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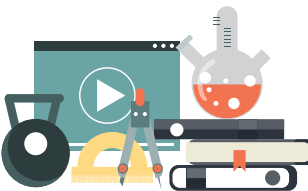
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BY YIN LOON

MEAT 2.0

The future of lab-grown protein

By now, we're all probably aware of the need to reduce our intake of meat - it's not just for our health, but also for the environment. That's why many companies are now trying to come up with the next 'clean meat', and we're not talking about tofu or veggie replacements - we're talking about real meat that's actually grown in labs. And this 'cultured meat' (aka lab-grown meat) could be the future of food.

What exactly is lab-grown meat?

Cultured meat is different from your meat alternatives like Beyond Meat and Impossible Foods - those are made from plants which are engineered to 'bleed' like meat. While it's a boon for the vegan community, meat eaters still prefer real meat that doesn't compromise on the quality and taste, and yet could eliminate much of the cruel treatment of animals and the environmental toll of factory farming.

Enter cultured meat: while it doesn't come from a dead animal, the reason it behaves like meat is because it is. It's actually made by taking a muscle sample from an animal, which is then fed a nutrient-rich fetal bovine serum to stimulate the cells to grow on their own. According to Mosa Meat, one tissue sample from a cow can yield enough muscle tissue to make 80,000 burgers!

Making meat from... your breath

If you think that's impressive, a number of startups like Air Protein, Solar Foods, and Calaysta are actually creating protein out of thin air! Researchers have found a type of microbe that can convert carbon dioxide into protein which is then turned into a flavourless powder. This powder is then used to develop meat alternatives and protein supplements.

Who makes them?

A number of startups - Memphis Meats, Aleph Farms, Higher Steaks, Mosa Meat and Meatable, to name a few - are in the race to produce the first commercially-viable cultured meat, and they're expected to hit the shelves in the next few years once they've managed to iron out some snags.

The first hitch is the cost: In 2013, a lab-grown burger cost US\$300,000 to produce, and it was overly dry. Since then, prices have fallen dramatically - Mosa Meat estimated that it could be US\$80 per kilogram, so a burger would cost just over US\$11. Meanwhile, Future Meat Technologies estimates that the cost of a cell-made steak could go down to US\$4 per pound if combined with plant-based meat substitutes.

Another issue is taste, but scientists have many methods to counter

that. These include adding fat cells which add moisture when mixed in with the muscle fibres, and starving the cells of oxygen which increases the amount of flavour-giving proteins in the final product. There's no limit to what scientists can do with flavour, but the first crop of cultured meat products will inevitably take the form of processed meats like burgers or nuggets, although in the future, it'll be possible to produce something like a steak or rack of ribs.

Beef isn't the only meat on the menu either: lamb, chicken, duck, kangaroo, and even seafood are in the works.

Singapore's very own lab-grown meat

Soon, you'll be able to eat lab-grown lobsters, crabs, and shrimps made by local enterprise Shioh Meats, Southeast Asia's first cell-based seafood company.

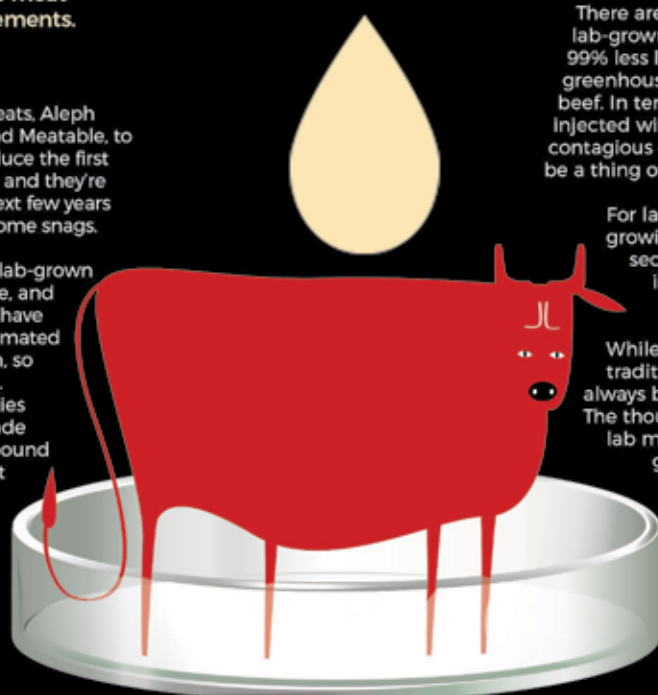
Currently, a kilogram of their shrimp - which resembles mincemeat - costs S\$5,000 to produce, but it could drop to just S\$50 by next year. Next on their list are lobsters and crabs, the prices of which could be significantly cheaper than live ones. In addition to being cost-friendly, they're also free from microplastics and other ocean pollutants.

Why should we try them?

There are many pros for cultured meat: lab-grown beef requires 45% less energy use, 99% less land use, and produces 96% fewer greenhouse gas emissions than conventional beef. In terms of health, you won't be eating meat injected with antibiotics or growth hormones, and contagious diseases like bird flu or swine fever will be a thing of the past.

For land-scarce Singapore, the possibility of growing our own food is also about food security. Imagine having our own meat industry without issues like pollution or scarcity of space.

While cultured meat could compete with traditional meat in the future, people will always be sensitive about what they eat. The thought of your burger coming from a lab may be a strange idea, but much like genetically-modified (GM) food, people will slowly overcome that hurdle.



REACH FOR THE STARS A CAREER IN SPACE

BY SIMON GWOZDZ, EQUATORIAL SPACE INDUSTRIES

I fondly remember the first time I met the many talented professionals working in the space industry - these mythical beings doing what others only dream of for a living: building satellites, analysing geographic data, and well, launching rockets.

Something interesting was apparent - these engineers, scientists, entrepreneurs, and even journalists all had one thing in common: they weren't always in space tech. It appears that most of the people across many of the space conferences worldwide came into it from another industry at some point.

SPACE INDUSTRY: A DIVERSE VILLAGE

Here is the hard truth: space tech is built by people from diverse backgrounds. You could be a fresh grad talking to a CTO of a major company, and nobody would be surprised. The sense that we are all in this together, challenging a new frontier, is palpable.

And, luckily for all of us, space is closer than ever, thanks to new technologies which make the entire process vastly cheaper and simpler. A single satellite used to cost half a billion dollars to build and launch. Nowadays, flocks of small satellites can do the same job for a fraction of the price, driving an unprecedented wave of innovation for companies and countries alike - including Singapore.

Right now, there are people in their 20s who are building satellites with their own hands. Simultaneously, experts from the traditional space tech sector with their wealth of experience often support startups, academic initiatives, and government programmes to benefit from improved telecommunications and geospatial awareness. The result is a blend of youthful energy and collected maturity which drives the industry towards new heights.

