

KEMENTERIAN SAINS,
TEKNOLOGI DAN INOVASI
MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION



NATIONAL TECHNOLOGY AND INNOVATION SANDBOX (NTIS)

PROGRESS REPORT
2020-2021

**YOUR VISION,
OUR FUTURE.**

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All data and information *i.e.* on achievements, funding and engagement, reflected in this Progress Report is for the period 1 August 2020 – 31 July 2021.

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YOUR VISION, OUR FUTURE.

HOW DO WE MAKE TECHNOLOGY AND INNOVATIONS MORE AFFORDABLE, AVAILABLE AND ACCESSIBLE TO ALL MALAYSIANS?

We sought to answer this question in our mission to encourage the local development of ideas to solve economic, logistical and societal problems in the country, using approaches that would propel Malaysia towards becoming a developed, tech-producing nation.

With this, the National Technology and Innovation Sandbox (NTIS) was formed in June 2020, as part of Malaysia's short-term National Economic Recovery Plan (PENJANA) on August 19, 2020 by the Prime Minister, aligned to the National Policy on Science, Technology and Innovation (DSTIN) 2021-2030.

With an allocation of RM100 million as announced under the National Economic Recovery Plan (PENJANA) in 2020, the NTIS is tasked with fast-tracking the nation's aspiration to become an innovation-driven economy.

NTIS ON SPEED DIAL

The NTIS is an initiative that allows researchers, innovators and entrepreneurs to accelerate their innovation-to-commercialisation process.

It brings key players in the ecosystem together to find ways to overcome current technical, regulatory and funding obstacles.

AS AT 31 JULY 2021

500

APPLICATIONS
RECEIVED

130+

PROJECTS
SUPPORTED

26

GOVERNMENT
MINISTRIES ENGAGED

26

INNOVATION ACCELERATION
NETWORK PARTNERS

(TECHNOLOGY, MARKET ACCESS, FUNDING, ETC.)

In this first Progress Report, we want to highlight how innovation thrives when the private and public sectors collaborate, aided by a robust and adaptive regulatory environment offered through an effective programme.

We invite you to be part of this mission as we intensify local technology development efforts to make that shift from being users to developers of innovative technology.

BENEFIT TO BUSINESSES

A structured innovation-to-commercialisation framework with controlled environments for innovators, researchers and product developers to attain technology readiness, gain wider market access, funding, regulatory support and more.

BENEFIT TO GOVERNMENT

Technology solutions to address sectoral challenges, reduce dependency on foreign technology, create jobs and services, and increase the national Gross Domestic Product (GDP).

BENEFIT TO THE RAKYAT

Affordable, widely available and accessible solutions, as well as to foster high-skilled job opportunities, food security, improved healthcare, and more.

CONNECT NOW

sandbox.gov.my
ntis.enquiries@sandbox.gov.my

ENVISIONING A FUTURE OF INFINITE POSSIBILITIES

Throughout history, the darkest of times have sparked the brightest of inventions. Likewise today, science and emerging technologies have unveiled a multitude of innovations to solve pressing issues brought on by the pandemic – from healthcare to logistics, food security to energy.

The number and types of innovations can stretch as far as our imagination – and there is no better time than the present to fuel the process. There are several compelling reasons for this.

As a nation, we face challenges on many fronts including rising unemployment, foreign labour dependency, local supply chain resilience, food & health security and patchy digital infrastructure.

Overcoming these major economic and social challenges needs to be on the back of innovation. We have enough fundamentals to be a technology-producing nation; and are already on our way albeit at a much lower scale than desired.

CAPITALISE GROSS EXPENDITURE

In terms of the Gross Expenditure on R&D (GERD) as compared to the Gross Domestic Product (GDP), for example – South Korea leads the pack in Asia, with 4.6 percent, followed by Taiwan, Japan, China and Singapore. Malaysia's GERD stands at 1 percent, lower than the world average of 1.7 percent.* According to research, a 1 percentage point increase in GERD corresponds to a 10 percent increase in economic growth. Public investments in research and development therefore, are foundational in fueling a country's economic growth. By investing in research, governments provide the building blocks for technological advancements and innovative products.

For all these reasons and in supporting Malaysia's aspirations toward becoming a high-income nation – one that offers sustainable and inclusive economic growth, as outlined in the Shared Prosperity Vision 2030 (SPV2030), we introduced the National Technology and Innovation Sandbox (NTIS).

Enabling the ecosystem and engineering a process to ensure that the innovation-to-commercialisation path has demonstrable sectoral and societal impact is a complex task.

As such, the government directed RM100 million through PENJANA towards this initiative, laying the groundwork for Malaysian-bred technologies to be recognised, supported, funded and brought to market in an expedient way.

NTIS is a needed and timely booster to industry participants, regulators and the government alike. By ramping up the development of innovative solutions and accelerating their commercialisation with regulatory and funding support, we are positioning the economy to recover more swiftly from the devastating impact of COVID-19.

NTIS WILL ALSO KICKSTART A CYCLE OF REVENUE GENERATION THAT CAN BE USED TO SUSTAIN FUTURE INNOVATIONS.

I am pleased to note that since its launch, the NTIS has received more than 500 applicants as of August 2021. About half of these approved projects are related to developing Advanced Intelligence Systems products and solutions. In terms of application, 50 percent of the approved projects are designed to serve the Agriculture & Forestry and Smart Engineering & Manufacturing sectors.

The commitment of 26 Ministries and government agencies in this programme will also go a long way in enculturating innovation within our society, leading to a multiplier effect.

With the ecosystem growing and gaining speed, we welcome more partners and participants to come on board this exciting initiative. The participation, investment and collaboration with the private sector is pertinent to fast-track our innovation-driven economy.

I would like to commend the NTIS Secretariat, in particular the Malaysian Global Innovation and Creativity Centre (MaGIC), Technology Park Malaysia (TPM), the National Applied R&D Centre (MIMOS), and Futurise, as well as the Malaysian Technology Development Corporation (MTDC), for continuously expediting engagement among the ecosystem stakeholders, setting up a robust Sandbox environment, and facilitating discussions with regulators and site owners, so that the inventions can be safely tested and prototyped for successful commercialisation.

The NTIS has unpacked many opportunities in the past 12 months, we are cognisant that we are not just innovating for the sake of innovating. By developing impact-driven solutions and scaling up their commercial value, we believe we can elevate the rakyat's earning potential through the creation of high-income job opportunities, thus raising the standards of living for Malaysians.

By ramping up our efforts in this space, we are building a bank of intellectual properties (IPs). And these IPs transform into a new, highly valued "currency" when we are able to commercialise them. This transformation of innovation to commercialisation allows us to derive greater socio-economic value, which is sustainable and offers shared success for the public, business and government. Through **commercialisation, innovations can be made more available, affordable and accessible.**

There has been strong momentum in the first year, and as we shift gears to the next, there is an even greater need for speed. We want to deliver faster, broader, deeper – to keep our innovation growing so that it can keep giving.

Let us unite in this vision and unbox a future of infinite possibilities.

Thank you.

Dato' Sri Dr. Adham bin Baba

Minister of Science,
Technology and Innovation
(MOSTI)

*World Competitiveness Yearbook 2019
https://mastic.mosti.gov.my/statistic?field_statistic_category_target_id=197



Datuk Zainal Abidin bin Abu Hassan

Secretary General,
Ministry of Science,
Technology and Innovation
(MOSTI)

ENABLING THE ECOSYSTEM FOR CONTINUOUS INNOVATION FOR WEALTH AND WELL-BEING

At the Ministry of Science, Technology and Innovation (MOSTI), we are steadfast in our belief that technology and innovation are essential to improving the wealth and well-being of Malaysians.

For decades now, the Gross Domestic Product (GDP) has been used to measure a nation's success. GDP is the total monetary value created in an economy, against how much wealth is created.

Experts however caution that while GDP is a useful macroeconomic measure of growth, it does not encapsulate the changing times we live in. We need to measure a nation's innovative spirit, or its overall thirst for invention; but more importantly, how that translates into tangible and intangible wealth.

In order to ascertain our performance on these counts, we look to several global benchmarks – including the Global Innovation Index (GII).

In 2020, Malaysia ranked 33rd out of 131 economies, improving two ranks from 2019. We have done relatively well, but much more is needed to fully leverage the rapidly evolving tech landscape to chart Malaysia's future.

THE PRIORITIES

To foster this progress, the Ministry developed the National Science, Technology and Innovation Policy (DSTIN) with the aim of achieving an innovation-driven economy, an extension of a knowledge-based economy.

Found within the DSTIN is the Malaysian Science, Technology, Innovation and Economic Development Framework (MySTIE 10-10). The MySTIE 10-10 framework is designed to ensure our cadre of innovators receive the necessary support to push the commercialisation of scientific, technological and innovative solutions. It integrates 10 global science and technology drivers with 10 socio-economic drivers in the country to drive the path for a better tomorrow.

THE PLATFORM

One of the outcomes from our initiatives is to increase the pace and value of innovation – which includes taking it to the next level of commercialisation. Therefore, we introduced the National Technology and Innovation Sandbox (NTIS) to much excitement from the technology, innovation and startup ecosystem.

The NTIS is one of the 10 STIE leap programmes designed to propel R&D conversion, creating spin-offs, targeted capacity building, technology development and ecosystem support for one purpose: rapid commercialisation.

THE PROCESS

The NTIS ensures that Malaysia doesn't just adopt but creates and commercialises solutions using emerging and advanced technologies.

It moves products along the technology readiness tranches in an expedient manner, from ideas to invention and implementation – and onwards to commercialisation.

