

Malaysia Media

NEUTRAL

[Unchanged]

TV digitization in full swing

Update on TV digitization - Maintain BUY on MPR

We organized a site visit to MYTV Broadcasting's (MYTV) Digital Multimedia Broadcasting Hub. With 85% of the population currently covered by the digital terrestrial TV broadcasting (DTTB) platform, we opine that the TV digitization process is in full swing. More importantly, the rate of new FTA TV channels launched will now be gradual and the impasse over the annual rental fees that MYTV intends to charge FTA TV channels may be resolved soon. Maintain BUY on MPR, HOLD on ASTRO.

Analysts

Yin Shao Yang
(603) 2297 8916
samuel.y@maybank-ib.com

Jade Tam
(603) 2297 8687
jade.tam@maybank-ib.com

TV digitization has begun in earnest

85% of the population has been covered by the DTTB platform since Jan 2016. MYTV also currently has the capacity to launch 30 FTA TV channels. 98% of the population will be covered by the DTTB platform by 2017 but to be fair, it requires a lot more infrastructure and effort than covering 85% of the population. Analogue switch off (ASO) date has been set for Jun 2018 at latest and it will still be within the target ASO date for all ASEAN countries to migrate to the DTTB platform by 2018. All in all, we opine that the TV digitization process is in full swing.

Fears over competition and rental fees overblown?

MYTV initially targeted to upgrade its capacity to launch 80 FTA TV channels by 2019. Currently, MYTV will still upgrade its capacity to launch 80 FTA TV channels but gradually over a longer period. Various parties have expressed interest in launching 45 FTA TV channels (and thus leasing the 45 FTA TV channel capacity from MYTV) but we understand that only a fraction may eventually launch due to licensing requirements. The impasse over the annual rental fees that MYTV initially targeted to charge FTA TV channels (SD: MYR12m, HD: MYR25m) may also be resolved soon with revised rental fees based on bandwidth.

Status quo for MPR and ASTRO in the short-term

We are relieved that the TV landscape will not be inundated with FTA TV channels so soon. Although we understand that RTM (Not Listed) will launch six new FTA TV channels, we do not believe that their content will be sufficiently compelling to wrest significant TV adex share from MPR or compel ASTRO subscribers to discontinue their subscriptions. Although the revised rental fees based on bandwidth have not been announced yet, we gather that they will not exert downward pressure on MPR's margins. Maintain BUY call on MPR and HOLD call on ASTRO.

Stock	Bloomberg code	Mkt cap (USD'm)	Rating	Price (LC)	TP (LC)	Upside (%)	P/E (x)		P/B (x)		Div yld (%)	
							15E	16E	15E	16E	15E	16E
Astro Malaysia	ASTRO MK	3,420	Hold	2.74	2.80	2	27.4	22.5	20.5	23.7	4.0	4.4
Star Media Group	STAR MK	422	Hold	2.38	2.40	1	15.4	13.9	1.5	1.5	6.3	6.7
Media Prima	MPR MK	346	Buy	1.30	1.53	17	10.7	10.1	0.9	0.9	6.2	6.2
Media Chinese In	MCIL MK	267	Buy	0.66	0.73	11	7.7	8.5	1.4	1.3	5.2	5.9

Update on TV digitization

Visited Digital Multimedia Broadcasting Hub

We organized a site visit to MYTV Broadcasting's (MYTV) Digital Multimedia Broadcasting Hub (DMBH) at Cyberjaya on 4 Feb 2016 to get an update on TV digitization in Malaysia. We were hosted by Mohamed Redzwan Yahya - COO, Haniza Ros Nasaruddin - CCO and Hamdan Mohamad - VP, Communications. To refresh your memory on TV digitization in Malaysia, please refer to our 27 Sep 2015 report ([link](#)).

Fig 1: Digital Multimedia Broadcasting Hub

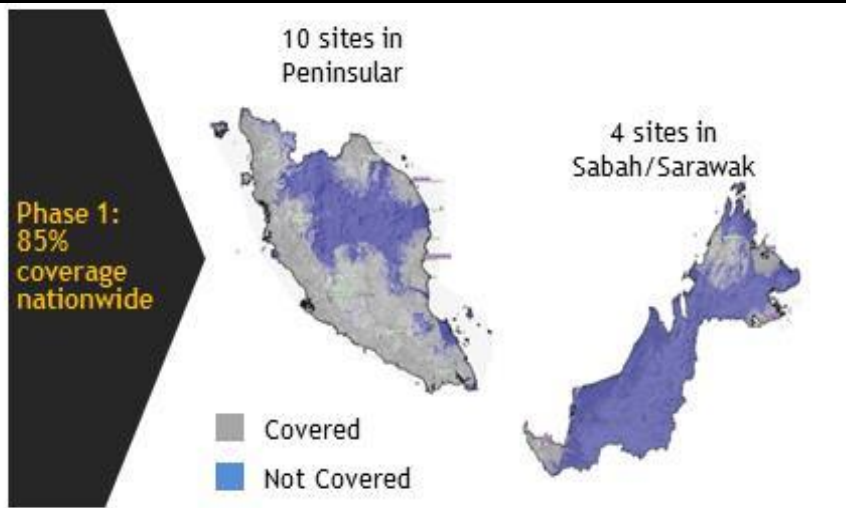


Source: MYTV

85% of population currently covered by DTTB

The digital terrestrial TV broadcasting (DTTB) rollout commenced in Apr 2015. Phase 1 targets to cover 85% of the population, focusing on the East Coast of Peninsular Malaysia. Testing commenced in Apr 2015 with 20,000 set-top-boxes (STB) and the 85% coverage was achieved in Jan 2016. The 85% coverage involved only 14 transmitters and all of them were already installed and leased from Telekom Malaysia (T MK, HOLD, TP: MYR7.00).