REACHING FOR THE STARS, FOR EARTH

Satellites, naturally, are at the centre of commercial space tech - but they are only the means to an end. What matters the most is how are they used to improve life on earth. Data analytics using satellite imagery and remote sensing devices allows for a myriad of purposes, from improving navigation to detecting terrorist threats. Space-based Internet-of-Things satellites connect far flung locations with poor terrestrial connectivity, allowing for smart solution deployment worldwide.

The amount of inefficiencies which satellites can help correct is absolutely staggering - and explains why the industry is growing at such an astonishing rate.

GETTING IN THE SPACE FOR SPACE

It's obvious that the space industry is the way of the future, but can just about anyone get in? An engineering degree helps, but it's not the only skillset required to be part of a successful space tech company. On top of designing and building rockets and satellites, one of the most lucrative fields right now is in data analytics specific to the needs of the end-user of the satellite information. Of course, legal, marketing, and business professionals are equally key to a healthy ecosystem. There are options for anyone willing to work hard and jump into the deep end.

So, how can you get started? Reach out to the people in the industry - go to public events, get to know who does what, and build up your network from there. Even if your academic background is relevant to the industry, you need to close the knowledge gap to understand what exactly is going on, and how can you improve it. Last but not least, don't be afraid to admit you're fresh and still learning - we all are.

FROM RED DOT TO RED PLANET

In the next few years, Singapore's space tech industry is expected to reach a point of inflection, with successful milestones leading to more investments, more revenue, and more jobs. We may have yet to put a man into space, but nothing worth having comes easy, and space is particularly hard - it will take some time before we can point towards the night sky, knowing something we've constructed is right there.

Singapore has a rare chance to build something amazing from scratch. The groundwork has been done - there are local space tech companies specialising in everything from plasma thrusters and rocket launchers to satellites and space debris solutions - but there is always a need for new talent. So, regardless of your background, a career in space is not as far-fetched as you think.

ASIAN TIGERS

BY
WANG
ZHIQI

Entrepreneurs in our backyard

Taking risks is often frowned upon in many Asian cultures. Instead, many families would prefer their children to excel academically, get top marks, and follow a stable career progression that offers the hallmark of a good life. Entrepreneurship offers none of these – it is unsteady and unpredictable, with no clear route or path to success.

It can be argued that entrepreneurship in Asia is a completely different ball game as compared to the developed Western world, because failure is so much less accepted in Eastern culture. However, here are some successful stories we can learn from.

Zhang Yong SINGAPORE/CHINA

Dropping out of high school before even turning 19, no one expected Zhang Yong to become anything he is today. In fact, before that, he has NEVER been to restaurant – but now, he boasts a net worth of more than \$39 billion and runs a restaurant chain with more than 300 locations around the world.

Zhang Yong is the co-founder of Hai Di Lao chain of Chinese hotpot restaurants, where customers are served a boiling hot broth that's used to cook various meats, vegetables and noodles. Last year, the Beijing-based restaurant chain reported \$16 billion in revenue with the company valued at \$12 billion.

Hai Di Lao is unique because it is very serviced based. The outlets often featured free popcorns, drinks and even manicure during waiting times. His key advice to new entrepreneurs would be to value employees like family, and provide opportunities for employees to raise suggestions to improve the business. Managers of the outlets are also rewarded with a percentage of profit each store makes.



Mochtar Riady INDONESIA

Mochtar Riady (Chinese name: Li Wenzheng) is the founder of Lippo Group, which has an asset of over US\$7 billion. Riady was a first generation Chinese immigrant to Indonesia, and his background and personality inspired him to start new projects and companies. Bit by bit, Riady built up his empire while contributing significantly to philanthropy on projects such as the NUS Mochtar Riady Business Building.

Even at 90 years of age, Riady is not stopping. He recently embarked on his latest project – creating a new city in Indonesia called Meikarta, located some 40km east of Jakarta. The total construction cost is estimated at 278 trillion rupiah (\$19.7 billion), and once completed it will have a population of 1 million.

Lei Jun CHINA

Lei Jun is the entrepreneur behind Xiaomi, a technology company that manufactures smartphones, mobile apps, and other consumer electronics. Unbelievably, this company only started in 2010 and entered the competitive smartphone market with an affordable smartphone that captured the mass market.

Even though Xiaomi phones were not top notch phones in terms of performance, the company attracted a huge following in China and other developing countries due to its user friendliness. Lei Jun is another classic self made millionaire who created a series of successful enterprises, including Kingsoft (software), Shunwei Capital (investment), and an online bookstore called Joyo, which he sold for US\$75 million to Amazon in 2004 before becoming a household name through Xiaomi. Xiaomi continues to breed innovations that are accessible to the majority of middle income earners.



Mukesh Dhirubhai Ambani INDIA

Mukesh Ambani is an Indian business magnate and the chairman of Reliance Industries Limited (RIL), a Fortune Global 500 company and India's most valuable company by its market value. In fact, he is the richest man in Asia and the 13th richest person in the world as of March 2019.

Ambani came from an ordinary family and through hard work and intelligence, managed to capitalise on key opportunities along the development journey of India which propelled him to success. From young, his dad instilled in him the importance of learning beyond the classroom – from the environment around him. Fun fact: Ambani was enrolled in Stanford University but dropped out to pursue his business dreams.

After reading the success stories, aren't you inspired to create something you can call your own and make a change in this world?

BY LINDSAY WONG

A DIGITAL HELP for REAL LIFE ISSUES

The Impact of Tech on Social Issues

We all know that technology has greatly impacted the world, from saving lives to creating jobs. But can technology save humanity? Social issues have existed since the beginning of humanity, and there are no signs of social issues being eradicated anytime soon. As long as there are people in the world, social issues will continue to be a problem. Increasingly, technology has been effectively used to alleviate social issues.

Mental Health

Although mental health has always been a taboo subject in Asia, it's a serious issue that a significant portion of the population deals with. Depression and anxiety are conditions that millions of people suffer from. One great feature of technology is anonymity; people don't have to be ashamed when using technology for these purposes because they are literally hidden behind a screen. Some people are able to share more and be open about their mental health.

There are several free apps that can assist in improving mental health, such as **Happify**, **TalkLife** and **Moodpath**. These apps mainly help people talk openly about mental health to a community, gain support, track their moods, assess mental health to decide if more professional help is needed, provide coping mechanisms, identify troubles or feelings, or brighten moods with fun games and activities. Such apps won't completely cure depression or anxiety, but they can alleviate it.

Poverty

Poverty is another serious long-standing social issue that remains as a huge problem. Millions of people around the world don't have access to food, clean water, and shelter.