What we really want to do is remove obstacles and encumbrances that weigh down on innovators, enabling them to take their products to market, fast.

PROGRAMME MANAGEMENT

As such, in the past year, MOSTI with the support of the NTIS Secretariat has been engaging the ecosystem in several areas including funding, technology evaluation and regulatory facilitation.

Among others, the approach includes addressing structural issues, funding, facilitating necessary dialogues between participants, partners and other key players as well as establishing clear governance processes to measure the impact of the programme.

Through the NTIS, many Sandbox test sites have been created across the country – including the ones at FELDA Mempaga in Pahang, Iskandar Puteri in Johor, and Cyberjaya.

Considering the limits brought on by the pandemic, the programme has delivered strong results in under 12 months as this Progress Report shows.

So, it should come as no surprise that we want these successes to be repeated. There continues to be strong interest in the NTIS, and we have the systems, processes and support to take more companies forward.

PARTNERS FOR PROGRESS

The highs of the NTIS in its first year are not without the support from the 26 world-class organisations who are part of our Innovation Acceleration Network (IAN). With these partners, we have been able to reimagine what our future looks like and develop many exciting solutions – and we welcome more.

Innovation is a new currency for our wealth and well-being.

In the coming years, we need to continue to drive innovation beyond the confines of laboratory or academia, into the market where innovative technology finds its specific and profitable use and commercial value.

At MOSTI, we are committed to supporting the ecosystem and our foot is on the pedal to accelerate the pace of innovation and commercialisation.

As they say, the race is on!

Thank you.

A portrait of Amiruddin Abdul Shukor, a man with dark hair and glasses, wearing a grey blazer over a white shirt. He is smiling and looking towards the camera. The background is a blurred outdoor setting with trees.

Amiruddin Abdul Shukor

Acting CEO
Malaysian Global
Innovation & Creativity Centre
(MaGIC)

ENABLING GREATER VALUE THROUGH INNOVATION: SPEEDING UP, SCALING OUT

In just the past 20 years, the number of Internet users globally has increased from 413 million in the year 2000 to over 4.72 billion users today. That's more than 50 percent of the world's population.*

In fact, technology companies have replaced oil and gas companies for the largest slice of the world's economic pie. Today, four of the world's most valuable companies are Apple, Microsoft, Amazon and Google. Together, they are valued at a colossal US\$747 billion, which is almost double the value of Malaysia's Gross Domestic Product (GDP) at US\$387 billion.**

Their products, seeded from an idea in a garage with nothing more than an unsteady Internet connection and an early-90's computer, have generated not just commercial returns, but changed the world and how we interact with technology.

In Malaysia, we are blessed with a young and burgeoning population, but we are a long way off from making innovation more broadly available, affordable and accessible. We still look to other developed nations for the latest and most innovative technologies, when we should be inculcating our own.

The way to advocate innovation then, is by creating a safe environment for it to thrive. We need a clear road to travel between product creation and commercialisation; to take a sapling and grow it into a great tree that will someday turn into a forest.

It was with all these in mind that the seeds for the National Technology and Innovation Sandbox (NTIS) were germinated.

Our task then, as the Secretariat, is to realise the vision for an innovative nation, by engaging the ecosystem, extending support, expediting implementation and evaluating the programme in such a way that our shared future is a sustainable future.

In just a year, many local companies have been fast-tracked from the prototype and testing stages, to the deployment and commercialisation stages, through our Sandboxes. From agriculture to biotechnology using advanced technology systems and more, a spectrum of Malaysian-bred innovations are in motion. You will read more about them in the sections that follow, and we are proud to have made a real difference in their journey.

This is quite a remarkable feat considering the year that was. We are still at the early stages, but this strong start gives me great confidence that technology will be the tool to lead us out of the current COVID-19 crisis and on to recovery.

MaGIC is proud to be a part of this exciting journey and we are honoured that MOSTI has entrusted us with this initiative. We cannot thank our partners enough for the support shown to MaGIC as the Lead Secretariat helming the management of the NTIS.

With the Secretariat members – Technology Park Malaysia (TPM), the National Applied R&D Centre (MIMOS), and Futurise, as well as the Malaysian Technology Development Corporation (MTDC), corporate partners, our agency partners, and our community of innovators who are pushing the envelope on technology application, we are determined to press on towards greater heights, and I am confident we are on the right track to achieve our goals.

Thank you.

**Digital 2021 April Global Statshot Report*
<https://datareportal.com/reports/digital-2021-april-global-statshot>

*** Forbes 2021*
<https://www.forbes.com/the-worlds-most-valuable-brands/#470be7ff119c>

EXPEDITING THE IMPLEMENTATION OF NTIS

MOSTI
LEAD MINISTRY



NTIS SECRETARIAT
PROGRAMME MANAGEMENT, TECHNOLOGY EVALUATION & REGULATORY FACILITATION



Under the guidance and leadership of the Ministry of Science, Technology and Innovation, the Secretariat:

ENGAGES THE ECOSYSTEM

Works with partners, funders, technology companies, regulators and government agencies to canvass sectoral and societal issues that can be addressed through the deployment of new technologies.

EXTENDS LINKAGES

Identifies suitable live test sites, evaluates funding requirements and connects key players to ready the product for market.

EXPEDITES IMPLEMENTATION

Designs showcases for the various Sandboxes across different sectors and sites to accelerate the innovation-to-commercialization processes for the benefit of participants and partners.

EVALUATES PROGRESS

Manages and coordinates the funding to ensure that project management goals are met.

ENHANCES FUTURE PATHWAYS

Charts out the next steps for growth for identified technologies and sectors with more partners.



“

MOSTI aims to strengthen the supply of innovation – and the NTIS is very much a key instrument in this regard. It enables innovators and start-ups to stress-test their products, services, business models and delivery mechanisms in a secure and live environment, with certain relaxations from regulatory requirements – leveling up both the quantity and quality of Malaysian-made innovative products and solutions. It's designed to bring "thought to thing" and "ideas to impact" in the fastest way!

We are delighted with the strong support shown by both the public and private sector in the first year, and I believe, will set the pace for greater things ahead! ”

Ts. Dr. Mohd Nor Azman Hassan
Chairman of NTIS Executive Selection Committee

“

Technology Park Malaysia continuously reviews the range of infrastructure, activities and processes that support Malaysian researchers, innovators, startups and high-tech entrepreneurs in maximising their fullest potential via the Sandbox.

This includes providing a favourable environment and framework for developing creative ideas and seeking to attract essential investments to maximise the value of commercially-viable interventions with both strong technological and international market potential. ”

Dzuleira Abu Bakar
Chief Executive Officer

“

Futurise, as a joint secretariat of NTIS, provides the government with a forward-looking approach to managing innovation through the National Regulatory Sandbox (NRS) mandate. This includes co-designing regulations, creating regulatory test environments and advising stakeholders, especially the government on policies and guidelines.

Our early identification and intervention of regulatory aspects of innovation spans 11 cohorts. In this period, we have also assisted 52 companies that have undergone the NTIS program.

This collaboration between NTIS and NRS presents a progressive platform for the government to regulate innovation, and rethink policies aimed at recovering the economy post-COVID-19. ”

Ts. Tengku Azrul Tengku Azhar
Head Of Innovation Ecosystem

“

MTDC, in collaboration with NTIS, has to date funded 70 high potential projects which provide significant impact to the economic and societal well-being of our nation.

Projects involving robots and drones, for example, have shown great potential based on the results of the early Sandbox phases. We look forward to generating more impactful projects based on this strategic collaboration. ”

Dato' Norhalim Yunus
Chief Executive Officer

“

NTIS plays a key role in paving a smoother pathway for new home-grown innovations to get to market. The use of advanced technologies to address challenges at a national scale provides market access opportunities for local technology players to build momentum in their early stages.

