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Venture Creation

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FEATURES

Editor's note

In 2005, Jeffrey Tiong embarked on the NUS Overseas Colleges (NOC) programme, where his internship in a medical device start-up required him to conduct due diligence on patents and intellectual property assets. Finding a convoluted process made more difficult by the lack of resources, he resolved to develop his own solution. Fast forward to March 2021, and PatSnap, the innovation intelligence platform he co-founded with NOC alumna Guan Dian, has become the first NUS Enterprise-incubated company to hit unicorn status.

While an achievement for the company, the accomplishment also provides an illustrative example of the active role a university can play in not only building an entrepreneurial culture, but in partnering with its start-ups to fuel their success.

This issue of SPARKS focuses on how NUS intends to deepen its efforts in this regard, notably through its newly articulated strategy of venture creation.

Professor Freddy Boey, NUS Deputy President (Innovation & Enterprise), and other members of the senior management team speak on their intent and ambitions in a new interview, outlining the resources and programmes being put into place to "bring all the jigsaw pieces together." (p. 10)

Such initiatives include the recently launched Msc in Venture Creation programme (p. 6), as well the Venture Building (VB) progamme (p. 3), which concluded its first run last December. Three participants from the first VB cohort also share their experience with SPARKS (p. 4), highlighting the programme's impact and ability to reach aspiring entrepreneurs at all stages of career development.

Simultaneously, as we look forward, we take the opportunity to celebrate a significant milestone for the NUS Enterprise community: March 2021 is the five-year anniversary of the opening of THE HANGAR, NUS' on-campus incubator and the source of many future success stories. (p. 7)

NUS National University of Singapore

NUS Enterprise

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RED HOT

AID FOR ASPIRING ENTREPRENEURS

In a business climate made challenging by the COVID-19 pandemic, aspiring entrepreneurs have a new lifeline: the National University of Singapore (NUS) and other autonomous universities have partnered with Enterprise Singapore (ESG) to launch venture building programmes designed to stimulate the formation of innovative start-ups.

Launched in October 2020, the three-month NUS Venture Building (VB) programme, designed by NUS Enterprise, helps candidates understand the process, challenges, risks, and rewards of starting a business. Open to all Singaporeans and Singapore Permanent Residents, VB aims to equip participants with the ability to analyse market opportunities, develop sustainable business models, and professionally pitch their solutions.

More than 50 participants joined the first cohort of the programme, with projects inclusive of an early childhood edutech platform, crowd management software for F&B operators, and a chatbot for personalised relationship advice, amongst others.

The programme culminated in a final demo day in December 2020, with 10 teams receiving recommendation for the newly enhanced ESG Startup SG Founder Grant of up to SGD50,000. In February 2021, an alum of the NUS VB programme, MediVR, emerged as one of the top five winners at Founder Ignite, an event organised by ESG to showcase start-ups arising from its partner universities' venture building programmes.

The second run of the NUS VB programme will conclude in March 2021.

Programme Structure

Week 1 - 6

- Entrepreneurship process
- Innovation and value proposition
- Ideation and team formation

Week 7 - 10

- Market analysis and validation
- Finance, business modelling and plans
- IP and competitive strategy

Week 11 - 12

- Investments and fund raising
- Pitching

For more information, visit
https://enterprise.nus.edu.sg/venture-building/

RED HOT

VOICES OF VENTURE BUILDING

Aiden (Left) with his MediVR co-founders Anthea Foong (Centre) and Jeremy Ong (Right). Photos taken pre-COVID.

Aiden Koh, MediVR

Tell us about your project

MediVR provides a virtual reality (VR) medical training simulation platform that improves the standardisation and rigour of clinical training. We focus on providing medical students the means to hone their clinical skills anytime, anywhere, and in a multi-user environment. Our process aims to provide up to seven times more clinical scenarios than what is available at schools now, empowering our medical students and better preparing them for real-world patient scenarios.

What were you doing before the NUS Venture Building (VB) programme?

I am a year 4 undergraduate, majoring in Mechanical Engineering and the Innovation & Design Programme (IDP). I've always had a keen interest in entrepreneurship and technologies that have the potential to change the world, and I had the wonderful opportunity to pursue my interests with fellow classmates in IDP, who are now my co-founders. I've also had the opportunity to hustle in a VR hardware start-up, which was recently acquired by Facebook Reality Labs. All these experiences culminated in the development of my start-up, MediVR.

Why were you interested in joining VB?

I was interested in joining VB as it allowed NUS Enterprise to serve as our Accredited Mentor Partner (AMP) while providing us the opportunity to gain valuable knowledge needed to build a start-up, from the concept of Lean methodology, to investments and fundraising techniques.

Favorite aspect of VB

The amazing networking opportunities provided. We had the pleasure of working with esteemed mentors Kate Lazarenko and Himawan Gunadhi, which gave us much needed insights and guidance in the industry we are tackling.

Most important lesson you took away from the programme

Learning how to deliver a professional pitch. VB has provided a great platform for first-time entrepreneurs such as myself to step out of our comfort zones, and to pitch effectively.

Future plans

My team and I will hustle onwards with MediVR. We plan to join the NUS Graduate Research Innovation Programme (GRIP) later this year and launch our alpha programme with selected medical students by the end of this year.

Advice for future participants

Be fearless and be focused. VB will put you through your paces and prepare you to answer the difficult questions that will come your way. Ultimately, the experience that you will gain from this programme will improve the odds of your start-up succeeding.