Fig 2: DTTB roll-out phase 1 (85% coverage)



Source: MCMC

Capacity to launch 30 FTA TV channels achieved

The DMBH is also housing three multiplexers (MUX) which enable MYTV to launch 30 FTA TV channels (assuming SD:HD FTA TV channel mix of 70%:30%). Simulcast (simultaneous broadcasting of analogue and digital TV signals) commenced in Apr 2015. For now, only Al-Hijrah is being broadcast in HD. Displayed at the top of every FTA channel were the words 'Siaran ujian DTT' in Malay which means 'DTT test broadcast' in English.

Fig 3: DTT test broadcast of FTA TV channels in Malaysia



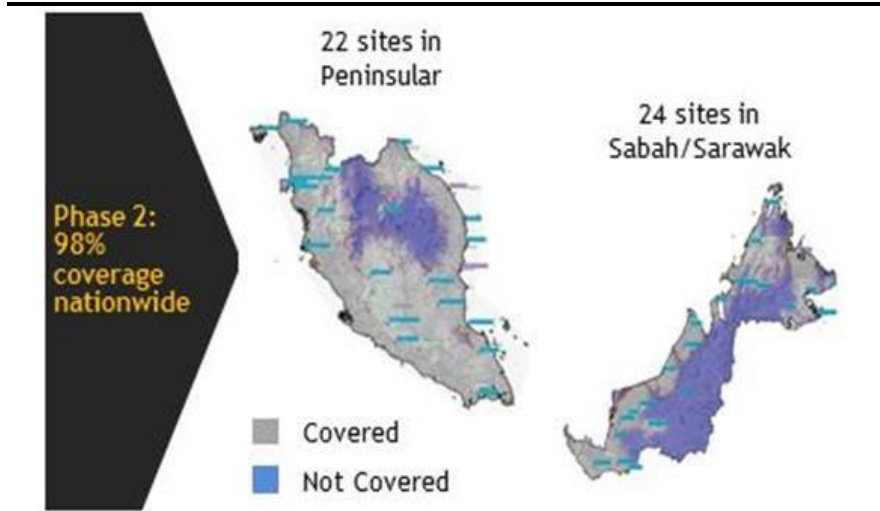
Source: Maybank Kim Eng

Analogue switch off date by Jun 2018

A lot more effort required for 98% coverage

Phase 2 targets to cover 98% of the population including the remainder of Peninsular and East Malaysia. To be fair, MYTV has to install 46 transmitters and 40 gap fillers to increase coverage of the population by only 13ppts to 98%. Recall that the 85% coverage involved only 14 transmitters. Thus, we gather that the 98% coverage will only be achieved in 2017.

Fig 4: DTTB roll-out phase 2 (98% coverage)



Source: MCMC

ASO date by Jun 2018 at latest

Given that 98% coverage will likely be achieved in 2017, we understand that the analogue switch off (ASO) date has been scheduled for Jun 2018. By then, MYTV would have supplied 2m households with STBs. MYTV will commence supplying the 2m STBs in Aug 2016. The threshold for ASO is 90% of the 7m Malaysian TV households having STBs, integrated digital tuner TVs or Pay TV. We understand that the ASO date may be earlier if the 90% threshold is achieved earlier.

Fig 5: Presentation of test STBs in Kota Kinabalu, Sabah on 9 Aug 2015



Source: MYTV

New FTA TV channels to be launched gradually

Initially targeted capacity of 80 FTA TV channels by 2019

There are seven existing FTA TV channels in Malaysia. MYTV currently has the capacity to launch 30 FTA TV channels via three MUXs and initially targeted to upgrade its capacity to launch 60 FTA TV channels by end-2017 via six MUXs. By end-2019, it initially targeted to upgrade its capacity to launch a total of 80 FTA TV channels via a total of eight MUXs. 70% were initially targeted to be in SD and 30% were initially targeted to be in HD.

Fig 6: Existing FTA TV channels in Malaysia

Channel	Operator	Genre/Content
TV3	MPR	Urban Malay
8TV	MPR	Chinese/English
ntv7	MPR	Chinese/English
TV9	MPR	Rural Malay
TV1	RTM	Rural Malay
TV2	RTM	Various
Al-Hijrah	AL-HIJRAH	Muslim

Source: MPR, RTM, Al-Hijrah Media Corporation

New FTA TV channels to be launched over a longer period

MYTV still intends to install eight MUXs in the long term but we understand that the additional three MUXs that will upgrade its capacity to launch 60 FTA TV channels will be installed in 2019 (originally by end-2017) and the two MUXs that will upgrade its capacity to launch 80 FTA TV channels will be installed from 2020 onwards (originally by end-2019). We opine that this is a wise move as the still weak adex sentiment is unlikely to support 80 FTA TV channels by 2019.

Fig 7: Revised MYTV MUX deployment plan

Number of MUXs	Period	Capacity
3	2015	30 FTA TV channels
3	2019	30 FTA TV channels
2	>2020	20 FTA TV channels
8		80 FTA TV channels

Source: MYTV

Only a fraction may eventually launch though

MYTV represented that various parties have expressed interest in launching a total of 45 FTA TV channels and thus, leasing 45 FTA TV channel capacity from MYTV. That said, only a fraction of these 45 may eventually launch as they still have to apply for a Content Applications Service Provider (CASP) license from the Malaysian Communications and Multimedia Commission (MCMC). To date, we understand that only six new FTA TV channels have been approved and they are all by an incumbent, RTM.

