions offers 'TrueVisions Anywhere' to customers who can access and watch live programs anytime, anywhere through their personal computer, tablet, or smartphone.

Furthermore AIS has recently partnered with Singapore's SVOD service operator Hooq to provide 'Hooq whenever you like' unlimited entertainment to subscribers at 119 baht per month (approx 3 US dollars) – featuring more than 10,000 top movies, TV series and hit animations from around the world.

DTAC offers YouTube and LINE TV packages via mobile phone application at a 'super value' price at 29 baht per day for 500 MB up to 169 baht per 15 days for 3 GB.

An opinion survey conducted by a private university revealed that more than half of the young audience aged 15 to 22 in Thailand watched TV programs via their smartphones through YouTube. The behavioural shift of youth to watching TV on smartphones is a wakeup call for digital TV operators to support the smartphone platform if they want to tap into this group. Leading operators Channels 3, 7 and Nation TV, for example, already have web-based content that computers and smartphones can access.

Smartphone ownership and mobile internet penetration are keys to the diffusion of mobile TV services in Thailand. To stimulate growth of mobile internet and mobile TV, industry players have urged the NBTC to make policies to increase competition and infrastructure investment. To date, the NBTC has not formally considered any licensing scheme of mobile cellular TV services.

IPTV

After a decade since its first deployment in Thailand, "walled-garden" IPTV has not gained much ground, as fixed broadband Internet penetration remained low at 9.5 percent of total population and 30 percent of total households in 2015. There were 6.4 million broadband Internet subscribers at the end of 2015 out of a total of 22-23 million households (source: NBTC). Five million of the households connected with fixed broadband Internet are on ADSL technology, which is old and becoming obsolete; only one million have high-speed connections which enhance users' experience with rich online content and applications.

In Thailand, IPTV services are mostly delivered on DSL technology, but this is expected to change moderately in the next 3-5 years as leading telco operators scramble to gain market shares by expanding their fixed broadband Internet subscriber base through offering high-speed fibre optic cable connections at competitive prices.

- Infrastructure in place: >310,000 km of optical fibre cables laid nationwide, with some 75 percent of sub-districts having fibre cable access.
- On the other hand mobile broadband networks cover 97 percent of populated areas.
- The rest is covered by satellite service.

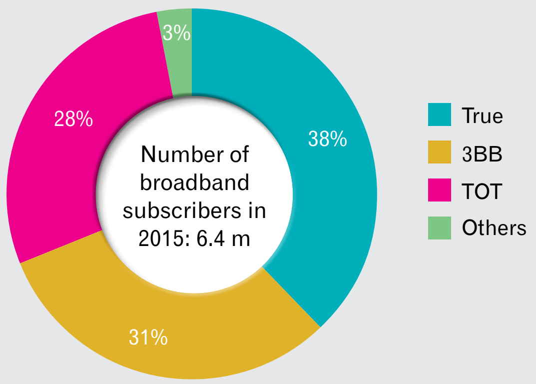
Current fixed broadband Internet service providers consist of telco operators: True, TOT, Triple T Broadband, AIS and CAT Telecom.

Advanced Info Service through its wholly-owned subsidiary Advanced Wireless Network (AWN) officially launched in May this year its AIS Fibre fixed-line broadband service, after soft-launching it in April last year, with the aim to become a top-three player within three years, with almost a million subscribers in 2017, and the market leader in five years with 3 million subscribers. During the first 5 months of operation, AWN enlisted 26,000 customers; by Q12016, AIS Fibre subscribers numbered 74,000.

AIS Fibre is bundling its ultra hi-speed broadband Internet up to 1,000 Mbps with Hooq OTT/SVOD service. The service provides online multimedia transmission support for online TV, online gaming or real-time video surveillance. It offers seamless connectivity with AIS' Internet network anywhere, anytime – connecting through AIS Fibre when at home and AIS 3G network or AIS Wifi when on the go. AIS Playbox provides more than 100 live TV channels and 12,000 MP3 songs.

Prior to AIS Fibre, another AIS subsidiary Advanced Datanetwork Communications (ADC) offered 'BuddyBroadband' service on DSL technology. In 2013, ADC had less than 50,000 broadband Internet subscribers. BuddyBroadband was discontinued in 2015.

Market shares of fixed broadband internet operators: 2015



Source: NBTC and operators

IPTV services are also being offered by Triple T Broadband (3BB) and TOT.

TOT had an estimated 250,000 IPTV customers in 2015; while 3BB's IPTV customer base had been kept a guarded secret, but widely believed to be no more than a couple to three hundred thousand, bringing the total subscribers within the range of half a million in 2015.

4.3 Leading cable and satellite TV operators

4.3.1 Pay-TV operators

TRUEVISIONS PLC

TrueVisions continues to reign as the country's largest pay-TV operator. The company offers its service via digital direct-to-home satellite (DTH) and digital HFC (hybrid fibre-coaxial) cable networks.

The company's previous 25-year agreement with MCOT Plc to operate pay-TV services using a multichannel multipoint distribution service (MMDS) system via wireless transmission ended in September 2014, while another agreement with MCOT for pay-TV services via cable will expire in 2019. (TrueVisions had only two channels on MMDS – TNN News 24 and Shopping@ Home when the concession ended. Both were free through MMDS antennae).

The company provides both subscription and free DTH services using Ku-band and C-band transmission and MPEG-2 and MPEG 4 video compression. These services are transmitted via the Thaicom 5 satellite.

TrueVisions is the leader in developing original pay-TV content for Thailand. Its Thai News Network Channel pioneered in presenting 24-hour live news for Thais. TrueVisions works in close collaboration with its affiliate Cineplex, and now offers 31 of its own-produced channels on pay TV. By genre, there are 11 sports channels, 5 movie channels, 2 news channels and the rest are lifestyle, reality, adventure and other genres. Thirteen are in HD quality, while the rest are SD. TrueVisions has also invested heavily in original programming, and to date has produced five series and four feature films.

Key developments in 2013

- In August/September 2013 TrueVisions, in partnership with PSI Holding (the largest manufacturer and producer of satellite TV receivers), expanded its pay-TV service to offer 'True TV by PSI' which is a prepaid service under the 'pay-as-you-watch' concept, allowing viewers to get the service on both their TV set and mobile phone with no contract. The package includes 120 FTA channels, including TrueVisions' exclusive channels. Customers can buy the satellite set-top box for 1,090 baht together with a refillable smart card which can be used at any 7-Eleven store nationwide to top up additional 17 channels (under the True Knowledge package) for 10 baht a day.

Key developments in 2014

- Global sports channel beIN Sports was launched on TrueVisions' pay-TV platform featuring a multitude of sports matches in high definition, e.g. RBS Six Nations, Liga Endesa, ACB Copa del Rey, Asian Beach Games 2014, etc.
- To stay competitive with rivals, more HD channels were added to middle and low-tier packages. The

firm also reduced the price of packages (e.g., Super Knowledge package was cut to 490 baht per month from 590 baht) to attract mass viewers.
- RTL CBS Extreme HD was launched.

Key Developments in 2015

In 2015 TrueVisions actively strengthened its viewership base through a number of marketing schemes.

- The company introduced two new satellite TV set-top boxes during the first half of the year:
  - The True Digital HD set-top box offers high-quality content with no monthly fees. Priced at 1,690 Baht, customers can access more than 200 channels including all the digital terrestrial TV channels and eight HD channels from TrueVisions.
  - True Digital HD2 is an all-purpose/hybrid set-top box which can receive signals from both satellite and the airwaves, offering free access to more than 200 TV channels including all the digital terrestrial channels and 15 HD channels. The box also costs 1,690 Baht. As an added bonus, customers are able to access the Happy Family HD package for four months free of charge.

Developments in 2016 and future strategy

- TrueVisions lost its bid for the English Premier League (EPL) broadcasting rights to beIN Sports (for seasons 2016-2019). However, in late July of this year, TrueVisions announced a sub-licensing agreement with beIN Sports to broadcast every English Premier League match, on every platform they offer, for the next three seasons (2016-2019).
- In 2016 TrueVisions continues its campaign to add more value and provide maximum exposure to local soccer. The firm spent 4.2 billion baht to acquire media rights to three Thai football leagues – Toyota Thai Premier League (TPL), Chang FA Cup and Toyota League Cup.
  - In February, the firm launched an affordable monthly 'Sanan Ball Thai' package at 299 Baht for fans of the three Thai major leagues.
  - Customers who do not want to pay monthly can buy a TrueVisons hybrid HD box for 1,690 Baht and be able to watch the matches without extra charge along with FTA channels such as True4U and TNN24.
- In late May this year, TrueVisions forged a partnership with CJ E&M Corp, a leading South Korean entertainment and media company, to jointly produce and distribute entertainment programs to serve the increasing demand of Thai and Asian audiences. A new joint venture company will be set up to produce content for all types of digital media platforms including OTT as well as ground events and festivals.
- Also in late May this year, TrueVisions announced the debut by July 7th of six software and interface upgrades, focusing on video-on-demand (VOD) service for its premium subscribers. The upgrades comprise an EVO12 translucent user interface, TrueVisions On-Demand, High Definition, HD Personal Video Recorder, TrueVisions Anywhere and Platinum Review.

TrueVisions On-Demand is the highlight of the upgrades as more consumers want to watch movies on home entertainment or portable devices. The company announced that subscribers to Platinum or Gold packages (would) receive a VOD free-trial privilege whereby they can watch 20 movies per month until August 31, 2016. After the free trial period, subscribers will have to pay about 50 to 100 baht per movie as regular customers. TrueVisions will offer 200 new movies rotating monthly via its service. The movies will come from the world's largest movie studios including Walt Disney, Fox, Paramount and Warner Bros. While the VOD service would only be available to its gold and premium package subscribers initially, the company expected to also offer it to non-subscribers later.

CTH PLC

Since its establishment in 2009, CTH Plc (formerly Cable Thai Holding Plc), had undergone significant transformations and hurdles over the years.

CTH started off as a content aggregator for the pay-TV industry feeding a bouquet of 16 channels to more than 200 local cable operators that had their own base of subscribers nationwide. In 2012, CTH won broadcasting rights in Thailand, Cambodia and Lao for the much coveted English Premier League (EPL) for three consecutive seasons (2013/14 to 2015/16) outbidding arch rival TrueVisions which held the media rights (at least for Thailand) for years.

In 2013, the company faced difficulty in expanding its cable network upcountry and opted to introduce satellite TV receivers to attract more subscribers to watch live broadcasts of EPL football matches. Later during the year, CTH launched a basic package to watch 120 channels (on pay-TV), and extra packages to watch 380 EPL live matches. CTH rented transponders from Vinasat, the Vietnam-based satellite provider, to transmit its signals for 120+ channels to subscribers in Thailand. The 120-channel package included 24 Fox channels. The company sold its own satellite-TV receivers with Ku-band dishes and set-top boxes through its network of local cable operators and other retail stores across the country.

2014

With the EPL content, CTH targeted at getting one million subscribers from the cable TV network and another million 'subscribers' from the satellite-TV platform, but there were only 500,000 subscribers by the start of 2014. CTH decided to focus more on satellite TV operators to expand its subscriber base by partnering with PSI Holding. CTH also collaborated with GMM B, the satellite TV unit of GMM Grammy, on a co-marketing deal to sell EPL packages via GMM B's subscriber base. At the same time, the firm dropped from its network about 70 local cable TV partners and retained only about 100 operators (presumably larger ones) who were willing to collaborate with the company on establishing a digital cable network in the coming years.

CTH continued to add more quality content to its offering. In partnership with India's Zee Entertainment, 'Zee Nung' (a Bollywood channel airing blockbuster movies dubbed in Thai) was launched on CTH platform in May 2014.

In July 2014, CTH and GMM Grammy (parent company of GMM B) announced a merger of their pay-TV businesses in the light of intense competition in the industry. In 2013, it was reported that GMM B incurred a loss of 1.3 billion baht while CTH lost around 4 billion baht because its subscriber base was much lower than anticipated. With the merger, CTH would have more content for its pay-TV platform, while GMM Grammy would concentrate more on its digital terrestrial TV business.

In August 2014, just before the second EPL season kicked off, CTH attempted to rebuild its faltering business by licensing to new (or existing) partners: PSI Holding, some satellite TV operators, My World IPTV, AIS, DTAC, information technology retailers, Sanook.com, and its subsidiary GMM B.

Free TV terrestrial operator Channel 3 was also tapped to broadcast 26 EPL matches live while Thairath TV broadcast three matches. CTH also joined hands with RS, the rights holder of La Liga, in selling its 'Sunbox La Liga Star' set-top boxes that broadcast all 380 matches of EPL in addition to the La Liga matches.

CTH efforts to roll out broadband services via its cable partners in 2014 failed to gain traction. For this reason, CTH shelved its triple-play plan, at least for the short-term, to focus instead on improving the company's core pay-TV proposition, revising fundamentals such as billing, pricing and packaging.

2015

Despite its concerted efforts to increase much-needed revenue from sponsorship, advertisement and sub-licensing to local free TV broadcasters, CTH's football investment fell short of breaking even as the third and final season of EPL kicked off in August 2015. In a last-ditch effort, CTH granted sub-license rights to Bangkok Media and Broadcasting – the operator of PPTV digital channel – to broadcast 26 live free-view matches. The sub-licensing earned 200 million baht for CTH.

CTH started building up the channel offer for women and families, with a particular focus on entertainment, kids and news, while improving multi-screen and on-demand services, to strengthen subscriber loyalty. True to this objective, CTH launched DreamWorks, a kids and family program service, in August 2015. CTH also signed carriage deals for HITS, Nick Jr and Warner TV.

Further revamp of the business model became apparent in November 2015 when CTH started revoking its service via hundreds of local cable operators including big players such as Charoen Cable TV. By the end of the year, CTH had stopped signal transmission to some 170 cable operators within its network.

2016

Under new management, CTH continued to make headlines in 2016 when it announced putting an end to its pay TV service via third party satellite TV operators GMM Z, RS and PSI Holding. The move affected nearly 3 million subscribers / customers of the three operators who broadcast live EPL matches on their set-top boxes. (CTH promised to compensate all affected viewers.)

Effective 1 March 2016, CTH cancelled all contracts with PSI and RS. It also discontinued its CTH Anywhere app.

In mid-June, CTH announced it would discontinue pay-TV programming via Thaicom's Ku-band satellite footprint by August 1st, 2016; and in late July the company announced it would cease all broadcasts on September 1. It was earlier reported that top company executives had resigned en masse, purportedly to pave the way for new faces to take the helm of its ailing business.

PROVINCIAL AND LOCAL CABLE OPERATORS

This section provides an overview of the operations of local cable TV companies under the TCTA umbrella, but also includes operators who are not TCTA members. While NBTC licensing records show more than 300 licenses, industry sources say the number of cable TV operators still in business are said to be around 250. TCTA and other cable TV associations quote the 350 members number that they had three years ago. But they privately admit that the number could be down to around 250 and is still falling. The causes were the extremely difficult economy over the past three years, market competition from satellite TV, NBTC's coupon subsidy scheme which enabled households with analogue sets to convert to digital TV channels, and a heavy extra cost burden caused by the NBTC must-carry rule.