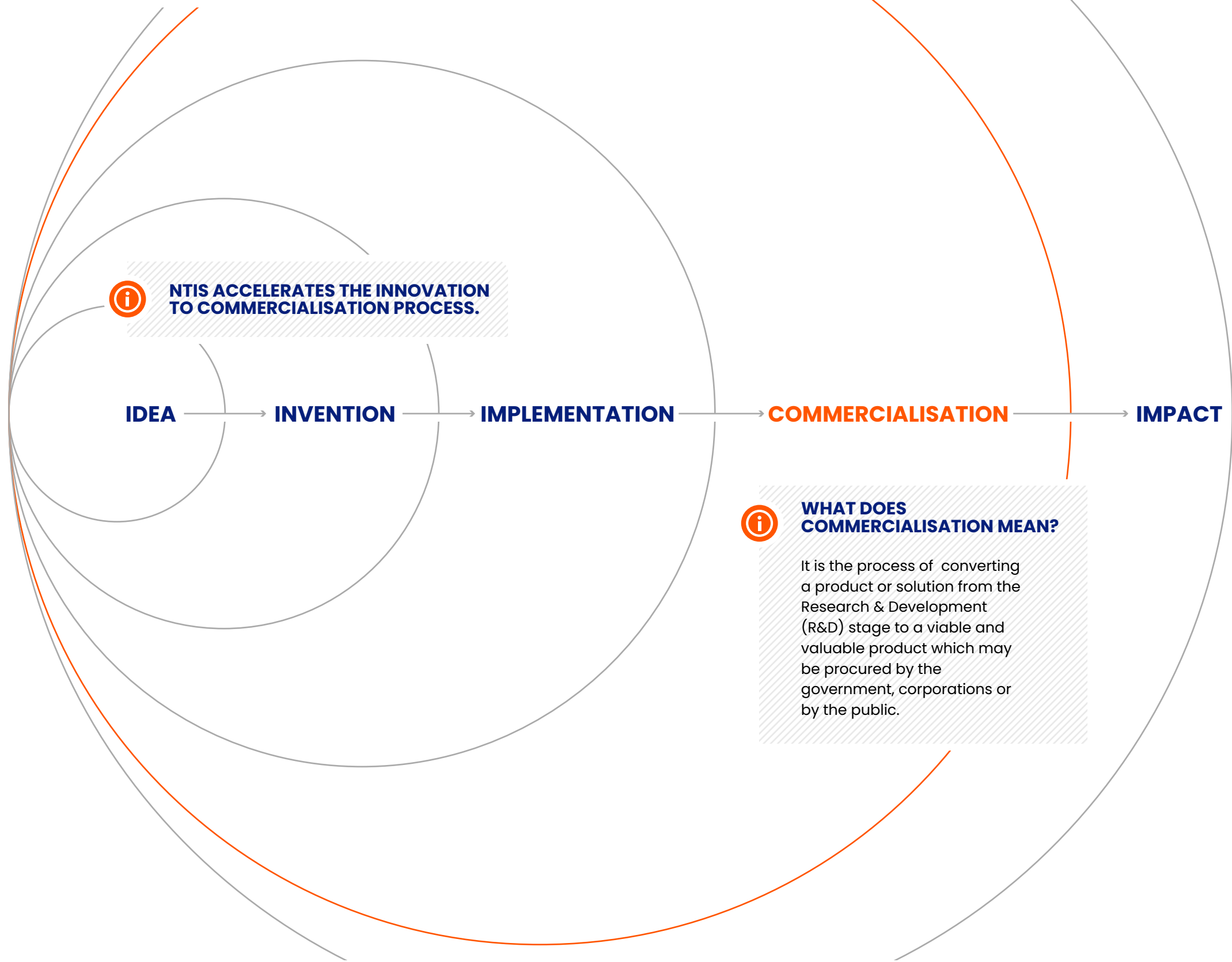
NTIS fits well within MIMOS' mandate to drive the development of local technologies.

We are confident that NTIS will help position Malaysia as a technology creator and exporter in the region. ”

Dr. Iskandar Samad
President and Chief Executive Officer

INNOVATION AND COMMERCIALISATION MATTERS

UNLOCKING THE
VALUE OF INNOVATION



Innovation is impactful.

In the same way the microchip unleashed the power of computing and the Internet, science and technology have solved some of our most pressing or simple everyday issues. From healthcare to logistics, food security to energy, much has been invented, tried and tested, applied and gained.

How then do we take a seed and grow it into a forest?

In the past, the path to scalability for innovative technology companies in Malaysia was riddled with obstacles.

Smaller companies lacked the necessary channels to obtain approvals quickly but were bogged down with tedious and time consuming documentation and paperwork. This diminished their ability to develop their products and test it.

After obtaining the necessary approvals, they were then faced with the high cost of commercialisation and barriers to market entry. Access to funding and the opportunity to go to market was scarce.

Further, regulations had not kept up with technological progress. There was also a lack of ‘safe’ environments for experimentative innovation to transpire, and inefficiencies which frustrated efforts to increase technology-driven initiatives, abounded.

Thus, the great need for a cohesive and comprehensive policy and within that, programmes, to address these shortcomings – for we cannot afford to trail behind in a world that’s rapidly shifting into a technology-driven one.

ADDRESSING THE NATION'S IMMEDIATE AND LONG TERM SOCIO-ECONOMIC NEEDS

Enter the **National Policy on Science, Technology and Innovation (DSTIN) 2021-2030.**

Announced in 2020, the new policy addresses the issue of innovation inefficiency through the Science, Technology, Innovation and Economy (STIE) framework, namely, the **10-10 MySTIE Framework.**

The framework was designed by the Academy of Sciences Malaysia (ASM) to support the implementation of the policy. It is an integration of 10 key Malaysian socio-economic drivers with 10 global leading science and technology drivers aligned to Malaysia's strengths and needs.

This enhances the competitiveness and sustainability of Malaysian industries as well as the *rakyat's* quality of life. The NTIS operates within this framework, supporting the nation's overarching goal for a technology-driven, innovation-focused and highly-skilled economy.

Source: 10-10 MySTIE Framework: Trailblazing the Way for Prosperity, Societal Well-Being & Global Competitiveness / MOSTI and Academy of Science Malaysia

THREE MAJOR GOALS

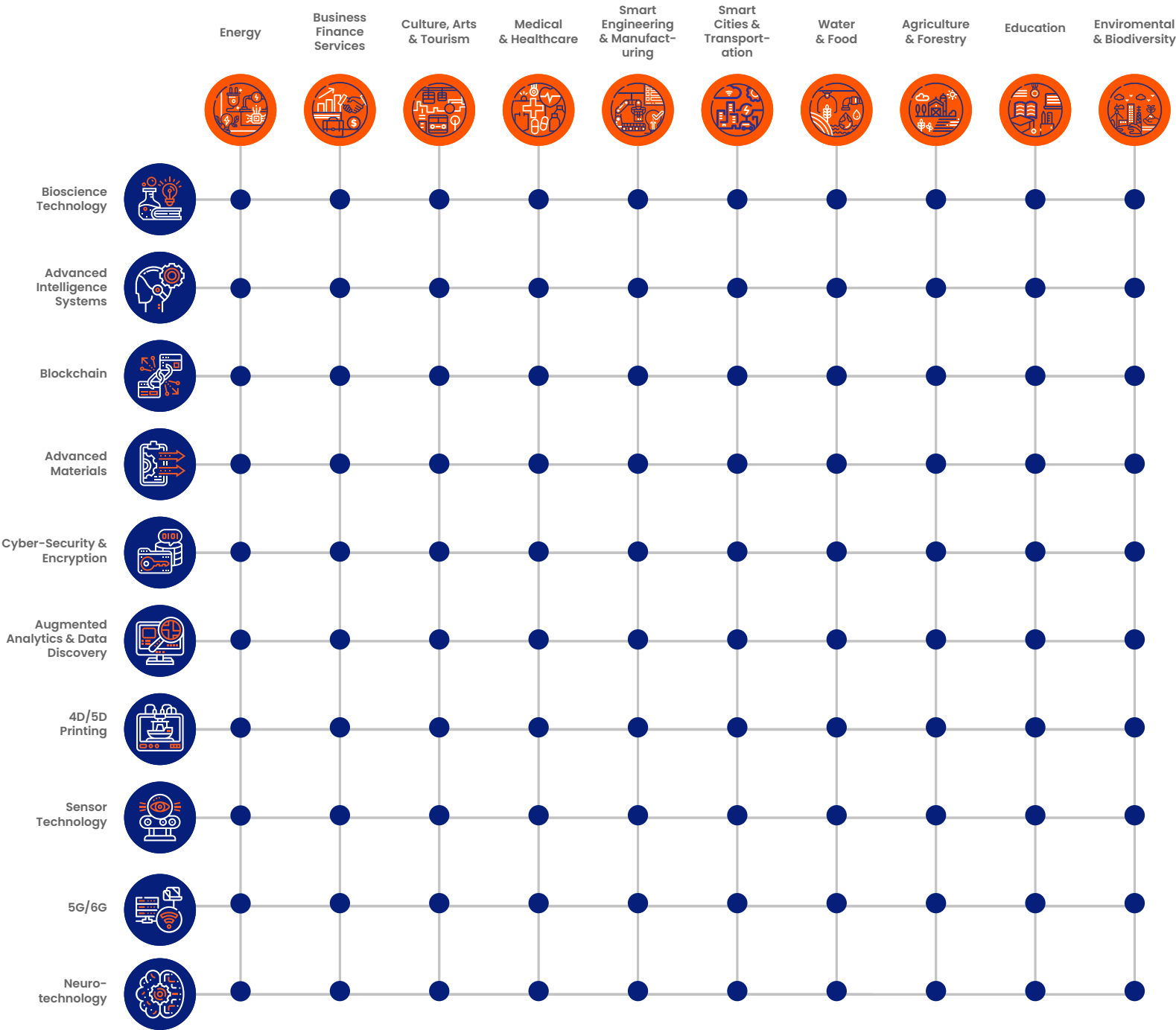
- 1

To foster local innovation and facilitate a smoother pathway to accelerate products or solutions to market.
- 2

To be a testbed for advanced technologies that would enable Malaysia to tackle the issues exacerbated by the COVID-19 pandemic and enhance participation, investment and collaboration in research with the private sector.
- 3

To enhance the *rakyat's* quality of life and income, create new high-skilled jobs, attract the best local talent, provide opportunities and foster shared prosperity, while reducing dependency on foreign labour.

MALAYSIA SOCIOECONOMIC DRIVERS



It is within this framework that NTIS operates to support our nation's overarching goal to be a technology-driven, innovation-focused and highly-skilled economy.



THE NATIONAL TECHNOLOGY AND INNOVATION SANDBOX (NTIS)

ON THE EXPRESS TRACK

From product research and development to deployment, the NTIS provides support in 3 ways:

COMMERCIALISATION

- Engages corporations to work with companies to provide market access.
- Guides through structured commercialisation pathways.
- Assists with IP Audits and Valuation.

REGULATORY

- Facilitates discussions with regulators to provide a conducive environment for safe testing and application.