Fig 8: Six new RTM FTA TV channels

Channel	Operator	Genre/Content
TVi	RTM	East Malaysian
Parlimen	RTM	Parliament
Salam	RTM	Muslim
BEST1	RTM	News
krayon	RTM	Cartoon
Iris	RTM	Women

Source: RTM

End to FTA TV channel rental fees impasse?

Initial FTA TV channel rental fees were expensive

MYTV initially planned to lease out FTA TV channels on an annual basis or on an ad hoc basis. The initial annual rental fee for a 24-hour FTA TV channel was MYR12m for SD and MYR25m for HD. We understand that effectively all the incumbents (RTM and MPR) and potential new entrants (STAR) balked at the initial annual rental fees as they effectively set the break-even point of a FTA TV channel at MYR50m-MYR60m.

Fig 9: Initial annual rental fees

Medium	Resolution	Annual rental fee
FTA TV	SD	MYR12.0m
FTA TV	HD	MYR25.0m
Radio	Audio	MYR0.5m
Radio	Audio & video	MYR3.0m

Source: MYTV

More dynamic pricing for FTA TV channel rental fees?

We understand that MYTV will employ a more dynamic approach to pricing rental fees to one based on bandwidth (SD: 2.65Mbps, HD: 7.85Mbps). Going forward, we understand that FTA TV channels can even broadcast certain content in SD (e.g. news) and certain content in HD (e.g. sports) rather than broadcast all content in either SD or HD. This will allow the FTA TV channels to manage their rental fees better.

New FTA TV channel rental fees to be 'palatable'

MYTV did not reveal to us what the new rental fees based on bandwidth are yet. Our sources at the incumbents reveal that they too do not know what the new rental fees are yet. That said, MYTV represented that an announcement on the new rental fees will be made soon and that the new rental fees will be 'palatable' to both incumbents and potential new entrants.

Potential impact on MPR and ASTRO

Competition from new FTA TV channels to be gradual

We are relieved that MYTV's revised plan to upgrade its capacity to launch 80 FTA TV channels will be phased over a longer period versus three initially. Again, we opine that this is a wise move as the still weak adex sentiment is unlikely to support 80 FTA TV channels by 2019. While various parties have expressed interest in 45 FTA TV channels, only a fraction may eventually launch as they still have to apply for CASP licenses.

Unsure if new RTM FTA TV channels will pose a threat

Despite owning and operating 29% of the FTA TV channels in Malaysia, RTM commands only 14% net TV adex share. We gather that this is due to its less than compelling content. Therefore, we are doubtful that the six new RTM FTA TV channels will broadcast better content. While one may reason that they will wrest TV adex share from the MPR FTA TV channels, we opine that they may also cannibalize TV adex share from TV1 and TV2.

Fig 10: Net TV adex share by FTA TV channel

Channel	2007	2008	2009	2010	2011	2012	2013	2014	9M15
TV3	55.2%	56.6%	54.5%	53.5%	54.3%	55.1%	54.7%	50.2%	52.8%
8TV	13.4%	12.2%	11.3%	11.7%	12.5%	10.9%	11.2%	10.7%	11.8%
ntv7	13.3%	14.1%	11.1%	11.5%	11.7%	9.8%	9.9%	8.6%	8.6%
TV9	6.3%	6.6%	8.0%	7.8%	7.0%	8.0%	9.0%	9.6%	11.8%
TV1	3.3%	3.2%	3.1%	3.2%	3.4%	4.2%	3.4%	4.4%	3.7%
TV2	8.5%	7.2%	11.9%	12.3%	11.1%	12.0%	9.4%	10.0%	9.5%
Al-Hijrah	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.4%	6.5%	1.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

* Yellow denotes MPR group, grey denotes RTM group

Source: Nielsen Media Research

Although the six new RTM channels will bring the number of FTA TV channels from seven to 13, we are doubtful that the content offering on the RTM FTA TV channels will be compelling enough for ASTRO subscribers to discontinue their subscriptions. Already ASTRO offers the subscription-free NJOI product, albeit a one-time payment of MYR428 applies, which grants viewers free access to 28 TV channels and 20 radio channels.

Pressure on MPR margins to be relieved?

In our 27 Sep 2015 report, we examined the impact that the initial annual rental fee of MYR12m for SD channels, MYR25m for HD channels and MYR0.5m for radio channels may have on MPR's earnings. It appeared that MPR's EBITDA may be diluted by MYR7m p.a. if all its FTA TV channels will continue to be broadcast in SD but by a whopping MYR59m p.a. if all its FTA TV channels will be broadcast in HD going forward.

Fig 11: Potential dilution to MPR EBITDA (MYRm) assuming SD broadcast

	Annual rental fee	Channels	Total
	A	B	C=AXB
FTA TV channel	12.0	4	48.0
Radio	0.5	3	1.5
Total (C)			49.5
2014 transmission fees (D)			42.2
Additional expense (E=C-D)			7.3

Source: Maybank Kim Eng

Fig 12: Potential dilution to MPR EBITDA (MYRm) assuming HD broadcast

	Annual rental fee	Channels	Total
	A	B	C=AXB
FTA TV channel	25.0	4.0	100.0
Radio	0.5	3.0	1.5
Total (C)			101.5
2014 transmission fees (D)			42.2
Additional expense (E=C-D)			59.3

Source: Maybank Kim Eng

With MYTV representing that the new rental fees based on bandwidth will be 'palatable' to both incumbents and potential new entrants, we gather that the pressure on MPR's EBITDA and margins may be relieved. That said, we are unable to quantify the impact the new rental fees based on bandwidth will have on MPR's EBITDA and margins until they are finally announced by MYTV. Our earnings estimates for MPR have imputed annual rental fees of MYR42m-MYR45m.