Provincial Cable Dynamics – Local And Regional Characteristics

Over the last two to three years cable operators have been losing ground to satellite TV in urban areas and gaining ground back in some areas as satellite operators faced serious problems. In general there are 2-3 cable operators at the most in a province. Only in Bangkok and the suburbs are there more than 10 operators. Very small operators still exist, each with 80 to 100 household subscribers.

Today, the Eastern region (Zone 3) which includes the provinces of Chonburi, Rayong, Chanthaburi, Trad, Chacheongsao, Prachinburi and Sa Kaew are the strongest because of population density, many tourist destinations, and industrial areas (Chonburi, Pattaya and Rayong). Supercheng in Chonburi and Laemchabang area and those of the 45 Group operating in Pattaya are big and strong LCOs. Cable subscriber growth last year varied from place to place but in certain locations like Banglamung, it reached up to 10 percent.

Next in overall strength is Zone 10 which includes Bangkok, Samut Prakan and Nonthaburi. This zone suffered heavily from competition with C- and Ku-band satellite channels and had a 'seesaw' experience. Some LCOs say that they first lost their subscribers who went over to satellite TV and more recently have seen customers return preferring the steady TV access through cable. Nonetheless subscriber rate recovery was only from 3 to 10%. Many parts of Zones 3 and 10 have digital broadcasters.

The third largest (strongest) grouping is Zone 8 in the Upper South covering Nakhon Si Thammarat, Ranong, Chumporn, Krabi, Phangnga, and Phuket where there are pockets of densely populated urban areas of high income households as well as tourism facilities. Here is where Hi Internet Group is active in Nakhon Si Thammarat and surrounding provinces – sharing their broadcast facilities with smaller LCOs. Hi-Internet also offers broadband internet. Also strong are LCOs in Had Yai and Phuket. Hi Internet Group grew out of dissent that many LCOs had with CTH asking to integrate their membership base. Hi Internet worked with TrueVisions for a contents platform and offered this to LCOs in their area. They grew in strength and today are a major group of LCOs within TCTA whose strength is strong enough to influence the election of incumbent president Viriya Thamruangthong and earlier, his predecessor Nuttachai Aksorndit.

Zone 7 is the fourth strongest LCO grouping which covers the Western region stretching from Bangkok suburbs of Samut Songkram, Samut Sakhon, Nakhon Pathom to Rajburi, Kachanaburi, Suphanburi, Petchburi and Prachuab Khirikhan. LCOs in Rajburi and Nakhom Pathom provinces are under the influence of Hi Internet. All of Hua Hin and Cha-am (cities in Prachuab Khirikhan province) have fibre optic cables and could provide broadband internet soon. Other parts of Prachuab Khirikhan and Chumpon have LCOs who are not ready to invest.

The remaining zones are not doing well. Some provinces where cable operators have shut down are Singburi and Angthong and Chainat. Cable operators in the North and Northeast are only active in densely populated urban areas where there are also digital broadcast stations. Chiang Mai is said to have shown some increase in subscribers.

To retain customers, operators have held subscription rates unchanged over several years while adding more and more channels. The switch to digital transmission by major operators has allowed a certain number of viewers who changed their TV receiver sets from the old analogue to digital sets capable of tuning in to more than 200 channels to watch the additional channels without added costs.

Cable TV subscribers tend to be middle class people living in homes which they own, while renters and/ or part-time residents have less interest in cable. Commercial business areas and market stalls tend to have cable more than satellite TV. Urban areas with higher numbers of rental residential units can have cable subscribers although it depends upon the arrangement made by cable operators with building managers on the price to charge tenants per unit. The price in such units could be as low as below 100 baht per month per unit if the building has a high number of tenants. Such buildings are preferred because investment in infrastructure is far lower than laying cable to detached homes in a housing estate. Many LCOs are now asking subscribers to pay 6-month and annual invoices in return for a slightly reduced monthly rate. This saves them the cost of collecting monthly rentals.

Cable operators have also targeted hotels where they offer packages catering to the hotel's guest requirements. This is why they tend to be successful in tourist areas of Pattaya, Rayong, Chiang Mai, Phuket and other major tourist destinations.

TrueVisions still captures the premium pay-TV market. At lower programming tiers, the biggest problem for the LCOs today is the advent of digital terrestrial channels and the expanded must carry rule. What cable operators cannot challenge, thus cannot change, is NBTC's order from December 2015 which expanded must-carry rules from the original six terrestrial channels to 36 channels of digital terrestrial free TV (DTT). Through this measure, DTT channels have gained free audience extension through cable and satellite networks and have access to higher advertising revenue because of this, but the higher revenues are not shared with cable operators. The FTA channels' audience expanded from original 7-8 million households to more than 20 million households overnight.

Community channels produced by cable operators that were widespread a few years are now dropping out due to economic constraints brought on by the high cost of must-carry. Operators prefer to offer local content, and show local news and local events to the local audience believing this is what the local audiences prefer. However today as advertising has dried up, the costs of producing such programs have become prohibitive and quality has been affected. Only a large platform operator can afford to produce local content today.

TCTA members today appear to be split into three camps: one led by current president Viriya Thamruangthong who used to be a Vice President of Hi Internet Ltd. and today leads a group of smaller cable operators in southern Thailand and other rural cable broadcasters; another group led by former TCTA president Kasem Inkaew, a four-time president; and The 45 Group, a group of leading (major) operators in many parts of the country who profess to be neutral.

Today a platform operator will offer Thai, Chinese and Korean drama series as the primary draw, followed by at least 2 channels of movies, and at the third level of attraction are game shows, news, comedies, documentaries, and religious talks. Sports programs are still a big draw for Thai viewers. But with the departure of CTH from cable TV, LCOs no longer use sports to attract viewers. They leave that to bigger players.

At the same time, viewing habits are expanding and going mobile. The use of special applications on smart phones has allowed many ‘exclusive’ programs to be seen on hand held devices. Investing very large sums of money in tech-savvy apps has become a viable strategy for (big) Thai players in this field; but it is not economically viable for struggling local cable operators.

Cable operators agree that the new challenge for them is the mushrooming of alternative technologies such as IPTV, smart phone, digital TV as well as OTT – while economic depression is hurting longtime customers. All these factors have had a negative impact on small cable operators.

Meanwhile the NBTC has encouraged state-owned telecoms operator CAT Telecom to work with cable operators. An MOU between CAT Telecom and a group of cable operators, inked in January 2016, was meant to bring the telecom operator together with LCOs. Under the agreement, CAT will lay fibre optic cable to areas where LCOs have subscribers. Cable subscribers will use CAT’s broadband internet and LCOs will be able to switch from analogue to using CAT’s digital broadcast head-end – mutually benefiting both parties in the process. The collaboration is now at a pilot stage where digital broadcast signals are sent from the CAT head-end in Bangkok to cable operators in the provinces of Ubon Ratchathani, Udon Thani and Phuket. CAT will try to sell their broadband internet service to subscribers of cable TV. However some cable operators are waiting to see if this will work since a similar activity with CAT had failed once in the past due to CAT’s inability to provide maintenance service when desired by customers. (CAT had in the past kept a strict Monday to Friday official operating hours to handle problems with equipment and manpower, whereas cable TV subscribers are used to maintenance service with flexible hours).

The year 2016 could see large cable operators also offering internet facilities as a way of earning alternative income. In the past small cable operators have applied for Type 1 Internet Service Provider licenses, but have failed to complete their applications to the satisfaction of NBTC officials. During the TCTA AGM in April this year, Dr. Varin Cholhan who is Vice President of TCTA and owner of Digital Petchabun Cable, had the opportunity to discuss with Khun Takorn Tantasith, secretary general of NBTC about his intention to apply for an Internet license together with several cable operators. So in May, 46 regional Thai cable TV network operators submitted a joint application for broadband internet operating licenses. Now all 46 applicants have received Type 1 Internet Service Operator License. The pay-TV operators hail from provinces across the country such as Petchabun, Chonburi and Ubon Ratchathani. They claim that at present about 30 percent of cable operators have the technical capabilities to offer Internet services. Because his group lacked the technical capability to lay fibre optics cable and to maintain the internet operation, Dr. Varin has approached Interlink Telecom Plc to manage the necessary operations which Interlink has agreed to do. The cable operators expect to offer a monthly service fee of THB590 (16 US dollars), the same fee major telecoms players charge to their customers.

4.4 Satellite TV platform aggregators

PSI HOLDING

PSI Holding together with its affiliates today remains the country's largest satellite dish and satellite TV receiver provider, having sold more than 19 million satellite set-top boxes (16 million SD and 3.3 million HD) nationwide.

Since late 2013, PSI started using MPEG4 satellite transmission, providing clearer pictures and optimizing the satellite's capacity usage.

Erstwhile operating as an FTA satellite TV platform aggregator, in June 2014, the company obtained a pay-TV operating license from the NBTC and became classified as a pay-TV platform operator (albeit without a monthly subscription fee). The move was in compliance with a new directive imposed by the then newly-installed military junta for all satellite TV channels and satellite TV platforms (such as PSI, IPMTV and DTV) to operate as licensed pay-TV service providers.

To stimulate demand, PSI made a deal with CTH in the third quarter of 2014 to offer affordable packages to watch live English Premier League (EPL) soccer matches for season 2014-2015. At that time, 10 million satellite receivers out of a total of 14 million PSI set-top boxes in the market were old versions and not compatible with the new conditional access (CA) system. Under this partnership with CTH, PSI offered a CA satellite adapter called "PSI Plug-in," so customers in this group could watch 380 live EPL matches for 2,499 Baht a year. In addition, customers could also get a package costing 1,500 Baht a year to watch entertainment programs from CTH. The partnership also offered CTH-PSI packages through PSI high-definition set-top boxes under the brands 'PSI O2' and 'PSI 02X' digital. While PSI 02 supported only C-band dishes, PSI 02X supported both C- and Ku-band dishes. For the year 2014 through first half of 2015, set-top box sales represented about 80 percent of company revenue, with 20 percent from subscription fees (through collaboration with CTH).

The deal with CTH ended abruptly on March 10, 2016 after CTH decided to stop supplying content, including EPL football matches, to PSI set-top-boxes because 'PSI could not meet revenue goals set by CTH.' CTH promised to 'compensate' PSI clients by either giving them a new set-top box or returning their money; but the service interruption had negative effects on PSI's standing as a 'reliable' service provider and its revenue stream.

However, PSI was quick to counteract the impact of the CTH fallout as the company launched a new OTT hybrid box in early May 2016, streaming live 100 free TV channels.

IPM TV

IPM TV manufactures and sells C-band and Ku-band satellite equipment including receivers and dishes. Apart from being a manufacturer and distributor of satellite TV equipment, IPM TV (through subsidiary Ten TV) produces programs for local cable and satellite TV operators, mostly in the provinces.

The IPM TV platform carries 153 channels, 30 HD (including 8 DTT channels) and 123 SD channels (including 18 DTT channel). They operate on the Thaicom 5 satellite. IPM TV offers three types of set-top boxes in the SD Standard, SD Premium and HD Premium packages. All satellite channels are free-to-view.

At certain seasons, IPM TV supplies special content and sells special packages. Each box has a user ID. When a subscriber wants to take advantage of a special promotion, usually in a sports season, the customer notifies with his/her user ID and pays through several easy to pay channels. The company will then switch on the special package.

In 2015, IPM TV started 30 local channels with offerings that had local (rural) content. After more than a year of operation, the channels have shown that they could be self-sustaining, encouraging IPM TV to add 30 more similar channels for Thailand's 30 remaining rural provinces effectively covering 60 rural provinces – each with one dedicated local channel.

For these channels, IPM TV supplies the bandwidth, sets up the broadcast station and trains local people to operate. The whole operation is at low cost, using local initiative, and local production style. The local people find their own sponsors to cover the cost of operating the channel, usually at around 200,000 baht a month. Each week there must be at least one hour given to a local university representation, prominent high schools (students do the work here), local sports events etc. TV time is offered equally to each of three main religions (Buddhism, Islam, and Christianity) and local customs, traditions, music, dances are all represented. Since the cost is kept low, local sponsors for local events are usually willing to shell out some cash. Sponsors can be local hospitals, district offices, local politicians, restaurants and other commercial establishments, schools and universities. IPM TV also partners with local cable operators. They produce their content and share with the local channel which is broadcast on the cable networks.

IPM TV also has a news channel – Bangkok Channel – which is run together with news producer Indpendent News Network (INN), providing real time news. There are five cartoon channels, and a channel each for Korean content, movies, music and tourism.

DTV

A fully-owned subsidiary of Thaicom, Thailand's sole commercial satellite operator, DTV runs three distinct businesses:

1. sales of satellite dishes and IRD boxes for receiving signals from both C-band and Ku-band transponders on THAICOM 5 and THAICOM 6;
2. broadband and television network and system integration services which include solutions such as platform service (IPTV, VDO conferencing, data transfer and multimedia online), and system integration to service network and software;
3. platform services including selling and leasing of platforms or systems developed by DTV such as IPTV channel, or multimedia streaming platforms used for broadcasting video or audio content via Internet networks, e.g., television or radio broadcast via Internet.

Through its sales of satellite dishes and boxes, the company provides access to a variety of satellite TV channels and programs, including news, documentaries, movies, cartoons, music, and several education channels. The company has developed an HDTV box to support high definition TV program viewing.

At present the DTV satellite TV platform provides broadcasting signals for 103 channels out of some 315 channel slots available. The operating stations include 26 free "must-carry" DTT channels, 45 variety channels, 5 news channels, 5 sports channels, 20 education channels and 2 family & kids' channel. Six of these channels are content for the Lao audience.

4.5 Cable and satellite TV content providers

KANTANA GROUP

Kantana Group PCL is a film and television production company based in Bangkok. It owns Thailand's oldest and largest film studios, having become a major Asian hub for film processing and editing. It is one of the most prominent production-houses for television programs in the country.

The business operations of the company and its more than 20 subsidiaries are divided into four core areas:

television, film, entertainment education (through Kantana Institute) and a newly set- up group to deal with Content Management and New Biz Solutions for major clients.

Television content production

Kantana is probably the most important name in television content production for all types – drama series, documentaries, news, sitcom, animation for children and edutainment, youth programs, and reality programs, as well as commercials. All their productions today are in HD with equipment being continuously upgraded for highest resolution.

Their customers are digital free TV, pay-TV, and other digital media and customers who require creative commercials. Kantana brings creativity and quality to their production, making sure that their programs acquire ratings at least within the top three among programs aired in the same time period if not at the very top. In 2015, when digital channels were in heavy competition to produce programs to attract audience away from competitors, Kantana brought to the table their ability to study the market and produce programs that cater to audience taste.

Kantana produces a number of TV dramas for Channel 3 as fully purchased time slots where they supply programs and advertising. They also buy foreign formats which are then locally produced, like 'The Face of Thailand'. For Channel 7, Kantana produced a number of very popular drama series.

Film production

Kantana is the top centre in Asia for film post-production work, with clients from 40 countries. The group's labs, teams and studios have processed many international features, including "Memoirs of a Geisha," "Superman Returns" and "Casino Royale," along with innumerable Thai films and television programs.