FUNDING

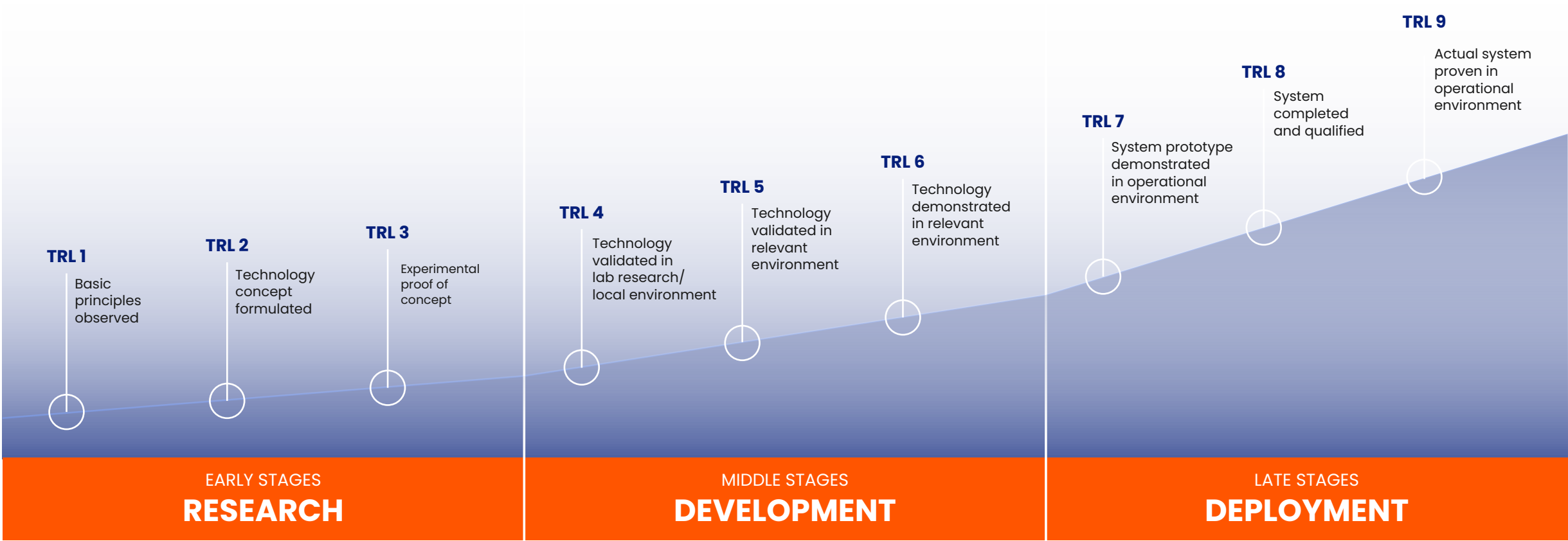
- Connects participants to various funding mechanisms including grants, sponsorship, ventures and more.

Technology Readiness Levels (TRL) are a type of measurement system developed by the National Aeronautics and Space Administration (NASA) Agency, used to assess the maturity level of a particular technology.

Each technology project is evaluated against the parameters for each technology level and is then assigned a TRL rating based on the projects progress.

There are nine technology readiness levels. TRL 1 is the lowest and TRL 9 is the highest.

BASED ON A SET OF TECHNOLOGY READINESS LEVEL (TRL) INDICATORS, WE ASSESS THE NEEDS OF THE COMPANY AND THE MATURITY LEVEL OF THE PRODUCT OR SOLUTION TO SUPPORT ITS PROGRESS TO THE NEXT STAGE.



This is the ideation and validation stage, where innovators can test and validate their ideas, and study their feasibility and sustainability, within a controlled lab environment.

Once ideas are formed, they are tested in real-life environments.

Here, regulations are relaxed to allow for the safe testing of products without the shackles of tedious bureaucracy processes that could hamper progress.

At this stage the product is taken to market and commercialised.

Here, maturity and growth is the focus, as earlier hurdles have been overcome.

FUNDING SCHEMES BY MTDC

SANDBOX TYPE	(1) SINGLE SITE	(2) MULTIPLE SITES	(3) COMMERCIALISATION	(4) MATCHING FUNDS
FUNDING AMOUNT* (MAXIMUM)	RM 250, 000 (100%)	RM 500, 000 (70%)	RM 4, 000, 000 (70%)	RM 5, 000, 000 (1:1 MATCHING FUND PER APPLICANT)
FUNDING INSTRUMENT	GRANT	GRANT	GRANT & CPN**	SUBJECT TO DICSUSSION BETWEEN MTDC, INVESTOR AND COMPANY
FUNDING DISBURSEMENT	MILESTONES ACHIEVEMENT BASIS	MILESTONES ACHIEVEMENT BASIS	MATCHING PAYMENT ON CLAIM BASIS	SUBJECT TO DICSUSSION BETWEEN MTDC, INVESTOR AND APPLICANT
PROJECT DURATION	6 MONTHS	6 MONTHS	18 MONTHS	6-18 MONTHS
TYPE OF ELIGIBLE COSTS FOR SANDBOX 1-4	<div><div>TECHNOLOGY LICENSING/CONSULTATION FEES</div><div>PRODUCT REGISTRATION/REGULATORY COMPLIANCE COSTS</div><div>PRODUCTION COSTS</div><div>IP REGISTRATION</div><div>TECHNOLOGY & MARKET VALIDATION ACTIVITIES</div><div>OPERATIONAL EXPENDITURES (STAFF ALLOWANCE, RENTAL, ACCOMODATION, UTILITIES, TRANSPORTATION)</div><div>FOR SANDBOX 3 & 4, ADDITIONAL ELIGIBLE COSTS ARE:</div><div>PURCHASE OF EQUIPMENT/MACHINERY</div><div>MARKETING AND PROMOTIONAL COSTS (ELECTRONIC MEDIA, PRINTED MEDIA, WEBSITE, ETC.)</div></div> <div><div>*Funding quantum ranges between RM250,000 to RM5 million, depending on the requirements and Sandbox category.</div><div>**CPN - Convertible promissory note. A promissory note is a financial instrument that contains a written promise by one party (the note's issuer or maker) to pay another party (the note's payee) a definite sum of money, either on-demand or at a specified future date. Under this funding instrument, the value of the debt may be converted into equity in the form of preference shares.</div></div>			

2020-2021 ACHIEVEMENTS

AT A GLANCE

RM
52.78
MILLION

FUNDING
APPROVED

70

COMPANIES
FUNDED

26

INNOVATION
ACCELERATION
NETWORK
PARTNERS (IAN)