Rosie Koh, Youth.ai

Tell us about your project

Youth.ai uses artificial intelligence to screen for early changes to youth mental health.

What were you doing before the NUS Venture Building (VB) programme?

I was working as a paediatric occupational therapist and completing an MBA in Australia.

Why were you interested in joining VB?

I was at a place in my career where I wanted to try something new. The VB programme offered an opportunity to learn how to run my own business, connect with industry leading mentors and plug into the extensive NUS network.

Favorite aspect of VB

I have two takeaways. One was meeting like-minded entrepreneurs who are driven by innovation and tenacity. Secondly, I was very thankful to have Chris Hardesty, Director of KPMG's Global Healthcare and Life Sciences Practice, as my mentor. His guidance and support was key in my development as an entrepreneur and in Youth.ai.

Most important lesson you took away from the programme

Professor Virginia Cha taught me about the importance of obtaining an unbiased understanding of customer pain points, so that the designed solution will have maximum impact.

Future plans

We have had a lot of interest in our software and are partnering with local institutions to roll out our pilot. This will allow us to build and scale our software locally and internationally over the short term.

Advice for future participants

Give it your best shot. It may or may not be what you want to pursue in the long term, but I believe the skills you learn will benefit your future career.

Nirmala Bali, MiceLah

Tell us about your project

The meetings, incentives, conferences and exhibitions (MICE) industry is fragmented; there is no one-stop shop for event planners and end users [corporates] to plan their activities and get an immediate quotation. Our solution is to make the process transparent, seamless and swift by empowering users with planning, scheduling and estimation tools.

MiceLah will bring all vendors/ suppliers of MICE activities under one roof through an app/ website. Corporates and event planners from all over the world can use our platform to plan and create their MICE events without having to wait around for quotations or going back and forth with multiple vendors.

What were you doing before the NUS Venture Building (VB) programme?

I worked in the MICE industry for about eight years and was retrenched due to COVID. I organised conferences, incentive trips, product launches, team building activities and meetings for corporate clients.

Why were you interested in joining VB?

Even before I was retrenched, I had this business idea lingering in my head. As soon as I was retrenched, I used the opportunity to start working on my business plan. But I felt I needed some guidance and hence, in my pursuit for start-up knowledge, I came across the NUS VB programme online. The programme also offered to match founders with co-founders. I was also looking for a tech co-founder. I submitted the application and was accepted.

Favorite aspect of VB

To me, it was a paradise of like-minded folks in a room together. I love the fact that everyone in the programme was working towards the goal of being an entrepreneur. The energy was high and everyone's enthusiasm had a positive effect on me.

Most important lesson you took away from the programme

My professor Himawan Gunadhi cultivated the idea that it's ok to pivot and move away from an idea which is not accepted or validated by the customers/ end users. This was an eye opener as it taught me to think out of the box and not hold on to my beliefs if they are failing. During the three months, I learnt to let go of my one-sided views about my business and pivoted according to my customers' needs.

Future plans

I have just received the support from NUS to be my Accredited Mentor Partner (AMP). I have onboarded a CTO and am waiting for the Enterprise Singapore (ESG) grant to start work on my minimum viable project (MVP).

Advice for future participants

The best decision I have made for myself was to join the NUS VB programme because it is so versatile and allows each individual to grow. If you have an idea, or even if you don't but have a strong urge to be an entrepreneur and wish to achieve your fullest potential, I would strongly advise you to join this programme. This programme opens up many doors to potential investors through NUS's extensive network. Every team in the programme is provided with a personal mentor who has relevant experience and knowledge in the field of business chosen. My mentor is from the MICE industry so it was a perfect match.

RED HOT

FIRST INTAKE FOR NUS MSC VENTURE CREATION

The National University of Singapore (NUS) broke ground with the commencement of its new Masters of Science in Venture Creation (MSc VC) programme in January 2021.

61 students from all over the world joined the inaugural intake, with the year-long programme set to provide both experiential learning and academic rigour.

In their first semester, students will undertake full-time internships at innovative start-ups, working alongside co-founders and gaining direct entrepreneurial experience. In the evenings, they will take a New Venture Creation module, which aims to help them understand the process of starting a business as well as improving their own chances of entrepreneurial success.

In June, students will attend a two-week Summer Programme in Entrepreneurship, which offers an immersive overview of the innovation and entrepreneurship environments of Singapore and Southeast Asia. Through an enriching combination of lectures, conversations with start-ups, ideation and pitching sessions, as well as visits to various organisations, the Summer Programme offers a chance to connect deeply with peers and start-up ecosystem players.

Lastly, to further empower students with the knowledge, skillsets and tools to bring their start-ups from ideation to fruition, students will be undergoing the Lean Startup Practicum, which provides them with the guidance, mentorship and support to accelerate ideas into viable businesses through a step-by-step hands-on approach.

> **“The MSc VC programme is the first of its kind in the world, leveraging NUS’ more than 20 years of experience in entrepreneurial education. By now taking our offerings to the graduate level through a formal degree programme, we hope to generate a new generation of NUS-trained entrepreneurs.”**
>
> Prof Chee Yeow Meng
> NUS Associate Vice President (Innovation & Enterprise)

Want to be part of the programme?
Applications are now open for the July 2021 batch!

