HEYÓKHA BROTHERS

A firefly at night in the grass. According to our guide in Kalimantan, fireflies indicate a healthy ecosystem.

We Care About The Ecosystem

"Do you mean to tell me that you are thinking seriously of building that way, when and if you are an architect?"

"Yes"

"My dear fellow, who will let you?"

"That is not the point. The point is, who will stop me?"

3Q 2017

Heyokha's ecosystem

HEYÓKHA BROTHERS

What we have learned this quarter

We care about the ecosystem

During our trip to the Jungle of Kalimantan, a zoologist made it clear to us how much we are all dependent on the natural ecosystems of this planet. And while it was such a pleasure for us to enjoy the natural beauty and see fireflies dancing in the bushes, we also missed something else. And that was the other world we usually have access to via our smartphones. Being totally disconnected, we realised how we are not only dependent on the natural ecosystems, but also the digital ones…

How digital drugs could be destroying a generation

Things may be worse than we thought. In our 1Q 2017 report, we discussed how tech companies design their products to activate pleasure centres in our brain so that we get hooked.

While we worried about people's loss of creativity and inability to do "deep work" as a consequence of these addictive and distracting products, it seems much more is at stake. And that is, the wellbeing of our young kids.

That is at least the message of a recent thought-provoking article[1] written by Professor of psychology Jean M. Twenge, in which she describes unprecedented shifts in teen behaviour that are coinciding with the proliferation of smartphones.

In the piece, Twenge writes that it's not an exaggeration to describe the post-millennial cohort – those born between 1995 and 2012 - as being on the brink of the worst mental health crisis in decades. Much of this deterioration can supposedly be traced to their phones.

Source: https://pulptastic.com/

Having studied generational differences for 25 years, Twenge typically observed that characteristics defining a generation appear gradually over time. She mentions that Millennials, as an example, are a highly individualistic generation. However, their individualism had already been increasing since the Baby Boomers came into this world.

Then, around 2012, Twenge noticed an abrupt change in her data. The gentle slopes of the line graphs describing behaviour over time became steep mountains and sheer cliffs, and many of the distinctive characteristics of the Millennial generation began to disappear. The biggest difference between the Millennials and their predecessors, Twenge writes, was in how they viewed the world; yet teens today differ from the Millennials not just in their views but in how they spend their time. The experiences they have every day are radically different from those of the generation that came of age just a few years before them.

"We have created tools that are ripping apart the social fabric of how society works,"

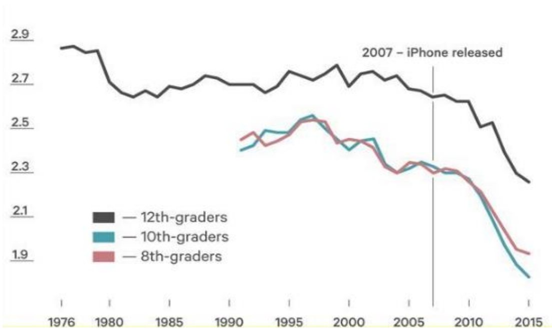
-Chamath Palihapitiya, ex-Vice President of Facebook for user growth-

[1]Twenge (2017, September). "Have smartphones destroyed a generation?" *The Atlantic*. Retrieved from https://www.theatlantic.com/magazine/archive/2017/09/has-the-smartphone-destroyed-a-generation/534198/

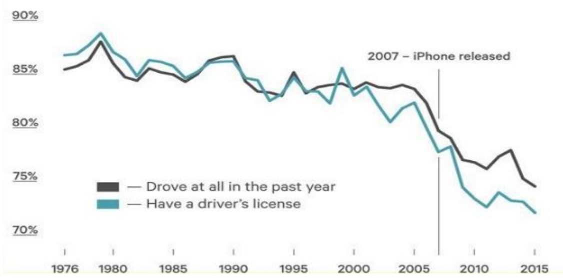
We summarise some observations below – parental discretion advised.

How post-Millennials are breaking trends in behaviour

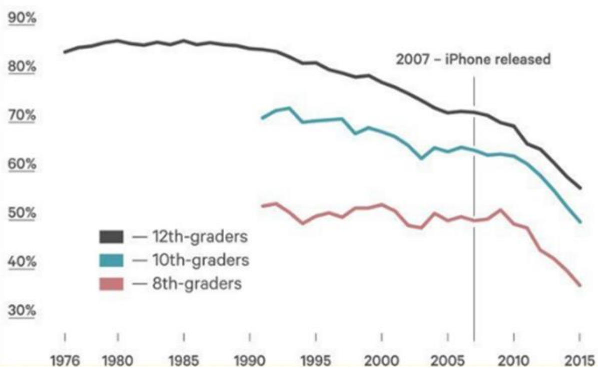
Not hanging out with friends
Times per week teenagers go out without their parents



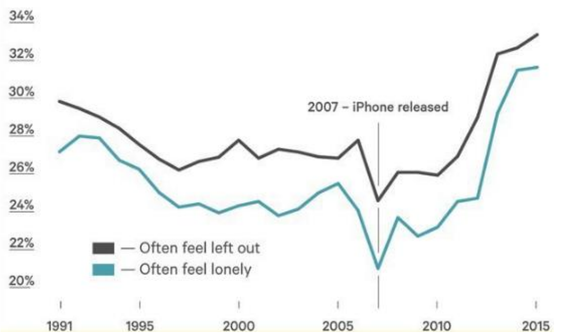
In no rush to drive
% of 12th-graders who drive



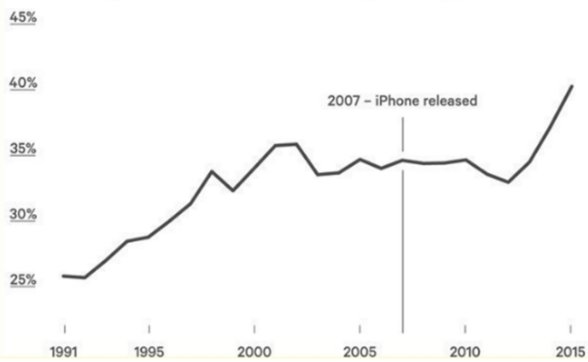
Less dating…
% of teenagers who ever go out on dates



More likely to feel lonely
% of 8th, 10th, and 12th graders who agree or mostly agree with the statement "I often feel left out of things" or "A lot of times I feel lonely"



Less likely to get enough sleep
% of 8th, 10th, and 12th graders who get less than seven hours of sleep most nights



Source: The Atlantic

Less independent, less hanging out, but physically safer

- The allure of independence, so powerful to previous generations, holds less sway over today's teens. They are in no rush to drive a car and are less likely to leave the house without their parents.
- Fewer kids are spending time simply hanging out. Teens seem to be content with this homebody arrangement—not because they're so studious, but because their social life is lived on their phone. They don't need to leave home to spend time with their friends.
- The good thing is that since post-Millennials spend more time in bedrooms than in a car or a party, they are less likely to have an accident.