One way in which technology is helping is with the existence of artificial intelligence (AI) which helps the problem by gathering information needed to help develop and improve conditions. Technology can also be used to create jobs and widen job prospects in developing countries as they gain greater access to the Internet. Apps we use today – like **Grab**, **Deliveroo** or **foodpanda** – give these people access to a marketplace where anyone can deliver goods and be paid for their services. This would allow those in poverty to economically sustain themselves.

Furthermore, technology helps to lower cost of production, which is vital in reducing poverty, as households would be able to get access to basic needs.



Loneliness

In recent decades, loneliness has become a crippling social issue that affects a huge portion of the adult population all over the developed world. It's a social issue that technology can tackle, although it does have its good and bad sides.

The main way to deal with loneliness is to form connections with others. Creating and fostering connections online can lead to meetings in person, alleviating the issue of loneliness. For example, the social network **Meetup** links people who share similar interests with in-person events.

Furthermore, apps and virtual reality can also help connect people through new technologies like **Push to Talk**, **Alcove VR** and **Reindeer**. Even voice services like **Siri** and **Alexa** encourage some form of interaction. While people have argued that technology discourages in-person interaction, it definitely has the ability to reduce loneliness because it still connects people, albeit virtually.

Dementia

For the older generation, dementia is both a social and medical issue. This medical condition significantly impacts a person's ability to socialise with others, including loved ones.

Technology can support patients with dementia with innovations such as specialised clocks that reduce anxiety, communication aids that enable greater digital and more frequent interactions with loved ones, location tracking devices, home care robots and robotic pets, and monitoring devices. Local startup **Mind Palace** is a VR app that allows patients to visit a place in their memory to help alleviate anxiety.

These devices not only relieve the burden of caregivers but also make their duties easier. As a result, dementia patients can lead a happier life with more social interactions which could be highly beneficial to them.

Mental health, poverty, loneliness, and dementia are just a few of the problems that technology can tackle, but there are many other social issues that innovation can also help to alleviate. As people get even more creative and time allows technology to develop further, the list will only continue to get longer.

Most of us probably want to get a stab at being an entrepreneur – after all, Singapore is one of the best place in the world to start one, especially since the government is very generous with local startups. If you're thinking of heading into business for yourself, you may have some questions, so here is a simple Q&A to get you going.

Cheat Sheet

#63 Entrepreneurship

RAISING MONEY

Most people get stuck at the beginning when it comes to raising money. If you have all the formula right it should take you six months to do so: in a mediocre business, infinity. The best source of funding is always a customer, but for many successful businesses, funding usually goes in this order:

1. Money from your savings, friends, and family
2. Angel investor money
3. VC (Venture capitalist) money

When raising money is not easy then your idea is probably incapable of raising money. If it's easy, then take as much as possible. If it's TOO easy, then sell your company (unless you are Twitter, etc).

WHEN DO YOU QUIT YOUR JOB?

Starting a business is not about taking risks, it's 100% about risk mitigation. Many successful businesses were started by people who didn't quickly quit their jobs. Larry Page stayed in graduate school for an entire year or so after he started Google. Steve Wozniak (of Apple) stayed at Hewlett-Packard because he didn't want to give up his safe job. Most entrepreneurs advise you to quit only if your salary can pay you for six months at your startup: basically, aim to quit your job but don't quit your job.

HOW MUCH SHOULD CEOs GET PAID?

No more than twice your lowest employee if you aren't profitable. If you're not funded, your salary should be zero until your revenues can pay your salary last. The CEO's salary is always the last expense paid in every business.

SELLING YOUR PRODUCT OR SERVICE

Find one customer who DEFINITELY – without a doubt – will buy a product or service from you. If you're planning on selling a product, make sure it works, and then think about providing it as a service: too many people do this in reverse and then fail. If nobody is buying your product, then change to a service and do whatever anyone is willing to pay for using the skills you developed while making your product. Come up with 10 ideas a day about new services your business can offer. Try to get a customer for each new service.

ANGEL INVESTORS VS VCs

Angel investors are individuals, often successful business people, who are using their own funds to invest in businesses they like, whereas venture capitalists manage the pooled money of others in a professionally-managed fund. Both investors focus on businesses in different life cycles – angels typically invest in early-stage business and startups (they face a higher risk), while VCs are interested in more established businesses.

HAVING PARTNERS IN BUSINESS

How do you make sure everyone is in it equally? Divide things up into these categories: manages the company; raises the money; had the idea; brings in the revenues; built the product (or performs the services). Divide up in equal portions. Starting a business is stressful, and fights with partners in the first year are not uncommon – if that happens, split before anything gets out of control. Losing your friends is one of the (unfortunate) steps of being an entrepreneur.

WHEN DO YOU GIVE UP YOUR BUSINESS?

When a business can't generate revenues, customers, or interest for two months, most entrepreneurs would call it quits. However, if you have a lot of traffic but no revenue, your best bet is to sell your company.

LAST NOTE

Being an entrepreneur is not all fun – there's a strong chance you can hate yourself throughout the process. Most books or "rules" for entrepreneurs talk about things like "think big", "go after your dreams". But often dreams turn into nightmares.

The golden rule is: Don't kill yourself. Remember that it's OK to fail and start over. Don't worry about it and come up with new ideas.



Enterprise and the Environment

In 2018, KFC became the first fast-food chain in Singapore to stop providing single use plastic straws. Soon, more than 270 other F&B outlets followed suit. One social enterprise that tries to solve the straw problem is Seastainable, a company that sells metal straws while contributing a large part of its profits to conserving marine wildlife.

Meanwhile, TreeDots seeks to feed the hungry in Singapore while simultaneously preventing unexpired food from being thrown into the garbage through its food distribution network.

Another environmentally-based social enterprise is Secondsguru, which aims to educate people – through talks and workshops aimed at both corporates and the community – about environmental awareness, from eco-friendly lifestyles to sustainable brands.



Help from the F&B Industry

When you think of food companies, you may think about the aroma of tacos emanating from a Pasar Malam or the soft piano music tinkling in the background at a high-end restaurant. These companies all have one primary goal: to stimulate your taste buds and make you feel nourished and sated. So what makes these companies different from a social enterprise focused on food? It is the objective of solving social problems.

An example of a social enterprise in the F&B industry is EighteenChefs, a restaurant that hires ex-prisoners – people who often find it difficult to secure jobs.

My NoNna's is not just a place to get your average Italian food in a

cafe-style setting, it also employs people with special needs. This includes people with autism, intellectual disabilities and physical disabilities. It is a prominent issue that still exists – according to a Straits Times article, only an estimated five out of every one hundred people with disabilities in Singapore are employed, which is the lowest in developed countries.

Coffee academy and cafe bettr Barista has a programme that trains disadvantaged women and the youth in order to integrate them into the coffee-making world. They don't just teach professional skills, but coffee education, life and emotional management skills, as well as physical training.