Find out more
Visit our website: bit.ly/NUS-MScVentureCreation
Or email us at: pgc@nus.edu.sg

For companies looking to hire our MSc interns, feel free to reach out to us via nocquery@nus.edu.sg. Please indicate “MSc in Venture Creation Internship” in your email subject.

RED HOT

GET OFF THE GROUND: THE HANGAR CELEBRATES 5 YEARS

All photos taken pre-COVID.

March 2021 marks five years since the opening of THE HANGAR by NUS Enterprise, the university's on-campus incubator for student, staff and alumni start-ups. Since 2016, the facility has helped more than 220 ventures take flight, quickly becoming the go-to place for aspiring entrepreneurs to accelerate their ideas.

We take a look back at how THE HANGAR has grown, and the unique features that make it ground zero for NUS' emerging technologies and companies.

> SGD 200M
in funding raised by
THE HANGAR alumni

>220 start-ups
incubated

5 start-up
acquisitions

> 1000 events held,
with > 49K attendees

> 220 visits hosted,
with > 2.8K visitors

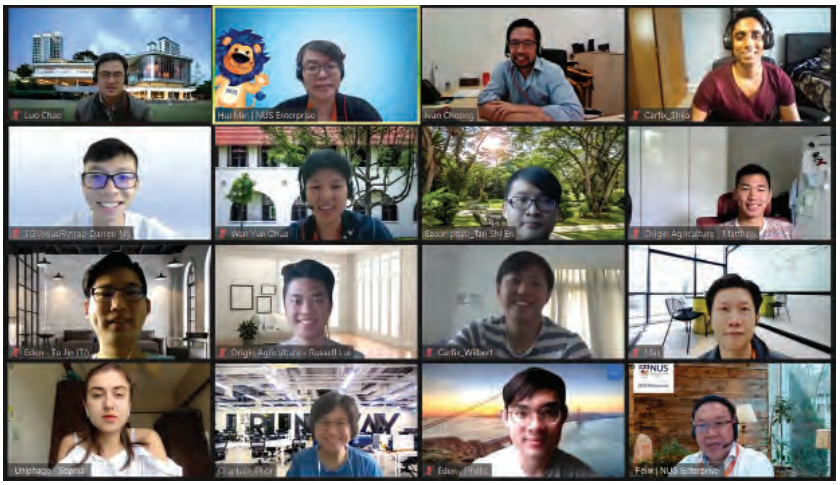
1. #HANGARCommunity

Prior to the launch of THE HANGAR, NUS start-ups were housed in various bungalows and container units along Prince George's Park. The opening of THE HANGAR enabled the aggregation of the community, making it the one-stop campus hub for innovators and ideas to intersect and collaborate.

2. Comprehensive Start-Up Support

More than just a co-working space & meeting venue, THE HANGAR has provided its incubatees with access to a full-range of support services, including expert mentoring, idea validation and test-bedding capabilities.

RED HOT



The latest offering?
In 2021, THE HANGAR launched its four-week Booster Programme, combining knowledge-based workshops, masterclasses, consultative clinics, and community engagement and peer-learning opportunities to give start-ups an added lift.

3. Area51

It's not classified: Area 51 is the place to be for hardware start-ups at NUS. Tucked at the rear of THE HANGAR, the prototyping zone has supported everything from drone technologies to ice cream capsule machines and astronomy cameras.

4. Kopi Chats

THE HANGAR has hosted over 1000 events in its time, but perhaps most iconic amongst them is the Kopi Chat series. Serving up in-depth dialogues with entrepreneurs and thought leaders (alongside a good fresh brew of local coffee!), the signature event provides meaningful insights into up-and-coming industries and trends relevant to the start-up community.

5. THE HANGAR Extension

In 2018, The HANGAR was extended beyond its scissor gates. New public workspaces as well as mural art by Arttero were added to the first floor of the i3 building, encapsulating the spirit of the "imagineer." Matching the vibrancy and creativity of its community, THE HANGAR's colourful environment has helped position the location as the centre of NUS' entrepreneurial activities.

THE HANGAR start-ups are diverse, innovative and dynamic. Here are just a few descriptions of the companies who have called the incubator home:

- A hand-crafted artisanal watchmaker
- A high-performance graphene manufacturer
- The world's first transformable cargo e-scooter
- An autonomous drone-maker for precision pollination in indoor farming
- A start-up turning tofu whey into wine
- A space start-up developing next-generation hybrid rocket propulsion
- A start-up developing wireless underwater solutions for communications and networking

RED HOT

NOC PITCHES TO PROSPECTIVE STUDENTS AT E-OPEN HOUSE

The NOC staff who helped make the e-Open House a success.

Held from 27 February to 6 March, the NUS e-Open House drew an impressive 6.8 million visitors to the event's associated websites, livestreams, webinars and social media sessions.

NUS Overseas Colleges (NOC) took the opportunity to showcase the "out-of-this-world" entrepreneurial experience it provides to students, spotlighting the more than 15 start-up hotspots around the world it is present in.

This year, NOC put together a microsite to feature the start-up internship experience in the different locations, and held three Facebook Live sessions on 4 March to allow the audience to engage with those that had embarked on the programme.

Altogether, NOC reached out to an audience of 100,000, received over 5000 views for the three live sessions, and had over 4000 visitors to its event website.