Maintain BUY call on MPR and HOLD on ASTRO

With competition from new FTA TV channels to be gradual, less than compelling content from the six new RTM FTA TV channels, and potential relief of pressure on MPR's EBITDA margins, we maintain our estimates, BUY call and MYR1.53 TP on 1.0x end-FY16 P/BV for MPR. Our MPR earnings estimates assume that it will continue to command 85% share of net TV adex and incur annual rental fees of MYR42m-MYR45m.

Like MPR, with competition from new FTA TV channels to be gradual and less than compelling content from the RTM FTA TV channels, we maintain our earnings estimates, HOLD call and MYR2.80 DCF-based TP (9.3% WACC, 2.5% long-term growth) for ASTRO. Our ASTRO estimates assume FY17/FY18/FY19 net additions of 0k/150k/150k and FY17/FY18/FY19 ARPU of MYR100/MYR101/MYR102. We gather that the TV digitization process will make the TV landscape more competitive only in the long term.

Fig 13: Glossary of technical terms

Adex	Advertising expenditure; sometimes used to refer to 'advertising revenue' in a company
ASO	Analogue switch off; analogue terrestrial TV broadcasting is ceased and replaced with digital terrestrial TV broadcasting
FTA	Free-To-Air
HD	High-Definition; commonly refers to TV or video at a resolution of either 720p, 1080i or 1080p
HD TV	Refers to either a TV capable of receiving and properly displaying an HD resolution TV signal or HD TV services in general
Multiplexer	Device that combines several analogue or digital TV signals into a single frequency. Accommodates 13-15 SD or 4-6 HD TV channels.
SD	Standard definition
Terrestrial	The oldest and most common technology for TV broadcasting. Transmits analogue signals utilising the ultrahigh frequency band.
TV Households	Households with at least one TV set. In the Malaysian context, we only consider Malaysian citizens and exclude non-citizens.

Source: Various

Research Offices

REGIONAL

Sadiq CURRIMBHOY

Regional Head, Research & Economics
(65) 6231 5836 sadiq@maybank-ke.com.sg

WONG Chew Hann, CA

Regional Head of Institutional Research
(603) 2297 8686 wchewh@maybank-ib.com

ONG Seng Yeow

Regional Head of Retail Research
(65) 6231 5839
ongsengyeow@maybank-ke.com.sg

TAN Sin Mui

Director of Research
(65) 6231 5849 sinmui@kimeng.com.hk

ECONOMICS

Suhaimi ILIAS

Chief Economist
Singapore | Malaysia
(603) 2297 8682 suhaimi_iliast@maybank-ib.com