SPENDING for GOOD

Social Enterprises in Singapore

What does a human being need to survive?
The basic necessities for us to function normally are air, water, and food. An average person can go around 3 minutes without oxygen, 3-4 days without water and 3-4 weeks without food. To further elaborate on the question, what does a person need to not only survive, but also thrive living in a first world country like Singapore? He or she will need a stable paying job, a shelter over his or her head, in addition to the basics of nourishing food and clean water.

The latter two are things that are sometimes not readily available in third world countries. Even if Singapore is a first world nation, there are small pockets of society that live in conditions that are far from ideal.

Enter social enterprises – business organisations, which can be both profit or non-profit, that set out to promote, encourage or make social change and help those in need.

Socially Aware Gifts

There are a number of retail-oriented social enterprises which aim to introduce handmade crafts made by disadvantaged folk.

Sonder Social is a monthly subscription service where you can get gifts from small social enterprises from the Asia Pacific region. These goodies range from food, homeware, fashion, art, and more; the purchases help to provide employment to marginalised communities.

The Animal Project retails lifestyle products centered around the theme of animals (printed onto fashion pieces, art, gift items, homeware and stationery), and the resident artists earn royalties from the sale.

Tinkle Arts specialises in clay craft, creating intricate, hand-made models from their studio in the SIA-MINDS Employment Development Centre where its beneficiaries are hired to help with the crafting.





BY YUKI KOH

REINVENTING A NEW AGE: STUDENT ENTREPRENEURS



Cudy

CUDY (2018)

Noticing that parents were splurging on tuition and enrichment classes which perpetuated inequalities in Singapore's education system, Alexander Lim and Sean Lam set out to 'democratise education' through Cudy. Cudy was an ambitious venture, reaching out to more than 500 tuition centres and private tutors across Singapore to coordinate them through an online platform.

Through such extensive efforts, they have established a network to tap on resources any time, anywhere. With the online system, parents can match their spending means to their desired tutor. As such, this creative enterprise benefits both ends – tutors enjoy a flexible schedule and parents can spend on tuition within their financial means.

As Cudy has successfully secured solid investor funding to start up its business, this has allowed them to really put their business into effect. In turn, Cudy has aimed to set the bar high in terms of quality. Besides their online matching systems, Cudy also offers free trials to allow the parents to test the tutor-tutee fit. Hence, apart from creating greater democracy within the realm of education, they have done so by ensuring customer satisfaction across households.

KPOPKART (2018)

The informal sale of merchandise has always been a crucial issue in the KPOP community, where many sellers go missing once items are purchased. On top of that, the hassle of finding official merchandise when they become sold out has become a great source of frustration for many fans.

To allay such anxieties, KpopKart ties together many KPOP groups and bands into a single online shop for the ease of KPOP fans, selling both formal and fan-made merchandise. The three founders behind this setup – Moh Moh San, Vera Sun and Janessa Sim – combined their technical and artistic expertise to bring KpopKart into existence. Although they initially struggled in trying to find credibility since KPOP isn't seen as a serious or legitimate field, their persistence in offline one-on-one sales and the curation of a sleek and easy user interface on their website has led to massive progress.

They even won the NUS UNICON 2019, which is a regional competition for young Asian entrepreneurs to pitch their ideas to investors and capitalists. Today, they export to more than 20 countries, and are soon going to monetise their business with their increasing credibility.

UNCLE JIMMY'S (2018)

Not to be mistaken with the legendary ice-cream man, Vivian Ong and Jonathan Goh started Uncle Jimmy's to re-colour Singapore's street food and culture. This was also to honour Jonathan's uncle – Uncle Jimmy.

This startup is truly local, where Ong and Goh even take it upon themselves to invent new flavours time and again. Moreover, every single chip is handmade in a little shop, where they put care and thought into every single package and batch.



When we think of entrepreneurs, we typically think of reputable businessmen with experience and prestige to their name – yet in the twenty first century, there's been less age barriers to entrepreneurship. Many young students have charted unexplored waters, marking new territory in seizing business opportunities and forming start-ups. Many have gained traction and sustained their start-ups through extremely dedicated and passionate work, creating a new generation of designers and creators.

What really sets them apart from profiteering entrepreneurs, however, is that it is less about the money and more about the ideas and solutions. Here are some entrepreneurs which have blazed the trail for future generations through their problem-centric start-ups.

Currently, their flavours comprise some funky flavours that remind us of some traditional and iconic Singaporean dishes and ingredients: Laksa, Hae Bee Hiam and Gula Melaka – a little bit of spice, saltiness, and sweetness. Hopefully, Uncle Jimmy's will tap onto even more local delights and delicacies, so that they can expand their business and online menu!

POPSICAL KARAOKE (2015)

You can physically cup the concave-shaped Popsical machine in your hand. That's how small it is. Yet that small machine can fit up to 200,000 songs in at least 13 different languages, and be brought around as a portable karaoke machine – imagine that! In addition to the microphones with wacky sound effects, Popsical provides a revolutionary alternative to the common bulky karaoke machines located within dark karaoke rooms with retro disco lights. Popsical lets you sing at your convenience, and provides a simple user interface as well.

It all began when Faruq Marican, Fadhli Rahim and Umar Abdul Hamid were looking to change the karaoke experience entirely. Making it seamless was one thing, but they also aimed for it to be easy, convenient, and accessible. Looking at the product, especially with its unique look, they've definitely helped usher in a new age of singing and partying, where we might actually have the freedom to belt high notes in the safety of our rooms now.

CAROUSELL (2012)

When it comes to student entrepreneurs, this platform is a must-mention! After undergoing the NUS Overseas College programme which aims to expose students to entrepreneurs, Sui Rui Quek was inspired by how passionate the people there were – both with technology and solutions. Driven to solve a simple problem himself, he teamed up with Lucas Ngoo and Marcus Tan to create the platform "Carousell".

From then on, Carousell became the go-to for Singaporeans to sell second-hand goods, be it from clothes and home appliances, to renting houses or selling cars. Some students even sell their notes online through this platform!

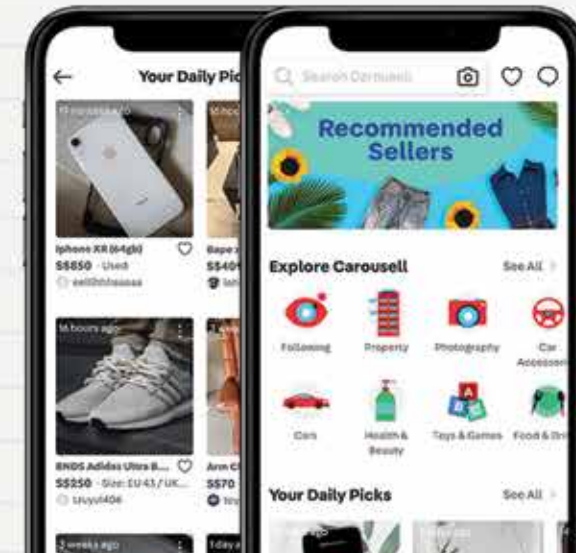
Started from a small 3-man team, Carousell now has no less than 200 staff, even going as high as 500 at one point. These numbers are a testament to their business model and growth. Carousell has even expanded overseas to Australia, Indonesia, Malaysia, Hong Kong, and many more countries. There is still growth potential, and we can definitely expect more from them in the future.