More likely to feel lonely, depressed, sleep deprived and commit suicide

- Despite spending far more time under the same roof as their parents, today's teens can hardly be said to be closer to their mothers and fathers than their predecessors were.
- The portrait of post-Millennials teens emerging from the data is one of a lonely, dislocated generation. Teens' feelings of loneliness spiked in 2013 and have remained high since.
- For all their power to link kids day and night, social media also exacerbate the age-old teen concern about being left out. Today's teens document their hangouts relentlessly—on Snapchat, Instagram, Facebook. Those not invited to come along are keenly aware of it. Forty-eight percent more girls said they often felt left out in 2015 than in 2010.
- Sleep deprivation: smartphones could be causing lack of sleep, which leads to depression, or the phones could be causing depression, which leads to lack of sleep.
- Boys' depressive symptoms increased by 21 percent from 2012 to 2015, while girls' increased by 50 percent—more than twice as much. Teenage girls are more likely to experience cyberbullying.
- Teens who spend three hours a day or more on electronic devices are 35 percent more likely to have a risk factor for suicide, such as making a suicide plan.
- Since 2007, the homicide rate among teens has declined, but the suicide rate has increased. As teens have started spending less time together, they have become less likely to kill one another, and more likely to kill themselves. In 2011, for the first time in 24 years, the teen suicide rate was higher than the teen homicide rate.

"All of us are jacked into this system," he said. "All of our minds can be hijacked. Our choices are not as free as we think they are."

-Sean Parker, Facebook co-founder-

Should we take their phones away? Or our own instead…

After reading the findings above, the image of depressed screen-addict teenagers who are failing to follow the traditional path to adulthood may prompt you to snatch smartphones out of the hands of your kids, or any kid.

Well, before you do that it is good to know that the article by Twenge actually caused a lot of discussions and plenty of commenters warned not to draw too strong conclusions based on two coinciding variables (referring to the old adage that "correlation doesn't imply causation").

An interesting alternative view was provided in an article[2] written by Dr Alexandra Samuel. She argued that smartphones actually "happened" to parents first, while children were still stuck texting on their feature phones.

She suggests perhaps it's time for us to consider another possible explanation for why our kids are increasingly disengaged. Namely that it's because we've disengaged ourselves; we're too busy looking down at our screens to look up at our kids.

"I'd love to tell you we used this shiny new tech to look up educational resources for our children, or play them classical music in utero. […] But you know what smartphones and social media are really great at? Tuning out your children."

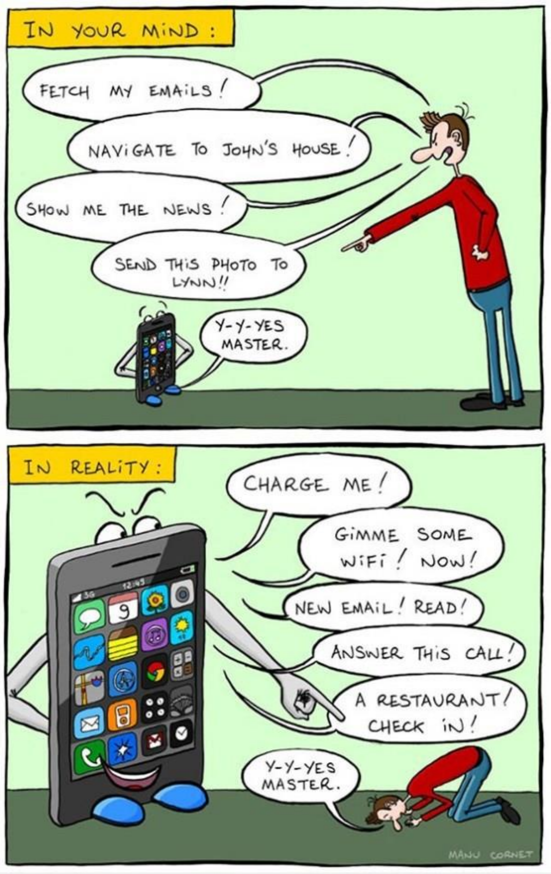
Dr Alexandra Samuel

Many psychologists support this view, like Dr Catherine Steiner-Adair, who wrote the best-seller "*The Big Disconnect: Protecting Childhood and Family Relationships in the Digital Age*".

According to Samuel, experiments[3] suggest that when parents are distracted – as today's parents are, by their phones – it's the positive support for their kids that suffers, more than the control asserted over them.

The result, she writes, is kids who stay inside their semi-gilded cages, because they don't get the support they need to spread their wings.

Think about that for a second…



Source: https://pulptastic.com/

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[2] Samuel (2017, August). "Yes, smartphones are destroying a generation, but not of kids" JSTOR Daily. Retrieved from https://daily.jstor.org/yes-smartphones-are-destroying-a-generation-but-not-of-kids/

[3] Samuel was referring to research by John Unger Zussman, who observed that when parents are distracted (by a game in his experiment), changes occurred in parenting style. They shortened their interactions with their kids, while also the quality of these interactions declined. More specifically, corrective behaviour increased (such as punishment), while support and stimulation of the kids were reduced.

Whatever the cause, investors should take note of how behaviour is impacted

The discussion about the potential causes of the mentioned changes in the behaviour of kids is perhaps more of a parenting issue (which some of us at Heyokha also must deal with) that will need to be solved by the relevant experts.

Yet, based on what we see ourselves, we feel there is no denying the changes wrought by the smart-phone. Just take a look at the adjacent graphs to see how much "screen-time" people are having while using apps; time that was formerly spent elsewhere since we all have 24 hours a day.

For us, the most important observation, and what the numbers presented by Twenge illustrate, is that behaviour is indeed changing at an unprecedented pace. How people behave and spend their time is of utmost importance to investors given its implications for the economy.

This goes much further than just a shift from offline to online purchases and the much lesser role of offline retailers. There will be significant shifts in spending across assets, products and services as well.

