

China's challenger to Airbus and Boeing set for takeoff

By Ben Bland in Shanghai

In a hanger on a vast industrial complex near Shanghai's Pudong airport, the Chinese-made aircraft that harbors the country's hopes of rivaling the Boeing 737 and Airbus A320 is being prepared for its first test flight in May.

The Comac C919 is bounded by a huge Chinese flag and a banner bearing an exhortation from President Xi Jinping: "Focus and get down to work to make China's first large aircraft fly into the skies."

More than 30 years after China's previous attempt to build a large airliner ended in failure - when it abandoned efforts to reverse-engineer a crashed Boeing 707 - Mr Xi's plan to turn China into an aviation powerhouse is one step closer to fruition.

"The first test flight will be exciting," says Wang Jingling, deputy director-general of the Civil Aviation Administration of China, the regulator charged with certifying the C919 as airworthy.

With China forecast overtake the US as the world's biggest aviation market in 2024, there will be a large domestic customer base for the C919, if all goes to plan and the first aircraft roll off the production line in 2019.

Chinese airlines and leasing companies have placed more than 500 orders for the 158-174 seat C919, which is designed to compete with Boeing and Airbus's workhorses of short-haul aviation. It is being built by Comac, a state-owned group spun out of China's military aviation industry in 2008, with many of the most important parts sourced from European and US companies such as GE, Safran and Honeywell.

Aviation experts warn that the path from test flight to mass production is likely to be bumpy. And they question how much value China will get from the billions of dollars it has spent on an aircraft that will be inferior to its Boeing and Airbus rivals and may not obtain the European and US certification needed to fly in most international markets.

Derek Levine, who wrote a book on China's aviation ambitions, says that while the first flight will be a "huge accomplishment" in political terms, China will remain "15 years behind" unless it can develop its own engines and avionics, rather than relying on foreign suppliers.

He warns that the C919 will be less fuel efficient than the latest iterations of its competitors - the 737 Max and A320neo - and more



expensive to service.

In addition, says Sash Tusa, an aerospace analyst at Agency Partners, a research house in London, "few of the high-value added systems are Chinese, so it takes away the cost advantage of the C919 being made in China".

Analysts say that state-owned airlines and leasing companies, including Shanghai-based China Eastern, have been encouraged to buy the C919.

"The risk for China is that it ends up with a mediocre aircraft manufacturer and that Chinese airlines are forced to use its products, making them mediocre airlines," says one western aviation industry executive.

Some developing nations in Africa and Asia might be induced to accept the Chinese certification and take the C919 because of cheap financing and political pressure.

But widespread international sales will require approval from the US Federal Aviation Administration and the European Aviation Safety Agency. EASA started working with China's CAAC in December to validate its certification of the C919, but there is no timeline or certainty that it will be approved for European flight.

"For Comac to seek certification from Europe is a significant move, as it suggests they are willing to open their books to us and learn the gaps in their process," says one European aviation official.

However, he warns that it will be "a painful process for Comac and the CAAC because they have never certified an aircraft of this size before".

Corrine Png, a transport analyst in Singapore, says that although many of the C919's parts come

from "tried and tested" suppliers, integrating different components for a new aircraft is difficult, even for more experienced manufacturers such as Airbus and Boeing.

The test flight is already more than a year behind schedule and further delays could cause a "snowball effect", not only holding back certification and production but making the C919's technology even more outdated, she says.

But Steven Lien, Asia-Pacific president of Honeywell Aerospace, which is supplying the C919's wheels, brakes and flight control systems, says that Comac is learning fast.

"The first version might be a little bit behind in terms of efficiency but Comac is doing everything it needs to invest in technology," he says. "Over the long term, it will be just as competitive as anything from the west."

Honeywell, which provided parts for Comac's recently launched 90-seat ARJ-21 regional jet, expects to earn \$15bn in revenue over the life-cycle of the C919. It is also talking

to Comac about collaborating on a widebody aircraft that Comac is planning to produce alongside Russia's United Aircraft Corporation.

Boeing and Airbus publicly play down the prospect of an imminent challenge from Comac. But privately they admit that Chinese ambitions cannot be ignored, even if the C919 takes time to win customers outside China. "They will get there," says one industry executive.