AS AT 31 JULY 2021

500
APPLICATIONS
SUBMITTED

139
COMPANIES
APPROVED

TECHNOLOGY AND SECTORS ENABLED

AS AT 31 JULY 2021

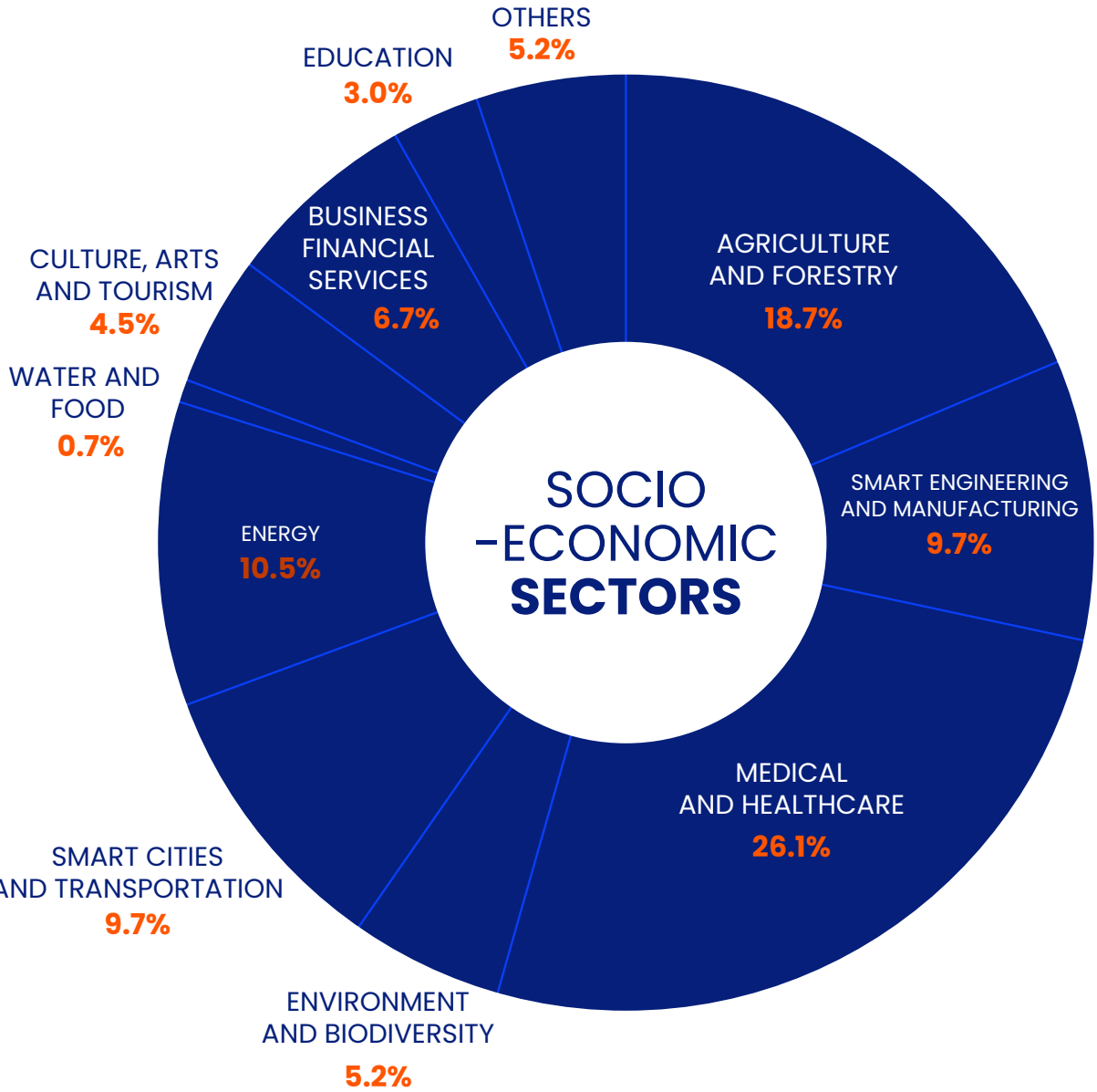
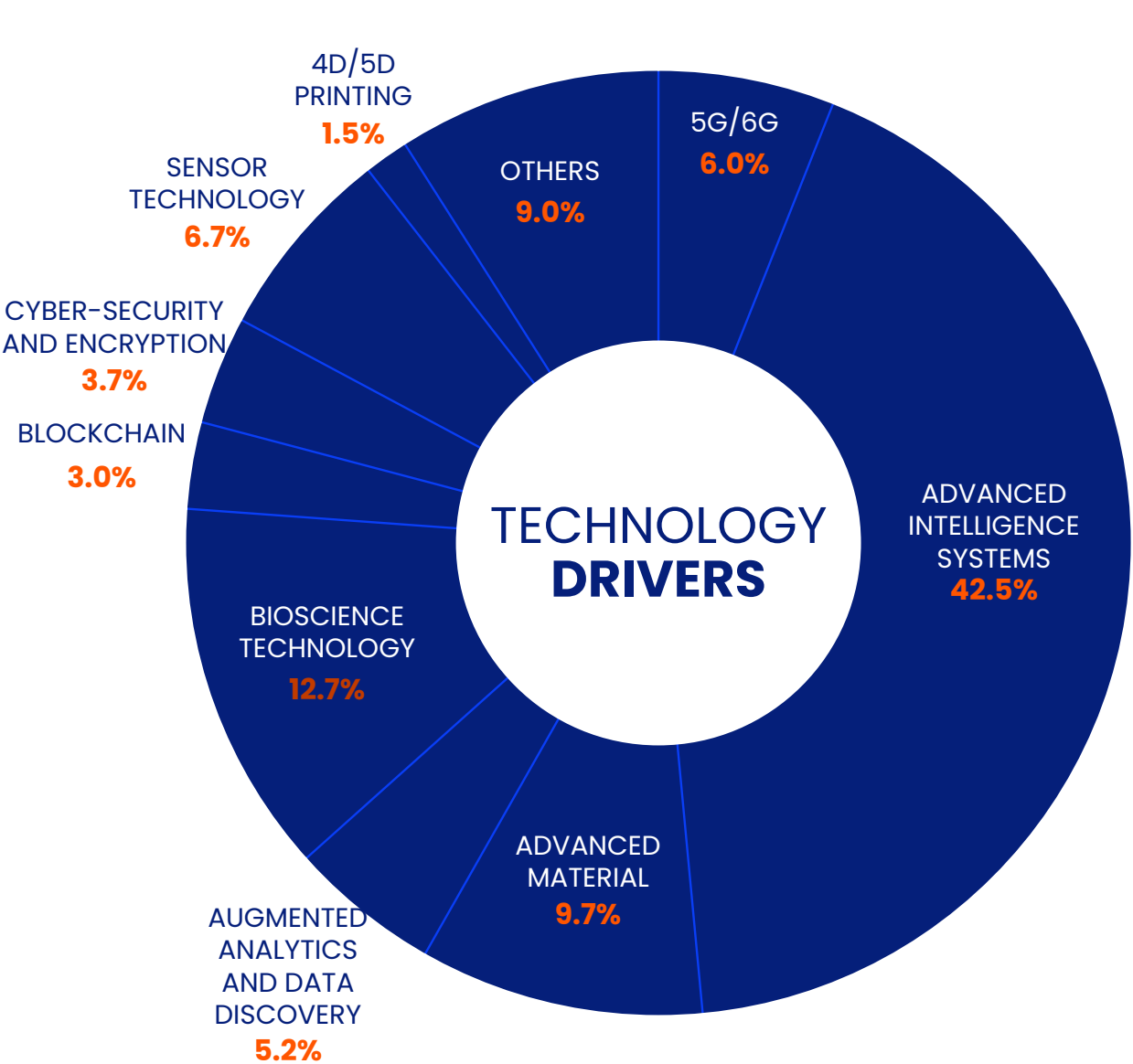
12
INNOVATORS AT
SANDBOX TEST SITES

40
REGULATORY
FACILITATION

70
COMPANIES
FUNDED

FUNDING

RM 52.78MILLION
FUNDING APPROVED
(INCLUDING CONDITIONAL APPROVALS)



N=139 APPROVED APPLICATIONS

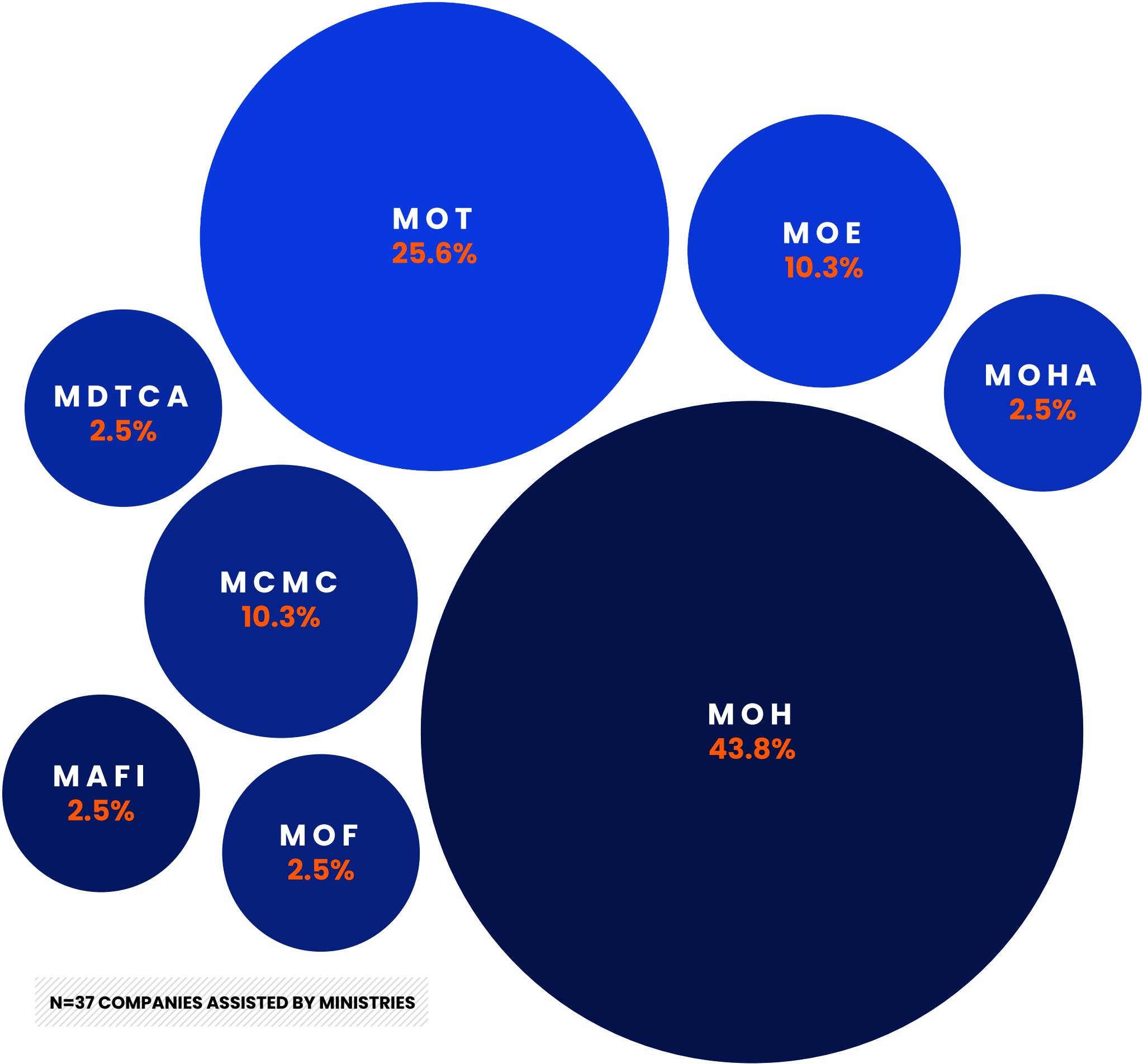
ENGAGING THE ECOSYSTEM

With great ambition comes great collaboration, and we are proud to work with our Sandbox partners, regulators and various government ministries and agencies to enable cutting-edge solutions to be tested and validated to help address a host of issues.

26 IAN PARTNERS

26 MINISTRIES ENGAGED

LEGEND	
MAFI:	Ministry of Agriculture and Home Industries
MCMC:	Malaysian Communications and Multimedia Commission
MOE:	Ministry of Education
MOF:	Ministry of Finance
MOH:	Ministry of Health
MOHA:	Ministry of Home Affairs
MOT:	Ministry of Transport
MDTCA:	Ministry of Domestic Trade and Consumer Affairs



ENGAGING THE ECOSYSTEM

Our Innovation Acceleration Network (IAN) Partners work closely with NTIS participants to guide them along, provide market and subject matter expertise, funding support and more.