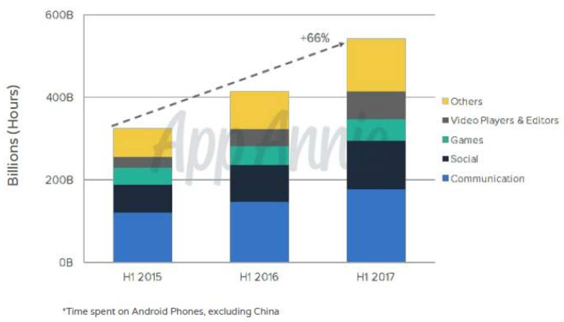
For example, Spencer Fung - Group CEO of Li & Fung - noted that spending on apparel as a percentage of people's wallet has fallen globally, from above 80% in 1900 to around only low single digits.

Of course, a rise in disposable income would result in a lower share of income being allocated to primary needs, but reading the article of Twenge made us contemplate that perhaps in an era when socializing is taking place more online than face to face, and WhatsApp group members hardly meet physically, the need to purchase apparel has become significantly less. They don't meet each other anymore anyway, so what's the point in getting a new pair of jeans?

We at Heyokha want to be ready for such changes. And that's why we have been focusing more and more on developments in the tech and start-up space.

Screen-time in apps showing staggering growth, at the expense of what?

Time spend in Apps - Worldwide
Total aggregate time spent per half year on Android phones



Time spend in Apps – Southeast Asia
Total aggregate time spent per quarter [on Android phones]

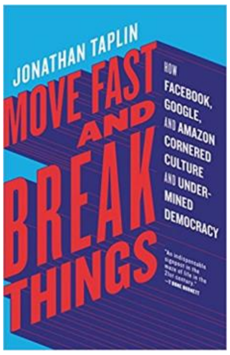
Source: App Annie

"Competition is for losers"

More warnings for the winner-takes-all effect

Many popular books have flagged that innovation is driving the rise of destructive monopolies.

An example is a book we discussed in our quarterly report of 1Q 2016 by Douglas Rushkoff called ***Throwing Rocks at the Google Bus*** in which he argues that digital selling-platforms are exacerbating the extremes between superstars and those who sell nothing.



A more recent book that we picked up on that subject is *"Move Fast and Break Things"* by Jonathan Taplin.

Taplin, who spent much of his life producing music and movies for artists such as Bob Dylan, The Band, George Harrison, and Martin Scorsese, wrote a compelling story that articulates the tectonic shift in the entertainment market triggered by digital distribution.

Taplin's story seems to be driven by anger as he mentioned a grievance about the fate of his friend Levon Helm, The Band's drummer.

Helm was suffering from cancer but had been forced back on the road at the age of 70 to help pay his medical bills because "free music" had destroyed his income as a recording artist.

In Taplin's view, the deeper we delve into the reasons artists are struggling in the digital age, the more we see that Internet monopolies are at the heart of the problem and that it is no longer a problem just for artists.

The issue is that U.S. laws have been quite accommodative to the forming of these monopolies. Taplin argues that Google, Amazon, and Facebook would all be prosecuted under antitrust statuses if it hadn't been for Professor Robert Bork. Bork's writings on antitrust had a very influential role in causing a shift towards more libertarian antitrust laws since the 1970's.

Bork did more than any other individual in the 20th century to embed the libertarian free-market principles of philosopher Ayn Rand and economist Milton Friedman into the heart of the American economic and judicial system. Put it simply, Rand and Friedman suggest that government is usually wrong and the market is always right (strikingly, the Internet was created with government funding and built on the principles of decentralization).

As expressed in his book *The Antitrust Paradox*, Bork posited that the primary focus of antitrust laws should be on consumer welfare rather than ensuring competition.

The sole matter that should concern regulators, according to Bork, is whether prices to consumers are falling. Thus, if Walmart ended up as the only general retailer in the country, as long as prices continued to fall, this would benefit consumer welfare.

Taplin thinks the U.S. regulators live in a fantasy world of "perfect markets". He mentions how network effects are reinforcing the dominance of the largest tech players. "Once one of these companies gets a monopoly, it's easy to spread the monopoly to adjacent markets by acquisition," Taplin quoted a prominent antitrust attorney. "You would think antitrust enforcers would know this by now."

Another problem flagged by Taplin is that the tech giants enjoy safe harbour protection, whereas their traditional media competitors do not. This means nobody can sue these tech giants for offending content, while a television station could have its licence revoked for the same.

Given the deflationary effect that these tech giants are having on prices paid for music and movies, Taplin does not expect much from the U.S. government. He notes that the EU remains one of the very few international organisations with both the appetite and the weight to take on Google and Facebook.

While we find Taplin's story of artists and their struggle in the era of "free music and movies" very touching, we noted that in the end, Taplin settles with *hoping* that the digital giants will come to their senses. It illustrates Taplin's view on how dependent we are on the goodwill of the tech giants. If anything, it shows how slavish the world built by tech giants has become.

Tipping Point against tech giants? Maybe not in China

Taplin seems to be of the view that American authorities have rolled over and allow tech authorities to do whatever they want. This is in part because these tech companies now comprise a big share of the U.S. economy and have attained political power. However, this may be about to change now it has recently become apparent what impact social media could have on the US presidential election.

The Economist 4th Nov 2017 edition, the cover says it all….

U.S. Senator Dianne Feinstein recently told the top lawyers at Facebook, Google, and Twitter to take more comprehensive action against foreign actors misusing their platforms, or risk intervention by the government.

"You created these platforms, and they are being misused. And you have to be the ones to do something about it—or we will." - U.S. Senator Dianne Feinstein

With tech platforms grabbing powers once exclusive to governments, such as control over media and – with the rise of cryptocurrencies - over money as well, governments are now feeling the heat to curb the powers of these tech giants.

Perhaps we are indeed at a tipping point. Already, in recent months, American politicians are increasingly targeting big tech companies for more regulation. However, it is interesting to point out that the Chinese government is taking the opposite approach. For sure the engineer dominated Chinese government is well aware of the dark side of big tech giants. But it appears that the Chinese government is embracing technology and - at this stage of economic development – is prioritizing the advancement of technology over populism. Moreover, there is no election to rig in China!

As an investor, we trust that we need to watch closely the governments' attitude towards tech disruptors. (As a note, Indonesian government under President Jokowi seems to be extending a welcome mat to the rising tech start-ups. This has a major implication on business landscape in the country).

In our efforts to learn about tech, we noticed how progressive Chinese companies have become recently. In the next sections, we will share with you some notable things that are going on there, and try to use that as to get a glimpse of the future in Indonesia.