The first Facebook Live session, "Ask NOC & Kahoot Giveaway," was hosted by Gean Chu, NOC's Head of Marketing and Student Selection. Final year students Austin Khong and Bao Linruo (Lynn) also joined to share their experiences on the NOC Silicon Valley programme, with the former providing accompanying video footage highlighting his life in the US. His verdict? NOC was "a journey of a lifetime" and "a dream come true."

Viewers also had the opportunity to glimpse the support their own ventures could receive post-NOC, with a virtual tour of NUS' on-campus incubator, THE HANGAR by NUS Enterprise, conducted by NOC alumni and Skilio co-founders Felix Tan and Ho Zhi Hui. A sneak peek of the expanded event and co-working space available at the newly renovated Level 2 was also shown, before Felix sat down with Siti Nurain Binte Abdul Hamid, NOC Alumni Engagement Manager, for an Ask Me Anything (AMA) session.

The NOC microsite gave viewers a glimpse into the programme's many locations.

The final session featured a panel of NOC alumni who have started their own companies, each of which are at different stages of growth. Speaking with NOC Alumni Community Manager Loh Weiren, Vishnu Saran of Invigilo Technologies, Kenneth Lou of Seedly, and Rayse Yeo of MatchHub discussed how NOC had shaped their views and mindsets on entrepreneurship. They also provided tips to their juniors who aspire to start their own companies and make an impact one day.

NOC alumni entrepreneurs joined NOC Alumni Community Manager Loh Weiren (upper left) to discuss their experiences with the programme.

BRIGHT IDEAS

NUS PUSHES VENTURE CREATION:

NUS' entrepreneurial reputation has been established by pioneering initiatives such as the NUS Overseas Colleges (NOC) programme and BLOCK71. But with incubators and accelerators now ubiquitous in the landscape, Professor Freddy Boey, NUS Deputy President (Innovation & Enterprise), recognises the need to do more. "NUS has done amazing things, but looking at its next phase, we need to innovate ourselves. We need to innovate innovation."

The Venture Building programme is one example of NUS' venture creation efforts.

THE STRATEGY: FOCUS ON VENTURE CREATION

The term, coined by Professor Chee Yeow Meng, NUS Associate Vice President (Innovation & Enterprise), connotes the increasingly active and deliberate role that the university is playing in transforming innovation into sustainable and successful start-ups. "We're not providing the facility, aggregating the resources and then leaving the start-up to figure it out alone," Prof Chee states. "We're taking a hands-on approach where NUS is the co-partner in the development and generation of new companies."

In the past few years, a slate of new programmes has emerged from NUS to support this concept, adding to the "complete suite" of the university's entrepreneurial offerings.

This includes the Graduate Research Innovation Programme (GRIP), which has already led to the realisation of more than 50 deep-tech spin-offs since its launch in 2018. More recent initiatives include the Venture Building (VB) programme, formed in partnership with Enterprise Singapore (ESG) to provide training to aspiring and first-time entrepreneurs, and the MSc Venture Creation programme, which provides an experiential and immersive entrepreneurial education at the graduate level.

> "In one sense, a small revolution
> We're showing people how to do
> very sustainable and complete v
> We are bringing together the bu
> complete the whole start-up, or
> has a higher probability of succe
>
> **Prof Freddy Boey**
> **NUS Deputy President (Innovation & Enterprise)**

“WE NEED TO INNOVATE INNOVATION.”

Come September, a new programme will join the line-up. The Technology Access Programme (TAP), helmed by Deputy Director Eugene Noh, will target international working professionals and corporate innovators keen to understand technology trends and identify potential business opportunities. Through a three-step Discover, Engage and Train process, participants will gain exposure to NUS' intellectual property (IP) while learning how to take an invention from the lab to the market.

To increase the viability of the companies emerging from these initiatives, new support structures are also being put into place. NUS is developing software that can match co-founders and business ideas; recruiting master engineers to aid in prototyping via NUS' Minimum Viable Product (MVP) Studio; employing business mentors and commercial champions to provide specific domain knowledge; and establishing an external early-stage venture fund to provide start-ups with access to financing. Significantly, NUS is also creating a start-up CEO list to help companies tap on senior management talent that can parachute in and bring their ventures to the next level.

And while NUS' various venture creation programmes may target different audiences and industries, they share a commonality in addressing one of the biggest pain points in the Singapore start-up ecosystem today: the lack of entrepreneurial talent. In line with the university's primary educational objective, venture creation is also at its heart about education, albeit in a different form. But by positioning itself as the training ground for successful entrepreneurs, NUS intends to not only produce, in its own parlance, “future-ready talent,” but help to create valuable employment opportunities through the formation of new businesses.

How large is the expected impact?

Taken together, the aforementioned programmes alone are expected to generate over a thousand NUS-trained

ion is happening in NUS. o do [venture creation] in a ete way. We are the architect. e building blocks that can , one that is healthy and uccess.”

rise)

Prof Freddy Boey, NUS Deputy President (Innovation & Enterprise)

entrepreneurs in the next few years. And if the success of existing programmes such as NOC are any indication, the resulting influence on the start-up ecosystem has the potential to be momentous. In its history of nearly 20 years, NOC has seen many of its alumni become serial entrepreneurs, returning to NUS to start again, mentor, and/ or invest in fellow start-ups. Other alumni have played alternative roles in the innovation & enterprise ecosystem, finding employment in incubators, venture capital firms, or taking on corporate innovation and new business development roles.