26 PARTNERS AS AT 31 JULY 2021

SANDBOX PARTNERS

Provides physical or virtual test bed(s) for innovators to conduct testing & validation activities.



FUNDING PARTNERS

Accelerates innovative ideas by providing funds or other forms of financial benefits.



TECHNOLOGY & FACILITY PARTNERS

Strengthens technical systems by providing technology infrastructure and info-structure including tools, testing and validation facilities (labs, manufacturing facility, etc.) and venues.



LET'S INSPIRE



MARKET ACCESS PARTNERS

Facilitates co-marketing programmes to expand the reach of participants to local and international sites.



REGULATORY PARTNERS

Provides advisory services on regulatory and compliance requirements for commercialisation.



SUBJECT MATTER PARTNERS

Contributes relevant industry, technology or functional advice, insights and knowledge.



CIVIL AVIATION AUTHORITY OF MALAYSIA (CAAM)

REGULATORY PARTNER

Through dialogues fostered through the NTIS, the CAAM recently launched three Civil Aviation Directives (CAD) to address risks and security issues in drone operations:

- Requirements and procedures for the organisation of remote pilot training
- Agriculture drone operations
- Facilitation of special UAS projects

NTIS works closely with CAAM to ensure safety and regulatory compliance in several Sandbox sites.



CAAM'S ROLE:

- Elevates Malaysia's visibility in the regional and global drone-tech industry;
- Provides **technical and regulatory framework** parameters for drones to **operate efficiently and safely**;
- Streamlines **permit applications** including for agriculture drones where the drones are flying at low altitudes in remote areas, posing low risk;
- Facilitates the exchange of information and experiences related to Unmanned Aircraft Systems (UAS) and gathers industry feedback on the new CAD;
- Develops an ecosystem for training and certification of talents for the DroneTech industry; sets standards for world-class drone events to be hosted, and for startups to network with incubators, accelerators and innovators to test and commercialise their drone innovation.



“CAAM is proud to be working alongside NTIS on this journey of innovation and transformation. We have been working closely with NTIS and all relevant stakeholders to both uphold the safety and security of Malaysian airspace and protect the interest of the public.

CAAM will continue to be committed towards regulatory advancement as we explore new technologies in drones and Unmanned Aerial Vehicles (UAV); we are indeed excited by the future possibilities ahead of us. ”

CAPTAIN CHESTER VOO CHEE SOON
CHIEF EXECUTIVE OFFICER OF CAAM



“

NTIS has proven to be a strategic platform that bridges the gap between innovation and real world commercialisation of technology. Since becoming a part of the ecosystem, DHL has had numerous positive engagements with technology providers and innovators. We look forward to seeing fruitful results from this initiative not just for DHL but also for Malaysia as a whole. ”



Justin Baird
Vice President and Head of Innovation Asia Pacific
DHL Customer Solutions and Innovation



“

We are pleased to be supporting NTIS as a strategic partner. As Malaysia progresses in its MyDIGITAL journey, we are committed to providing our technology and resources to empower our researchers, innovators and entrepreneurs to have a greater impact on our country and its people. This is in line with our mission to empower every person and every organisation on the planet to achieve more. ”



K. Raman
Managing Director
Microsoft Malaysia



“

The collaboration between NTIS and PETRONAS Ventures is critical for nurturing and upskilling local talents and scaling them up to global standards, thus creating a greater economic impact for the nation. This is in line with our aspirations to empower technology Startups while developing a vibrant and sustainable entrepreneurship ecosystem in Malaysia. ”



Arni Laily Anwarrudin
Head of PETRONAS Ventures



“

“Innovation and digital technology will be the fundamental drivers of change in the next few decades. NTIS’ role in discovering and testing technology solutions in areas that are at the heart of socio-economic development, is a key ingredient for accelerating our progress towards achieving the Sustainable Development Goals in Malaysia. UNDP looks forward to collaborating with NTIS in nurturing the local ecosystem for impact technology, and promoting inclusive and planet-friendly technology solutions for the benefit of all. ”



Niloy Banerjee
UNDP Resident Representative
for Malaysia, Singapore and Brunei Darussalam

SHOWCASE

Sandbox projects aimed at capturing our imagination, and more importantly, future markets.

These are just several of many participants which have:

- Progressed their product development
- Increased partnership
- Gained revenue opportunities and
- Expanded to hire more people

AGRICULTURE SANDBOX

Could drones be the answer to reinvigorate and propel the competitiveness of our agriculture sector, securing food supply for the future?

We certainly think so.

This is why the NTIS team is grooming world-class drone technology providers for a harvest.

Globally, drone technologies have taken flight with projected market growth rates of 30 percent and upwards. In the agriculture sector alone, it is said to be worth US\$32.4 billion*.

Here, drone technology is used in soil and field analysis, terrain mapping, crop spraying, health assessment and planting, and the monitoring of yield.

It also provides career prospects for the younger generation in agriculture, whilst potentially improving the socio-economic of FELDA settlers and their family members.



* Communications Review/July 2017, PriceWaterhouseCoopers (PwC)

SANDBOX SITE

FELDA MEMPAGA
LAUNCHED: NOVEMBER 2020

AIM

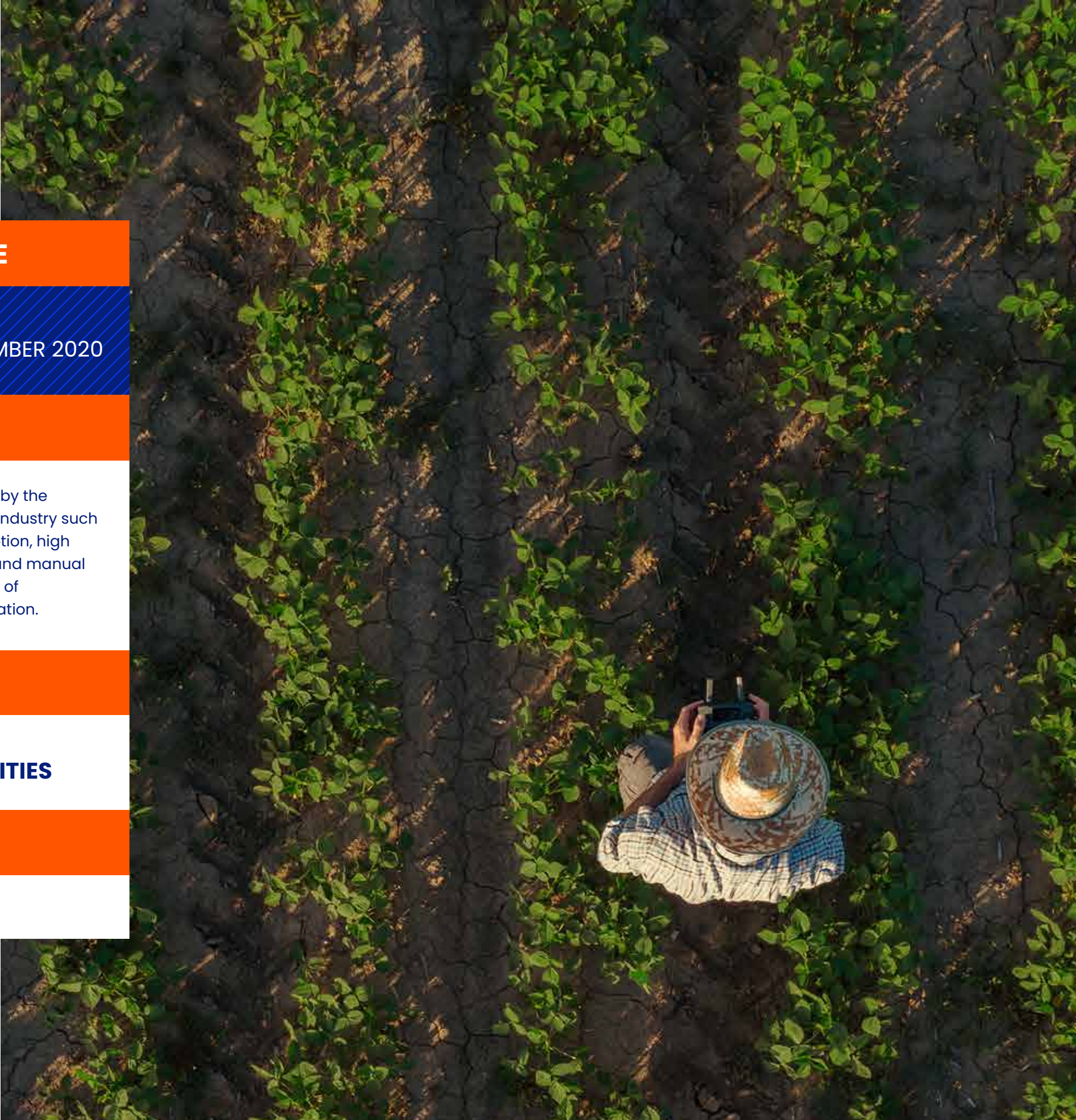
To alleviate issues faced by the farming and agriculture industry such as slow technology adoption, high dependency on foreign and manual labour, and the high cost of maintenance and fertilisation.