For China's Communist party leaders, it is as much about politics and national pride as market opportunity.

At Comac's sprawling factory, another propaganda banner urges the 10,000 workers to help China defeat the competition in the regional, short-haul and long-haul jet markets:

"Remember your mission, march forward and win the 'three battles,'" it says.

Additional reporting by Peggy Hollinger in London

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China hopes to overtake the US as the world's biggest aviation market in 2024

ENTREPRENEURS

Taizo Son, Mistletoe founder, on Japan's start-up culture



Taizo Son

By Leo Lewis

Fear of failure runs high. The rewards of success are often low. Only a third of Japanese adults think starting a business is a good career choice. Entrepreneurship has a fundamental image problem in Japan, and Taizo Son has a good idea what it is.

The biggest hurdle for a young, would-be Japanese founder, says the 43-year-old serial entrepreneur, is convincing their parents that a start-up beats a steady job. GungHo, his first major enterprise, produced Puzzle & Dragons, the first mobile game in the world to generate USD1bn in revenues.

Mr Son pauses, weighing the consequences of casting one gender as dream-crushing conservatives: "Especially Mum. Convincing her is the most difficult obstacle. The people who can do that . . . start companies," he says.

He should know. As well as founding GungHo, worth about \$2.1bn, he has had front-row seats for Ja-

pan's greatest entrepreneurial showcase of recent years. His brother, Masayoshi, founded SoftBank and turned it into Japan's biggest and most aggressive technology company. Masayoshi formed a \$100bn investment fund with Saudi Arabia; bought the UK's Arm Holdings for \$32bn last year; and features prominently in appreciative tweets by US president Donald Trump.

Taizo, convinced he will one day outshine his brother, quietly invests through Mistletoe, a venture investment vehicle he founded with his own considerable capital. It has basic psychological work to do in Japan: triggering an "attitude revolution" towards business risk.

Since 2013, Mistletoe has directly invested approximately \$100bn in about 50 start-ups. One of the largest is Planet Table, a Tokyo-based online platform that aims to reduce food waste.

Through Mistletoe, Mr Son has incubated medical delivery drones,

micro satellites, self-driving cars and disease-detecting toilets - the technological furniture, he says, that will change the world. He stops listing Japan's entrepreneurial shortcomings and instead explains how things are changing.

“The motivation in big companies has been lost.”

TAIZO SON

"Critics say that Japan cannot find a good venture company like Google, Facebook or Apple. But those companies didn't emerge in the UK or China either. It is wrong to be sad that Japan doesn't have a Google. We have a different approach," he says.

Hardware engineers are as vital as their software counterparts. "When everything is connected, the Japanese can contribute their expertise at making the products and bringing them into the world of innovation," he says.

But behind the media-ready bullishness, Mr Son reveals that he has not gone all-in on his Japan bet. Shortly after meeting the Financial Times in Tokyo, he revealed plans to establish a second headquarters for Mistletoe in Singapore. It is not an abandonment of Japan, he asserts, but it will bring him closer to Southeast Asia and what he sees as the region's more "energetic", less tightly regulated systems of innovation.

There may be lessons, he says, that can be brought back to Tokyo. Mistletoe is Mr Son's attempt to "socialise" entrepreneurship by putting a technology incubator, a venture investment company, a seed accelerator and a start-up consultancy under one roof.

"Very few [young people] have a concrete idea [for a company] but they admire entrepreneurs . . . The power of community is very important: if people feel isolated, they will eventually give up trying to start something," he says.

As someone who spent formative time in Silicon Valley and now invests in companies based there, such as Zoox, the self-driving car start-up, Mr Son sees a chance to replicate that West Coast energy and fuse it with a new breed of Japanese entrepreneurialism coiled for release. Mistletoe, struggling somewhat to encapsulate these grand ideas, calls itself a "collective impact studio". Even insiders admit the phrase needs work.