The emphasis on venture creation is poised to take this phenomenon to another level, providing the next stage in a progression that starts with exposure to others' start-ups and ends with the development of one's own. Indeed, in NUS' next phase of growth, NOC can be seen as a prelude to later programmes such as GRIP- a first step in a cohesive and complete chain of resources focused on the production of innovative entrepreneurs and cutting-edge companies.

In a similar vein, the plan also anticipates the extension of the university's sphere of influence internationally. The global BLOCK71 network will take on an additional and more proactive role in channeling overseas talent to NUS, while the TAP programme will enable NUS' IP to be tested in markets outside of Singapore. As Noh states, "TAP serves as a platform for us to be able to explore new markets and new applications for NUS' technologies, while also addressing the need for people outside of our immediate community to have access to us, our IP and our know-how around deep-tech start-ups." The result: increased commercialisation of NUS research and increased alumni with experience in forming technology-intensive ventures.

The NUS GRIP programme has generated more than 50 spin-offs since its launch in 2018. Photo taken pre-COVID.

Key to the success of NUS' innovation and enterprise endeavors, however, is the ability of its employees to translate the blueprint of these ideas into reality. Acknowledging that the current team is both passionate and committed, Prof Boey underscores the opportunities available to high-energy talent with new ideas: given the expected growth of both new initiatives and the start-ups that will result from them, NUS urgently needs and is on the active lookout for new staff.

If all goes according to plan though, what does NUS ultimately hope to achieve through its emphasis on venture creation?

According to Prof Chee, "My aspiration is for NUS to be the most influential force behind start-ups in Asia, or even beyond."

Prof Boey echoes this sentiment. "We want to surprise people, and we want to be among the top three universities in the world in terms of innovation. Israel is the start-up nation. We will be the start-up university."

BRIGHT IDEAS

BUILDING SOUTHEAST ASIA'S DEEP TECH COMMUNITY

BLOCK71 Yogyakarta has been building a global community of entrepreneurs since its launch in 2018. Photo taken pre-COVID.

InnoXJogja is a large-scale virtual showcase and technology festival in Yogyakarta. Organised by BLOCK71 Yogyakarta in partnership with local universities, the inaugural edition of the event was held on 17 November 2020 and featured over 15 different panel discussions. One of these focused on "Building South East Asia's Deep Tech Community."

Meet the Panelists

Alwy Herfian
Co-founder, Widya Group

Irene Cheong
Director, Industry Liaison Office (ILO), NUS

Siddharth Jadhav
Founder & CEO, Polybee

Moderator:
Michael Robert Blakely
Co-founder & Managing Partner, Cocoon Capital

What defines a deep tech start-up?

TECHNOLOGY

Deep tech start-ups are commonly founded on propriety technologies and scientific discoveries emerging from universities or research institutions.

MARKET

Deep tech start-ups tend to tackle some of the biggest and most challenging problems facing the world, meaning their markets tend to be massive in size and geographically agnostic.

TALENT

Deep tech start-ups frequently have founders from academic backgrounds. These include fresh PhD graduates from tertiary institutions and active researchers with specialised skill sets.

How can deep-tech start-ups succeed?

The panelists agreed that the biggest question deep tech start-ups need to consider is whether their technology will work and how it can be made more accessible and useful for the world.

In addition, Siddharth noted that, "A deep understanding of the market needs, especially for deep tech development, will become one of the solutions to face the lack of funding for the deep tech community."

How can technology commercialisation be improved?

Researchers generally don't think about the commercial potential of their technology while they are developing it. Their work is generally curiosity-driven, which results in universities needing to find "problems" that can be met by the researchers' "solutions." The key is to therefore identify the ideas with the most commercial potential.

In an effort to improve the commercialisation of NUS' technology, the university will be launching the Technology Access Programme (TAP) in 2021. This quasi-accelerator programme will invite individuals from big corporations all over ASEAN to evaluate NUS' technology and assess its potential to be implemented in their respective markets.

How can the deep tech community be improved?

1. Apart from leveraging talent, founders and academic institutions, more focus needs to be directed to determining the best early-stage investment mechanisms for deep tech start-ups.

2. Market access has been a huge challenge for start-ups. Creating gateways to global or regional communities to allow the exchange of talent, money and companies is critical.

3. Being part of a dynamic community is key to continuing innovation and utilising opportunities that align with changing times.

TRAIL BLAZERS

FEMALE FOUNDERS TO CELEBRATE

A global surge in female entrepreneurship shows that all one needs is an incredible idea, a business plan, and the confidence to lead. We at NUS Enterprise pride ourselves on cultivating an environment that fosters the female leaders of tomorrow. In honour of International Women's Day, here are six women from our community whose business acumen and entrepreneurial journeys continue to inspire change:

Florence Leong

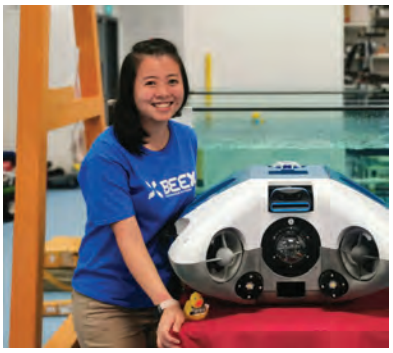
Co-founder, Kosmode Health

Florence is an NUS Business School alumna. Her start-up, KosmodeHealth, supports the zero-waste economy by turning by-products from the malt and brewing industry into nutritious food while retaining protein and fibre. KosmodeHealth recently launched W0W™ noodles, the world's first zero-starch, zero-cholesterol, and zero-glycemic response noodles made using zero-waste principles.