BENEFICIARY

B40
RURAL COMMUNITIES

SECTOR

AGRICULTURE



AGRICULTURE SANDBOX AT FELDA MEMPAGA



“ Technological innovation is essential in accelerating growth and managing sustainable plantation development for FELDA and its settlers. Our aim is to reduce dependency on labour and plantation related costs as well as to increase productivity.

The strategic partnership between NTIS and FELDA could open up more opportunities for us to work together with industry experts in realising our goals. ”

DATO’ AMIRUDDIN BIN ABDUL SATAR
DIRECTOR GENERAL
FELDA

INNOVATION PARTNERS

- Pesticide spraying drones by Poladrone and Aerodyne
- AI robotics automated farm by Braintree Technologies
- Smart farming with AI sensors by OFO Tech
- Antifungal nanodelivery system by Nanzinn

TESTING

Various drone and robotic solutions to improve aspects of:

- HARVESTING
- MAINTENANCE
- FERTILISATION

PERIOD

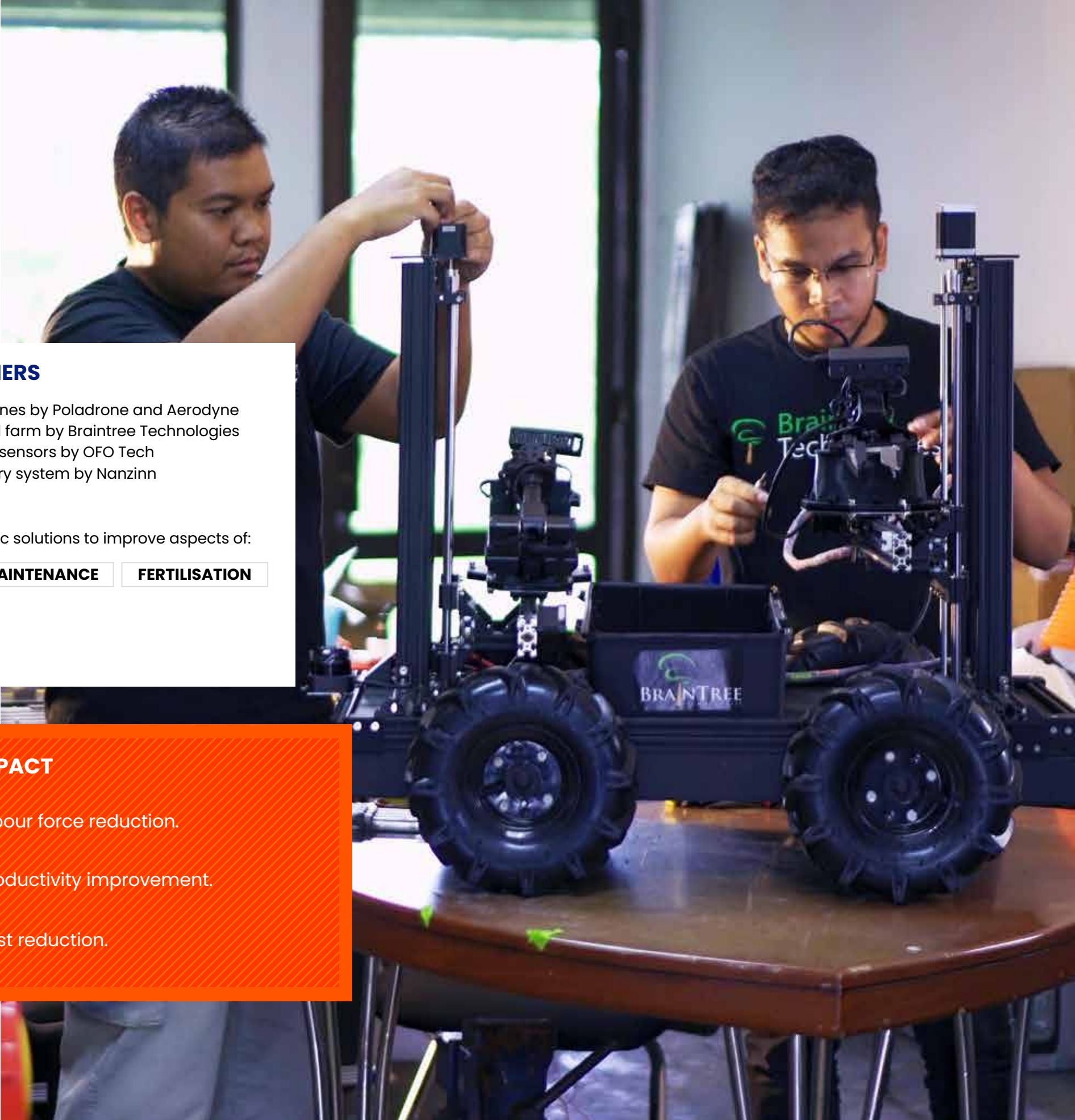
6 to 12 Months

FELDA’S TARGET IMPACT

UP TO **50%** labour force reduction.

UP TO **30%** productivity improvement.

UP TO **20%** cost reduction.



SMART CITY & TRANSPORTATION SANDBOX

What role can drone technology and robotics play in creating smart cities? How can we improve networks of people and their relationship with the environment and objects that serve to improve their well-being?

In Asia, the drone market is expected to more than double* in revenue from US\$8.6 billion in 2020 to US\$17.9 billion in 2025. The total value of robotics market is estimated to be USD 48 billion in 2020, with Asia leading the way in the industrial robot market

In order to capture a slice of this market, the Sandbox was launched in Medini, Iskandar Puteri to better funnel this incredible potential into our nation, and position Malaysia as Southeast Asia’s first drone and robotics zone while realising the vision of an integrated sustainable living area.

Medini is equipped with the necessary infrastructure and amenities for drone, autonomous vehicles (AV) and robotics test sites. This includes office spaces, maker labs, proof-of-concept of solutions, drone and robotics training centres, as well as light assembly, repair, maintenance and overhaul (MRO) facilities. DRZ Iskandar aims to accelerate the growth of drone and robotics companies through corporate accelerator programmes (CAP), market access, funding opportunities and hosting world-class drone and robotics events, allowing incubators, accelerators and innovators to congregate, test and commercialise drone and robotics innovations.

DRZ Iskandar works closely with the Ministry of Transport, Civil Aviation Authority Malaysia and other regulators to provide technical, regulatory and frameworks and parameters for drones and AV to operate efficiently and safely, whilst fast-tracking the testing of drones and autonomous vehicles solutions from local and global companies.



POWERED BY



**Drone Industry Insights (2020)*
**International Federation of Robotics 2020*

SANDBOX SITE

DRONE AND ROBOTICS ZONE (DRZ)
MEDINI, ISKANDAR PUTERI
LAUNCHED: DECEMBER 2020

AIMS

To realise Iskandar Puteri’s vision as an integrated sustainable living site with a focus on security & surveillance, smart agriculture, delivery and logistics, autonomous vehicles, applied analytics, defects and inspection.

To strengthen the drone and robotics ecosystem in DRZ Iskandar, positioning it as a growth engine, technology leader and talent hub for Malaysia and the region.

BENEFICIARY

PUBLIC
INDUSTRY

SECTOR

SMART CITY

SMART CITY SANDBOX AT THE DRONE AND ROBOTIC ZONE (DRZ) AT ISKANDAR PUTERI



“ Iskandar Investment Berhad (IIB) is proud to be supporting Johor’s state-wide digital transformation to accelerate the growth of IR4.0, including transforming Medini into the digital hub of the southern state. IIB’s flagship initiative, Iskandar NEXT (New Economic Experience & Talent), has given rise to our DRZ Iskandar which has recently been recognized as an NTIS sandbox by MOSTI. This recognition is testament to our joint efforts to upskill local talents and to move them higher up the technology value chain, thus creating significant socio-economic impact. Already equipped with world class ready-built infrastructure, IIB will further enhance Medini with advanced digital infrastructure to attract more tech-related companies to establish their footprint here. ”

DATUK IR KHAIRIL ANWAR AHMAD
PRESIDENT AND CEO
ISKANDAR INVESTMENT BERHAD

INNOVATION PARTNERS

- Strategic Partnership for remote pilot training by SG Academy
- Security and Surveillance Drones by Vstream Revolution
- Urban Delivery Drones: Automated External Defibrillator (AED) delivery
- Parcel and Food Delivery Robots by HelloWorld Robotics
- Autonomous Vehicles: Shuttle Vehicles by eMooVit
- Autonomous Vehicles: Self-Driving Vehicles by Kommu

TESTING

Various drone and robotics solutions for smart city applications - with a focus on

SECURITY & SURVEILLANCE	AUTONOMOUS VEHICLES
SMART AGRICULTURE	APPLIED ANALYTICS
DELIVERY AND LOGISTICS	DEFECTS & INSPECTION

PERIOD	AREA
6 to 12 months	Area/ land allocated within Iskandar Puteri for solution testing: <ul style="list-style-type: none">• Drone Test Site (DTS) – 25 acres and 3,000 acres of flight area, designated for visual line of sight (VLOS) and beyond visual line of sight (BVLOS) drone testing• Autonomous Vehicle Test Site (AVTS) – 5 km and 20 km length in roads, designated for AV testing

DRZ'S TARGET IMPACT

- OVER **RM351** million investments targeted by 2025.
- UP TO **1000** high-value jobs created in drone and robotics by 2025.
- OVER **70** technology companies to set up business in Medini, creating high skilled jobs and knowledge-sharing opportunities.



SANDBOX FOR URBAN DRONE DELIVERY

This Sandbox evaluates the feasibility of urban drone delivery services for moving small goods.