**Success is hardly found in money,
but rather in ideas to solve problems.**

Nobody really plans to be an entrepreneur until they are struck with an idea. Generally, these entrepreneurs see the world with problems, and therefore create solutions to solve them. They are driven by hunger, passion and a determination to bridge such gaps. Let's support these homegrown brands and start-ups, and appreciate the brilliant youths of our generation. And for you – it's never too late to start your journey today. If you have an idea, pitch it, believe in it, create it, and then market it. For all you know, you could be the next Carousell.



carousell



KpopKart

POP-PRENEURS:

CELEBRITY ENTREPRENEURS ESTABLISHING BIG BUSINESSES

Celebrities are not only models, actors, musicians, and social media influencers – many of them have used their celebrity status to establish their own businesses. For decades, celebrity endorsements were common, where celebrities would lend their names to brands in order to give them more recognition. Now, celebrities are getting behind their own brands by becoming entrepreneurs themselves. From food to fashion, here are some popular celebrity entrepreneurs.

BY LINDSAY WONG



Kim Kardashian

This famous family is full of entrepreneurs, and Kim is at the forefront of it. Many of her ventures have gained media attention, such as her 2014 mobile game 'Kim Kardashian: Hollywood', the 2015 photo book 'Selfish', an emoji pack for iOS devices called 'Kimoji', a shapewear brand Skims (previously – and controversially – called 'Kimono'), and various other products. Her large social media following has enabled the success of her business ventures.



Victoria Beckham

Although she is famously known for portraying Posh Spice in legendary girl group Spice Girls, Victoria Beckham is one of Britain's top entrepreneurs. Since the 2000s, she has become a style icon and an extremely successful fashion designer. Largely because of her business ventures, her net worth exceeds US\$300 million. Victoria's eponymous business was established in 2008 and now includes luxury handbags, dresses, eyewear, and fragrances. Its annual sales are around US\$50 million.



Oprah Winfrey

Since the 20th century, Oprah Winfrey was the richest African-American woman, with a net worth of US\$2.7 billion. 'The Oprah Winfrey Show', spanning over 25 years and discussing highly relevant social issues like women empowerment and human rights, garnered massive success and won many Emmy awards. Oprah then established her own production company, Harpo Productions Inc., which runs a TV channel and magazine.



Kylie Jenner

Kylie Jenner is the youngest self-made billionaire entrepreneur. At the age of 21, her makeup brand Kylie's Cosmetics sold almost US\$650 million worth of products, according to FEE. Kylie has effectively used her massive Instagram and Snapchat following to promote and sell her products, which are fairly affordable. The fact that her business only has 12 employees and Kylie handles the marketing by herself is challenging traditional theories about entrepreneurship.



Gwyneth Paltrow

Oscar-winning actress Gwyneth Paltrow has also found success as an entrepreneur. In 2008, she launched Goop, a wellness and lifestyle brand that aimed to provide information on travel, food, and health. Now, Goop has transformed to include e-commerce and recommendations on the aforementioned topics. Goop has also launched pop-up stores, its own magazine, and even a Wellness Summit.



Kanye West

Outside of music, rapper Kanye West was always interested in fashion. In 2009, he became the first non-athlete to collaborate with Nike to release his own shoe brand, the Air Yeezys. He also designed shoes for Louis Vuitton, which made its premiere during that year's Paris Fashion Week. Soon after, he worked with Adidas for Yeezy Boosts. Now, his Yeezys brand is one of the most influential sneaker brands in the world. Kanye also has his own music production company, creative content company, and music streaming service.

G-Dragon

The leader of BigBang, also known as the 'King of K-pop', has really lived up to this title as he is one of the industry's most well-known entrepreneurs. Even before he enlisted in the army, G-Dragon opened two cafes on Jeju Island. He directly participated in the construction of the cafe's unique architecture and concept. At Jeju Shinhwa World, G-Dragon has also overlooked the establishment of a bowling alley at the YG Republic Zone.



Automating Eating Out: Redefining the Hawker Centre

By Lydia Tan

What makes a new-age hawker?

The quintessential new-age hawkers are not your typical older uncle or auntie – they are usually in their 20s or 30s. Some of these younger hawkers fall under the "hot hawker" category, usually young hawker hunks and babes who have sometimes made the news just for their attractive looks and have drawn queues of smitten fans to their stalls.

Besides the hawkers being eye candy, the food sold is also not conventional hawker food fare – a lot of modern hawkers are experimenting with fusion or exotic cuisines. These fusion foods usually reimagine local tastes by combining them with Western cuisine elements to create a whole new take on dishes we're familiar with.



The trend of serving fusion hawker food might be a clever strategy to draw in a younger crowd. Since this kind of food is usually found in expensive hipster cafes, seeing it served in a hawker centre is definitely something unconventional. This will likely attract youth who are more adventurous with trying new food – and the more Instagrammable, the better.

Hawker centres of the future

Globalisation has changed the hawker centre setting and experience as we know it today.

There have been more measures introduced to make ordering food much more convenient, such as cashless payment systems and self-payment machines at the counter. More hawker stalls are also utilising the buzzer system to notify patrons to collect their orders when they are ready.

We are also seeing automated amenities in many hawker centres today. For



example, more and more hawker centres are introducing automated tray return stations that wash the dishes and return you the deposit charged for using the tray. Jurong West Hawker Centre has tray return robots that roam around for patrons to drop off their used trays.

In fact, Singapore now has its first robotic concept hawker restaurant called Hawkee, which opened at Fraser Tower in September. The fully automated hawker restaurant has self-ordering kiosks, self-collection stations and robots cooking your food. It gives some insight into how future hawker centres might look like – indoors and air-conditioned like a food court, with less need for manpower since they run purely on technology.



Hawker centres are a beloved aspect of our local culture; however, it is a dying profession. According to a 2017 report by the Hawker Centre 3.0 Committee, the median age of hawkers is 59, which is relatively high. More hawkers are passing on or retiring due to old age or sickness and the turnover rate isn't high. With no one to pass on their skills, the hawker culture could very well lose its authenticity and heritage just like that.

However, in recent years, there have been more young people stepping up to the plate (pun intended) and setting up their own hawker businesses in an attempt to keep the culture alive. We explore this rising trend and what it can bring to the future of hawker centres in Singapore.