Satellite TV channels

In 2009, Kantana Group entered the satellite TV industry by producing content for its first channel – Farm Channel which is dedicated to agricultural programs. Operated by Farm Channel (Thailand) Ltd. this is Thailand's first television network that promotes agricultural knowledge as well as expanding opportunities for farmers.

Miracle Channel is Kantana's only cable-and-satellite channel that they solely produce and manage. This platform shows paranormal and supernatural dramas very popular in Thailand. The Miracle Channel also emphasizes religious activities, Thai culture and tradition.

Other Free to air satellite channels that Kantana operates with various partners are:

- **M Channel** is operated by Major Kantana Broadcasting, a joint venture with Major Cineplex. The channel is dedicated to premium quality Thai and international feature films. Launched in 2010, the audience reach grew larger and larger every year as the channel was shown on cable TVs nationwide. Today, it can also be seen on the company's website, through mobile applications, and smart TVs.
- **Boomerang** is Thailand's top 'cartoon for family' channel, jointly operated by Major Kantana Broadcasting and Turner International Asia Pacific, owner of Boomerang. There are varieties of entertaining cartoons, both the classical variety and the newly created Power Puff Girls, Batman, Ben 10, Garfield, Tom and Jerry and more.
- **Toonami** is popular variety channel shown on local cable and satellite. Also a joint operation by Major Kantana Broadcasting and Turner International Asia Pacific, the channel shows programs of super heroes like Batman, Superman, Avenger, X-men, Justice League, Dragonball Z, and Inazuma.

Kantana has operations in neighboring countries of Cambodia, Myanmar and Vietnam providing marketing and content for them. In Cambodia, Kantana is in joint venture with a local producer to operate Channel 5. In Myanmar, Kantana provides Thai dramas dubbed into Burmese language for the government TV station. In Vietnam they are in a joint venture with a local company to produce content.

For 2016, Kantana plans to produce no less than 200 hours of drama series for their own programs, and another 200 hours for their clients. Farm Channel Co., Ltd. will continue to manage the satellite and cable channels of Kantana. Kantana's business model is to expand the domestic client base. For ASEAN activities, Kantana will be working with DreamWorks to market animations of DreamWorks into Cambodia, Myanmar and Vietnam. Long series from China and India will also be marketed.

TRITON HOLDING PCL (FORMERLY LIVE INCORPORATION PCL)

Originally named Onpa International Co., Ltd. in 1987, this firm became a public company in 1994 and operated media and publishing businesses. The company underwent several business transformations during the past 28 years. In 2006, Onpa was renamed LIVE Incorporation PCL. In 2015 LIVE was taken over by Triton Holding, and LMG PCL dealing in media became Splash Media PCL, while subsidiary companies Spin Work, Media Event Organization, Splash Studio and POP TV and Thai Chaiyo TV were merged into Splash.

Thus, SET-listed Live Media became Triton Holding PCL of which only one out of four core businesses was in media. The others were in energy, mining and real estate.

Splash Media did well in 2015 with 635 million baht in revenue largely from advertising spot rentals and billboard related business. The company continues to offer bandwidth management for satellite TV, airtime rental, studio rental, TV content production and advertising for TV programs.

Splash Studio provides complete musical and broadcasting facilities, in an ample space with the latest digital and analogue equipment.

SPLASH TV has 2 satellite television channels of their own. Through Thaicom, Splash's satellite services cover 108 countries via C Band and KU Band.

- POP TV Channel produces music programs for the younger generation;
- THAICHAIYO TV produces television programs for 24 hour broadcast.

The audience is mainly located in upcountry districts as well as the main cities in Thailand.

NEXT STEP CO., LTD.

Next Step began content work in 2000 when they produced Samruajlok ("New Explorer") for Channel 9 and then for Channel 5 and Channel 11. Later as they produced other well recognised content, their programs were shown on local cable TV and other satellite TV platforms. In 2015 Next Step changed direction from being a content provider to becoming a platform provider for DTH satellite TV.

Today, Next Step is a platform provider offering FTA channels branded as the "FreeView HD" platform on the Intelsat Horizons-2 satellite. Next Step buys foreign content from a variety of sources in the form of blocks of National Geographic, Discovery Channel, BBC documentaries, GRB's extreme nature and wildlife shows, music and movies and other programming adapted for local audiences. Their platform is made of around 55 channels which includes the "must carry," Next Step's 9 HD channels and 14 other popular channels. FreeView HD's channels are broadcast at 1080p which is the full HD.

Next Step had teamed up with Intelsat by leasing 12 transponders of Intelsat Horizon 2 for 10 years, using CAT's fibre optics for the uplink. The new investments of 5,000 million baht over the next several years, included the cost of leasing transponders, producing the platform and the contents. Over the next few years, Next Step will concentrate on selling set top boxes and small 60cm and 75cm satellite dishes to provide a strong and secure audience base among middle class families; it will then move to leasing bandwidth to clients. Local viewers with Ku band satellite dishes can just buy the set top boxes and watch Next Step's high quality HD channels with no monthly or additional fees.

Below is the channel line-up of their-own produced content, distributed as free content to cable and satellite TV networks and also shown on FreeView HD:

- Samruajlok ("New Explorer"), a 24/7 documentary channel in SD format
- Khong Dee Prathet Thai ('Good Things Thailand"), a documentary channel on Thai history, temples, traditions
- MySci, a 24/7 scientific documentary channel

Only shown on FreeView HD:

- Samruajlok HD, a premium documentary channel
- Animal Show HD
- Real Metro, a 24/7 urban lifestyle and home decor channel
- Busaba Café, a 24/7 Thai traditional show channel
- Media 84
- CAT Channel

Samruajlok Channel, Khong Dee Prathet Thai and MySci channels are offered as free channels to local cable operators and satellite TV platforms, while Real Metro and Busaba Café are only shown on FreeView HD together with other popular channels with lifestyle, music, movies, cartoons and channels of interest to middle class viewers.

MV (TELEVISION) THAILAND CO., LTD.

In 2010, MV TV began distributing 13 satellite TV channels which gradually increased to 25 over the next few years. The company's strengths are its ability to bring contents from Taiwan-based TVBS and Singapore's Mediacorp – enabling it to provide top-rated TV programs to local TV channel operators, including Thai terrestrial TV stations. Today, with the arrival of DTT terrestrial stations, MV TV's own channels have dwindled down to 6 channels distributed in Thailand through Thaicom 5's C-band platform and DTV's Ku-band platform. They are also available on cable and broadband cable networks, through the MVTV application.

The six channels still operating:

- MVTV channel – popular drama series from Chinese and other Asian sources
- Mix Major Channel – brings Big Theater to the home with popular Asian and Western movies
- Asian Major Channel – brings entertainment in the form of Asian movies for viewing enjoyment
- Modern India TV – shows Indian movies, drama series, music video from different parts of India
- FIVE Channel – brings business news, life in the working place, various vocations, and entertainment suited to all lifestyles
- Esan TV – a shopping channel

Today MV TV is looking to expand into neighboring CLMV (Cambodia, Laos, Myanmar and Vietnam). After a successful collaboration with the Laos government in 2006, the company began broadcasting MV Lao TV in analogue since 2010 and will start broadcasting the station in digital in 2017. They are also currently looking either to provide their content to, or operate TV stations in Myanmar.

ASIA BROADCASTING TELEVISION LTD.

Asia Broadcasting Television Co., Ltd. (ABTV) is a multi-channel delivery platform provider. The company aggregates premium TV programs from content providers for delivery to cable TV operators and Free-to-Air satellite TV platform aggregators throughout the country. The current channel line-up includes one own-produced channel (Thai Visions) and six channels that are produced by content partners.

The bouquet of seven channels can be viewed on the following platforms: PSI (C-Band), Symphony, and CATTV.

Channel 132	Thai Visions TV
Channel 133	Good TV
Channel 134	C-Con TV
Channel 135	Thai Station
Channel 136	JJ Channel
Channel 137	Good Living
Channel 139	Maxacro TV

4.6 Leading Digital Terrestrial TV Channel Producers

GMM GRAMMY PLC

The largest Thai music and entertainment conglomerate GMM Grammy ("Grammy") has realigned once again its broadcasting-related businesses. Grammy through its subsidiary companies started off with broadcasting free-to-air satellite television channels in 2008; launched a pay-TV platform in February 2013, offering a bouquet of encrypted channels of entertainment and sports; and has operated two digital terrestrial television channels since 2014.

Today the entertainment giant operates only two FTA satellite TV channels (down from 10 in 2013) and has discontinued the pay TV service since 2015 when the operation was taken over by CTH under a cross-shareholding deal. Grammy's main focus now in broadcasting is the promotion and development of its DTT channels.

Grammy Group divides its business into two main categories:

1. Core Business
   - Its music business comprises sale and distribution of physical products, digital content, copyright management, show business, and artist management
   - Its digital Terrestrial TV business comprises 2 channels: GMM 25(SD), and One 31 (HD).

2. Other Businesses which support sustainable growth of the Group over the long term
   - Radio Business
   - Movie Business
   - Home Shopping Business
   - Satellite TV Business

Only the DTT and satellite TV businesses are highlighted here.

Digital Terrestrial TV Business

The Group bid for and won two commercial DTT licenses awarded by the NBTC in 2013.

CATEGORY	STANDARD DEFINITION	HIGH DEFINITION
Channel name	GMM 25	One 31
Channel number	Channel 25	Channel 31
Channel format	All formats that bring fun or a happy channel under the slogan "Enjoy every day, be together all the time"	High-quality variety programming including news, top-rated sitcoms, and primetime dramas ('For great drama, watch Channel One')
Target group	Teenagers and new generations with active lifestyle	Modern mass audience, families and working people
Began broadcasting	April 2014	April 2014

The two DTT channels showed massive gains after two years of operation. During the first quarter of 2016, One 31 was ranked in the top 5 among 25 DTT channels while GMM25 was in the top 10. Digital TV revenue surged by nearly 200 percent year-on-year in Q1 2016. As a sign of its popularity, One31 recently raised its ad rates by 30 percent: 120,000 Baht per minute during prime time, and 35,000 – 40,000 baht per minute during non-prime time. GMM Channel will be beefed up by GMM Bravo, a content creation operating unit which will maximize the use of the Group's music resources to produce TV drama series. The two DTT stations have budgeted two billion baht in 2016 for improving content including production of high quality drama series.

For 2016 onwards, Grammy has set a two-pronged strategic plan to promote the digital TV channels:

- Focus on content that is outstanding, interesting and has variety since viewers select programs based on content.
- Create wide audience awareness of digital TV under GMM 25 and One Channel by different forms of promotion through a variety of channels such as large advertising boards, online media, printed media and promotional activities at various locations and competitions.

Satellite TV Business

Grammy's Satellite TV business can be divided into 2 main components:

1. The Grammy branded "GMM Z" FTA satellite business launched in March 2012 and is responsible for the sale of satellite TV set-top-boxes (STB) to consumers. GMM Z has a variety of products for the target audience of all levels.
   – GMM Z HD for the high end – level customer group who prefer high definition with Dolby Digital 5.1 sound.
   – GMM Z HD Lite, enabling HD transmission with digital TV compatibility for customers who want to watch in HD at an affordable price.
   – GMM Z Smart for the middle-level customer group, available for both C-Band and KU-Band satellite systems
   – GMM Z Mini for customers who have limited budgets but want to switch from antenna to satellite television.
   – GMM Z Zeason by Loxley (jointly distributed with Loxley Plc).

   Under this collaboration, Loxley is in charge of production, development and quality control of the product to meet high quality standards. All items are assembled in Thailand and approved by the NBTC. The products' key features include quality, efficiencies and high durability. The software used in "GMM Z Zeason by Loxley" ensures stability and effectively supports all functions such as allowing channels to switch faster than other boxes.

2. Satellite TV Media, which is the production of TV channels aired on satellite TV.

   By the end of 2015, the Group has produced free-to-air satellite television programs for audiences of Thaicom as follows:

CHANNEL	TYPE OF PROGRAM	TARGET GROUP	DATE FIRST ON AIR
Fan Music	GMM Grammy's songs including pop, rock, dance, and local Thai folk songs under the slogan "All Your Music"	General audience	Changed from Fan TV to Fan Music in 2015
Money Channel*	Programs on financial matters and investments	General audience and working professionals with an interest in finance and investments	October 2009

*Jointly owned (50:50) with the Stock Exchange of Thailand through the Group's subsidiary, Family Know-How Co., Ltd.

MCOT PLC

SET-listed MCOT PLC operates an analogue terrestrial television station (Modernine TV or Channel 9), MCOT radio stations, the Thai News Agency (TNA) and a number of free-to-air satellite television channels. The firm also operates broadcasting services for digital television. Since 2014, the company has been operating a digital Free Terrestrial TV HD channel (9MCOT HD) and 1 SD Channel (9MCOT Family). MCOT has 39 main broadcasting stations (towers) and 45 relay sites nationwide. MCOT selected Loxley to provide equipment for its digital TV transmission network over a period of two years. By June 2016, the roll out plan will be complete for all broadcasting towers and relay sites across the country.

Moreover, MCOT has forged cross-over media partnerships with other operators in broadcasting programs – with TrueVisions for live matches of Thai Premier League, with Nation TV in producing situation talk 'Ying TokKanokChak', and with NOW TV in broadcasting reality boxing show 'the Champ'. The company launched 'The Creator Project' to supply content for 9 MCOT HD and to be showcased at international contents marketplaces.

MCOT also supplies Broadcast Network Operation (BNO) Services to 4 digital channels which are non-MCOT – one HD channel-Thai Rath TV-and three SD channels – Voice TV, Spring News and National Parliament TV. Revenue from these 4 amounted to 291 million baht in 2015. Currently MCOT has capacity to broadcast 2 HD channels and 6 SD channels thus they are not broadcasting at full capacity being short of 2 SD channels.

MCOT also operates satellite channels MCOT 1 and MCOT World, and rents C-band satellite channels to other operators. The numbers of lessees have reduced in 2015, however, leading to a revenue drop in this sector.

The company supervises operations of its subsidiaries, Panorama Worldwide and Seed MCOT in the production of television and documentary programs as well as musical and digital content. MCOT Plc. also has revenue sharing agreements with Bangkok Entertainment Company Limited (BEC) in running Television Channel 3 and leasing airtime for radio programs and advertisements on FM 105.5 MHz. and TrueVisions Cable Plc. in providing subscription-based television service through cable. The TrueVisions agreement has three more years to run and is due to expire at the end of 2019.

Throughout 2015 MCOT worked hard to keep up with changing viewer preferences, now that the audience has a wide choice of channels and program times to choose from. The company carefully prepared their targeted audience – youth and working age people, improved quality and program scheduling focused at the target viewers, and provided programs online for those with less time to watch television.

Core business

Television, including analogue channel Modernine TV and the 2 digital channels, forms the company's core business, and provided 44% of revenue in 2015; BNO services generated another 8%. MCOT radio stations broadcasting via FM and AM frequencies through 62 stations nationwide provided another 24% of revenue. The rest came from miscellaneous leasing and other businesses including revenue sharing deals with TrueVisions Cable Plc and Bangkok Entertainment Co., Ltd. (Channel 3).