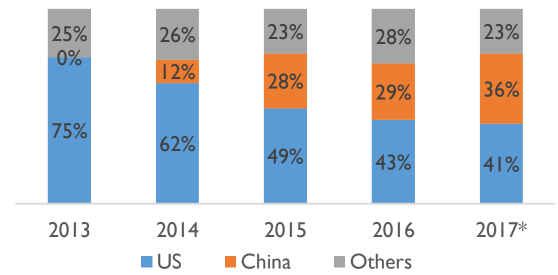
Is China getting ahead in the tech race?

"China missed the Industrial Revolution but it is definitely a co-architect of the Information Age"

- Arvind Sethumadhavan, CIO Dentsu Aegis Network Asia Pacific.

China is threatening America's unicorn dominance

Distribution of unicorns 'born' from 2013 to 2017, by country



Source: CB Insight, Statista

In 2017, for the first time ever, two Chinese tech companies (Alibaba and Tencent) joined the ranks of the world's top 10 largest firms as measured by market capitalisation.

While this may grab headlines, other Chinese tech companies are probably on the same path, given China's large addressable market, leading innovation and government support. This made us wonder if Chinese tech companies may be getting ahead of their U.S. peers.

Of course, one drop of rain doesn't mean rainy season has arrived. So, let us summarise some hints that indicate China's impressive progress.

Multiple factors point to remarkable progress in China

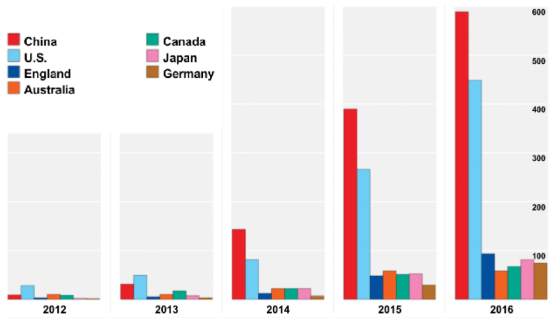
China's unicorn birth rate is catching up

When looking at the number of companies that reach a valuation of at least USD 1bln, we see that if you divide the world into three geographies - being the U.S, China and others -, China is responsible for an increasingly higher share of unicorns, at the expense of the U.S.

China's research output on A.I. exceeds that of the U.S.

As shown in the graph below, China has surpassed the US in the number of scientific papers produced on the topic of artificial intelligence. Also, nowadays, some 40% of all A.I. research papers published worldwide are written in Chinese language.

With such a high share of research practically being inaccessible to the non-Chinese speaking world, the mostly bi-lingual Chinese AI researchers have a major competitive advantage in terms of access to knowledge.



Since 2014 China has published the most research papers per year on deep learning, an advanced form of artificial intelligence.

Source: MIT Technology Review

Many do not seem to be fully aware of the progress that is being made in China. Last year, for example, Microsoft announced that it has created software capable of matching human skills in understanding speech. However, Baidu[4] clarified that it has achieved similar precision (with the Chinese language) two years earlier.

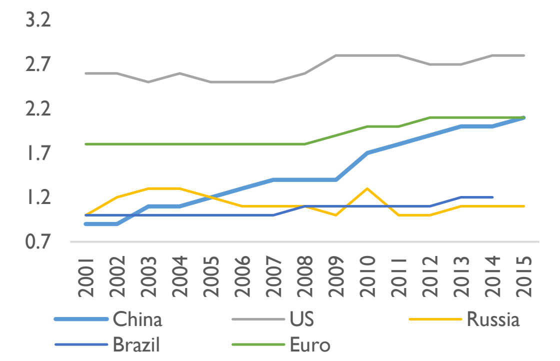
[44]. Will Knight (2015, December). "Baidu's Deep-Learning System Rivals People at Speech Recognition", *MIT* Technology Review. Retrieved from https://www.technologyreview.com/s/544651/baidus-deep-learning-system-rivals-people-at-speech-recognition/

R&D activities are accelerating

When looking at national statistics, we see that China's R&D expenditure as % of GDP is still lower than in the U.S., but is rapidly catching up.

China R&D expenditure has passed Euro countries and now eyeing for the U.S.

R&D expenditure as % of GDP 2000-2015

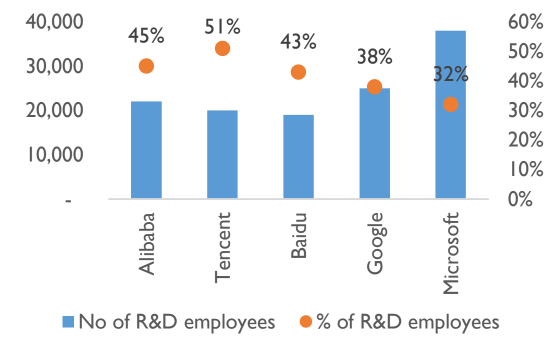


Source: World Bank

For instance, it is interesting to note that the workforce of Chinese tech firms has a higher share of R&D employees, as compared to Google and Microsoft.

Chinese tech firms have higher share of R&D employees

R&D employee in US and Chinese tech firms



Source: Companies annual report

16x higher e-payment penetration

With Alipay and Tenpay, China has become the world's largest e-payment market. There are an estimated 500mn e-payment users in China (36% penetration rate compared to 11% in the US), and 160mn users who borrow online (equivalent to half of the US population).

In fact, the number of e-payment transactions in China is already about 16x larger than in the US. And despite the sheer size of the market, growth is still very strong at a 50% clip year on year.

Higher e-finance penetration

Due to the success of e-payments in China, many people and merchants are storing their money in digital wallets as opposed to in traditional banks.

With the convenience of digital wallets, a massive demand emerged for online wealth management- and consumer financing products.

There are about 400mn investors in China who buy wealth management products online (more than the US population).

The success of China's e-finance market is exemplified by Yu'e Bao, a money market product of Ant Financial, which became the largest money market fund in the world with AUM of more than US$ 211b in less than two years.

Also, in the Insurtech space, China is way ahead of the west. Founded only in 2013, Zhong An Online P&C Insurance is the first online agentless insurance company in the world.

While all US insurtech companies are still in a start-up phase, Zhong An expects to achieve close to US$ 1bn in gross written premiums in 2017.

Leading in some digital business transformation cases

Even a mainstream company like Ping An Insurance has embarked on a digital business transformation (click here for more information) and is fully committed.

The result? After series of investment in research & development, Ping An Technology (wholly owned by Ping An Insurance) has developed facial recognition with the best accuracy in the world.

Their voiceprint recognition boasts 99+% accuracy. This will shorten the verification process significantly. They claimed their face recognition technology can process 30,000 faces per minutes. In addition, they are also in the process of building their own cloud, big data, and AI.