Luz LORENZO

Philippines
(63) 2 849 8836
luz_lorenzo@maybank-atrke.com

Tim LEELAHAPHAN

Thailand
(66) 2658 6300 ext 1420
tim.l@maybank-ke.co.th

JUNIMAN

Chief Economist, BII
Indonesia
(62) 21 29228888 ext 29682
Juniman@bankbii.com

STRATEGY

Sadiq CURRIMBHOY

Global Strategist
(65) 6231 5836 sadiq@maybank-ke.com.sg

Willie CHAN

Hong Kong / Regional
(852) 2268 0631 williechan@kimeng.com.hk

MALAYSIA

WONG Chew Hann, CA Head of Research

(603) 2297 8686 wchewh@maybank-ib.com

- Strategy

Desmond CH'NG, ACA

(603) 2297 8680
desmond.chng@maybank-ib.com

- Banking & Finance

LIAW Thong Jung

(603) 2297 8688 tjliaw@maybank-ib.com

- Oil & Gas Services - Regional

ONG Chee Ting, CA

(603) 2297 8678 ct.ong@maybank-ib.com

- Plantations - Regional

Mohshin AZIZ

(603) 2297 8692 mohshin.aziz@maybank-ib.com

- Aviation - Regional • Petrochem

YIN Shao Yang, CPA

(603) 2297 8916 samuel.y@maybank-ib.com

- Gaming - Regional • Media

TAN Chi Wei, CFA

(603) 2297 8690 chiwei.t@maybank-ib.com

- Power • Telcos

WONG Wei Sum, CFA

(603) 2297 8679 weisum@maybank-ib.com

- Property

LEE Yen Ling

(603) 2297 8691 lee.yl@maybank-ib.com

- Building Materials • Glove • Ports • Shipping

CHAI Li Shin, CFA

(603) 2297 8684 lishin.c@maybank-ib.com

- Plantation • Construction & Infrastructure

Ivan YAP

(603) 2297 8612 ivan.yap@maybank-ib.com

- Automotive • Semiconductor • Technology

Kevin WONG

(603) 2082 6824 kevin.wong@maybank-ib.com

- REITs • Consumer Discretionary

LIEW Wei Han

(603) 2297 8676 weihan.l@maybank-ib.com

- Consumer Staples

LEE Cheng Hooi Regional Chartist

(603) 2297 8694
chenghooi.lee@maybank-ib.com

Tee Sze Chiah Head of Retail Research

(603) 2297 6858 szechiah.t@maybank-ib.com

Cheah Chong Ling

(603) 2297 8767 chongling.c@maybank-ib.com

HONG KONG / CHINA

Howard WONG Head of Research

(852) 2268 0648
howardwong@kimeng.com.hk

- Oil & Gas - Regional

Benjamin HO

(852) 2268 0632 benjaminho@kimeng.com.hk

- Consumer & Auto

Jacqueline KO, CFA

(852) 2268 0633 jacquelineko@kimeng.com.hk

- Consumer Staples & Durables

Ka Leong LO, CFA

(852) 2268 0630 klllo@kimeng.com.hk

- Consumer Discretionary & Auto

Mitchell KIM

(852) 2268 0634 mitchellkim@kimeng.com.hk

- Internet & Telcos

Osbert TANG, CFA

(86) 21 5096 8370

osberttang@kimeng.com.hk

- Transport & Industrials

Stefan CHANG, CFA

(852) 2268 0675

stefanchang@kimeng.com.hk

- Technology

Warren LAU

(852) 2268 0644

warrenlau@kimeng.com.hk

- Technology - Regional

INDIA

Jigar SHAH Head of Research

(91) 22 6623 2632 jigar@maybank-ke.co.in

- Oil & Gas • Automobile • Cement

Anubhav GUPTA

(91) 22 6623 2605 anubhav@maybank-ke.co.in

- Metal & Mining • Capital Goods • Property

Vishal MODI

(91) 22 6623 2607 vishal@maybank-ke.co.in

- Banking & Financials

Abhijeet KUNDU

(91) 22 6623 2628 abhijeet@maybank-ke.co.in

- Consumer

Neerav DALAL

(91) 22 6623 2606 neerav@maybank-ke.co.in

- Software Technology • Telcos

SINGAPORE

Gregory YAP

(65) 6231 5848 gyap@maybank-ke.com.sg

- SMID Caps

- Technology & Manufacturing • Telcos

YEAK Chee Keong, CFA

(65) 6231 5842

yeakcheekeong@maybank-ke.com.sg

- Offshore & Marine

Derrick HENG, CFA

(65) 6231 5843 derrickheng@maybank-ke.com.sg

- Transport • Property • REITs (Office)

Joshua TAN

(65) 6231 5850 joshuatan@maybank-ke.com.sg

- REITs (Retail, Industrial)