KosmodeHealth currently incubates with NUS Enterprise@Singapore Science Park and BLOCK71 Suzhou.

Grace Chia

CEO & Co-founder, BeeX



Grace is an alumna of the NUS Overseas Colleges (NOC) programme. Her start-up, BeeX, designs and builds autonomous underwater vehicles (AUVs) and unmanned surface vessels (USVs) that can reduce the costs and risks of underwater operations. The company recently partnered with Sulmara Subsea APAC to extend the availability and traction of A.IKANBILIS hover-capable autonomous underwater vehicles (HAUVs). BeeX is a graduate of the NUS Graduate Research Innovation Programme (NUS GRIP), and the winner of PIER71's Smart Port Challenge 2020.

Katrina Lee

CEO & Co-Founder, Savour!

Katrina is a Year 3 NUS Business School student who is currently interning remotely with a rising tech start-up through the NOC Toronto programme. Passionate about fighting food waste, she co-founded Savour!, a social enterprise which connects non-profit organisations, event planners and companies to merchants with regular, expiring, blemished and surplus food at corporate discounts. They were the winners of the OCBC Green Pitch in 2019.

Dr Jia Zhunan

CEO & Co-founder, Breathonix

Zhunan founded Breathonix in 2019. The NUS spin-off develops affordable, accessible, and non-invasive breath tests for disease detection. A graduate of NUS GRIP, Breathonix has attracted recent attention for its COVID-19 breath test that can detect the disease within one minute with an accuracy of over 90%. Breathonix currently incubates with NUS Enterprise@ Singapore Science Park.

Samantha Thian

Founder, Seastainable

Samantha is an NUS alumna and a Philip Yeo Initiative (PYI) Associate. After working as a whale shark research assistant in the Philippines, Samantha founded Seastainable in 2017 to support marine conservation and sustainability in Southeast Asia. Since its start, the social business has contributed over SGD30,000 to over 33 conservation projects across five countries and impacted over 5,200 individuals in local communities through the Seastainable Grant.

MYTHBUSTING: THE MARRIAGE OF START-UPS AND CORPORATE INNOVATORS

Ever wondered how start-ups and corporate innovators connect and collaborate? The crucial association between the three formed the crux of a very insightful panel on "Mythbusting: The Marriage of Startups and Corporate Innovators," held as part of the Inno^{x}Jogja technology festival on 17 November 2020.

Here's what the panelists had to say

There are a lot of things that money can't buy, such as the happiness of our customers by using our products. I think that that's the result we hope for when partnering with a start-up. How can we collaborate together and make life easier?"

Andi Kristianto
Vice President Corporate Strategy, Telkomsel & CEO, TMI

Corporates usually conduct R&D to keep on generating innovation. But today, as the technology keeps changing, collaboration with start-ups can be one of the solutions and the lowest risk activity to keep digging for innovation."

Dr. Mark Lim
Programme Director, PIER71

Start-ups and corporate incubators create a beneficial partnership between each other. Corporates need start-ups to create the innovation culture and the start-up needs a corporate incubator for funding."

Eko Seno P
General Manager Business Incubation, Telkomsel & Head of Telkomsel Innovation Center (TINC)

In the end, no matter what kind of incubator we are joining (a corporate or normal incubator), the partnership should be beneficial for both the start-up and the corporate."

Albertus Gian
CEO, Beehive Drones

CORPORATE PERSPECTIVE

A key insight from the discussion focused on how the collaboration between corporates and start-ups has evolved over the years. As corporates gain more experience working with start-ups, they get more involved in the innovation process: it's not just about investing or providing fuel for the start-up anymore.

There are various opportunities out there but limited resources; hence, co-creation and co-innovation play an important role. Additionally, since there is a constraint on both resources and time, discipline is crucial. Therefore, more resources will be allocated to start-ups that have a higher potential to succeed.

START-UP PERSPECTIVE

While resources, time and money are significant for a successful joint endeavor, the quality of the partnership between the start-up and the corporate is equally important. It is also crucial to evaluate the partnership and consider the value that a start-up adds to a corporate and vice versa.

Corporates also need to realise that they have a bigger leadership role to play as they provide both the market access and the resources. They need to be accountable to their role, take into account the needs of the start-up and contribute towards their growth. Start-ups, on the other hand, need to choose their partners carefully.

FIRE STARTER

AN ACCELERATING ADVENTURE - NOC SILICON VALLEY TO KOREA

What's it like participating in an overseas accelerator during the middle of a pandemic? ***Alvin Ryanputra,*** *a final year Engineering student from the July 2020 NOC Silicon Valley programme, discusses his experience in the K-Startup Grand Challenge (KSGC) as part of his internship with robotics software start-up Movel AI.*

Due to the COVID-19 pandemic, the first half of my NUS Overseas Colleges (NOC) internship was converted into a local one. I have a strong interest in robotics, and managed to secure an internship at Movel AI. Two months in as a robotics software engineer, I was presented with the incredible opportunity to attend a three-month accelerator programme in Korea on the company's behalf. With blessings from NOC, I had a hectic week of settling the visa paperwork, made complicated by COVID-19, and flew out within two weeks in September 2020.