It helps when the Government helps…

Clearly, the Chinese government intends to provide a conducive environment for local tech firms to flourish. The support is extended beyond protecting local firms from the foreign tech giants such as Google and Facebook.

For example, in 2015 the Chinese government unveiled the concept of "Internet Plus" and followed up with a detailed action plan to *"integrate mobile internet, cloud computing, big data, and the internet of things with modern manufacturing, to encourage the healthy development of e-commerce, industrial networks, and Internet banking, and to help Internet companies increase their international presence"*[5].

In addition, a recent article[6] in the Financial Times describes how China is seeking dominance of the global AI industry. It highlights that while the National Science Foundation in the US has no increase in funding this year, China has promised to vigorously use governmental and social capital to dominate the industry.

In addition, Beijing created a blueprint for investing in artificial intelligence that aims to create a USD 150bn industry by 2030. China also supports the local tech industry with funding, not only talk. The Chinese government capitalised several state funds in 2015, making available some USD 336 billion for investing in the nation's start-ups at the end of that year.

In term of infrastructure, the country is also investing heavily. China is set to build the planet's largest 5G mobile network for USD 180 billion through its state-owned telecom companies[7]. Beijing (or Shenzhen?) has also shown to be able to lead in research. To the envy of numerous scientists in the world, China successfully launched Micius, the world's first quantum satellite, in 2016.

Legally, the Chinese government has also been supportive in the sense that it gives space to digital players to experiment before enacting official regulation. It is not preventing creative destruction from the onset. Case in point is that the Chinese government only implemented a cap on online money transfers 11 years after Alipay launched such services. A barcode payment standard was released within 5 years after its initial use by Alipay.

The above confirms what we mentioned earlier: the Chinese government is prioritising advancement of technology over populism, while American politicians are increasingly targeting big tech companies for more regulation.

Leading in O2O developments

In terms of integrating online and offline retail activities, China is ahead of the US. Alibaba and JD.com have been actively acquiring many department stores, electronic retail chains, and supermarkets since 2014.

In the meantime, Amazon only acquired its first supermarket chain Whole Food and department store Kohl's in the recent months.

It seems like Chinese e-commerce is leading in the O2O integration. We can purchase groceries on Alibaba and JD.com, with the merchandise to be delivered within an hour from nearly all the supermarket branches that they have acquired.

In comparison, Amazon currently only utilises Whole Foods/Kohl's as a pickup point. For unmanned retail, Amazon and JD.com are in a neck to neck race.

[5] (2015, July) "China unveils Internet Plus action plan to fuel growth", *english.gov.cn*, retrieved from http://english.gov.cn/policies/latest_releases/2015/07/04/content_281475140165588.htm
[6] Louise Lucas (2017, October), "China seeks dominance of global AI industry", *Financial Times*
[7] Bien Perez (2017, June) "China set to build the planet's largest 5G mobile network for US$180b", South China Morning Post, retrieved from: http://www.scmp.com/tech/china-tech/article/2097972/chinas-5g-network-spending-tipped-reach-us180-billion-over-seven

Leading in e-commerce logistics

While Amazon has been experimenting with drone delivery services and unmanned sorting systems, these technologies are already operational at JD.com.

JD.com will build 200 drone airports next years to roll out drone delivery nationwide

Source: Bloomberg

Indeed, JD is already using drones to deliver goods, even in the B2C space. The latest milestone is the development of a drone that is supposedly able to carry up to 1 ton in weight.

JD.com can deliver more than half of its daily orders within the same day, as compared to Amazon where default shipping will need about 1-2 days on average.

Not to be complacent, JD already started an unmanned sorting centre in Shanghai back in August 2017. The advantage of having your own logistic network is becoming more apparent now.

How the two Chinese giants built their ecosystems

Granted, we are dragging on a bit about the Chinese giants. But given that these companies are already starting to have an impact on the Southeast Asian context, we feel it's important to know what their playbook was at home.

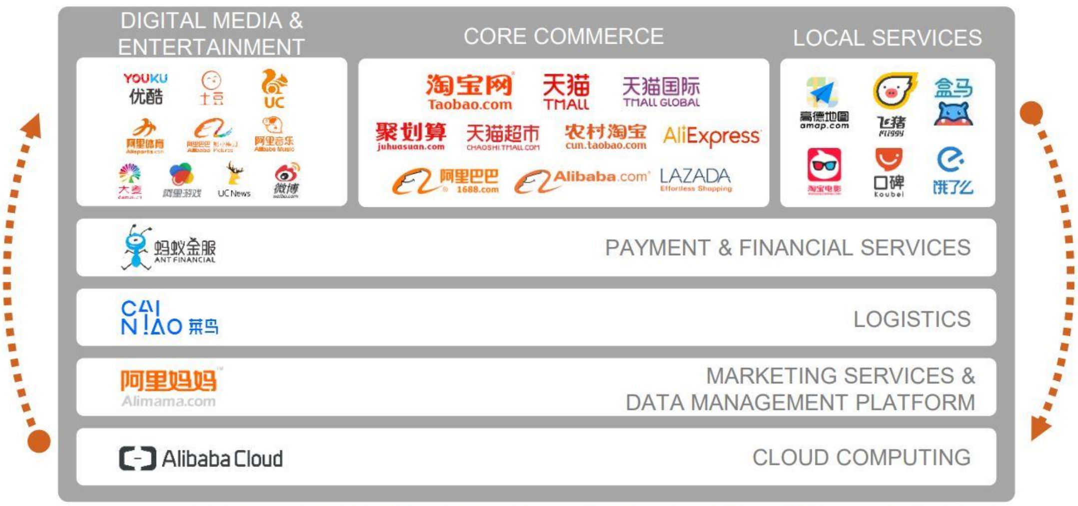
Earlier in this report, we mentioned that network effects are seen to be reinforcing the dominance of the largest tech players. In the Chinese context, Alibaba and Tencent would be perfect examples of this.

Both companies started in the late 90's with products that depended on a network of users: Alibaba started with an online marketplace where Chinese exporters could post and sell products to customers directly, while Tencent started with a messenger called OICQ – later renamed to QQ.

Then, after the companies managed to acquire large user bases, they started to add complementary services, whether developed in-house, by acquisition or by partnerships. While Alibaba focused more on marketplaces and e-commerce, Tencent was more focused on social apps, gaming and media.

Both Alibaba and Tencent have created complete ecosystems around their "super apps", offering consumers a one-stop shop to various services that now spans gaming, messaging, video, music, finance, insurance and much more.