Evolution or a loss of identity

Efforts are being made to preserve the local hawker culture. In March this year, Singapore submitted a bid to add hawker culture to the Unesco Representative List of the Intangible Cultural Heritage of Humanity.

However, some might argue that all these revamped new hawker centres are losing the traditional aspects of what really makes the hawker culture unique in Singapore. The key drawing factor of many of our favourite hawker stalls is their consistency in maintaining the same taste for years which creates a sense of familiarity and a nostalgic connection.

Will this element of our local identity be lost completely in the bid to modernise? Or will evolve to create a whole new identity for us in the years to come? It's important for us to know how to strike a balance between the traditional and modern so we don't lose out on our culture while still being able to move on with the times.



THE LIST

MOVIES ABOUT ENTREPRENEURS

THE FOUNDER (2016)

CAST: MICHAEL KEATON

Comedy/drama The Founder tells the story of McDonald's in the 1950s. Ray Kroc was a struggling milkshake mixer salesman who saw a franchise potential in the McDonald brothers' speedy system of making burgers. Ray then proceeds to pull the company from the brothers to create the multi-billion dollar empire we know today. Many entrepreneurs can relate to his journey - after failing a few times in unsuccessful business ventures, he saw a gap in a market and pursued it with vigour.

JOY (2015)

CAST: JENNIFER LAWRENCE

The semi-biographical movie Joy tells the story of Joy Mangano, a home shopping entrepreneur and inventor. A divorced mother of two, Joy invented a detachable, self-wringing mop called the Miracle Mop, which revolutionised the mop industry in the 1990s. However, on her road to success, she had to overcome betrayal, treachery, the loss of innocence to develop a wildly successful enterprise and become a true boss.

COCO BEFORE CHANEL (2009)

CAST: AUDREY TAUTOU

Young Coco Chanel, seamstress by day and cabaret entertainer by night, meets a wealthy heir and becomes his lover and fashion consultant. Tired of the flowery hats and tight corsets that defined women's fashion, Coco uses her lover's clothing to distill an elegant and sophisticated line of women's clothing that propels her to the top of Parisian haute couture. The movie chronicles Coco's storied ascension from orphan to a timeless fashion icon.

THE AVIATOR (2004)

CAST: LEONARDO DICAPRIO

It's a biopic documenting the life of Howard Hughes, a twenty-something millionaire who's one of the most well-known entrepreneurs in history - he did a little bit of everything. After making a fortune as an engineer, this eccentric inventor then became a Hollywood mogul, before focusing his attention on aviation, setting air speed records and flying around the world before founding his own airline. He was considered a bit crazy by some, but he certainly never let fear get in the way of taking a risk.

If you're wondering about how some business empires got so big, or how some entrepreneurs simply just 'make it', then you may want to watch these biopics which highlight the many ups and downs of some of the world's most famous and successful entrepreneurs.

THE SOCIAL NETWORK (2010)

CAST: JESSE EISENBERG

Although largely fictionalised, The Social Network tells the story of how Mark Zuckerberg created Facebook while studying at Harvard and how he was later sued by two brothers who claimed he stole their idea, and his best friend who was ousted from the company. It reminds you that big companies often have small beginnings, and teaches important lessons about the need to be resilient yet flexible enough to change direction when needed.

STEVE JOBS (2015)

CAST: MICHAEL FASSBENDER

The movie Steve Jobs takes us behind the scenes of the digital revolution, to paint a portrait of the man at its epicentre. It details both his success and his failures, and his struggle to keep Apple a leader in tech innovation. The story unfolds backstage at three iconic product launches, ending in 1998 with the unveiling of the iMac. It's both inspirational and a cautionary tale of what happens when one man becomes the very soul of the business they founded.

THE PURSUIT OF HAPPYNESS (2006)

CAST: WILL SMITH

This inspirational movie is based on the true story of Chris Gardner, who rose from poverty and homelessness to become a Wall Street legend. Chris was a marginally employed salesman struggling to make ends meet, when he finds himself and his five-year-old son homeless one day. Gardner then lands an internship at a prestigious stock brokerage firm, poised to begin a life-changing professional career - one that would lead him to start up his own firm and make him a multimillionaire.

THE WOLF OF WALL STREET (2013)

CAST: LEONARDO DICAPRIO

Based on the outrageous true story of Jordan Belfort, the film follows the young stockbroker's hunger for a life of non-stop thrill. His drug-fueled, money-making ride to the top led to his crime-ridden, debauched fall back down, which ended in a prison term and a surprising second act. Jordan's earlier successes certainly show what's possible, but overall, this film provides a lesson on what can go wrong when greed gets in the way of true ambition.

WASTE TO WEALTH

BY ERIK HERTZMAN



The United Nations reports that the level of carbon dioxide concentration in the atmosphere continues to increase and the Earth keeps warming up. We are far from an equilibrium and an illustration of this is that Earth Overshoot Day, the date on which humanity's resource consumption for the year exceeds Earth's capacity to regenerate those resources, came on 29 July in 2019, which is the earliest on record.

The current dire situation has been a long time coming. Ever since the Romans introduced legislation around 100 CE that protected property owners against smoke from cheese-making neighbours, governments and communities have sought to limit pollution and

the damage it does to people and wildlife, but such efforts have shown insufficient cumulative results until now.

It's easy to get discouraged about the future when it comes to news like this - but there are more reasons than ever to keep the faith. Our innovative and industrious nature responsible for devising innovations that consume the Earth's resources are also what will bring us back on a sustainable path.

Managing waste is a top priority and something to be hopeful about are all the new ideas and solutions that have the potential to reduce the amount of pollutants ending up in the air, soil, and water.

TAKE PLASTICS...

Although plastics are a highly useful family of materials, plastic waste pollution is a serious concern. Collecting and sorting of plastic waste is a significant part of a very complex problem.

Sorting of waste has been a labour-intensive and dangerous job, but developments in computer science and robotics are allowing companies like AMP Robotics and TOMRA to use machine learning and robots to differentiate and separate materials on conveyor belts. Once plastic waste is sorted effectively, it is possible to reuse or recycle certain types (PET, PP or HDPE) without impacting the quality of the material in a significant way.



ESE World in Germany has shown that bottle plastic can be recycled over ten times. The potential lifespan of a plastic bottle being 15-20 years, and the relatively low loss of material in the recycling process, could mean sustainable production from the same recycled plastic bottle for 150 to 200 years.

In order to reduce the use of fossil fuel hydrocarbons in the production of plastic, other companies are using bio-based polymers as an alternative. Biomass such as used vegetable oils, wood, and starch can be used to create traditional plastic items like food packaging and cutlery. Bio-based polymer production is linked to the energy industry, where companies like Finland's Neste Oyj use the same raw bio materials to create renewable diesel with properties similar to traditional fossil fuels without adding any new carbon to the ecosystem.