Modernine TV is an analogue channel whose license is due to expire in June 2018. This channel is broadcast from a Bangkok station with 35 relay stations nationwide reaching 87% of the country area and 88% of the population. Modernine TV is simultaneously broadcast (simulcast) as DTT station 9MCOT HD (channel 30) which has 39 major transmitters and 122 gap filler stations nationwide. At full implementation of the digital conversion program next year, the digital relay stations will bring the programs to the homes of some 21 million households covering 95% of the country.

This channel's content can be broken into entertainment and drama 35%, news and analysis 31%, knowledge and information 16%, edutainment 8%, sports 4% and program promotion and others 6%.

9MCOT Family is a standard-definition (SD) DTT Channel in the category of children, youth and family. The primary target audience is children aged between 4-12 years with programs aimed to promote creative learning and happiness for children and families through watching quality content, while housewives and family members are a secondary target audience. 75% of the programs shown here are MCOT's own content. For this channel, the content breakdowns are entertainment 47%, knowledge and information 19%, public services 16% and remaining 18% are news and edutainment.

Thai News Agency (TNA) is the news production center for MCOT's TV and nationwide radio network that also distributes news around the world, especially, news exchanges with ASEAN member countries.

SATELLITE CHANNELS

MCOT owns and operates two satellite television channels MCOT 1 Channel and MCOT World (formerly MCOT 2). The channels are broadcast on C band/ TrueVisions and Ku band.

- MCOT1 has been upgraded and now offers a much-improved entertainment package since its initial launch in 2010. The station boasts a variety of edutainment programs related to health, live sports events and analyses, cooking and regional news compiled from all corners of Thailand.
- MCOT World is an English language station that showcases Thailand to the world – for all foreigners residing inside and outside Thailand as well as foreign tourists that come to visit the country. Programming content includes Thai art, culture and traditions, travel & tourism, Thai food, and daily news.

New Generation digital media business

MCOT has expanded the viewer base to new generation viewers via www.nineentertain.tv and www.facebook.com/9entertain featuring real-time news clips updated minute to minute, and the Nine Entertain Application on smartphone devices to cater for young audiences. These approaches have contributed to an increasing number of online viewers. The contents include a variety of MCOT programs either live or via internet or recorded broadcast from the MCOT TV channels (Modernine, 9MCOT, MCOT Family, MCOT 1 and MCOT World) and MCOT radio stations.

NATION MULTIMEDIA GROUP PLC

Calling itself a multiplatform media business, SET-listed Nation Multimedia Group (NMG) has business operations in four areas:

- Traditional publishing: Producing two Thai language dailies 'Krungthep Thurakit' and 'Kom Chad Luek', and one English language daily 'The Nation', and publishing educational books including service printing.
- Broadcasting for television and radio: Producing news and TV content for their two digital TV channels Nation TV and NOW, for other DTT stations, as well as operating radio stations.
- Education: Nation University
- Logistics service: For the printed media (in-house), and for general customers.

Nation Group has 45 years of expertise in news gathering and reporting; it entered the television business in 2000 and today, the broadcasting business forms 45% of NMG's revenue, with the publishing business bringing another 45%. There are two broadcasting business operators in the Nation Group – BBB and NBC.

Bangkok Business Broadcasting Co., Ltd. (BBB), a subsidiary of NMG, owns and operates SD digital channel NOW (Ch. 26), in the variety category. This channel developed from the Krungthep Thurakit satellite channel which started operation in 2012 as free to air Satellite TV. NOW is aimed at a new generation audience in the urban area and features programming of news, entertainment, economy, stocks, investments, how to succeed, lifestyle, culture, sports, reality shows, sitcoms, environment and family. In 2014 NOW studio was established to produce digital content for films, dramas and reality shows for NOW 26 and for other television stations in Thailand and abroad. NOW's programs also include international series and international documentaries from the world's top studios such as National Geographic's Life Below Zero and BBC's Human Planet.

Nation Broadcasting Corporation Pcl (NBC) is founder and operator of broadcasting businesses such as content production and procurement, sale of airtime for news and entertainment programs, including production of radio programs (2 FM stations and 1 AM station) and new media.

NBC subsidiary – NBC Next Vision Co., Ltd. – owns and operates OTT channel Nation TV (Ch. 22). This is a 24-hour news channel and is distributed through set-top boxes, and via satellite C-band and Ku-band. The Nation name, already recognized for the quality of their news reporting on satellite TV for the past 16 years, brings reliability to their news programs especially the evening discussions of current affairs issues.

RS PLC

SET-listed RS Plc, a leading entertainment company, operates three distinct business units: a media business including television and radio, music distribution, and events management. Under distribution business, the company also handles beauty products and nutritional supplements.

The media business is the company's largest income generator. About 60% of the company's revenue in 2015 came from media (TV and radio) business – nearly about 2.25 billion baht – the bulk of which was derived from the TV segment. The company owns and operates one digital terrestrial TV channel, Channel 8, and four satellite TV channels (You Channel, Sabaidee Channel, Channel 2 and Sun Channel) offering a variety of content including entertainment, music, and sports.

Sun Channel, formerly named RS La Liga, is the platform for broadcasting premium sports content, in addition to other various programs. RS held exclusive broadcasting rights for three consecutive seasons of the Spanish La Liga (2012-2014) – thus the birth of RS La Liga dedicated solely for transmitting broadcasting signals of La Liga. In March of 2013, the channel was renamed Sun Channel. Today Sun Channel has been transformed into a variety/entertainment channel and now broadcasts other content aside from sports.

In July 2015, RS launched a new satellite TV channel 'Ploen TV,' dubbed the first TV station in Thailand that catered for 'seasoned' or more senior audience. However, the channel attracted only a few advertisers and posted monthly losses of nearly 15 million baht. In mid Q4 2015 RS decided to shut it down.

Initially RS had planned to invest 2 billion baht in 2016 to expand its TV business by producing more than 30 soap operas and other new content. Of the total budget, one billion baht was to be for soap opera production, 800 million baht for other new programs such as variety, sports and news, and 200 million baht for building public awareness about its digital TV channel number. However, due to sluggish advertising revenues, the company adjusted its business strategy and investment plan. To prepare for the expected soft ad spend in Q1 2016, RS cut back on expensive program production. It reduced weekly drama programming from 90 minutes to 60 minutes and cancelled the launch of a new weekend drama in Q1 2016. It also moved some popular programs from its satellite TV operation (Ploen TV & Channel 2) to Channel 8 to strengthen the flagship digital TV channel. In December 2015, Channel 8 had 350,000 people watching per minute, with 60 percent in Bangkok and major provinces. AGB Nielsen Media Research has constantly rated Channel 8 as the 4th most watched by TV households nationwide.

RS expects its media business to recover from Q2 2016 onwards, and will renew its investment on premium content production.

WORKPOINT ENTERTAINMENT PCL

In 2014, SET-listed Workpoint Entertainment PCL moved from being a production house known for quality TV content production to becoming a digital terrestrial TV operator in its own right. After winning a license to operate a commercial SD DTT channel from the NBTC in late 2013, Workpoint quickly focused its strategy on operating the Workpoint DTT channel, with content production for other clients, and the movies & events business, becoming secondary profit centers for the company.

This transition was not difficult because Workpoint was already operating its own channel as DTH satellite TV since 2012 and had more than 25 years' experience in producing high quality TV programs. In 2015, the company moved all its popular contents from other channels to Workpoint Channel. By the end of 2015 Workpoint TV obtained the 3rd most popular rating in Thai television (including analogue sector) with audience share of more than 10% according to Nielsen.

Workpoint produces three types of content:

- Light entertainment: These are variety shows, quiz shows, game shows and reality shows.
- Sitcom/drama: Sitcoms are shows with humorous outlook on life raising laughter in the audience, while dramas of Workpoint are deliberately different from other channels.
- News and sports. Workpoint also buys finished foreign programs in the areas of food, health, cartoon, game shows, and foreign drama series for their channel. They also bought licenses to show live sports programs such as FIVB Volley Ball World Cup 2015 (and 2016), Thai Boxing International, WLF World Boxing Championship, etc.

Workpoint continues to produce quality entertainment for other satellite channels. But the company has stopped buying show time on other channels and no longer sells advertising and promotion for those contents. The primary objective of the company today is production of quality programs for Workpoint TV.

In 2016 Workpoint plans to spend some 600 million baht for more drama series and sports content to expand their audience base.

4.7 Television Audience Measurement

As of mid-2016, AGB Nielsen Media Research Thailand ('Nielsen') remains the sole provider of TV audience measurement to the country's hundreds of broadcasting operators.

Since the launch of digital terrestrial TV trial runs in April 2014, Nielsen started to also monitor DTT platform performance with respect to audience measurements and advertising spend in addition to analogue, cable and satellite TV.

Nielsen's monopoly in this field could potentially end in 2017. UK-based Kantar Media, in collaboration with the Media Agency Association of Thailand (MAAT)'s Media Research Development Association or MRDA will provide multi-screen audience measurement services to clients in Thailand. Kantar is reported to be mobilizing jointly with its local affiliate TNS Thailand a local team of 100 employees to support its TV rating service. Once in place, it will take about a year to prepare for the measurement system to be fully set up, which could be third quarter or fourth quarter 2017. To develop the multi-screen rating system, MRDA is raising 1.5 billion baht (US$43 million) from its members consisting of broadcasters of DTTV, cabsat TV operators and media agencies. MRDA is also likely to allow Kantar to provide its multi-screen audience statistics commercially to clients that are not members of the MRDA.

The arrival of this competitive challenge has been controversial. During the inception phase in the third quarter of 2015, MAAT and some DTT broadcasters submitted a proposal to the NBTC requesting 'early-stage' funding of 368.8 million baht (US$10.5 million) for the new multi-screen audience measurement. Nielsen Thailand asked the regulator for fair treatment, as the company had already invested heavily in developing its measurement system. Due to protests from Nielsen and the operator of Channel 7, the initial decision of the broadcasting committee was not to approve the funding request. In May this year, the MAAT resubmitted its funding proposal, with new governance arrangements, to the NBTC's Broadcasting and Telecommunications Research and Development Fund for further consideration.

To prepare itself in defending its market from the looming 'threat' from Kantar, Nielsen had consciously beefed up the survey sampling frame to improve the accuracy of its TV rating measurement. Nielsen had steadily increased the sample panel since the fourth quarter of 2014 to 1,800 households, rising to 2,200 households in the second quarter of 2015, further expanding to 2,400 households in the first quarter of 2016, with the goal of more than 3,000 households in 2017. (The panel includes households using all technologies, including cable and satellite.)

Nielsen also announced in November last year that it will expand its TV and advertising measurements to cover more platforms ranging from the existing digital and cable/satellite to OTT, digital radio and out-of-home TV. The company aims to provide total audience measurement covering television and online advertising which will remove duplicate views by the same person on different platforms. The move is seen as the company's strategy to be one step ahead of impending competition. According to an executive at Nielsen Thailand, the total TV audience measurement system could help media agencies value their assets and broadcasting operators produce the right content for the right targeted audience.

Meanwhile the MAAT has not been lying idle while waiting for Kantar's local business unit to take shape. In collaboration with major digital TV operators, the MAAT commissioned Video Research International (Thailand), the media research arm of Thailand Marketing Research Society, to conduct during November 2015 to January 2016 a television audience profile survey of 2,400 respondents in Bangkok and eight major provinces. Beyond quantitative TV audience measurement surveys, audience profile surveys which are qualitative in nature have become an essential methodological component of a marketing strategy for digital TV operators amid fierce competition. The research team collected sample respondents' verbatim statements which provided in-depth exploration of what and why audiences think, feel and do. Survey findings are expected to become a powerful tool for the further development of content on television. Moreover, qualitative audience profiling, in addition to quantitative research which measures how many people think, feel or behave in a certain manner, could better equip digital TV operators in developing a sound marketing plan to build their businesses successfully.

A few highlights of the Nov 15-Jan 16 survey:

- Channel 3, Channel 5, Channel 7, Workpoint TV and Channel 8 are most popular.
- Spring News, Now 26, PPTV, Voice TV, Amarin TV and Bright TV are lesser known.
- The two biggest problems in the industry in 2015 were the shutdown of some digital TV channels and the confusing new channel-numbering system.

The MAAT plans to commission in the near future similar qualitative surveys in the rural provinces to obtain a more comprehensive coverage of TV audiences.

4.8 Programming

4.8.1 Cable, satellite and IPTV channels

One of the measures enacted by the National Commission on Peace and Order (NCPO), which wrested power from Thailand's elected government in May 2014, was to put the broadcasting industry in order. This included allowing free-to-air (FTA) TV network providers to air only six analogue channels and licensed digital channels (except Voice TV's digital channel, which was earlier banned by the military junta).

Taking the cue from the NCPO, the NBTC asked all FTA satellite TV channels broadcasting at that time to re-apply for a pay-TV license. The NBTC ensured that only those operators who met the junta's standards and criteria, in addition to existing NBTC requirements, were given a new pay-TV license. Industry insiders looked at this development as aimed to create a broadcasting sector that would be easier to control than unlicensed satellite free-to-air channels, which were prone to offering 'inappropriate and politically provocative content.'

In late 2015, after a year of DTT operation, the NBTC announced that of the over 1,000 broadcasting service licenses issued in 2014, more than 40 percent were no longer in operation. This brought the number of licensed channels down to 661, while 258 satellite TV channels, 158 cable TV channels and 15 IPTV channels did not renew their licenses to operate.

By May 2016, the number of broadcasting service licenses given by the NBTC stood at 611, a further fall of eight percent over the 2015 figure. These are broken down into 149 cable TV, 451 satellite TV and 11 IPTV.

The channels are further classified by type of content (genre) as follows:

CONTENT	NUMBER OF LICENSED CHANNELS			
	CABLE	SATELLITE	IPTV	TOTAL
Type 2 – news and current affairs	41	57	4	102
Type 3 – children, youth, family, senior, handicapped and marginalized	2	31	-	33
Type 4 – education, religion, culture, science, technology, environment, promotion of vocation	1	46	-	47
Type 5 – sports, travel and health promotion	2	57	-	59
Type 6 – entertainment	103	260	7	370
Total	149	451	11	611

Note: No licenses issued for Type 1 – general
Source: Television Broadcasting Business Licensing Bureau, NBTC (as of 26 May 2016)

4.8.2 Turn-around channels

Foreign content includes more than 150 foreign – originated channels, covering all genres broken down as news (16), kids (26), educational (6), sports (11), entertainment/variety (85) and 10 non-specified foreign channels.

4.8.3 Commissioned programs

There are not that many commissioned programs in Thailand's cable & satellite landscape. A few cable TV operators either produce their own content or buy non-exclusive and exclusive programming from local production houses. In addition, some satellite TV operators also work with content developers such as Kantana and Next Step to produce programs for their own platforms. Some of these commissioned channels include Farm Channel, Miracle Channel, M Channel, T Sport and Rama Channel.