Alibaba's ecosystem



** Ant Financial, Alibaba Pictures, Weibo, Paytm, Tao Piao Piao, Koubei and Ele.me are affiliated entities*

Secondary network effects as a driver of ecosystem building

The Financial Times lexicon defines "network effects" as the phenomenon where a product's value to the user increases as the number of users of the product grows. The classic example is the telephone. The more people own telephones, the more valuable the telephone network is to each owner.

This insight is the basis of Metcalfe's law that states that the value of a network is proportional to the square of the number of members within the network. Other examples of such products are the internet itself, social networks, messenger apps, etc.

Now, except for these direct effects, there are also indirect network effects. That is where increased usage of the product spawns the addition of increasingly valuable complementary products, and this results in an increase in the value of the original product.

We feel this is exactly the driving force that formed the colossal ecosystems that Alibaba and Tencent are today.

According to a report by Mckinsey, the WeChat app of Tencent has expanded to no less than 40 functions in 2017, while Alipay's even has 90 functions, about seven times more than the company offered in 2011.

Chinese ecosystems poised to expand their reach

In the race to become and remain the most valuable digital network to users, both Alibaba and Tencent are continuously looking for- and absorbing new products and services in their platforms.

And likewise, the value that these platforms now offer to both users and partnering companies is immense. It is not for nothing that the rise of Alibaba has created multiple billionaires among those who service its platform.

Another example is the investment by Tencent into JD.com, which instantly increased the value of JD.com as the WeChat app of Tencent is now driving about 25% JD's traffic.

The process of securing (exclusive) deals with third parties, may pose both opportunities and threats to these potential partners. Considerable sums may be paid, but if they partner with your competitor it may kill you.

Tencent's ecosystem

The value of joining a platform

A recent article[8] published by Bloomberg called "Alibaba's Rise Creates At Least 10 Billionaires Not Named Jack Ma" describes how Jack Ma, the founder of Alibaba, has created at least 10 billionaires by investing directly in- or partnering with companies that provide services for his online buying platforms.

One of them is Ou YaFei, of Chinese online insurance broker Zhong An Online P&C Insurance Co., which offers shipping return insurance for purchases on the Alibaba platform. Zhong An also collaborates with Ctrip.com for pay per go travel insurance, and with Didi Chuxing for accident insurance. By having access to these platforms, Zhong An managed to be profitable since the 1st year of operation.

Another billionaire, Min Luo of Qudian Inc, solely made it to billionaire status by providing credit to online shoppers at the Alibaba platform. The company collaborates with Ant Financial, the financing arm of Alibaba. An additional example of a successful cooperation is the one between Tencent and JD.com. Tencent sold its B2C e-commerce platform Paipai to JD.com after it took an 18% share in JD.com.

Instead of competing, Tencent is now feeding traffic to the JD.com platform, making it the largest retailer in China. By becoming part of a larger ecosystem and leveraging on the platform's large user base and data, these companies have obtained important resources for growth and been able to focus on what they are good at.

We feel the Chinese giants are able to further consolidate their leading position. This is because they have the ideal prerequisites to develop and monetise artificial intelligence. Not only are they able to acquire the right talents and start-ups, they are also sitting on the world's largest stockpile of A.I. raw material: data.

With the Alibaba and Tencent ecosystems covering so many aspects of the life of Chinese consumers, these companies may have a better picture of their clients than the average secret intelligence agency of its citizens. Now, summarising the above it seems that strategic opportunities to create Network Effects only become available after certain levels of success are achieved with simpler products.

The end game is to convince shoppers to use digital wallets under the control of the tech company for all sorts of purchases, paving the way for them to provide more profitable offerings such as online credit, insurances and wealth management products. In Indonesia, we see one unicorn that seems to be on that path. More on that in the next section.

"If you don't take their money, and they invest in a competitor, it can be deadly"

-Andy Mok from Red Pagoda Resources, referring to Tencent-

[8] Venus Feng (2017, November). "Alibaba's Rise Creates At Least 10 Billionaires Not Named Jack Ma" *Bloomberg*. Retrieved from https://www.bloomberg.com/news/articles/2017-11-12/alibaba-rise-creates-at-least-10-billionaires-not-named-jack-ma

Indonesia: we care about the ecosystem

Chinese Giants stirring the Indonesian market

Now the Chinese internet giants are dominating their home markets, they have set their sights on the rest of the planet. The first stop: Southeast Asia.

Alibaba first obtained its foothold in the region in 2016, when they took a controlling stake in Lazada.

Subsequently, we have seen a number of strategic investments by both Alibaba, Tencent and JD in Indonesian companies like Tokopedia, media group Emtek, Go-Jek, and Traveloka. Tencent was also an early backer of gaming company Sea, which subsequently launched a marketplace platform Shopee.

The above examples make clear what is happening. The Chinese giants are quick to make their move to carve up Southeast Asia's tech ecosystem.

If they play by the playbook discussed earlier in this report, it can be expected that Alibaba, Tencent and perhaps other followers from China will aggressively seek to acquire assets that enhance their ecosystems and consolidate their positions.

Fast forward thinking: former foes become allies

In the Southeast Asian context, incumbents with a strong franchise and large footprint could be of great value to the tech ecosystems. Former enemies are now becoming potential partners.

Case in point is Uber partnering up with Singaporean taxi company Comfort Delgro. Something that was unthinkable before. Similarly, we see Indonesia's leading taxi company Blue Bird working together with Go-Jek's car-hailing vertical Go-Car.

In Indonesia, we are seeing some interesting opportunities emerging when public equity investors are discounting the disruption from tech companies. At depressed valuation, the risk-reward from the tech-incumbent dynamic could prove to be compelling.

Go-Jek the first true Indonesian ecosystem?

There is one company that we believe may be Indonesia's first true ecosystem: the tremendously fast-growing ride-hailing start-up Go-Jek. Similar to the Chinese tech giants, the company started with a single successful product (ride-hailing) and then built a bigger company around it. As illustrated in the figure below, the Go-Jek app now offers more than 16 services.

With acquisitions of other start-ups like Kartuku and Halodoc, Go-Jek has shown not shy away from buying other companies to increase the value of its app. Another similarity with the Chinese giants is the introduction of a digital wallet akin WeChat pay, which not only facilitates payments to Go-Jek and its merchants, but also to other users.

When we speak to people in the tech scene, it seems that the majority believes Go-Pay is likely to become the most successful digital wallet in Indonesia. With Go-Jek's continued growth, we feel this very much possible.