AND FOOD WASTE...

Another area with room for improvement is food waste. About 10% of all waste in Singapore is expired, uncooked or unconsumed food. At the same time, plastics that are contaminated with food are not easily recyclable. Local companies like Tria has designed biodegradable food containers that allow for the processing and treatment of packaging and food waste together in an industrial digester. The result is water, carbon dioxide, and plant matter that can be used in parks, gardens, and farms.

With inventions like these, and new solutions constantly coming to the market, there is tremendous reason for optimism. By putting human ingenuity and industriousness to good use, we can create a clean, bright future together.



OUT AND ABOUT

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PRODUCTIONS



17 Dec - 5 Jan | 1pm, 2pm, 6pm, 8pm
Sands Theatre, Marina Bay Sands
Tickets: \$50-\$220

CATS

Andrew Lloyd Webber's record-breaking musical CATS comes to Singapore for a limited season. This musical comes together in a fusion of music, dance and verse, and has now taken on a new life for a new generation. With timeless music, spectacular sets, a superb cast, breathtaking choreography and the unforgettable 'Memory', CATS is a musical like no other.

8-19 Jan | various
Esplanade
Tickets: varies

M1 Fringe Festival

The M1 Singapore Fringe Festival is an annual festival of theatre, dance, music, visual arts and mixed media created and presented by Singaporeans and international artists. Bringing the best of contemporary, cutting-edge and socially engaged works to the Singapore audience, this year's theme is 'My Country and My People'. This year's highlights include 'Beside Ourselves', a multi-disciplinary concert exploring how our rich interior lives interact with the surrealism of everyday banalities; and 'Kebaya Homies', a delightful musical romp weaving through Malay history and culture, told through the elegant yet coy kebaya.



MOVIES

Jojo Rabbit

(January 2)

Cast: Taika Waititi, Scarlett Johansson, Rebel Wilson

Writer director Taika Waititi brings his signature style of humor and pathos to his latest film, JOJO RABBIT, a WWII satire that follows a lonely German boy, Jojo (Roman Griffin Davis) whose world view is turned upside down when he discovers his single mother (Scarlett Johansson) is hiding a young Jewish girl (Thomasin McKenzie) in their attic. Aided only by his idiotic imaginary friend, Adolf Hitler (Taika Waititi), Jojo must confront his blind nationalism.



GIGS



11 Feb | 8pm
The Star Theatre
Tickets: \$108-228

Pentatonix

Vocal sensation Pentatonix is back! With track records of sold-out performances here, the acclaimed A Cappella-pop group is best known for their pop-style arrangements of modern hits with powerful vocal harmonies, basslines, rifting, percussion, and beatboxing.



20 Feb | 8pm
Esplanade Concert Hall
Tickets: \$128-\$188

An Evening with 98°

Renowned boy band 98° will perform in Singapore for the first time. Back in the 90s, 98° had teenage girls everywhere swooning after them. Today, the pop quartet also appeals to 90's music enthusiasts. The band reunites for a music spectacle, promising the Singapore crowd a real glimpse into the past through their classic hits!

BY ISABELLE CHUA

GAME CHANGERS

If you've been paying attention to any form of media, you would definitely know that in terms of industry, gaming is one of the biggest. Video games have higher incomes than the music and movie industries combined. In 2017, the U.S. game industry as a whole was worth US\$18.4 billion, and is forecasted to reach \$230 billion by 2022, making it the largest market in the world.

Because of its highly technical nature, the realm of gaming offers plenty of room for innovation, from introducing blockchain to total gamer immersion.



INNOVATIONS IN GAMING

One of the most interesting recent developments in gaming is **Planetarium**, a blockchain-enabled MMORPG. Unhappy with the way that corporations were able to enforce strict rules upon their player base and impede the organic growth of communities, the founders - citing the closure of a number of custom World of Warcraft servers by Blizzard - sought to use blockchain technology to create fully player-run MMORPG servers. No one would be able to shut down a server once it was running - a total freedom to the player.

It's not like the big companies have been completely idle, however. The landmark release of **Red Dead Redemption 2** by Rockstar Studios in 2018, represents a major breakthrough in the immersion of games. While we were lied to by VR headset developers half a decade ago, **Red Dead Redemption 2** innovated on the open-world formula that Rockstar is known for, bringing to a new height the level of interactivity players are afforded with the world. This in itself was based on the concept of building an open-world game on integrated systems that was introduced by **The Legend of Zelda: Breath of the Wild** in 2017.

However, innovation in games is not just technical. All too often, we're used to listening to developers list off seemingly impressive but

incredibly out-of-context numbers, such as frame rate, number of polygons per model, size of the map, etc. Watching these presentations almost feels like an exercise in numerology. Beyond the technological advancements surrounding gaming, we also have to deal with the fact that games are transforming from mere entertainment into an art form.

GAME NARRATIVES

The art that is gaming is spearheaded both by small developers like Davey Wreden of **The Stanley Parable** fame, as well as larger-than-life auteurs like Hideo Kojima (**Metal Gear Solid** and **Death Stranding**), but is also being supported by the constantly increasing number of artistic commentators of games on YouTube.

All this does mean, however, that game developers need to be careful about the messages which they propagate in their games. Some might choose to go all-in on the political messaging in their games, like MachineGames did with **Wolfenstein II: The New Colossus**, or they might choose to dial it back, as Ubisoft did with **Far Cry 5**.

Either way, the discourse on the narratives presented as well as the meta-textual analysis of game production and development cycles enriches the way games convey thematic elements, allowing companies to experiment and innovate on nuanced messaging and story-telling.

It is quite remarkable that within the same decade, the action romp **Call of Duty** series went from pressing F to pay your respects (**Advanced Warfare**), to having an entire mission that deals with the nebulous nature of Rules of Engagement in civilian environments, and the difficult snap decisions soldiers have to make in a hybrid battlefield (**Modern Warfare 2019**).

GAMES OF TOMORROW

The future of gaming as an industry is bright. Even as the gaming experiences that are offered to us from developers both large and small increase exponentially in quality of experience and complexity, we are more able to observe systemic problems within the industry, such as crunch-time and high rates of turnover for employees, among others.

This is probably one thing that continues to slow the innovation of game design - the persistent intrusion of corporate interests into the game design itself, which can lead to cuts in content or even a disaster on the level of Telltale Games' sudden closure.

While it is neither possible nor desirable to return gaming from its modern mass commercial appeal to its previous small-scale nature, I believe that the work of creating games is, and always should be, one defined by passion and love.

CHASING CHASTITY

BY NINA GAN

Innovative sexual assault prevention

Victim-blaming is unfortunately common when it comes to sexual assault, and all too often, survivors are asked what they might have done to facilitate or provoke an attack. Let's not forget the fact that many perpetrators often get away practically scot free. This is one of the reasons why crimes like these often go unreported, so it's always a better idea to prevent such crimes from happening in the first place.