But there are two fundamental changes that give Mr Son confidence in his project, and the first is the onset of disillusionment. Two separate Japanese generations are disillusioned with corporate powerhouses: one in its twenties that sees companies as idea-stifling slave ships, and another, already mid-career and working miserably for those companies. Big scandals, like accounting problems at Toshiba, mass lay-offs at Panasonic in 2009 and the sale of Sharp to Taiwan's Foxconn, have been fatal blows on Japan Inc's image, he says. "Big companies are not interesting any more. All the heads that I know ask me why their best engineers have started founding spinout companies . . . The engineers say they had a bunch of new ideas that they took to their bosses and they were mostly rejected. The motivation in big companies has been lost," says Mr Son.

But the second change is structural. Many of the formidable barriers to starting a company in Japan, in particular the legal requirement for \$100,000 of capital to set up a publicly traded company; the near-impossibility of a bank loan; and a stringent guarantor system, have been softened in recent years. The difference now is significant. A small but growing number of angel investors and other incubator-type companies present would-be entrepreneurs with the ability to crash and burn without devastating consequences.

They remove, he says, what was once a paralysing notion that a failed idea would result in a declaration of personal bankruptcy and, in practical effect, the inability to try anything again.

He returns to the subject of Japanese risk appetite, and looks around for a metaphor to explain the over-thinking that holds entrepreneurs back, opting for the carefully crafted crudeness of the Mistletoe office.

"The Japanese demand too much quality," he concludes. "They apologise when a train is five minutes delayed . . . There is too much quality and too many customer demands - and that sometimes gives you a waste of resources. Japanese society is too sophisticated."

FIFA scandal spreads as Asia official admits taking bribes



FIFA President Gianni Infantino speaks to reporters

By Patricia Hurtado, Tariq Panja

THE first Asian football official to be convicted in the FIFA corruption scandal, a member of a committee that oversaw ethics compliance, told a U.S. judge he accepted about \$1 million in bribes, including USD100,000 from the former president of the Asian Football Confederation.

Guam Football Association President Richard Lai, a U.S. citizen who's also on the Asian confederation's executive board, implicated that group's ex-president, Mohamed Bin Hammam, and two other Asian football officials during his guilty plea Thursday, according to records in federal court in Brooklyn, New York.

Lai said rival factions within the sport's governance bodies were trying to win his influence in the election for FIFA president and that he accepted illegal payments from both sides. Suspended Friday by the football organization's ethics committee, Lai could face decades in prison after admitting to two counts of wire fraud.

While Lai didn't name Hammam in court, he said he

accepted \$100,000 "from the head of Asian Football Conference at the time," whom he said was later "banned for life from football." Hammam, a Qatari, was president of the conference from 2002 until he resigned in 2011 and was subsequently banned for life.

Lai said the AFC president approached him in January 2011 with an offer to pay him as a consultant for a construction business while also soliciting his support in a run for the FIFA presidency. Lai said he never did any work for the money, which was wired from an account in Qatar.

Lai said he received more than \$850,000 in bribes from November 2009 to late 2014 to advance the interests of an opposing faction in Asian football and identify others with influence in FIFA who might be open to receiving bribes. He traced that relationship to a conference in Malaysia where he said the president of the Kuwait Football Association and an intermediary approached him seeking help to limit the influence of the AFC president.

In a 21-page document outlining the case and plea deal, descriptions of one of the co-conspirators matches Kuwait's Sheikh Ahmad

Al Fahd Al Sabah, a sports powerbroker who sits on FIFA's executive board. He's also an influential member of the International Olympic Committee and backed that organization's presi-

dent towards election victory 2013.

"Sheikh Ahmad is very surprised by such allegations and strongly denies any wrongdoing," according to a statement sent by the Olympic Council of Asia, an umbrella body that he also leads. "He will vigorously defend his integrity and reputation and that of any organization that he represents in any relevant legal review."

IOC spokesman Mark Adams said Ahmad had referred himself to FIFA's ethics committee and "even though it is not related to any IOC matter, he has also informed the IOC chief ethics and compliance officer."

Lai said he profited from working both sides, telling the judge he "ensured" that a "thorough" audit of Asian football would reveal a misuse of funds resulting in the AFC president's ban from the sport.

"A high-ranking FIFA officer met with me and thanked me for my work on the audit," Lai told the judge, according to the transcript. "That FIFA officer then rewarded me for those efforts by having me appointed to be the FIFA audit and compliance committee."