Just like the Chinese giants, Go-Jek has partnered up with various parties. For example, Go-Jek has partnered up with several convenience store chains. This collaboration enabled the company to add several services to its platform, like delivery of groceries. This instantly added a network of 14,000 locations where Go-Jek users can top-up (and soon cash-out) their Go-Pay wallet. It is a win-win situation. In the example above, the stores would see its footfall increase, which presents the opportunity to cross sell products and services in addition to receiving fee-based income from the top-ups.

As such, we think there are interesting investment opportunities in Indonesian (conventional) businesses that could be of value to tech platforms. We have increased our exposure to those we think will benefit.

Go-jek's ecosystem

Enjoy reading our reports? Check out our website for more!

-The End-

A brief history of Chinese tech ecosystems

A short history of Alibaba

As described above, Alibaba started in the 90's with an online B2B marketplace. Then, in 2003, the company launched Taobao, a marketplace for Chinese consumers to transact in the Chinese language.

To improve its competitive advantage, Taobao tried to solve the biggest issue in e-commerce in China at that time: the distrust between sellers and buyers.

The solution came in 2004 in the form of Alipay, the online payment processor founded by the company. Having success in solving the trust issue, Alipay experienced incredible growth and even started to be used on other platforms outside of the Alibaba ecosystem.

The company then launched Tmall in 2008, an online mall of retailers targeting the more affluent Chinese consumers who desire to buy from the brands and stores that they know.

Tmall allowed these retailers to capture this demand, by offering them an easy way to open a storefront on the Tmall platform and then expose it to the immense user base of Taobao.

This platform also made it possible for Western retailers to gain access to the Chinese market, without the need of having a local presence.

With the explosion of consumers and merchants holding deposits in their Alipay accounts, the company added the Yu'EBao service in 2013, allowing the Alipay users to buy money market funds. This turned out to be a landmark decision for Alipay, as it was the first step to expand beyond payment services and create a financial services company.

Alibaba rebranded Alipay to Ant Financial Services in 2014, which has now grown into a full-scale financial service company that leverages on a big data infrastructure.

Alipay is now integrated with a wide range of financial services, such as insurance (ZhongAn), credit ratings (Sesame Credit), personal credit lines (Ant Micro Loan), SMB banking (MYbank) as well as the mentioned money market investment (YuEBao). It's an ecosystem within an ecosystem...

Alibaba's mission to surround the Chinese consumer with all the essential things required in their daily life seem to be working out pretty well.

Nowadays, Alibaba does not only own China's most valuable fintech company (Ant Financial), but is also China's biggest cloud provider (AliYun), and the largest B2C e-commerce company in ASEAN (Lazada).

It is also active in mobile gaming (Kabam), mobile messaging (TangoME), video content (Youku Tudou), music content (Xiami), taxi-hailing (Kuaidi Dache later merged with Didi Kuaidi), social media (Weibo), and mobile browsing (UCWeb).

Ant Financial: the ecosystem within an ecosystem

A short history of Tencent

In the 90's, Tencent built its initial user base with the instant messenger service OICQ (later renamed to QQ). The messenger soon had millions of users and Tencent started to find ways to monetise these users by offering virtual goods and paid-premium QQ services.

In 2003 the company launched QQ.com, one of the largest portal sites in China, and started to expand its online gaming offering. Two years later in 2005, the company launched a social network called Qzone.

As users increasingly started to access the internet through their mobile phones, Tencent created the mobile instant messenger app called WeChat in 2011.

A major milestone was achieved in 2012 when WeChat launched version 4.0. This made WeChat the first social network for smartphones, and gradually attracted most of the social media users of other platforms such as Renren, the Chinese equivalent of Facebook.

Then in 2013, WeChat launched version 5.0 that included the payment service called WeChat Pay. This was used to enable peer-to-peer transfers and in-app purchases on public accounts owned by brands and publishers. While mobile commerce took off, WeChat Pay swiftly expanded its features and started to compete with Alipay.

Just like Alipay was the stepping stone for Alibaba to become a fully-fledged financial services company, so was WeChat Pay the stepping stone for adding an online bank (WeBank), and a money market fund manager (LiCaiTong).

WeBank has disbursed more than US$ 45 billion in loans to clients since its launch two years ago. While LiCaiTong already has AUM of about US$ 30bn.

Tencent is now the China's largest gaming and media company, boasting 843 million monthly active users at its QQ instant messenger, 980 million monthly active users for its WeChat app and 568 million MAU at its Qzone social network.

More signs of better conditions for farmers

In our reports, we have been arguing that one area that's less prone to digital disruption is the farming sector. In one of our key markets, Indonesia, the digital revolution has actually helped the sector rather than disrupting it.

With farmers having better access to information about prices of rice, corn, and chilli for example, they can maximize their selling price.

Also, the agricultural reform of Indonesia's current government has been running for about two years now. Many initiatives have been undertaken, but communicating these to the farmers is a challenge on its own.

We learned from our many trips across Indonesia that a big majority of the farmers are not really using smartphones. However, better network coverage and a big push in rural Indonesia from Chinese phone makers like OPPO is gradually changing the landscape.

One of the Oppo shops in Gorontalo. According data from IDC, Oppo Indonesia sales increased by 210% in 2Q17. Oppo market share has increased from 16.7% in 3Q16 to 24% in 2Q17. Oppo is the 2nd bestselling smartphone after Samsung in Indonesia.

We have witnessed how the Indonesian government has adapted and learned to use social media to broadcast the programs on agricultural reform.

One example is the campaign to push a farmer insurance program designed to protect farmers from losses resulting from floods and pests.

There are anecdotes that this insurance program has been very effective this year since many farmlands were affected by various kind of pets. The farmer insurance program helps to keep farmers' planting appetite strong and helps to avoid farmers resorting to loan sharks for a "solution" to their financial woes.

What we would like to stress is that this insurance program is just one of the many components of the Indonesian agricultural reform aimed at improving farmers' welfare.

Click here for farmer insurance program's ad

We wrote in our previous report that investors seem to overlook the related IDR500tn (US$38bn) opportunity.

Click here for our 2Q 2017 report

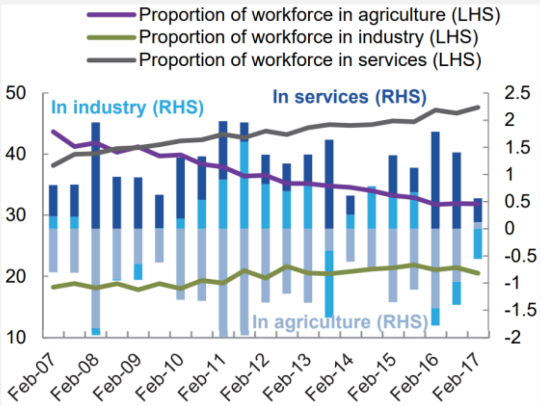
We mentioned that despite the program's many shortcomings and room for improvement, it has yielded impressive tangible results, such as massive infrastructure construction and growing agriculture output. Now, recent numbers about Indonesian employment levels are also signalling an improving situation of farmers.