4.8.4 In-house channels

Most in-house channels produced by cable TV operators concern local news and cultural activities, including local sport. TrueVisions alone among pay-TV operators produces large amounts of its own content in collaboration with its affiliate Cineplex, with 31 channels on pay-TV. Thirteen of these channels are in HD quality, while the rest are SD. By category, there are 11 sports channels, 5 movie channels, 2 news channels and the rest are lifestyle, reality, adventure and other genres.

In addition, TrueVisions has also produced 5 series and 4 feature films as follows:

TrueVisions Original Series:

- Coffee Prince Thailand
- Autumn in My Heart Thailand
- Full House Thailand
- Kiss Me Thailand
- Princess Hours Thailand

TrueVisions Original Movies:

- The Life of Gravity (2014) film by Pen-Ek Ratanaruang
- The Master (2014) film by Nawapol Thamrongrattanarit (won Best Documentary – Thailand National Film Association Awards 2015
- So Be it (2014) film by Kongdej Jaturanrasamee (Official Selection 19th BUSAN International Film Festival 2014
- Snap (2015) film by Kongdej Jaturanrasamee (won Best Sound, Best Screenplay, Best Art Direction – Thailand National Film Association Awards 2016)

TrueVisions Own-Produced Channels

True Film HD	True Movie Hits	True Thai Film	True Film Asia
True Series	True Inside HD	True X-Zyte HD	True Asian Series HD
True Spark Play	True Spark Jump	True Explore Wild	True Explore Life
True Explore Science	True Asian	True Select	True Plook Panya
True Music	Reality H	True4U	TNN 24
TNN 2	TrueSport 1	TrueSport 2	TrueSport 3
TrueSport 5	TrueSport 6	TrueSport 7	TrueSport HD
TrueSport HD 2	TrueSport HD 3	True Tennis	

4.8.5 Pay-TV Channel Line-ups and Pricing

TRUEVISIONS PLATFORM

TrueVisions offers a variety of top international channels including movies (e.g., HBO, Cinemax, Fox); sports (e.g., Star sports, beIN Sports, and the company's own sports channels), infotainment (e.g. Discovery Channel, National Geographic), and news (e.g. CNN, CNBC, Bloomberg and BBC World), in addition to free TV channels and pay-per-view.

Currently, TrueVisions has nine package offerings for monthly subscribers. The top-end premium package has a bouquet of 188 channels which costs 60 US dollars monthly while at the lower end is 121 channels for 8 U.S. dollars a month.

Monthly Subscription Rate as of June 2016

TRUEVISIONS PACKAGE	NUMBER OF CHANNELS	BAHT/MONTH	USD/MONTH
Platinum HD	188	2,155	60
Gold HD	163	1,568	44
Super Family HD	161	899	25
Smart Family HD / Super Knowledge	151/148	590/490	16/14
Sports Family HD/Super Sports	129	495/590	14/16
Happy Family HD/ Knowledge	121	299	8

Exchange rate used 1US$= 36 baht; USD rates rounded off to nearest whole number
Source: TrueVisions Annual Report 2015

In addition to the above packages, TrueVisions provides a-la-carte packages with a maximum of five channels where customers can choose according to their subscribed packages.

Other key products and services include:

- High Definition Personal Video Recorder (HD PVR), with advanced features such as recording, zooming, instant replay
- TrueVisions Anywhere enables customers to enjoy TrueVisions' and FTA channels anywhere, anytime via multiple platforms including smartphone, tablet, notebook and PC.

In collaboration with affiliated companies within True Group, TrueVisions also offers convergence packages:

PACKAGE	SUBSCRIPTION RATE PER MONTH
TRUE Smart Choices, quad-play value package offering TrueOnline's broadband Internet with a download speed of 30 Mbps via fibre cable network, TrueVisions' 100 channels plus 3 HD channels, TrueMove H's 300 minutes voice call and 4G/3G data services, and 50 minutes call through fixed line telephone service	Starting from 999 Baht (28 US dollars)
TRUE Super Speed Fiber: 3 Services, offering TrueOnlines' hi-speed Internet via fibre network with a download speed of 30 Mbps, TrueVisions 99 channels plus 3 HD channels, and TrueMove H's iSmart/iNet/iTalk package (199 Baht or 6 US dollars per month)	Starting from 799 Baht (22 US dollars)
TRUE Super Speed Fiber: 2 Services, offering TrueOnlines' hi-speed Internet via fibre network with a download speed of 18 Mbps and a choice between TrueVisions 99 channels plus 3 HD channels and fixed-line telephone service worth 200 (6 US dollars)	Starting from 699 Baht (19 US dollars)
TRUE Hi-Speed Net: 3 Services, offering TrueOnlines' broadband Internet via ADSL with a download speed of 16 Mbps, TrueVisions 99 channels plus 3 HD channels, together with TrueMove H's iSmart/iNet/iTalk package (199 Baht or 6 USD dollars per month)	Starting from 799 Baht (2 US dollars)
TRUE Hi-Speed Net: 2 Services, offering TrueOnlines' broadband Internet via ADSL with a download speed of 13 Mbps and TrueVisions 99 channels plus 3 HD channels	Starting from 699 Baht (19 US dollars)

Exchange rate used 1US$= 36 baht; USD rates rounded off to nearest whole number
Source: True Visions Annual Report 2015

CTH PLATFORM

At the time of writing (this report), CTH was at the final stages of strategic re-structuring and has announced an imminent cessation of its broadcasting business. The following is historical information relevant to the company's previous offerings.

PACKAGE	NUMBER OF PREMIUM (EXCLUSIVE) CHANNELS	MONTHLY RATE (BAHT)
Beyond CTHZ	59	999 (28 US dollars)
Ultra Platinum	50	699 (19 US dollars)
Family	30	499 (14 US dollars)
Pink Gold	27	399 (11 US dollars)
Gold	24	299 (8 US dollars)

Source: www.cth.co.th/compare (accessed on 25 May 2016)

RS PLATFORM

RS Plc and subsidiary Starz (Thailand) own and operate one digital terrestrial TV channel and four satellite TV channels. Only the Sun Channel is offered on pay satellite TV (for the La Liga matches).

- Channel 8 — Entertainment variety digital TV channel
- Channel 2 — A 'complete entertainment channel' which gathers top variety shows from artists, actors, celebrities, and leading local and foreign artists; drama program; and entertainment news with insightful commentaries
- You Channel — Channel with program concept of "Television for Thai Music Lovers"

- Sabaidee TV — Thai 'Luktung' or folk music for the whole family
- Sun Channel — Channel under the "Extreme Entertainment Variety" concept that consists of sports news, information, and entertainment programs; live broadcasting of the La Liga Spanish football until season 2015-2016 which ended 15 May 2016; operated by RS subsdiary "Starz (Thailand) Co., Ltd."

IPM TV

The IPM TV platform carries 153 channels, 30 HD (including 8 DTT channels) and 123 SD channels (including 18 DTT channel). They operate on Thaicom 5 satellite.

Among the foreign content HD channels are:

- Foreign Movies HD
- Asian Movies HD
- World Story HD
- Aniplus HD (cartoon channel)
- Fashion One HD
- Motor Sports HD (sports)
- Travel Channel HD
- Kboom Channel HD (Korean variety)
- Variety One HD (Asian variety)

Genres of SD channels include drama/variety (33 channels), sports (4 channels), news (7 channels), movies (14 channels), cartoon (7 channels), documentary (3 channels), DTT (26 channels) and local news/other genres (29 channels).

To cater for different customer segments, IPM launched three set-top-box models offering different packages.

STB MODEL	PACKAGE	STB PRICE	ONE-OFF CHARGE FOR PACKAGE	TOTAL COST
Lite	SD Standard (101 channels incl 26 DTT channels)	490 Baht (US$14)	500 (US$14)	990 (US$28)
Clear	SD Premium (123 SD channels and 8 HD DTT channels)	690 Baht (US$19)	800 (US$22)	1,490 (US$41)
HD Pro	HD Premium (30 HD and 123 SD channels)	1,000 (US$28)	1,250 (US$35)	2,250 (US$63)

Exchange rate used 1US$= 36 baht; USD rates rounded off to nearest whole number
Source: IPMTV (http://www.ipmtv.tv/index.php/2011-04-17-17-18-46/ipm-package)

TOT IPTV AND OTT PLATFORMS

Having previously launched its original IPTV service in 2012, available for a monthly fee of 150 baht, TOT in March 2015 launched a additional new service delivered via its own IPTV set top box which costs a one-off payment of 3,500 baht and could be used with any broadband Internet connection, regardless of the Internet service provider. Currently this package offers 86 free to view channels (11 HD) which includes a wide variety of news, entertainment, sports and children's TV shows from Thailand and overseas.

In addition, TOT also offers several premium IPTV packages for discerning customers:

- Choice Super Plus offering 46 channels (20 digital, 26 standard) for 390 Baht per month. There are 38 'unique' channels in original language (mostly English), with 8 channels also dubbed in Thai language
- Mono Maxxx package offering more than 10,000 hours of movies and popular series for 129 Baht per month

- Hollywood movie series package offering more than 2,500 episodes at 150 Baht per month (being offered in collaboration with Doonee OTT operator)
- CCC movie package offering Asian content in various genres (comedy, fantasy, romantic, animation, etc.) for 99 Baht per month

TOT also has a promotion package on offer until 31 March 2017 for 50 Baht per month to watch 90 channels via a smart phone, tablet, notebook or PC.

3BB IPTV PLATFORM

The company offers the following packages for broadband Internet subscribers

3BB Movie by Mono Maxxx package offering more than 10,000 hours of movies and popular series for 129 Baht per month. For first time service users, 3BB offers a promotional package of 129 Baht for 60 days.

3BB Cloud IPTV offering 68 free TV channels, available also on an OTT basis to non-subscribers.

PROVINCIAL AND LOCAL CABLE OPERATORS

Among the 250 local cable operators that are members of the TCTA, 30 percent are operating digital transmission systems which now offer up to 300 channels, while the rest are still using analogue transmission signals that can carry between 60-80 channels only.

The largest local cable operator (LCO) in Bangkok – Charoen Cable TV – now offers packages with 65, or 75 channels for analogue watchers and 200 to 300 channels for digital audiences. The majority of these programs are produced in Thailand, while other channels originate internationally. Programs on offer are a selection of movies, drama series, musical variety, Thai country music, documentary, news, sports, cartoon, and general entertainment.

Cable operators in Greater Bangkok that are using analogue systems offer 80 “standard” channels – with similar program selections as Charoen Cable TV; but foreign content is quite limited.

MSS Cable TV operates in 6 provinces largely in the urban districts of each province – Pathum Thani, Nonthaburi, Bangkok (only in north area of Don Muang and Sai Mai), Samut Prakan, Chacheongsao and Pitsanulok. MSS offers 70 channels for analogue TV and 200 channels for digital. Price varies from 80 baht per room in hostels to 350 baht per month (up to 4 TV points), 1,900 baht for 6-months and 3,600 baht for annual subscription.

Another major operator which is based in Nakhon Si Thammarat province is Hi Cable TV, which is affiliated with Hi Internet Group and includes LCOs such as Hi Cable TV in Songkhla, Had Yai, Muang Nakhon Si Thammarat and Klongchan of Bangkok, Linear Cable in PathumThani and Bangkok, Nawanakhon Cable, Chen Jian Wan Chareon of Khorat, PTV in various locations of Chonburi province, Lomsak Cable, Krabi Cable, Phangnga Cable and MSS Cable in Phitsanulok, Chacheongsao, Samut Prakan and Pathum Thani among others. All subscribers to these LCOs have access to digital programs of Hi Cable TV and can apply for high speed Internet from Hi Internet. Hi Cable has extensive coverage in southern Thailand extending to the deep south, and provides good coverage of local news programs which is their strength. The Hi Cable TV bouquet of channels includes all free DTT channels, TrueVisions free view channels and the Hi Sports channel dedicated for local sports such as cock fighting.

4.8.6 Satellite TV channels

The table below lists a sample of content provided by some satellite TV operators.

CONTENT PROVIDER	SATELLITE TV CHANNELS	DESCRIPTION
GMM Grammy	Fan Music (changed from Fan TV in 2015) Money Channel (with SET)	GMM Grammy's songs including pop, rock, dance, local Thai folk songs under the slogan "All Your Music" Programs on financial matters and investments
Kantana Group	• Farm Channel • Miracle Channel • M Channel • Boomerang • Toonami	Agriculture channel Mystery, supernatural movies Thai & international film features Wide variety of cartoons: Power Puff Girls, Batman, Ben 10, Garfield, Tom and Jerry, etc. Shows super heroes like Batman, Superman, Avenger, X-men, Justice League, Dragonball Z, Inazuma
RS	• You Channel • Sabaidee Channel • Channel 2 • Sun Chanel	Musical variety (for teenagers) Thai country music (Luk Thung) Complete entertainment variety channel 'Extreme Variety' channel offering sport, news, entertainment, information

Source: Operators and CASBAA research

4.9 Piracy and unauthorized distribution

Thailand is often considered to be a hub for digital and traditional piracy. Since the inception in 1989 of the United States' Office of the Trade Representative's (USTR) Special 301 Report on Intellectual Property Rights infringement, the kingdom has been listed (for violating IPR), and for nine consecutive years since 2007, Thailand has been on the Priority Watch List.

In regards to infringements occurring on digital platforms, the USTR had criticized Thailand as lacking, first and foremost, a coordinated governmental approach. In response, the government made at least a semblance of working together to achieve the common goal of ridding the country of IP rights offenders. In 2013, the Department of Intellectual Property (DIP) established the National IPR Centre of Enforcement (NICE) to promote cooperation among the 25 government entities responsible for enforcing IP rights. Since NICE was ran without government budget, participating agencies operated voluntarily through working groups and jointly pursued enforcement cases.

At its inception the Centre aimed at dealing with cases related to newly emerging challenges such as internet piracy or online and physical sales of counterfeit consumer products. In this regard, the Centre was able to physically shut down a good number of illegal shops selling counterfeit and pirated goods in Bangkok and several cities outside Bangkok. But with regard to online piracy, NICE accomplished very little in terms of removing infringing content from rogue streaming websites because (1) it lacked the authority to order ISPs to close down such illegal websites; and (2) the ISPs, even if they had the authority, did (do) not have the technical capability to remove 'bad or illegal' content from the websites. What NICE had been able to do was only 'to coordinate' with ISPs, but the ultimate objective of removing infringing content was not achieved.

Digital piracy has intensified in the country with the rise of social media such as Facebook, Line and YouTube. Widespread availability of social media has made piracy easier, especially for movies. Digital piracy comes in the form of sharing a web link to movies as well as uploading the movies on social media platforms especially on Facebook (FB). According to the Motion Picture Association (MPA), they have come across a number of FB webpages in Thailand that offer newly-released movies which obviously are pirated content. Initially these could be accessed by the public, but later, when the webpage owners receive warning messages or complaints, they would immediately create a secret or closed group which could only be accessed by 'registered' users. This has made it more difficult to hunt them down.

MPA and other local entertainment associations such as the Thai Entertainment Content Trade Association (TECA) and Thai Film Association had urged government authorities to speed up amending the Copyright and Computer Crime Acts to allow copyright owners to petition courts to shut down pirate websites in Thailand.