John CHEONG, CFA

(65) 6231 5845 johncheong@maybank-ke.com.sg

- Small & Mid Caps • Healthcare

Ng Li Hiang

(65) 6231 5840 nglihiang@maybank-ke.com.sg

- Banks

INDONESIA

Inaputra ISKANDAR Head of Research

(62) 21 2557 1129

inaputra.iskandar@maybank-ke.co.id

- Strategy • Metals & Mining • Cement

Rahmi MARINA

(62) 21 2557 1128

rahmi.marina@maybank-ke.co.id

- Banking & Finance

Aurellia SETIABUDI

(62) 21 2953 0785

aurellia.setiabudi@maybank-ke.co.id

- Property

Pandu ANUGRAH

(62) 21 2557 1137

pandu.anugrah@maybank-ke.co.id

- Infra • Construction • Transport • Telcos

Janni ASMAN

(62) 21 2953 0784

janni.asman@maybank-ke.co.id

- Cigarette • Healthcare • Retail

Adhi TASMIN

(62) 21 2557 1209

adhi.tasmin@maybank-ke.co.id

- Plantations

Anthony LUKMAWIJAYA

(62) 21 2557 1126

anthony.lukmawijaya@maybank-ke.co.id

- Aviation

PHILIPPINES

Luz LORENZO Head of Research

(63) 2 849 8836

luz_lorenzo@maybank-atrke.com

- Strategy

- Utilities • Conglomerates • Telcos

Lovell SARREAL

(63) 2 849 8841

lovell_sarreal@maybank-atrke.com

- Consumer • Media • Cement

Rommel RODRIGO

(63) 2 849 8839

rommel_rodrigo@maybank-atrke.com

- Conglomerates • Property • Gaming

- Ports / Logistics

Katherine TAN

(63) 2 849 8843

kat_tan@maybank-atrke.com

- Banks • Construction

Michael BENGSON

(63) 2 849 8840

michael_bengson@maybank-atrke.com

- Conglomerates

Jaclyn JIMENEZ

(63) 2 849 8842

jaclyn_jimenez@maybank-atrke.com

- Consumer

Arabelle MAGHIRANG

(63) 2 849 8838

arabelle_maghirang@maybank-atrke.com

- Banks

THAILAND

Maria LAPIZ Head of Institutional Research

Dir (66) 2257 0250 | (66) 2658 6300 ext 1399

Maria.L@maybank-ke.co.th

- Consumer • Materials • Ind. Estates

Sittichai DUANGRATTANACHAYA

(66) 2658 6300 ext 1393

Sittichai.D@maybank-ke.co.th

- Services Sector • Transport

Yupapan POLPORNPRASERT

(66) 2658 6300 ext 1395

yupapan.p@maybank-ke.co.th

- Oil & Gas

Sukit UDOMSIRIKUL Head of Retail Research

(66) 2658 6300 ext 5090

Sukit.u@maybank-ke.co.th

Mayuree CHOWVIKRAM

(66) 2658 6300 ext 1440

mayuree.c@maybank-ke.co.th

- Strategy

Padon VANNARAT

(66) 2658 6300 ext 1450

Padon.v@maybank-ke.co.th

- Strategy

Surachai PRAMUALCHAROENKIT

(66) 2658 6300 ext 1470

Surachai.p@maybank-ke.co.th

- Auto • Conmat • Contractor • Steel

Suttatip PEERASUB

(66) 2658 6300 ext 1430

suttatip.p@maybank-ke.co.th

- Media • Commerce

Sutthichai KUMWORACHAI

(66) 2658 6300 ext 1400

sutthichai.k@maybank-ke.co.th

- Energy • Petrochem

Termporn TANTIVIVAT

(66) 2658 6300 ext 1520

termporn.t@maybank-ke.co.th

- Property

Jarooppan WATTANAWONG

(66) 2658 6300 ext 1404

jarooppan.w@maybank-ke.co.th

APPENDIX I: TERMS FOR PROVISION OF REPORT, DISCLAIMERS AND DISCLOSURES

DISCLAIMERS

This research report is prepared for general circulation and for information purposes only and under no circumstances should it be considered or intended as an offer to sell or a solicitation of an offer to buy the securities referred to herein. Investors should note that values of such securities, if any, may fluctuate and that each security's price or value may rise or fall. Opinions or recommendations contained herein are in form of technical ratings and fundamental ratings. Technical ratings may differ from fundamental ratings as technical valuations apply different methodologies and are purely based on price and volume-related information extracted from the relevant jurisdiction's stock exchange in the equity analysis. Accordingly, investors' returns may be less than the original sum invested. Past performance is not necessarily a guide to future performance. This report is not intended to provide personal investment advice and does not take into account the specific investment objectives, the financial situation and the particular needs of persons who may receive or read this report. Investors should therefore seek financial, legal and other advice regarding the appropriateness of investing in any securities or the investment strategies discussed or recommended in this report.

The information contained herein has been obtained from sources believed to be reliable but such sources have not been independently verified by Maybank Investment Bank Berhad, its subsidiary and affiliates (collectively, "MKE") and consequently no representation is made as to the accuracy or completeness of this report by MKE and it should not be relied upon as such. Accordingly, MKE and its officers, directors, associates, connected parties and/or employees (collectively, "Representatives") shall not be liable for any direct, indirect or consequential losses or damages that may arise from the use or reliance of this report. Any information, opinions or recommendations contained herein are subject to change at any time, without prior notice.

This report may contain forward looking statements which are often but not always identified by the use of words such as "anticipate", "believe", "estimate", "intend", "plan", "expect", "forecast", "predict" and "project" and statements that an event or result "may", "will", "can", "should", "could" or "might" occur or be achieved and other similar expressions. Such forward looking statements are based on assumptions made and information currently available to us and are subject to certain risks and uncertainties that could cause the actual results to differ materially from those expressed in any forward looking statements. Readers are cautioned not to place undue relevance on these forward-looking statements. MKE expressly disclaims any obligation to update or revise any such forward looking statements to reflect new information, events or circumstances after the date of this publication or to reflect the occurrence of unanticipated events.

MKE and its officers, directors and employees, including persons involved in the preparation or issuance of this report, may, to the extent permitted by law, from time to time participate or invest in financing transactions with the issuer(s) of the securities mentioned in this report, perform services for or solicit business from such issuers, and/or have a position or holding, or other material interest, or effect transactions, in such securities or options thereon, or other investments related thereto. In addition, it may make markets in the securities mentioned in the material presented in this report. MKE may, to the extent permitted by law, act upon or use the information presented herein, or the research or analysis on which they are based, before the material is published. One or more directors, officers and/or employees of MKE may be a director of the issuers of the securities mentioned in this report.

This report is prepared for the use of MKE's clients and may not be reproduced, altered in any way, transmitted to, copied or distributed to any other party in whole or in part in any form or manner without the prior express written consent of MKE and MKE and its Representatives accepts no liability whatsoever for the actions of third parties in this respect.

This report is not directed to or intended for distribution to or use by any person or entity who is a citizen or resident of or located in any locality, state, country or other jurisdiction where such distribution, publication, availability or use would be contrary to law or regulation. This report is for distribution only under such circumstances as may be permitted by applicable law. The securities described herein may not be eligible for sale in all jurisdictions or to certain categories of investors. Without prejudice to the foregoing, the reader is to note that additional disclaimers, warnings or qualifications may apply based on geographical location of the person or entity receiving this report.

Malaysia

Opinions or recommendations contained herein are in the form of technical ratings and fundamental ratings. Technical ratings may differ from fundamental ratings as technical valuations apply different methodologies and are purely based on price and volume-related information extracted from Bursa Malaysia Securities Berhad in the equity analysis.

Singapore

This report has been produced as of the date hereof and the information herein may be subject to change. Maybank Kim Eng Research Pte. Ltd. ("Maybank KERPL") in Singapore has no obligation to update such information for any recipient. For distribution in Singapore, recipients of this report are to contact Maybank KERPL in Singapore in respect of any matters arising from, or in connection with, this report. If the recipient of this report is not an accredited investor, expert investor or institutional investor (as defined under Section 4A of the Singapore Securities and Futures Act), Maybank KERPL shall be legally liable for the contents of this report, with such liability being limited to the extent (if any) as permitted by law.