Lai said his efforts helped the opposing faction's candidate eventually winning of the presidency of the Asian federation and the Kuwait of-

ficial get elected to the FIFA executive committee.

"The defendant abused the trust placed in him as a football official in order to line his own pockets," acting U.S. Attorney Bridget Rohde in Brooklyn said in a statement. "The defendant's breach of trust was particularly significant given his position as a member of the FIFA Audit and Compliance committee, which must play an important and independent role if corruption within FIFA is to be eliminated."

Lai's lawyer didn't immediately respond Friday to an email seeking comment on the plea. Hammam couldn't be immediately located for comment and the U.S. attorney's office was unable to identify his lawyer.

The sprawling U.S. case against FIFA officials sent shockwaves through global football, unseating leaders including Sepp Blatter, who was replaced last year by Gianni Infantino. The scandal has affected FIFA's bottom line as well as its image, as sponsors have held off buying slots for next year's World Cup in Russia. This month, FIFA announced it had lost \$369 million in 2016 after spending \$130 million on lawyers and court costs in the past two years.

FIFA and the Asian Football Confederation announced Lai has been suspended and faces an internal probe.

"I would like to thank the American authorities for their continued efforts to stamp out corruption from football, which is also the top priority of the new leadership of FIFA," Infantino said in a statement. **Bloomberg**

Sheikh Ahmad resigning amid bribery claims

FIFA Council member Sheikh Ahmad Al Fahad Al Sabah of Kuwait is resigning from his football roles under pressure from allegations in an American federal court that he bribed Asian officials.

Sheikh Ahmad said yesterday in a statement he will withdraw from a May 8 election in Bahrain for the FIFA seat representing Asia which he currently holds.

"I do not want these allegations to create divisions or distract attention from the upcoming AFC (Asian Football Confederation) and FIFA Congresses," said the Kuwaiti royal, who denies any wrongdoing.

"Therefore, after careful consideration, I have decided it is in the best interests of FIFA and the AFC, for me to withdraw my candidacy for the FIFA Council and resign from my current football positions," he said.

Sheikh Ahmad resigned his candidacy ahead of a FIFA panel deciding whether to remove him on ethical grounds.

The FIFA Review Committee, which rules on the integrity of people seeking senior FIFA positions, has been studying the sheikh's candidacy since the allegations emerged, The Associated Press reported on Saturday.

The FIFA ethics committee is making a se-



Asian Olympic leader Kuwaiti Sheikh Ahmad Al-Fahad Al Sabah

parate assessment of whether to provisionally suspend the sheikh, a long-time leader of Kuwait's soccer federation who was elected to FIFA's ruling committee in 2015.

Resigning from his football positions does not necessarily put Sheikh Ahmad out of reach of FIFA ethics prosecutors and judges if any action was taken.

In 2012, former FIFA presidential candidate Mohamed bin Hammam of Qatar was banned for life by the ethics committee days after he resigned. **AP**

The global growth hotspots of the future are here

Urban Gainers

Emerging market cities are expected to grow in the years ahead

Country	City	2015 Population	2030 Population
China	Hangzhou	6.39	8.82
China	Dongguan	7.43	8.7
India	Surat	5.65	8.62
China	Foshan	7.04	8.35
Afghanistan	Kabul	4.63	8.28
Sudan	Khartoum	5.13	8.16
China	Suzhou	5.47	8.1
India	Pune	5.73	8.09
Saudi Arabia	Riyadh	6.37	7.94
China	Shenyang	6.32	7.91
China	Xi'an	6.04	7.9

Source: HSBC, UN Urbanization Project (select data)

Bloomberg

By Catherine Bosley

If you want to be at the epicenter of global growth in the next few decades, you could do worse than relocate to somewhere like Kigali,

Foshan, or Belo Horizonte. That's because many cities that today are still comparative backwaters on a global level will become major contributors to economic performance thanks to fast popu-

lation growth, according to a new report by HSBC economist James Pomeroy.

While wealthier countries are more urbanized today, the proportion of urban to rural dwellers in emerging markets is

expected to climb to 63 percent in 2050 from 50 percent now, according to the study, which draws on research by McKinsey and the United Nations.