In view of the glaring legal framework inadequacies, some internet Service Providers have taken their own actions to curb IPR infringements taking place on the internet by beginning to limit the bandwidth to consumers who download torrents.

4.9.1 Amendments to the Copyright Act

Amendments to key IP laws relevant to broadcasting that were approved in 2015 include:

- In April 2015, the amendment to the Copyright Act to criminalize unauthorized camcording in cinemas; and,
- In August 2015, the amendment to the Copyright Act to promote the dissemination of content online while protecting the interests of right holders by introducing rights management information (RMI) protection, technological protection measures (TPMs) and ISP's liability limitation.

In 2013, Thailand notoriously occupied the top spot in Asia in illegal camcording – the main reason for the amendment in 2015. Today, the number of camcording offenders has dwindled because of the poor quality of video recording.

The USTR 2015 Report on policies and practices with respect to IP cited that the relevant copyright amendment introducing an option for rights holders to obtain a court injunction forcing ISPs to take down infringing content 'lacked clarity in the operation of the notice-and-takedown procedures' which could diminish eventually the success of enforcement. The Report also raised concern, amongst many others, about extensive cable and satellite signal theft which apparently has continued despite the changeover to digital HDTV standard by many consumers. In addition, streaming TV boxes that use apps to stream pirated content such as movies and TV series are reportedly growing in popularity in Thailand.

4.9.2 Relevant amendments to the 2007 Computer Crime Act

Another important amendment considered pivotal to promoting effective enforcement was the amendment to the 2007 Computer Crime Act to include online infringement of intellectual property rights as an offence.

In April 2016, the National Legislative Assembly (NLA) approved in principle amendments to the Computer Crime Act which outlaw spamming for the first time and gives appointed committees power to 'suppress the distribution of or remove computer data' though the content has not been formally judged as illegal. The bill is one of the digital security series of laws in support of the digital economy initiative.

However, industry insiders have the opinion these amendments are simply too vague to be effective. For instance, they continue to lack clarity regarding the 'notice-and-takedown' procedures.

5 OTT Services in Thailand

OTT services in Thailand

The OTT market in Thailand is still at a nascent stage, but with more than 10 operators – both local and foreign-based – now offering services, the market is gearing up for vibrant competition. Last year, the OTT service market on streaming video on demand (SVOD) or video on demand (VOD) was valued at around 500 million baht (approx US$14 million), according to the Managing Director of Mono Film, a homegrown video-streaming service provider. *(Another Thai service provider, PrimeTime, provided a much lower estimate of 100 million baht. Discussions with other industry players indicated that the market should be higher than 100 million baht)*. This year, the market value could more than double – as Mono Film alone projects its subscriber base to double in number – as Thai consumers shift their demand from DVD rental and Internet-enabled devices, especially smartphones become increasingly available.

Snapshots of OTT service providers in Thailand

SVOD service providers in Thailand are a mix of telco operators, regional and international players (Hooq, Iflix, Netflix) and Thai entrepreneurs (Doonee, HollywoodHD, MONOMaxxx, PrimeTime).

5.1 International and regional players

HOOQ.TV
www.hooq.tv/th
www.ais.co.th/hooq/en/

Launched in Thailand in May 2015, Hooq is an Internet video streaming and download service run by Singaporean telecoms operator Singtel, in conjunction with Sony Pictures and Warner Bros. The service offers unlimited streaming and downloading for a monthly subscription.

Singtel has partnered with the country's biggest mobile operator, AIS, in its bid to tap into nearly 36 million 3G/4G subscribers.

Features

Hooq provides a bit of everything, local and international, all available to watch both on- and offline. Downloading movies to watch offline is available only on smartphones and tablets with the HOOQ app where a maximum of five videos can be downloaded at one time across all devices on the account.

The service works best on Firefox or Safari, but it is not optimized for the Chrome browser.

Content and pricing

Thai viewers are able to sign up and watch local films and TV programs through deals with various local studios (GTH, Five Star, TIGA and more). The service also offers more than 10,000 films and TV programs from Hollywood (including Disney, Sony, Warner Bros and Dreamworks) Bollywood, and Asian series.

Hooq offers a free 45-day trial until 31 Dec 2016. Subscription is 119 Baht per month.

Platforms

All types of Internet-compatible devices such as desktop PCs, mobile phones and tablets.

The service supports the AIS Playbox which is an Android-based set-top-box provided by Advanced Info Services (AIS).

IFLIX

www.iflix.com

Malaysia-based Iflix opted to invest in a local team to run the Thai operations. Since its entry in September 2015, Iflix claims to have accumulated 500,000 active members over a period of eight months. Iflix Thailand is targeting 5 million active users by the end of 2016, banking on good service, a strong team, and solid partners. Iflix has recently forged an agreement with True Corp to bring Iflix service to TrueMove H's 25 million 4G users. Another partnership with Fitness First Thailand, the largest privately-owned health club group in the world, will offer Iflix service to its members as a privilege.

Features

Thai movies are available with Bahasa, Tagalog, Korean and Mandarin dubs and subs.

Content and pricing

This service provides access to a stockroom of Southeast Asian, Chinese, Korean and Hollywood films from Fox, Disney, Paramount, Warner Bros and MGM boasting 1,000 movie titles and 1,600 series seasons.

The content offering covers locally produced and indie films providing a good selection of Thai shows that are hard to find elsewhere. Japanese anime series are also offered.

Iflix offers a one-month free trial for new customers; once users evolve into customers, they are charged 100 Baht per month or 1,000 Baht per year for unlimited series and movie titles. One account holder can use the iflix service on five different devices and can even watch content via two devices at the same time. Moreover, they can download up to 10 titles to watch offline.

Platforms

Smartphone, laptop, tablet, smart TV

NETFLIX

www.netflix.com/th/

Launched in January 2016, US-based Netflix is Thailand's newest OTT service provider. The availability of the much-awaited 4G wireless broadband service and changing lifestyle of young Thai consumers who are spending more time on their smartphones than with TV sets are crucial factors that lured the global player to the local video-streaming space.

Features

Netflix has not added any new Thai-language content beyond the small selection of films it already has. The website, app or subtitles are not yet available in Thai.

Netflix says it will eventually add Thai-language support and obtain licenses for Thai television shows and movies.

Content and pricing

Not all of its entertainment will be available in Thailand – as in other parts of the world. For instance, access to Walt Disney films right after their release will be limited to Netflix customers in the US and Canada as part of a deal negotiated several years ago, but Netflix is hoping to expand those rights into other countries soon (including Thailand).

Netflix applies differentiated censorship to movies showing in different markets around the world and adheres to local media laws, including in Thailand. It is not yet clear what measures will eventually be adopted in Thailand.

In Thailand, Netflix is offering a free, no-obligation trial of its service for a month. After that, subscribers can opt for and switch between any of three payment plans.

Options start with a standard-definition programming package that can be viewed on only one device at a time for 280 Baht a month.

The standard package, at 350 Baht monthly, offers HD content and simultaneous viewing on two screens.

The 420-Baht-per-month plan offers four screens and Ultra-HD content, which requires a 4K television or computer monitor to enjoy.

Platforms

- TV (smart TV, PlayStation, Xbox, Chromecast, Apple TV, Blu-ray players, etc.)
- iPhone, iPad, Android phones and tablets, Windows phones and tablets
- PC (on Netflix.com)

5.2 Local players

DOONEE
www.doonee.com

A brainchild of leading local and international content provider STG Mediaplex, Doonee was launched in 2012. The movies and shows on this streaming service started with a heavily localized flavor. Today the service offers a wide variety of premium content in HD quality with Thai soundtrack or Thai subtitles.

Features

All series are imported from Major Hollywood and Asian film studios and are available to watch at anytime, but can only be watched within Thailand. Streaming speed appears to be the slowest among existing services.

Content and pricing

Doonee offers a wide selection of TV series of all genres (action, drama, comedy, fantasy, investigation, horror, sci-fi), variety programs, documentary programs, kid shows and Asian shows.

Packages are available at 159 Baht/month.

Doonee often runs great promotions, such as unlimited access to series for 9 Baht/day and buy-3-months-get-3-months free for Siam Commercial Bank clients.

Platforms

Smart TV, PC, Mac, smartphone, tablet, iPod, iPad, iPhone (iOS/Android)

HOLLYWOOD HDTV
www.hollywood-hdtv.com

Launched in March 2014, Hollywood HDTV is an SVOD service platform offering a Hollywood-weighted film selection – as the name implies. In addition, it also provides a good selection of Asian movies and TV series including Thai, Chinese, Korean, and Japanese anime.

Features

All Hollywood titles are available in original soundtrack with Thai subtitles. Some of the classic Hollywood movies have dubs.

Adaptive bit-rate streaming (300 kbps – 1900 kbps) is used.

Content and pricing

Hollywood HDTV service provides on-demand Internet streaming of movies, TV series, cartoons as well as live TV streaming. At any given time, over 1,000 titles are available and more than 100 new titles are added each month.

For 199 Baht/month, users can have unlimited access to a buffet package (mostly older films and series) of Hollywood movies, TV series, Asian movies, Asian TV series, cartoons and live TV. For 300 Bah/month, a better (newer) selection is offered.

Customers also have the option to buy individual movies starting from 89 to 299 baht depending on the title or rent a movie of their choice.

Platforms

iOS, Android and web platforms

MONOMAXXX

www.monomaxxx.com

Mono Film Co., Ltd. under the Mono Group (operator of Mono29 DTT Channel) operates MONOMaxxx, previously known as Doonung.com. The rebranding in February 2016 was aimed at competing in the fierce online movie business and fighting against copyright-infringing websites. The group hoped to reduce confusion among customers because there were many illegal online movie streaming websites using similar names as its previous name, e.g., the free online movie service doonung-d.net.

Mono expects its movie-streaming subscribers to double from one million in 2015 to two million in 2016. The company claimed to have secured 20 percent market share in the online movie industry in 2015, which was estimated to have reached 500 million baht, about US$14 million (much higher than PrimeTime's estimate). The company further estimated its share of the overall 5 billion baht-movie industry at about 10 percent.

Features

MONOMaxxx offers unlimited online movies, series, cartoons, TV shows. There are more than 10,000 hours of content that subscribers can watch anytime, anywhere.

Its business strategy is offering quality content and service for subscribers, to retain loyalty of existing customers and attract new ones in the future.

Mono is also actively pursuing systematic management of movie rights in its portfolio and encourages consumers to reject illegal streaming services.

Content and pricing

MONOMaxxx offers movies and series under an SVOD business model. It currently holds rights to more than 2,800 movies. The fee is a flat rate of 129 Baht per month.

Movie content is categorized into Thai and other Asian movies, now accounting for half of total offerings, while Western films make up the other half.

Platforms

MONOMaxx can be viewed on various devices, including computer, smartphone, tablets, etc.

PRIMETIME HDTV

www.goprimetime.tv

Prime Time, which was launched on March 1, 2015, was founded by a former executive of DTAC (second largest mobile operator) / Microsoft who had vast experience in the IT space. As of the end of 2015, Prime Time claimed to have more than one million users.

PrimeTime HDTV was the first premium streaming service to bring US movies and TV to Thailand. It claims to be unique in offering HD quality, DTS Audio and HeadphoneX technology.

Features
PrimeTime's selling points are a large movie catalogue, high quality video & audio encoding, and fast movie release window (around three months after US theatrical release).

The PrimeTime app also has many interesting features:
- The first partner to support DTS Virtual Surround Sound 5.1 in every earphone
- Chrome-cast and Apple TV supported
- 4K UHD picture quality
- Thai & English subtitles and dubs

The selection, though not super up-to-date, is pretty broad and carries plenty of hits. The impressive streaming performance consumes fewer megabytes, making it unnecessary to be Wi-Fi connected to watch a film.

Content and pricing
PrimeTime has three monthly packages and also offers movie rental service:
- Starter Pack package at 99 Baht/month
- Movie Buffet all-you-can-watch package at 199 Baht/month
- (The movies in this package are available 4 years after theatrical release)
- New Combo Package offering unlimited access to Movie Buffet and TV Series Buffet at 299 Baht/month
- Premier Movie Rental latest hit movies with a 3-month release window. These movies can be watched using an a-la-carte model as with the iTunes Store or Google Play. Priced at 79 Baht per movie title and 100 Baht per two movie titles.

Platforms
PrimeTime service is available on all devices with iOS7 and above, Android 4.2 Jellybean and above, PC & Mac, LG Smart TV model 2012 onward.

5.3 Pirate Services

There are also a large number of pirate OTT services operating in Thailand, which compete unfairly with the legitimate operators. These may be based inside or outside the Kingdom, and they target Thais as well as expat residents. Subscription costs are low, but consumers find inconstant services replete with malware viruses. Legal availability of high-quality legitimate services should help repress growth of the pirate OTT sector.

5.4 Trends in the future

Although OTT is not yet very widespread in Thailand, the steady increase in broadband access is expected to impact media consumption behavior in the long term. At present, the country's total sales of Internet-connectable equipment is quite high at 12 million smartphones a year, with an annual growth forecast of 6 percent for the next five years. In 2015, 22 million smartphone devices had been sold in the country.

Nearly half of the more than 23 million Thai households are predicted to use Internet TV by 2020 as a result of increased availability and more affordable prices of less than US$300 a set. In addition, household access to broadband Internet will continue to increase at 15 percent a year, while consumption of IT products also continues to rise. With the expansion of 4G mobile networks nationwide, more than half of users are predicted to use video on demand at least once a day – a phenomenon that happens in other parts of the world, according to telecom giant, Ericsson. This means that a greater number of Thai consumers will consume media online.

Increasing OTT services in Thailand will provide a major disruption to Internet Service Providers and 'traditional' TV operators, as well as change the TV and media ecosystems. A jump in online traffic has already been observed in recent months (even prior to the launch of Netflix in January 2016) and is expected to be felt more heavily as more and more users get hooked on the services.

Digital terrestrial TV and cable and satellite TV operators may lose market share as advertisements will be allocated to other media formats, including online media. To counter this, some traditional TV operators such as Channel 7, Workpoint, GTH and Thairath TV have collaborated with Line to launch Line TV applications for movies, series and music on mobile phones, tablets and computers to increase viewers and gain additional revenue for TV operators.

It also seems clear that, in the long run, relevant government authorities are likely to seek greater control over OTT programming than is now exercised.

6 Pay-TV Regulatory Environment

6.1 Political Forces at a Glance

Since 2014, Thailand has been under a military regime, ruled by former army chief and current prime minister, Prayuth Chan-ocha, who enjoys the full backing of a junta known as the National Council for Peace and Order (NCPO) which incidentally is also headed by Prayuth. The military coup in May 2014 led to the dissolution of the parliament elected in 2011. The junta censored the broadcasting system in Thailand, suspended the constitution, and detained members of the Thai cabinet (they were released shortly afterwards).

The NCPO appointed an interim National Legislative Assembly ('parliament') in August 2014, and a 250-member National Reform Council (NRC), which is tasked with recommending reforms and approving a new charter, was subsequently appointed.

The NCPO engaged in a substantial clampdown on the media. No sooner had the junta rounded up political dissidents (mostly aligned with the former prime minister or her party) who openly disagreed with the coup than it issued strict measures to muzzle the media - directing print media as well as TV, radio, cable and online media operators not to publish or broadcast information critical of the military's actions.