Thailand

The disclosure of the survey result of the Thai Institute of Directors Association ("IOD") regarding corporate governance is made pursuant to the policy of the Office of the Securities and Exchange Commission. The survey of the IOD is based on the information of a company listed on the Stock Exchange of Thailand and the market for Alternative Investment disclosed to the public and able to be accessed by a general public investor. The result, therefore, is from the perspective of a third party. It is not an evaluation of operation and is not based on inside information. The survey result is as of the date appearing in the Corporate Governance Report of Thai Listed Companies. As a result, the survey may be changed after that date. Maybank Kim Eng Securities (Thailand) Public Company Limited ("MBKET") does not confirm nor certify the accuracy of such survey result.

Except as specifically permitted, no part of this presentation may be reproduced or distributed in any manner without the prior written permission of MBKET. MBKET accepts no liability whatsoever for the actions of third parties in this respect.

US

This research report prepared by MKE is distributed in the United States ("US") to Major US Institutional Investors (as defined in Rule 15a-6 under the Securities Exchange Act of 1934, as amended) only by Maybank Kim Eng Securities USA Inc ("Maybank KESUSA"), a broker-dealer registered in the US (registered under Section 15 of the Securities Exchange Act of 1934, as amended). All responsibility for the distribution of this report by Maybank KESUSA in the US shall be borne by Maybank KESUSA. All resulting transactions by a US person or entity should be effected through a registered broker-dealer in the US. This report is not directed at you if MKE is prohibited or restricted by any legislation or regulation in any jurisdiction from making it available to you. You should satisfy yourself before reading it that Maybank KESUSA is permitted to provide research material concerning investments to you under relevant legislation and regulations.

UK

This document is being distributed by Maybank Kim Eng Securities (London) Ltd ("Maybank KESL") which is authorized and regulated, by the Financial Services Authority and is for Informational Purposes only. This document is not intended for distribution to anyone defined as a Retail Client under the Financial Services and Markets Act 2000 within the UK. Any inclusion of a third party link is for the recipients convenience only, and that the firm does not take any responsibility for its comments or accuracy, and that access to such links is at the individuals own risk. Nothing in this report should be considered as constituting legal, accounting or tax advice, and that for accurate guidance recipients should consult with their own independent tax advisers.

DISCLOSURES

Legal Entities Disclosures

Malaysia: This report is issued and distributed in Malaysia by Maybank Investment Bank Berhad (15938-H) which is a Participating Organization of Bursa Malaysia Berhad and a holder of Capital Markets and Services License issued by the Securities Commission in Malaysia. **Singapore:** This material is issued and distributed in Singapore by Maybank KERPL (Co. Reg No 197201256N) which is regulated by the Monetary Authority of Singapore. **Indonesia:** PT Kim Eng Securities (“PTKES”) (Reg. No. KEP-251/PM/1992) is a member of the Indonesia Stock Exchange and is regulated by the BAPEPAM LK. **Thailand:** MBKET (Reg. No.0107545000314) is a member of the Stock Exchange of Thailand and is regulated by the Ministry of Finance and the Securities and Exchange Commission. **Philippines:** Maybank ATRKES (Reg. No.01-2004-00019) is a member of the Philippines Stock Exchange and is regulated by the Securities and Exchange Commission. **Vietnam:** Maybank Kim Eng Securities JSC (License Number: 71/UBCK-GP) is licensed under the State Securities Commission of Vietnam. **Hong Kong:** KESHK (Central Entity No AAD284) is regulated by the Securities and Futures Commission. **India:** Kim Eng Securities India Private Limited (“KESI”) is a participant of the National Stock Exchange of India Limited (Reg No: INF/INB 231452435) and the Bombay Stock Exchange (Reg. No. INF/INB 011452431) and is regulated by Securities and Exchange Board of India. KESI is also registered with SEBI as Category 1 Merchant Banker (Reg. No. INM 000011708) **US:** Maybank KESUSA is a member of/ and is authorized and regulated by the FINRA - Broker ID 27861. **UK:** Maybank KESL (Reg No 2377538) is authorized and regulated by the Financial Services Authority.

Disclosure of Interest

Malaysia: MKE and its Representatives may from time to time have positions or be materially interested in the securities referred to herein and may further act as market maker or may have assumed an underwriting commitment or deal with such securities and may also perform or seek to perform investment banking services, advisory and other services for or relating to those companies.

Singapore: As of 16 February 2016, Maybank KERPL and the covering analyst do not have any interest in any companies recommended in this research report.

Thailand: MBKET may have a business relationship with or may possibly be an issuer of derivative warrants on the securities /companies mentioned in the research report. Therefore, Investors should exercise their own judgment before making any investment decisions. MBKET, its associates, directors, connected parties and/or employees may from time to time have interests and/or underwriting commitments in the securities mentioned in this report.

Hong Kong: KESHK may have financial interests in relation to an issuer or a new listing applicant referred to as defined by the requirements under Paragraph 16.5(a) of the Hong Kong Code of Conduct for Persons Licensed by or Registered with the Securities and Futures Commission.

As of 16 February 2016, KESHK and the authoring analyst do not have any interest in any companies recommended in this research report.

MKE may have, within the last three years, served as manager or co-manager of a public offering of securities for, or currently may make a primary market in issues of, any or all of the entities mentioned in this report or may be providing, or have provided within the previous 12 months, significant advice or investment services in relation to the investment concerned or a related investment and may receive compensation for the services provided from the companies covered in this report.

OTHERS

Analyst Certification of Independence

The views expressed in this research report accurately reflect the analyst’s personal views about any and all of the subject securities or issuers; and no part of the research analyst’s compensation was, is or will be, directly or indirectly, related to the specific recommendations or views expressed in the report.