By 2050 some 5 billion people – more than half the world's population – will live in emerging market cities, and account for more than half of global gross domestic product growth.

"The rise of medium-sized cities in emerging markets, both in terms of their size and wealth, will mean that investors need to focus more on emerging markets and the policy decisions that are being made there," Pomeroy says. "These cities will start to play a bigger and bigger role in the world economy and understanding what is going on there will be even more important." That means policy makers will have to balance the upsides of urbanization – economies of scale, better productivity and infrastructure, chance encounters that lead to new ideas, better productivity and infrastructure – with the potential downsides, in the shape of increased crime, pollution and perpetually snarled traffic. If that doesn't happen, these ill effects could

sap economic potential, Pomeroy says.

Indeed, China is focusing its hopes for better cities on the construction of Xiongan New Area, intended to be a model of urban development two hours from the capital Beijing. Chinese President Xi Jinping's aim is to turn what now is a sleepy town into a hub for innovative companies and a release-valve for the over-stretched capital.

Yet the urban areas experiencing the biggest increase in population will probably be in Africa. Kigali, Rwanda's capital, is expected to see its population of 1.3 million double in the next 15 years. To help prepare for that the city has developed a master-plan for transportation, and housing, with the aim of being a slum-free city. Unplanned growth is a common effect of rapid urbanization, as cities like Dhaka, Karachi and Lagos can attest to. Even so, they'll be among the world's 10 most populous cities, according to the study. By 2030, 81 of the world's 100 most populous cities will be in emerging markets.

The flip side is that in developed markets, where populations are ageing, the share of people living in cities may already have peaked.

"Cities that western investors may not have heard of," Pomeroy says, "may contribute more to global GDP growth than Geneva, Berlin or Milan." **Bloomberg**

ASK THE VET

by Dr Ruan Du Toit Bester



COMMON QUESTIONS ABOUT QUEENING AND BREEDING CATS

Breeding cats can be a wonderful experience. However, unless you are prepared to learn how to take care of a breeding cat and have homes for all the kittens, you should spay your cat. There are already many unwanted kittens in Macau, and unspayed cats are at more risk for several diseases, so usually spaying your pet cat is the best option. If you want to investigate responsible breeding practices, however, here are some commonly asked questions.

At what age can cats be bred?

Cats may become capable of pregnancy at as early as four months of age, but they should not be bred until they are at least one year old. If your kitten becomes accidentally pregnant at a very young age, you may need to take her to the vet get the fetuses removed.

How long does a cat's heat cycle last?

A cat will go into heat for one to two days or longer, every few weeks until she has been mated. In the northern hemisphere, these cycles will usually last from

around January until around August. While in estrus (heat), female cats will try very hard to escape and find a mate, and may be very vocal. They will also attract male cats.

How can I mate her to a particular tom?

Cats are capable of having kittens from different fathers in the same litter, so if you want your cat to only have kittens with one father cat, you should lock them up together for at least 24 hours, or up to four days to make sure. A female cat will continue to try and mate until her estrus cycle is over, regardless of whether or not she has already been made pregnant, so keep her away from other cats until she has finished her cycle.

How can I tell if she is pregnant?

The gestation period lasts between 60-65 days. The first sign of pregnancy will be that your cat's heat cycles have stopped, but this in itself is not a sure sign of pregnancy. Her nipples may swell slightly and turn pink, and she may begin to eat a little more. At around the



three week mark, your vet should be able to feel the kittens with palpitation. At five weeks, your cat's stomach will start to swell.

What food should I feed my cat before and during pregnancy?

It can be tempting to overfeed a pregnant cat, but generally they only need a slight increase in meals until the final few weeks of pregnancy. Simply feed them normally, with a high quality food. Overfeeding her may be harmful, as it can make her unfit and less able to deal with the stress of birth. Three weeks before the birth, switch to kitten food, and give her small, frequent meals. You

might also want to add calcium supplements at this time.

Breeding cats is not difficult if you have thoroughly researched the process and anticipated any problems. Take the time to make sure that your cat is happy and healthy and her kittens will be as well.

Hope this helps
Till next week
Dr. Ruan

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