The broadcasting environment was affected. International news channels were removed from broadcast bouquets temporarily, being restored after calm had returned. A number of TV stations aligned with the Pheu Thai party and 'red shirts' (e.g., DTT operator Peace TV and satellite TV operator Voice TV) were closed temporarily; both were allowed to go on air again after removing contents fomenting social division, dissent and hatred. But in April 2015, the NBTC revoked the licence of Peace TV permanently because "Peace TV resumed providing programs that caused confusion, misleading people and creating conflicts in society." This decision was challenged in the courts, but in July 2016 NCPO issued an order removing legal constraints on NBTC, which again ordered Peace TV to cease broadcasting.

Taking its cues from the NCPO, the NBTC moved to get the freewheeling satellite TV industry under control, requiring all satellite TV operators to apply for a pay-TV license which was to be granted only to applicants who adhered strictly to the security standards set by the NCPO, in addition to NBTC's requirements.

Also acting under NCPO's orders, the NBTC took into account the junta's opinions when awarding licenses. Network operators were required to comply with the NCPO (national security) standards when applying for a license.

The exercise of the junta's power through the NBTC to shut down Peace TV was widely perceived as intervening into the independent nature of the broadcasting regulator. (When the NBTC was originally formed, its overall objective was to cut off the tentacles of state and military control over the broadcast media.) Now the nagging concern is that regardless of the existing laws guaranteeing the independence of the NBTC, the military could always override its decisions.

Even before the military takeover of the government, there was criticism of the NBTC for being vulnerable to meddling from powerful political and business groups. On the one hand, some critics slammed the NBTC for lacking transparency and expertise with respect to frequency allocation and supervision of broadcast operation management and content. Others criticized its inability to regulate the 'unruly' community radio and satellite television platforms. After the coup, when the NBTC withheld the licenses of thousands of community radios, provincial media groups reportedly applauded the decision because these local broadcasters were regarded as mouthpieces of political parties, which were blamed for the political schism in Thai society.

The "digital economy" legislation introduced in 2016 was seen as "clipping the wings" of the independent NBTC. Frequency allocation responsibility is now to be shared with the new Ministry of Digital Economy and Society and the NBTC itself was restructured to reduce the number of Commissioners. There are various new age and experience requirements for new Commissioners, but no requirement that any have relevant industry experience (a failing of the previous Commission structure as well). Critics have expressed concern that the new Commission will be dominated by ex-civil servants without industry knowledge. It remains to be seen whether the new regulatory arrangements result in a growing, albeit less boisterous, broadcasting industry, as the leadership seems to want.

6.2 Key players in Regulation

Telecommunications, audio-visual media distribution and the internet are subject to regulation by the National Broadcasting and Telecommunications Commission (NBTC). The Ministry of Information and Communications Technology (MICT) – including the National Information Technology Committee and the National Electronics and Computer Technology Centre – also plays a significant role.

Formed in October 2011, the NBTC has an essential mission to regulate the fast-evolving convergent media industry, especially Thailand's TV market. The NBTC is de-facto and sole broadcasting industry regulator, though its only 'policing' power is the revocation of broadcasting licenses. The 11-member Commission is responsible for issues such as frequency management and allocation, standard-setting, licensing and regulating broadcasters and telecommunications businesses, and protecting consumer rights. Initially, the NBTC was perceived as a positive force for establishing a more orderly and competitive framework for the TV industry; however, following the licensing of a large number of new terrestrial digital channels, NBTC's policies have given substantial advantages to DTT at the cost of established players.

6.3 Reforms in the state regulatory apparatus

After the coup in May 2014, the military junta powered by the National Council for Peace and Order (NCPO) partially repealed the 2007 constitution and enacted an interim constitution to establish the National Legislative Assembly (NLA) aimed at fulfilling national reforms including media reform. At the time of writing, the NLA is considering amendments to the NBTC Act to bring some of NBTC's functions back into the purview of the government (specifically spectrum auctions). The legislation would also resolve some unclear areas such as conflicts between the online audiovisual content regulations of the NBTC and the Ministry of Information Communication Technology (MICT). (Under current practices, for example, some internet TV-like services (mostly free) are not licensed by the NBTC, but only loosely regulated under the computer-related crime law enforced by the MICT.) Proposals in the draft regulation flowed from a process in 2015, when the two agencies defined their roles distinctively and made joint proposals to the ruling military-backed cabinet with suggested amendments of broadcasting, telecommunication, frequency, and computer-related crime laws.

6.4 NBTC Changes

In mid-April 2016, the cabinet approved the draft of the new NBTC law. Salient points of the draft law include:

- Transfer of the existing NBTC R&D fund to the upcoming Digital Economy Fund (under oversight of the National Digital Economy Committee);
- Reducing the number of NBTC board members from 11 to seven, requiring contenders for a seat to be high-ranking police or military officers, directors of a state enterprise, associate professors or private sector executives of companies with more than three billion baht annual revenue;
- Restructuring the selection committee in charge of choosing NBTC commissioners so it would be mainly made up of members of judicial bodies (which have no expertise in the telecom and broadcasting industries);
- Besides the auction method for allocating TV broadcasting spectra, 'beauty contests' will also be used.
- The NLA committee reviewing the draft bill was expected to consider the separation of satellite affairs from telecom affairs. If this is finally approved by the NLA, it could lead to the formulation of the country's first satellite law.

In June 2016, the NBTC approved the draft of the new universal service obligation (USO) fund rule which will charge television operators a progressive rate based on actual revenue per year. The draft is a major departure from the current fixed rate of two percent of an operator's annual revenue. Under the progressive scheme, operators will be charged 0.5 percent on revenue of less than five million baht, 0.75 percent on revenue of 5-50 million baht, one percent on 50-500 million baht, 1.75 percent on 500 million to one billion, and two percent for more than one billion baht annual turnover. The NBTC believes that the new rule will promote fairness and transparency as well as a level playing field amongst investors in the television industry, and especially digital TV operators whose financial performance remains weak.

New Ministry of Digital Economy and Society

The NLA approved the establishment by September 2016 of a new Ministry of Digital Economy and Society aimed at increasing the country's economic potential and social development. It will replace the MICT, and take over responsibility for the National Statistics Office, the Thai Meteorological Department, the Software Industry Promotion Agency, the Electronics Transactions Development Agency, Thailand Post, TOT Plc and CAT Telecom. The National Disaster Warning Center, which is under the supervision of MICT, will be transferred to the Interior Ministry. The new ministry will set up two ministerial agencies, namely the National Digital Economy Committee and the Digital Economy Promotion

Agency, to take responsibility for development of the digital economy. The incumbent Prime Minister will chair the National Digital Economy Committee.

6.5 Review of Initiatives by the NBTC

The NBTC has divided itself into two sub-commissions – one to deal with telecom matters and one to deal with broadcasting. Regulation of the broadcasting industry is normally handled by the sub-commission, which has five members. The incumbent chairman and four commissioners are due to be replaced in October 2017 after a one-term tenure of six years. However, this tenure could be abruptly changed by the new legislation making its way through the National Legislative Assembly (NLA).

Col. Natee Sukonrat, Ph.D. Vice-Chairman of the NBTC Chairman, Broadcasting Committee			
Police Col. Taweesak Ngamsanga	Asst. Professor Thawatchai Jittrapanun	Lt. Gen. Peerapong Manakit	Ms. Supinya Klang-narong

Migration from analogue to digital TV broadcasting

In line with the NBTC's Five-Year Digital Master Plan (2012-2016), the Broadcasting Commission made the country's migration from analogue to digital TV broadcasting its top priority.

Background

Under the Master Plan, the NBTC would make 48 new digital terrestrial television (DTT) channels available for 'qualified' broadcasters. The plan divided available radio spectra into national digital terrestrial broadcasting services for community-based purposes, public services and commercial uses.

Under the plan, the NBTC would offer 12 standard-definition (SD) broadcasting channels for community-based service broadcasters.

Another 12 SD channels would be reserved for public service broadcasters. In early 2013, the NBTC announced it would grant four of the 12 digital TV licenses to existing public TV service providers without any bidding. Channel 5 and NBT Channel (Channel 11) will be given one license each while Thai PBS will be allotted two channels – one for the current programming and another one for a children's channel, leaving eight channels to be potentially offered for auction someday.

Commercial broadcasters would be granted 24 channels, comprising 17 SD and seven HD channels, broken down as follows:

1. three SD channels for kids and family;
2. seven SD news and information TV channels; and,
3. seven SD channels and seven HD channels for general programming.

Commercial broadcasters who wanted to operate a digital TV station required two licenses – one for the spectrum and another for the broadcasting service.

The license for operating a digital commercial channel is valid for 15 years; while the license for a public service channel has a four-year term.

2013

During the 4th quarter of 2013, the Broadcasting Commission auctioned and awarded 24 digital terrestrial TV (DTT) licenses for commercial broadcasting. The auction was a huge success in financial terms, as bidders paid shockingly high premiums to get into this government-supported end of the broadcasting industry. The auction raised a total of 50,862 million baht (USD1.589 billion) in favor of the 'government' and 'research fund.' The total winning bid was 35,672 million baht above the reserve price.

At the same time, the Commission also allowed three public service TV stations – Channel 5 (Royal Thai Army channel), NBT (Public Relations Department channel) and Thai PBS (public service channel) to use the DTT platform. These three public service TV channels are expected later to apply for and be granted a license by the NBTC without having to enter a bidding process.

The NBTC also issued licenses for multiplex infrastructure and networks to provide the backbone for digital TV transmission.

2014

Trial broadcasting on OTT platforms started in April 2014. To ensure that the public had access to news and programs under the old system, the NBTC required all DTT license holders to broadcast their content on both analogue and digital platforms during the transitional period. Permits (licenses) for a six-month simulcast period were issued for operators of commercial DTT channels, which can be renewed every six months. Licenses for simulcast broadcast obtained by public service providers are valid for the entire duration of the migration from analogue to digital.

According to the NBTC timeline, all channels are expected to broadcast through the digital system by 2017.

During the digital broadcast testing, the TV stations each pay two percent of their total income to the NBTC for the license fee, and another two percent for a research and development fund. (In 2016 NBTC adopted a sliding-scale fee plan, which is to be implemented by 2017.)

To promote a switch to watching digital TV among consumers, the NBTC embarked on a plan to distribute subsidy coupons to some 22 million households nationwide. The coupon worth 690 Baht could be used to buy either a digital TV set-top box or a TV set with a digital TV tuner.

As of April 2016, some 14 million coupons have been distributed in most geographical areas of the country, while only 8.7 million coupons have been redeemed by consumers. In addition, the NBTC reported that over 5.7 million iDTV (integrated digital TV) sets were sold between August 2013 and May 2016 – showing that more and more consumers are now technology-prepared to watch DTT.

The final phase of coupons distribution will commence once the deployment of DTT networks is completed by 2017.

2015

In 2015, Thai Parliamentary TV (already broadcasting on Free-to-Air satellite TV) applied for a license to become the fourth public service broadcaster on DTT platform.

Under the 'must carry rule,' all TV broadcasting platforms including terrestrial, cable and satellite must carry 36 DTT channels: 24 commercial and 12 public service channels.

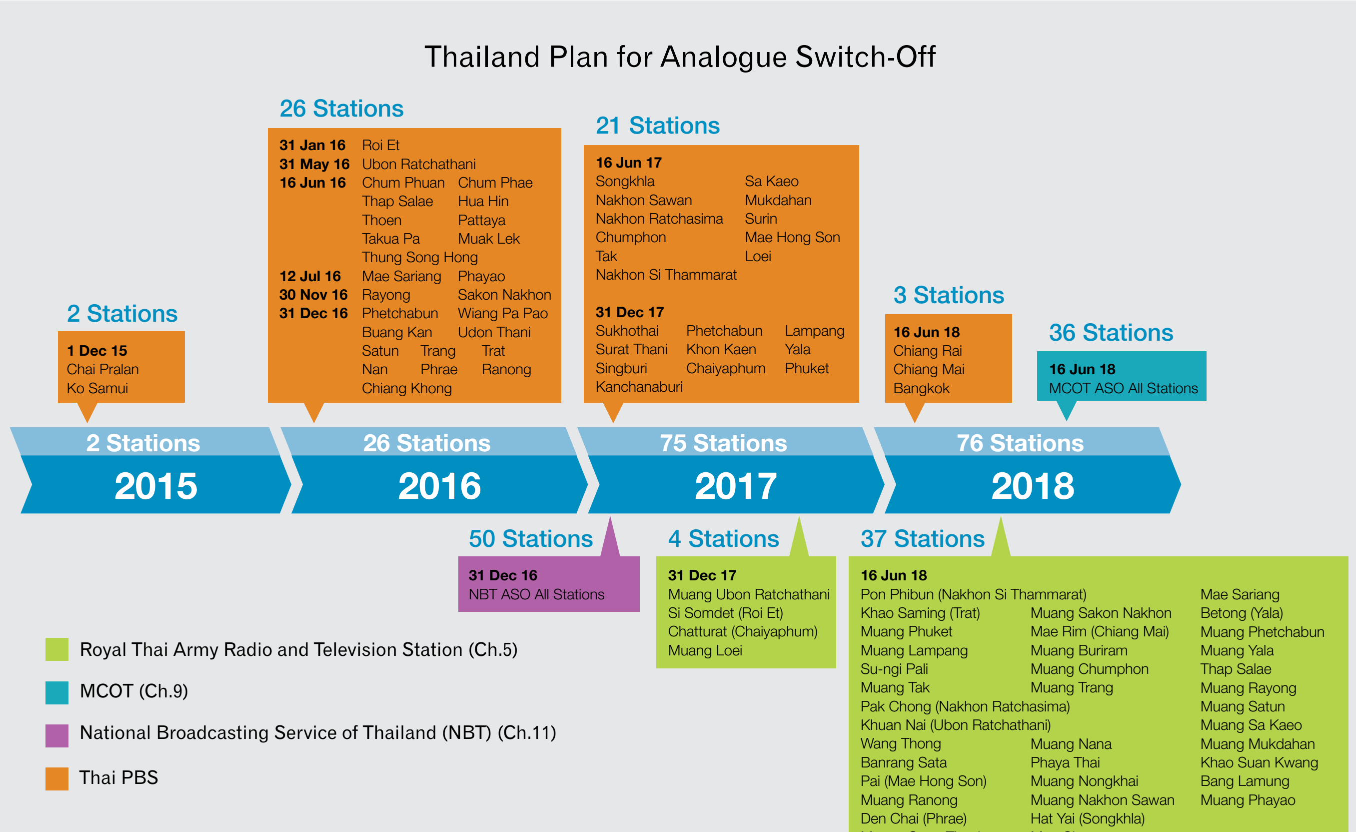
The NBTC amended the must carry rule in December 2015 to require a single standard of channel numbering across all platforms requiring all TV platform providers (pay-TV and free-to-air) to reserve Channels 1 to 36 specifically for DTT channels as designated by the regulator. (See Section 2 of this report for the lineup of DTT channels). This was a blow to pay-TV operators who regarded channel numbering as an asset whose use could be negotiated with channel suppliers for compensation; the regulatory fiat deprived them of a valuable asset.