Shift of workers from agri to service industry slowed down

As yet another indicator of the success of the program, we would like to point out a chart (see below) from Indonesian national labour force survey, Sakernas. The survey suggests that for the first time in a decade, workers' shift from agriculture to service industry has slowed.

Workers' shift from agriculture to services has slowed and the proportion of workers with industrial jobs has started to decline

Proportion of workforce based on sector



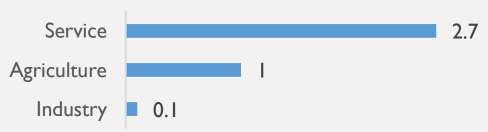
Source: Sakernas, World Bank

More jobs added in agri than in industry sector

Another chart (see below) from the same institution suggests that, in contrary to common belief, the number of employed workers in the agriculture sector has increased by 1mn in the period from Feb 2016 to Feb 2017. The addition is multiple times the size of addition in the manufacturing sector.

Increase in agriculture workers for the first time since 2007

Change in the number of employed workers (million), Feb'16-Feb'17 by type of job and sector employment



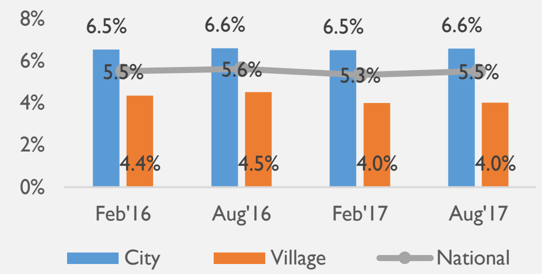
Source: Sakernas, World Bank

Unemployment rate in villages (=farmers) declined further

Based on data from the Indonesian statistics agency, the unemployment rate in the villages has been on the way down, from 4.35% in Feb 2016 to 4.01% in August 2017. During our trip to the villages, farmers informed us that it is generally difficult to find workers to help them during the harvest time.

Unemployment in villages declines

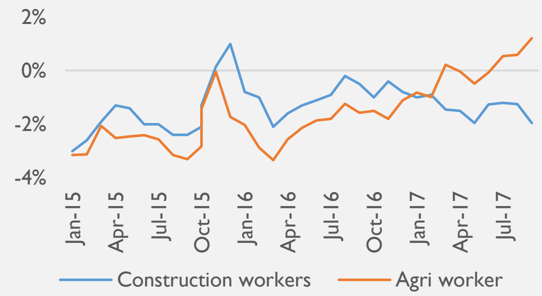
Unemployment rate in village and urban area



Source: National Bureau statistics

Agriculture real wage growth outperform the construction workers despite of big infrastructure spending

Real wage growth YoY



Source: National Bureau statistics

We expect the trend of falling unemployment in Indonesian rural areas to continue given that various ministry-level proposals have been made aiming to incentivise people to stay and work in the villages.

No doubt that, reflecting the economic reality in the villages, a vast majority of these proposals will impact the farming area.

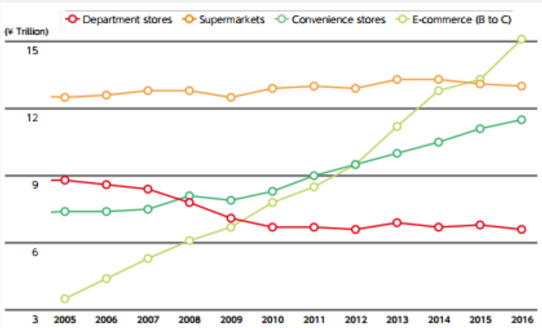
As the numbers are hard to argue with, we trust that investors should be more open-minded about the success of the Indonesian agricultural reform.

Minimart/convenience store chain – the invincible

While some of the conventional business such as retail may get disrupted, this does not seem to apply to convenience stores.

Convenience store format continues to grow amid increasing e-commerce penetration

Sales by retail format in Japan



Source: Ministry of Economy, Trade, and Industry of Japan

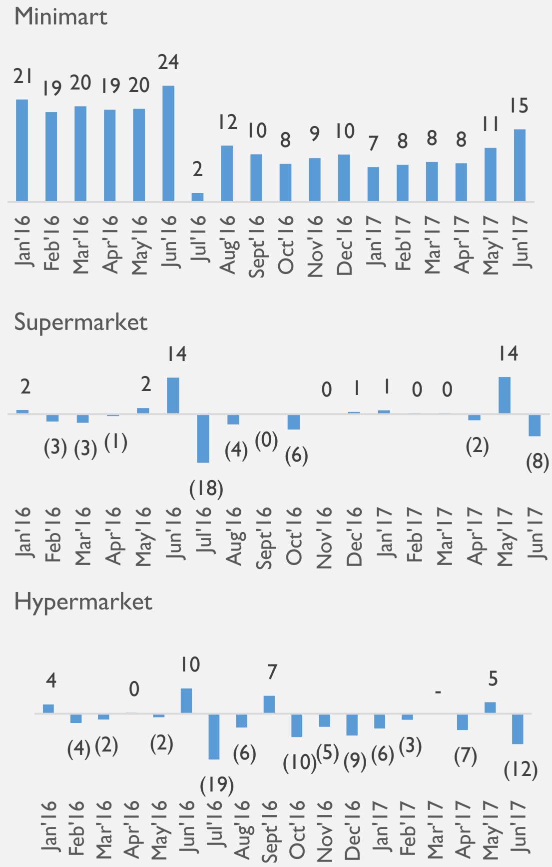
In Japan, a country with one of the highest e-commerce penetration levels in the world, online retail- and convenience store sales have grown hand-in-hand. At the same time, sales of large format retailers such as supermarkets and department stores have been declining.

We believe the same pattern will appear in Indonesia. It is quite clear that the convenience store concept is the winning retail format in Indonesia. Both supermarkets and hypermarkets are struggling to compete, despite that e-commerce penetration in Indonesia is not even 2%.

Given that convenience stores add great value to the tech ecosystems, and also appear immune to e-commerce disruption, we believe there are opportunities in this space.

Minimart winning the Indonesian retail market

Sales growth YoY, in percentage



Source: Nielsen