Crime prevention initiatives targeting sexual assault are by no means new, arguably dating back to the chastity belts of the 15th century. These days, with personal safety a big issue for everyone, prevention strategies abound, ranging from the practical to the downright bizarre.

MEDIEVAL PUNISHMENTS

Older anti-rape devices actually focused on punishing the rapist and are worn internally by women. A 1979 anti-rape device actually injects tranquilliser fluid into the rapist to knock him out. Then there was **The Trap**, a 1993 rubber pocket with plastic spears designed to clamp onto the head of a penis.

South Africa, which has a high instance of rape, was the birthplace of two anti-rape devices. **Rape-aXe** (2005) is a female condom embedded with shafts of sharp, inward-facing barbs that would remain attached to the attacker's penis when he withdrew, and could only be removed surgically. However, this doesn't seem to be as gory as a 2000 invention which resembles a tampon with a core containing a tensioned spring blade that would actually slice off the tip of a penis!

These gadgets would undoubtedly make men wince looking at them. Sadly, these inventions remain on the drawing board since they don't really do anything to prevent rape in the first place.

If you think chastity belts were only around in the medieval era, think again. **AR Wear** (2013) and **Safe Shorts** (2017) are undies/shorts that literally lock in place and made with cut-resistant fabrics. **AR Wear** has a 'skeletal structure' cage around the genitals, and you'll need to remember one of the 132 'clock-hand positions' that open the in-built combination lock on the waistband (seriously). **Safe Shorts** actually has a bulky 3-number combination lock on its waistband, and a yellow drawstring which actually emits a loud alarm when pulled.

While these items are too weird to be functional, thankfully there's a slew of new tech innovations that can help anyone who feels threatened, and all you need is your phone.

Whether you're using these apps in Singapore – where cases of molest have been on the rise – or when travelling, they can help everyone feel a little bit safer knowing that technology is always looking out for us (and we don't have to resort to carrying mace).

MODERN-DAY APPS

If you feel like there's a weirdo following you around or making you feel unsafe, there are plenty of apps that track your location and alert your loved ones if you're in trouble. Many apps for safety activate by clicking a button, shaking your phone (**Shake2Alert**), or when you scream (**Chilla**, **One Scream**).

Eyewatch and Women Safety even have a video/audio/photo recording function which lets your contacts see what's happening in real time. To save you from dates gone wrong, there are apps with a 'call me' function that lets your contacts call you to bail you out, like **Circle of 6** and **bSafe**.

Handy apps like **Scream Alarm** or **Air Horn** make loud noises to call attention to a creepy molester near you if you're unable to call for help. Simply search for a personal safety app online and you'll find a slew of options depending on what you need.

WEARABLE SAFETY

There are also safety wearables – in case you aren't able to get to your phone – that can send SOS messages to your emergency contacts at the press of a button. **Revolar** lets you alert your emergency contacts to call you or request immediate help, while Occl's **Bline** doubles up as a bodycam with audio and video data uploaded to the cloud in real-time.

Some gadgets double up as jewellery, which allow you to notify your emergency contacts of your GPS position. There's **Nimb**, a slick unisex ring, and **invisiWear** which has a range of jewellery like necklaces and bracelets.

The **invi bracelet** works a bit differently – by pulling on it hard enough, it actually releases a foul smell to deter attackers.

The Business of Bubbles

Boba, bubble tea, pearl milk tea — you either love it or hate it. Head down to your nearest mall or neighbourhood store and you'll likely find a bubble tea stall or two. And every few months, a new bubble tea brand pops up, with no sign of dying out in the near future. What's the deal?

The Timeline of Bubble Tea

Bubble tea isn't a new phenomenon in Singapore – in fact, it came and left pretty quickly. Will this current trend last?



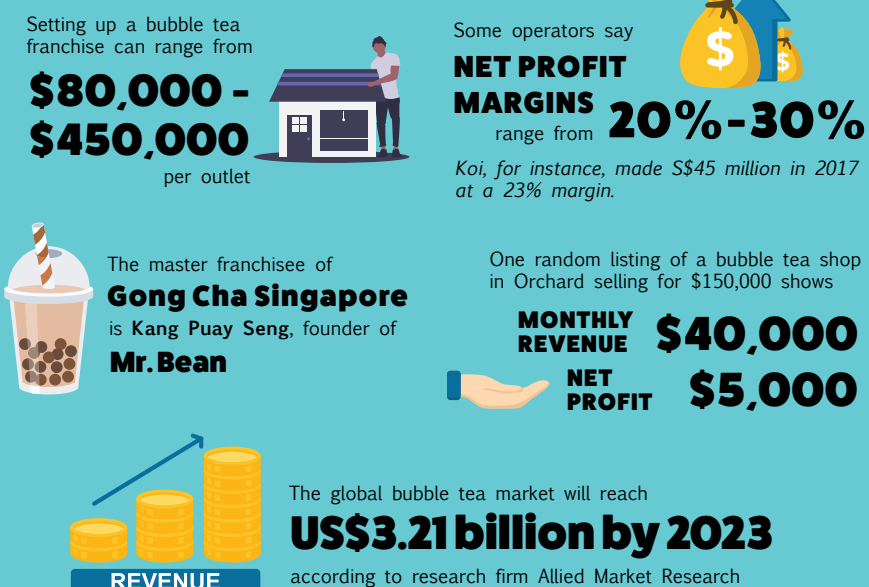
The Five 'Cs' of Bubble Tea

What makes bubble tea so popular? Here are some ways the drink has made its mark in the world – will it take over Starbucks?



The Business Side of Boba

What does it take to run a bubble tea franchise, and what are the profit margins? Here are some facts and figures.



Bubble Tea Facts

We all know that bubble tea isn't healthy the way we all order them, but just how bad are they?

A cup with regular sweetness contains **34g** of sugar

Maximum human daily intake should be capped at 50g

According to Singapore's Health Promotion Board, pearls add up to more than

100 calories which will require

10 minutes of jogging to burn

STRESS

RELIEF

Entrepreneurship isn't a singular job. It's actually better seen (and thought of) as an amalgamation of different jobs, with duties ranging from the very large (securing venture funding) to the very small (paying your office water bill). If you're stressed out from trying to figure out your next business, spare some time literally wearing different hats with this simple stress relief!

DIRECTIONS

1. Cut out the image of the guy and all the hats.
2. Use the tabs on the hats to fold over the guy.
3. Each hat can be labeled according to the type of work an entrepreneur does.



MANAGEMENT



SALES



MARKETING



BUSINESS
DEVELOPMENT



ENTREPRENEUR



HUMAN
RESOURCE



PUBLIC RELATIONS



ACCOUNTANCY