2016

At present, 22 of the 24 commercial DTT, and four of twelve public TV channels are operating; two channels operated by cash-strapped Thai TV went off-the air in November 2015 because the company had incurred massive financial losses from operating the two stations. In February of this year, the NBTC revoked Thai TV's licenses to operate the two channels, and a legal dispute has ensued over whether the operator should be forced to pay all the fees it had bid in the 2013 auction. Press reports noted that the outcome of the court cases could lead other channel operators to give up licenses, if they could be exempted from the high bid payments.

The NBTC did not make an announcement whether it would call for another round of auction for the two revoked commercial DTT licenses, but this seems unlikely in the near future at least.

The NBTC has set a tentative schedule for the analogue switch off (ASO) around 2017 and 2018.



Source: NBTC

6.6 Other Regulatory Issues

Regulation of new pay-TV services

With DTT rollout well under way, the NBTC has begun to pay closer attention to new TV services such as IPTV and mobile TV. In addition to protecting public interests, the NBTC was also mandated to support the development of innovative TV services which improve industry growth and expand consumers' choices.

The NBTC classified broadcasting licenses into two types: 1) broadcasting services using (licensed) frequency waves 2) broadcasting services not using frequency waves (e.g., cable TV, satellite TV and IPTV). New operators of network-based IPTV services must apply for a second license as a pay-TV broadcaster, in addition to having a network provider license. Other IPTV service operators such as TOT and Triple T Broadband have already been granted such licenses by the NBTC.

According to the watchdog's DTT roll-out plan, the licensing process for mobile broadcasting will be rescheduled to begin after 95 percent completion of DTT coverage in 2017. Mobile TV's broadcasting facility providers and network providers are likely to be similar to DTT's if their infrastructure and hardware employ the same DVB-T2 standards. However, if mobile TV broadcasting adopts the CMMB (China Multimedia Mobile Broadcasting) standard, its network operators must invest in new facilities. It is expected that the NBTC would play a vital role in the final decision on a mobile TV broadcasting standard.

Draft of the Second Broadcasting Master Plan

With the first broadcasting master plan (2012-2016) coming to an end in April 2017, the incumbent broadcasting committee formed a working group tasked with drafting the second master plan for national radio and TV broadcasting services as early as June 2016. The working panel is headed by NBTC Commissioner Peerapong Manakit, who is a member of the broadcasting committee and oversees the subcommittee on content and TV programming.

However, some broadcasting operators have pointed out that a new broadcasting master plan should be deferred until the establishment in September 2016 of the digital economy ministry and two ministerial agencies which will be responsible for the development of the digital economy. They noted that as a corollary to this new development, the NBTC is expected to be transformed and restructured to conform to the overall digital economy policy.

Role of NBTC and other agencies in content regulation

In recent years, the NBTC has been particularly active in exercising its authority with respect to content and competition issues. For 2016, the NBTC singled out strict supervision of content on television and radio broadcasting as one of its priority tasks. The Commission made clear that operators who broadcast objectionable content (e.g. content that is harmful to society, defames the higher institution (monarchy), or is against the laws and regulations of the Food and Drug Administration) will be prosecuted and penalized. Broadcasting licenses can be suspended or revoked depending on the gravity of offence.

During the past few years, the NBTC – in multiple cases – fined operators for the broadcast of what was regarded as inappropriate content. More than 50 satellite TV channels have either been put on a watch list (given warnings) or their licenses revoked by the NBTC after being found in breach of the food and drug law (mostly related to false or exaggerated advertising that was not approved by the FDA). But internet advertising is a lot more difficult to control, and the illegal activities are therefore moving online. Particularly with the unapproved food/drug ads, if the authorities close down their websites, they can open another page the following day. In addition, some TV shows circumvent the rules by inviting a representative of the food products to give an interview, during which the product is promoted, as this does not need any approval. Thus, this issue remains a "hot" one.

Conversion of free-to-air satellite operators to pay-TV

Taking a cue from the military regime to more closely control the TV broadcasting industry, the NBTC enacted a measure in June 2014 to require satellite operators who retransmitted FTA satellite channels to apply for a pay-TV license. (Such platforms previously operated using satellite frequency licenses, and had no broadcast license.)

This measure fitted well with the NBTC's long-term goal to have only free digital content and pay-TV content in Thailand. Because operators of such services are licensed, they are perceived as easier to control than the free-wheeling FTA satellite channels, which were prone to offering inappropriate (e.g. unapproved drug ads) and politically provocative programs.

Must carry rule & amendments

Under the 'must carry rule,' all TV broadcasting platforms including terrestrial, cable and satellite must reserve and carry 36 DTT channels: 24 commercial and 12 public service channels.

The NBTC amended the must carry rule in December 2015 to implement a single standard of channel numbering across all platforms requiring all TV platform providers (pay-TV and free-to-air) to reserve Channels 1 to 36 specifically for DTT channels as designated by the regulator.

Constraints on contracting for exclusive carriage of particular content

Despite past discussions of exclusivity, the regulator has not made any move to draft a regulation that restricts pay-TV operators from contracting for exclusive broadcast of content. A limited and focused "must-have" list of sporting events which must be broadcast on FTA TV remains in effect.

OTT regulation in Thailand

OTT TV in Thailand is still at a nascent stage. However, there is high growth potential in subscription VOD and "free" ad-based video services. The issue of competition between licensed services and new OTT TV is being debated worldwide but in Thailand the relevant authorities (ICT Ministry and the NBTC) have so far neither taken an active stance nor assumed a leading role to tackle this particular subject.

License Fees for Pay-TV Operators

The NBTC approved in June 2016, the draft of the new universal service obligation (USO) fund rule which will charge television operators a progressive rate based on actual revenue per year.

The draft is a major departure from the previously-mooted fixed rate of two percent of operator's annual revenue. (This is in addition to a license fee of 2% of revenue, for a total of 4%.)

Under the progressive scheme, operators will be charged 0.5 percent on revenue of less than five million baht, 0.75 percent on revenue of 5-50 million baht, one percent on 50-500 million baht, 1.75 percent on 500 million to one billion, and two percent for more than one billion baht annual turnover. The NBTC believes that the new rule will promote fairness and transparency, as well as a level playing field amongst investors in the television industry, and especially digital TV operators whose financial performance remains weak.

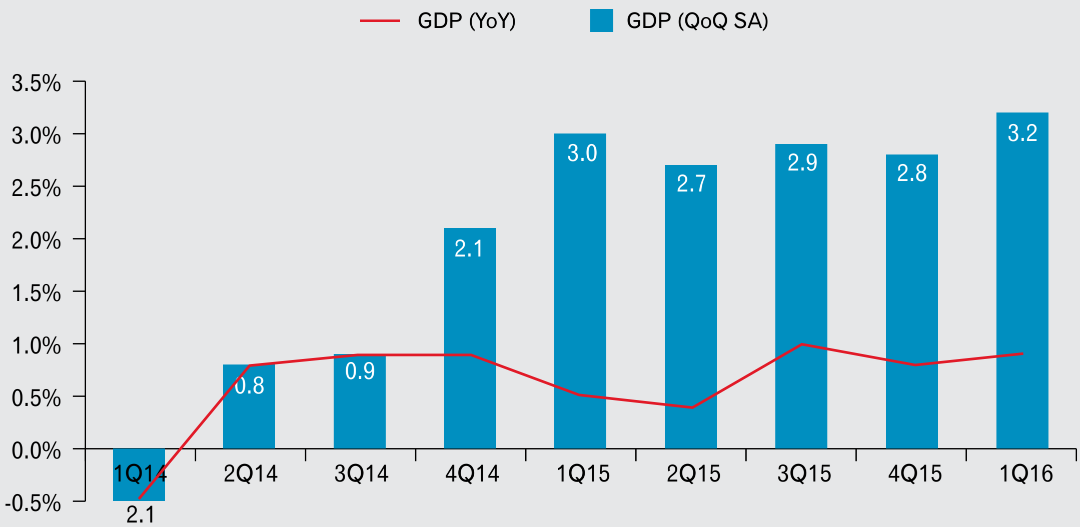
Appendix 1

Background: Thailand Market Environment

Economy at a glance

The Thai economy in the first quarter of 2016 expanded by 3.2 percent, higher than 2.8 percent in previous quarter, and the highest rate since the first quarter of 2013. The **expenditure side** was supported by high growth in government spending and investment, and export of services, as well as the growth in private consumption and private investment. The **production side** grew in most sectors, especially hotel and restaurants, and construction which posted a big increase. Transportation, wholesale and retail trade grew reasonably as well. Meanwhile, agriculture and manufacturing declined. After seasonal adjustment, the GDP in the first quarter expanded by 0.9 percent (QoQ_SA) from the fourth quarter of 2015.

Growth rate of Gross Domestic Product



GDP (YoY) = GDP year-on-year based on CVM (Chain Volume Measurements)
GDP QoQ SA = GDP quarter-on-quarter, seasonally-adjusted
Source: Office of the National Economic and Social Development Board (NESDB)

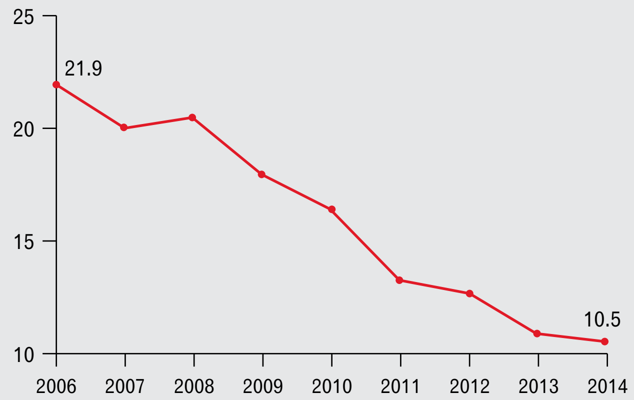
Thailand's GDP in 2016 is projected to grow in the range of 3.0 – 3.5 percent, improving from 2.8 percent in 2015. The supporting factors for growth include (i) acceleration in government spending and investment; (ii) the stimulus measures announced by the government for September 2015 – March 2016; (iii) the growing number of inbound tourists; (iv) low oil prices; and (v) the expected recovery of the agricultural sector in second half of 2016. It is predicted that export value will fall by 1.7 percent; while private consumption and total investment will increase by 2.3 and 4.2 percent, respectively. Headline inflation is expected to be in between 0.1 – 0.6 percent; and the current account balance to register a surplus of 9.4 percent of GDP.

Economic Projections for 2016

% YOY	2014	2015			2016	
	YEAR	Q3	Q4	YEAR	Q1	YEAR (F)
GDP (CVM)	0.8	2.9	2.8	2.8	3.2	3.0-3.5
Total Investment	-2.4	-2.6	9.4	4.7	4.7	4.2
Private	-1.0	-10.1	1.9	-2.0	2.1	2.1
Public	-7.3	21.9	41.2	29.8	12.4	11.7
Private Consumption	0.6	1.8	2.6	2.1	2.3	2.3
Public Consumption	2.1	2.3	4.8	2.2	8.0	3.9
Export of Goods[1]	-0.3	-4.7	-7.9	-5.6	-1.4	-1.7
Import of Goods[1]	-8.5	-14.5	-13.2	-11.3	-14.4	-4.6
Current Account to GDP (%)	3.8	7.3	10.4	8.0	16.6	9.4
Inflation	1.9	-1.1	-0.9	-0.9	-0.5	0.1-0.6

[1]Based on Bank of Thailand's data
Source: NESDB

Fewer poor, more affluent Thais
Poverty headcount ratio at national poverty line
(% of population)



Source: World Bank

The national poverty rate is the percentage of the population living below the national poverty line. During the nine-year period of 2006 to 2014, the proportion of Thai poor declined by more than half from 21.9 percent in 2006 to 10.5 percent in 2014 – proof of general improvement in the economic status of most Thai people.

A key factor: growth of the 4G mobile and smartphone market

At the end of December 2015, there were 83 million mobile subscribers in Thailand, for a penetration rate of 124 percent of the 67 million-person population. In comparison, smartphone penetration stood at 60 percent, with about 40 million units in operation. Thailand's mobile broadband subscriptions already placed third in mobile broadband penetration in the region (after Australia and Singapore), and (according to Ericsson) by 2021, the mobile broadband penetration rate will reach around 150 percent in Thailand, placing Thailand near the top of countries in the region.

Ericsson further predicted that mobile data traffic in Thailand will grow 14 times in six years, with average data usage of nine gigabytes per month per user in 2021, up from 1.2 Gb in 2015. The reason for this is the widespread usage of streaming media, which would account for 70 percent of mobile data traffic in the country by 2021, up from 50 percent in 2015 – a figure which is already high, considering the only nascent adoption of OTT services.

The upsurge of smartphone/4G adoption runs parallel to developments in broadband internet. Ericsson has found that when 4G service is available, more than 50 percent of users will use video on demand at least once a day, which means that more and more Thais will consume media online.

The rapid adoption of smart phones and tablets as second screens has transformed traditional television viewing. In recent years, connected TV has allowed users in Thailand to access Internet content such as web videos. With the availability of new devices, the consumption of audiovisual content across platforms has grown at a moderate pace, which has shaped conventional TV businesses and started turning consumers' viewing behaviors towards time-shifted and OTT services.

Regardless of platforms, TV is ultimately content-driven. Traditional TV channels, on-demand videos, and a huge amount of "user-generated" content give consumers a variety of viewing options and personalized experiences. Today TV operators also tap social media to create a secondary channel which facilitates social expression and co-viewing experiences. Industry surveys reveal that many younger audiences in Thailand watch a number of local TV channels via YouTube, for example.

Low cost fixed broadband network

Under the Thai government's digital economy framework, a national broadband network is to be rolled out between 2016-2017, with construction jointly handled by the Ministry of Information and Telecommunication Ministry (MICT) and the NBTC. Under the plan, all 70,000 villages nationwide will be able to access low cost broadband internet service at minimum speeds of 20 Mbps. During the first phase, the network will extend high speed internet access to 30,000 villages that are currently unserved.

Some 50% of Thai households are expected to use internet TV by 2020 as a result of increased availability and access to broadband internet.

SELECTED INDICATORS IN THAILAND, 2015
83 m mobile users, 123.5 percent penetration
38 m Internet users, 57 percent penetration
74 m 3G mobile users
4.3 m 4G mobile users
34 m Facebook users
32 m Facebook users on mobile phones
33 m Line users
7.1 Instagram users

Sources: NBTC, Yozzo, Facebook Business

Appendix 2

Contact Information of Key Players in Thailand's TV Market

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About CASBAA

CASBAA is the Asia Pacific region's largest non-profit media association, serving the multi-channel audio-visual content creation and distribution industry. Established in 1991, CASBAA has grown with the industry to include digital multichannel television, content, platforms, advertising, and video delivery. Encompassing some 500 million connections within a footprint across the region, CASBAA works to be the authoritative voice for multichannel TV; promoting even-handed and market-friendly regulation, IP protection and revenue growth for subscription and advertising, while promoting global best practices.

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