The K-Startup Grand Challenge (KSGC) is an accelerator programme organised by the Ministry of SMEs and Startups of the Republic of Korea to attract promising foreign start-ups to the country. More than 2600 start-ups from 118 different countries applied for the 2020 programme, from which Movel AI was selected as one of 60 teams to participate.

For the programme I was attached to a Korean seed accelerator firm, Big Bang Angels (BBA). They helped connect us to potential mentors, collaborators and clients, while providing mentorship and support. It was definitely a fantastic experience working with an accelerator first-hand, and I became familiar with the networking, emailing and 'hustling' that a company founder has to do. Admittedly, it felt daunting as an inexperienced intern, but the coaching by my CEO and product manager greatly prepared me in understanding the vision and path that the company was taking. It was important that I knew the company well in the following aspects:

Networking was a must, and by the end of the programme I became more confident and calm when interacting with people in new environments.

- Value proposition of the company's product
- Vision for the company (future milestones/targets)
- Past clients/projects
- Competitive landscape in Korea, and our competitive advantage

I found myself communicating these over and over again to various people, and it became obvious to me that clarity of thought and communication are important skills for an entrepreneur to sell his idea effectively.

The best part about the programme was the opportunity to interact with other participants, many of whom were co-founders. What struck me was how human they were - with families, hobbies, interests just like everybody else, in spite of how accomplished they were.

A common characteristic I saw in them was exceptional passion and drive in whatever they did, and an abundance

of energy to pursue the things that they believed in. Their stories left me awe-struck and inspired; and even though their journeys were probably extremely arduous, I became surer than ever that entrepreneurship, start-ups and tech are the things I want to pursue.

I also attended RoboWorld Expo 2020, where I met many potential clients/partners, and saw many innovative technologies—including this robot that helps with walking rehabilitation!

The accelerator programme culminated in a demo day, where each participant had five minutes to pitch and five minutes of question and answer with a panel of judges. The event was broadcast live online, and had an elaborate setup with more cameras than I could count - they even had live translators on set! That was probably the peak of my trip, and it was tremendously exhilarating. Watching the other participants was also a great learning opportunity, as each had their own unique style of delivery.

All in all, it was an incredible experience. I think the Korean start-up scene is really taking off, with the government actively pouring in investment and effort into nurturing the ecosystem. One can definitely look to Korea as a good location to build a company in due to its high technology uptake, innovation and support from various institutions. The Netflix series Start-Up (while a little dramatised) does actually reflect Korea's growth and potential as a start-up hub!

KSGC aside, NOC also provided me the opportunity to join the Plug and Play university programme, where students from around the world review and discuss real start-up pitches during biweekly calls with a Plug and Play investor. That gave me great insights into the venture capital side of things, which also sprouted my interest to pursue a venture capital internship in the coming semester. The second half of my NOC programme will be a remote internship with the San Francisco-based office of the venture capital group WI Harper. I think that NOC definitely offers a huge number of opportunities to aspiring entrepreneurs like myself, and if you're a student passionate about start-ups, you should definitely give NOC a shot.

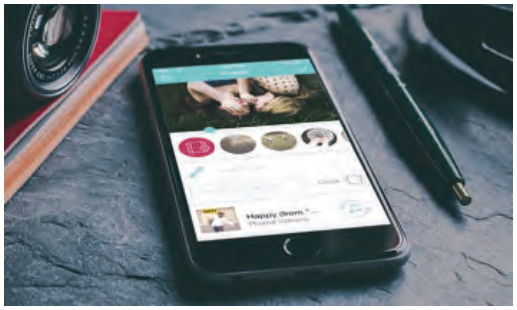
I love talking to like-minded people about entrepreneurship and tech-related topics, and I hope to hear your thoughts and stories too! Feel free to contact me at alvin.ryanputra@gmail.com or connect with me on LinkedIn. I'll also be joining NOC's N-House at Kent Ridge Hall, so I'm hoping to get to know more NOC students and alumni over the next few months.

Thanks for reading, and here's wishing you all the best!

Work aside, I got the opportunity to do some hiking and play Ultimate Frisbee in my spare time.

NEWSFEED

In February, it was announced that video-sharing start-up Lomotif was acquired by a group of investors- including former MoviePass Chairman Ted Farnsworth- for a reported USD125M, making it one of Singapore's largest start-up exits in recent years. Lomotif got its start in BLOCK71 Singapore in 2014, before moving to BLOCK71 San Francisco to be closer to its user base.



Former BLOCK71 Singapore incubatee Lumitics was among 25 winners (out of more than 10,000 entries) in a global start-up competition organised by the United Nations World Tourism Organization and recognising companies which contribute to Sustainable Development Goals (SDGs). The start-up, which uses artificial intelligence to tackle food waste, was the winner in the "SDG12 - Sustainable consumption and production" category.

In March, PatSnap announced that it had raised USD300M in Series E funding, raising the company's valuation to more than USD1B. In addition to this being the largest known funding round for any NUS Enterprise-related company (excluding IPOs and acquisitions), the news also makes PatSnap the first formally incubated company by NUS Enterprise to hit unicorn status.