Reminder

Structured securities are complex instruments, typically involve a high degree of risk and are intended for sale only to sophisticated investors who are capable of understanding and assuming the risks involved. The market value of any structured security may be affected by changes in economic, financial and political factors (including, but not limited to, spot and forward interest and exchange rates), time to maturity, market conditions and volatility and the credit quality of any issuer or reference issuer. Any investor interested in purchasing a structured product should conduct its own analysis of the product and consult with its own professional advisers as to the risks involved in making such a purchase.

No part of this material may be copied, photocopied or duplicated in any form by any means or redistributed without the prior consent of MKE.

Definition of Ratings

Maybank Kim Eng Research uses the following rating system

BUY	Return is expected to be above 10% in the next 12 months (excluding dividends)
HOLD	Return is expected to be between - 10% to +10% in the next 12 months (excluding dividends)
SELL	Return is expected to be below -10% in the next 12 months (excluding dividends)

Applicability of Ratings

The respective analyst maintains a coverage universe of stocks, the list of which may be adjusted according to needs. Investment ratings are only applicable to the stocks which form part of the coverage universe. Reports on companies which are not part of the coverage do not carry investment ratings as we do not actively follow developments in these companies.

 **Malaysia**

Maybank Investment Bank Berhad
(A Participating Organisation of
Bursa Malaysia Securities Berhad)
33rd Floor, Menara Maybank,
100 Jalan Tun Perak,
50050 Kuala Lumpur
Tel: (603) 2059 1888;
Fax: (603) 2078 4194

Stockbroking Business:
Level 8, Tower C, Dataran Maybank,
No.1, Jalan Maarof
59000 Kuala Lumpur
Tel: (603) 2297 8888
Fax: (603) 2282 5136

 **Philippines**

Maybank ATR Kim Eng Securities Inc.
17/F, Tower One & Exchange Plaza
Ayala Triangle, Ayala Avenue
Makati City, Philippines 1200

Tel: (63) 2 849 8888
Fax: (63) 2 848 5738

 **South Asia Sales Trading**

Kevin Foy
Regional Head Sales Trading
kevinfoy@maybank-ke.com.sg
Tel: (65) 6336-5157
US Toll Free: 1-866-406-7447

Malaysia

Rommel Jacob
rommeljacob@maybank-ib.com
Tel: (603) 2717 5152

Indonesia

Hariato Liong
harianto.liong@maybank-ke.co.id
Tel: (62) 21 2557 1177

New York

Andrew Dacey
adacey@maybank-keusa.com
Tel: (212) 688 2956

Vietnam

Tien Nguyen
thuytien.nguyen@maybank-kimeng.com.vn
Tel: (84) 44 555 888 x8079

 **Singapore**

Maybank Kim Eng Securities Pte Ltd
Maybank Kim Eng Research Pte Ltd
50 North Canal Road
Singapore 059304

Tel: (65) 6336 9090

 **Hong Kong**

Kim Eng Securities (HK) Ltd
Level 30,
Three Pacific Place,
1 Queen's Road East,
Hong Kong

Tel: (852) 2268 0800
Fax: (852) 2877 0104

 **Thailand**

Maybank Kim Eng Securities
(Thailand) Public Company Limited
999/9 The Offices at Central World,
20th - 21st Floor,
Rama 1 Road Pathumwan,
Bangkok 10330, Thailand

Tel: (66) 2 658 6817 (sales)
Tel: (66) 2 658 6801 (research)

 **North Asia Sales Trading**

Andrew Lee
andrewlee@kimeng.com.hk
Tel: (852) 2268 0283
US Toll Free: 1 877 837 7635

Thailand

Tanasak Krishnasreni
Tanasak.K@maybank-ke.co.th
Tel: (66)2 658 6820

India

Manish Modi
manish@maybank-ke.co.in
Tel: (91)-22-6623-2601

Philippines

Keith Roy
keith_roy@maybank-atrke.com
Tel: (63) 2 848-5288

 **London**

Maybank Kim Eng Securities
(London) Ltd
5th Floor, Aldermay House
10-15 Queen Street
London EC4N 1TX, UK

Tel: (44) 20 7332 0221
Fax: (44) 20 7332 0302

 **Indonesia**

PT Maybank Kim Eng Securities
Plaza Bapindo
Citibank Tower 17th Floor
Jl Jend. Sudirman Kav. 54-55
Jakarta 12190, Indonesia

Tel: (62) 21 2557 1188
Fax: (62) 21 2557 1189

 **Vietnam**

Maybank Kim Eng Securities Limited
4A-15+16 Floor Vincom Center Dong
Khoi, 72 Le Thanh Ton St. District 1
Ho Chi Minh City, Vietnam

Tel : (84) 844 555 888
Fax : (84) 8 38 271 030

 **New York**

Maybank Kim Eng Securities USA
Inc
777 Third Avenue, 21st Floor
New York, NY 10017, U.S.A.

Tel: (212) 688 8886
Fax: (212) 688 3500

 **India**

Kim Eng Securities India Pvt Ltd
2nd Floor, The International 16,
Maharishi Karve Road,
Churchgate Station,
Mumbai City - 400 020, India

Tel: (91) 22 6623 2600
Fax: (91) 22 6623 2604

 **Saudi Arabia**

In association with
Anfaal Capital
Villa 47, Tujjar Jeddah
Prince Mohammed bin Abdulaziz
Street P.O. Box 126575
Jeddah 21352

Tel: (966) 2 6068686
Fax: (966) 26068787