In March, NUS spin-off Breathonix announced it was engaging in a joint clinical trial with Dubai Health Authority (DHA) and Mohammed Bin Rashid University of Medicine and Health Sciences (MBRU) to assess the viability of Breathonix's easy-to-use breath test, which can detect COVID-19 within one minute. Breathonix previously conducted a Singapore-based pilot clinical trial that involved 180 patients and achieved a sensitivity rate of 93% and specificity rate of 95%.

New funding announcements from NUS Enterprise-affiliated companies:

- **Advantir Innovations** - Seed funding; undisclosed
- **Ajaib Technologies** - Series A; USD25M
- **ALAMI- Equity & Debt** Funding; USD20M
- **Bot MD** - Series A; USD5M
- **Build38** - Pre-Series A; €3M
- **F-Drones;** Seed funding; undisclosed
- **Funding Societies** - Debt Facility; €5M
- **Flowcast;** Unspecified; USD3M
- **Lomotif -** Acquired; USD125M
- **Lumiere32**- Venture Debt; SGD500K
- **Mesh Bio** - Seed; USD1.8M
- **Microsec** - Series A; undisclosed
- **PatSnap** - Series E; USD300M
- **RateS** - Series A; undisclosed
- **SecurityAdvisor**- Series A; USD7.3M
- **Xfers** - Unspecified; USD30M

All info based on public news sources.

FLASH BACK

NUS ENTERPRISE EVENTS & ACTIVITIES: JAN - MAR 2021

Stay updated on our upcoming events at: enterprise.nus.edu.sg/events

JAN

- **11** ASEAN DXPF Corporate Innovation Program
- **17** iFLYHACK- Hack Your Future Challenge
- **25** Journey of the Innovator: Startup Pitching 1-2-3!
- **25** NOC Meet-Up @ NUS Virtual Go Global Fair 2021
- **26** SelectUSA Tech ASEAN 2021
- **27** UX and Bagels: Aligning Your Startup With Your Users
- **29** #FridayLearnings Episode 3: Applying Machine Learning in E-Commerce UX Design

FEB

- **01** Journey of the Innovator: From the Horses' Mouths
- **03-04** NUS Enterprise Virtual Office Hours
- **08** Journey of the Innovator: Money Talks
- **09** GRIP Run 6 Recruitment Roadshow 1
- **23** JISSI x N-House: Enabling Green Innovation
- **24** Kopi Chat Deep Dive: Rise of Auto-Bots: Automation & Robots
- **25** GRIP Run 6 Recruitment Roadshow 2

MAR

- **01-05** GRIP Run 6 Recruitment 1-to-1 Consultation Sessions
- **04** NUS Overseas Colleges e-Open House
- **04** Kopi Chat Deep Dive: Is Digital Health a Cultural or Technological Transformation of Healthcare?
- **05** Industry Roundtable Series- Sustainability in Food Tech: Waste Valorisation
- **17** Venture Building Programme Run 3 Recruitment Sharing Session 1
- **26** #FridayLearnings Episode 4 with Ruby He- Apply Contextual Thinking in Design
- **30** Venture Building Programme Run 3 Recruitment Sharing Session 2
- **31** Venture Building Programme Run 2 Demo Day

GROWING OPPORTUNITIES IN AGRITECH

On 4 November 2020, NUS Enterprise hosted "Visioning the Future of Agritech," the latest event in its NUS Industry Roundtable Series. Participants across sectors joined an in-depth discussion among three stakeholders in the agritech industry, covering topics from the future of the agrifood industry and plant breeding, to opportunities for agritech.

Clockwise:

- Moderator: David Sher, Venture Development Manager, NUS GRIP, NUS Industry Liaison Office
- Andrew D Powell, Ph.D, Chief Executive Officer, Asia BioBusiness Pte. Ltd., Singapore
- Timothy Chua, Business Development Director at Singrow Pte Ltd, CEO of Singrow Solution Pte Ltd
- Eunyoung Chae, Ph.D. Assistant Professor, Department of Biological Sciences, National University of Singapore

Here are the key takeaways from the session:

Governmental intervention and support are key

Technological development in agriculture has been minimal compared with advancements in other industries. This, coupled with increasing population size, has strained the food system and resulted in problematic food wastage. Timothy pointed out that 25% of all farmland is currently rated as highly degraded, with approximately 80% of global deforestation driven by agricultural concerns. A $1T investment is necessary until 2050 for irrigation water management in developing countries alone. Thus, governmental investment in food security, resilience and technological leadership is of utmost importance.

Skilled agri-techno specialists needed

Artificial intelligence (AI), machine learning and sensor engineering are hot skills in demand for future agri-techno specialists to breed plants with higher yield and quality. According to Professor Chae, AI has great potential for monitoring plant growth and health, as well as predicting plant offspring traits. Automated platforms and sensors can also provide great assistance to researchers for plant breeding.

Entrepreneurial opportunities abound

On the macro-level, the agrifood industry consists of a vast array of opportunities for a wide range of technologies. A typical agricultural value chain starts with production, harvesting and transport, followed by processing, storage, distribution and packaging before products are sold at wholesale and retail markets. Foodtech is also a vital area for consideration in the agrifood industry, for instance in the creation of plant-based meat. However, Andrew advised that solutions must be relevant, commercially feasible and address real problems.

The NUS Industry Roundtable Series is a platform for exchange of knowledge amongst start-ups, researchers, and industry experts. Centred on a series of topics, the Industry Roundtable harnesses the university's innovation resources to uncover new trends and opportunities. Check out the NUS Enterprise website for more updates on future events.