Such delivery services could positively impact healthcare services, as 24 percent of the country's population live in rural areas.

With delivery drones, medicines, vaccines and necessary supplies can be transported to hard to reach areas quickly and efficiently.



SANDBOX SITE

CYBERJAYA
LAUNCHED: MARCH 2021

AIM

To evaluate the feasibility of developing a viable urban drone delivery service for transporting goods, or shuttling medical supplies to areas that are rural, remote, or affected by natural disasters.

BENEFICIARIES

M40 COMMUNITIES
B40 COMMUNITIES
T20 (E-COMMERCE)

SECTOR

FAST MOVING CONSUMER GOODS
DELIVERY



URBAN DRONE DELIVERY SANDBOX
AT CYBERJAYA WITH AIRASIA



“ AirAsia recognises and greatly appreciates NTIS’ efforts in providing the much-needed stepping stone for startups and entrepreneurs to test out innovative ideas, their scalability and marketability, from start to finish.

It’s been very rewarding to work with the professional team of experts at NTIS, who have been supportive and accommodating in every way possible. Through our partnership with NTIS via MaGIC, AirAsia has been able to source for the local drone industry players to work alongside us on a Proof-Of-Concept project for the urban drone delivery Sandbox. ”

CAPTAIN LIONG TIEN LING
CHIEF SAFETY OFFICER
AIRASIA

IN PROGRESS

- Urban delivery drones for food and goods delivery by VStream Revolution and Meraque.

TESTING

The capability, experience, approval process, deployment readiness and service expansion of the drone operators, as well as the long-term feasibility of delivery drones.

PERIOD

6 months
(phased approach)

AREA

Cyberjaya



SHOWCASE

ADVANCED TECHNOLOGY APPLIED IN SOCIO-ECONOMIC SECTORS

The NTIS paves the way for innovators, regulators and the government to discuss, deliberate, design and develop Sandboxes to advance a technology product or solution to the stage of commercial readiness.

FOR THE GOVERNMENT

The NTIS has assisted 40 solution-intensive companies to perform a variety of testing, research and development work with several Ministries to alleviate some common issues.

GOVERNMENT COLLABORATION FOR SANDBOXES

MINISTRY OF TRANSPORT & AERODYNE

SUPPORT PROVIDED:
Assistance for UAS operations guidelines and CAD Agricultural UAS Operations to grant the Aerial Work Certificate (AWC).

MINISTRY OF TRANSPORT & POLADRONE

SUPPORT PROVIDED:
Assistance for UAS Operations guidelines and CAD Agricultural UAS Operations to grant the AWC.

JABATAN KERJA RAYA (JKR) NEGERI MELAKA & ADVANLED







SUPPORT PROVIDED:
Assistance to test 'AI Traffic Melaka' from its starting point at JKR Melaka to Jalan Kolej Yayasan Saad at Durian Tunggal, Melaka.

MINISTRY OF SCIENCE, TECHNOLOGY AND INNOVATION & THULEEN

SUPPORT PROVIDED:
Assistance to gain approval for a block-chain solution testing at MOSTI.







SHOWCASE

ADVANCED TECHNOLOGY APPLIED IN SOCIO-ECONOMIC SECTORS





COMPANY	DESCRIPTION	NTIS SUPPORT	OUTCOMES	SOCIO ECONOMIC DRIVER	TECHNOLOGY DRIVER
AKAR INDAH ENGINEERING SDN BHD	Autonomous robot for market waste disposal and management.	Fund the prototyping of the solution. Facilitated discussions with local authorities for the live testing and deployment of robotics solutions.	The autonomous robot has been successfully operating at Pasar Ayam Amanjaya, Ipoh since May 2021. Received interest for similar solutions from private companies in agriculture and horticulture sectors, factories, and smart city development. Received interest from Japan for similar solutions.	 <div>Water & Food</div>	 <div>Advanced Intelligence Systems</div>
AIRIS LAB	Airis Sense, an abnormal temperature detection and AI Facial Recognition Data Logger System is used to reduce the manual temperature measurement and record-taking tasks. Saves time and reduces risk of item sharing among employees or visitors in all premises.	Provision of funding.	Successfully produced Airis Sense as planned. The product has been deployed at several Sandbox Sites. Testing successfully conducted. Completed 100% of KPIs.	 <div>Smart Engineering & Manufacturing</div>	 <div>Advanced Intelligence Systems</div>
BIOGENES TECHNOLOGIES SDN BHD	First Malaysian company developing a new COVID-19 In-Vitro Diagnostic Kit. A rapid antigen-based test kit for COVID-19 and other infectious diseases.	Facilitated discussions on regulatory procedures with the Malaysian Medical Device Authority (MDA). Sought clearance from MDA and coordinated approval with the Ministry of Health for a test site for live virus clinical validation. Provision of funding.	The test-kits have undergone pre-clinical and clinical trials at Pusat Perubatan Universiti Malaya.	 <div>Medical & Healthcare</div>	 <div>Bioscience Technology</div>

SHOWCASE

ADVANCED TECHNOLOGY APPLIED IN SOCIO-ECONOMIC SECTORS





COMPANY	DESCRIPTION	NTIS SUPPORT	OUTCOMES	SOCIO ECONOMIC DRIVER	TECHNOLOGY DRIVER
BINSHO SOLUTIONS	An automated Fresh Fruit Bunch (FFB) Grading System which reduces human judgement for quality control in upstream activities of the oil palm industry.	Provision of funding.	Fresh Fruit Bunch achieved up to 90% grading accuracy and 90% count accuracy of the system.	 <div>Agriculture & Forestry</div>	 <div>Augmented Analytics & Data Discovery</div>
DF AUTOMATION & ROBOTICS SDN BHD	UV Disinfection Robots equipped with Ultraviolet lamps to disinfect premises against COVID-19. Aimed at resolving the problem of expensive and imported autonomous disinfection robots based on feedback from hospitals.	Facilitated regulatory processes for field testing and validation for the use of autonomous robots in hospital sites. Provision of funding.	Successfully conducted tests and deployed its Robots in Hospital Canselor Tuanku Muhriz UKM (HCTM).	 <div>Medical & Healthcare</div>	 <div>Advanced Intelligence Systems</div>
IDEASPARQ ROBOTICS SDN BHD	Development and testing of an autonomous floor-scrubbing robot to clean and disinfect the wet market premises and other areas including hospitals.	Provision of funding. Facilitated discussions with local authorities for the LIVE testing and deployment of robotics solutions. Test site: Pasar Ayam Amanjaya, Ipoh. Test site: Hospital Tunku Azizah – Single Site Sandbox.	Successfully deployed robots to Pasar Ayam Amanjaya, Ipoh. Pending deployment to a second site: Pasar Besar Seremban. Engaged a partner to commercialise the robot in Malaysian hospitals.	 <div>Medical & Healthcare</div>	 <div>Advanced Intelligence Systems</div>

SHOWCASE
ADVANCED TECHNOLOGY APPLIED IN SOCIO-ECONOMIC SECTORS

COMPANY	DESCRIPTION	NTIS SUPPORT	OUTCOMES	SOCIO ECONOMIC DRIVER	TECHNOLOGY DRIVER
IKHLAS JATI SDN BHD	Smart Floating and Tilting Solar Panel Platform for Energy Generation (SENSLAR) is a smart solar floating platform that can track the sun’s position for maximum exposure resulting in more than 40% improvement in energy harvesting.	Product validation. Assistance to turn the prototype into a commercially ready product and help with relevant regulations. Provision of funding. Technical support. Facilitation with regulatory processes and requirements.	Completed the technology licensing agreement from Universiti Tenaga Nasional (UNITEN). In the process of deploying (SENSLAR) at the UNITEN lake.	 Energy	 Sensor Technology
ITXOTIC SDN BHD	AI-based CCTV technology using deeptech and computing hardware without relying on imported technology which is costly and complex, while complying with SIRIM regulations.	Provision of funding. Facilitated collaboration with Consortium Pasar Besar Seremban for a testing site.	Successfully deployed AI solution at Pasar Ayam Amanjaya, Ipoh. Pending deployment at Pasar Besar Seremban.	 Smart Engineering & Manufacturing	 Advanced Intelligence Systems







SHOWCASE

ADVANCED TECHNOLOGY APPLIED IN SOCIO-ECONOMIC SECTORS

COMPANY	DESCRIPTION	NTIS SUPPORT	OUTCOMES	SOCIO ECONOMIC DRIVER	TECHNOLOGY DRIVER
MSD INNOVATION SDN BHD	Smart Urban Farming (SUF) system that’s easy to use to generate income.	Provision of funding. Facilitated and provided multiple test sites for market validation.	Successfully developed a Smart Urban Farming Training Manual. Provided training for selected B40 and Asnaf participants using the SUF Manual. Identified and obtained approval to roll out the SUF system for the selected B40 participants in six sites. All participants have started using the system on their respective farms to generate income. Engaged Tenaga Nasional Berhad to request for cheaper energy tariffs for Smart Urban Farms. Collaborated with Majlis Bandaraya Subang Jaya to introduce a license category for smart farming indoors.	 <div>Agriculture & Forestry</div>	 <div>Sensor Technology</div>
NALURI HIDUP SDN BHD	Naluri is a human-driven, AI-augmented digital disease management programme. <ul style="list-style-type: none"> Food Recognition through image recognition AI. Health Metrics Tracking (e.g., Blood Pressure, Blood Glucose) through Bluetooth Connected Devices (e.g., glucometer). Depression Detection through Natural Language Processing. 	Facilitated validation and testing at 3 sandbox sites. Provision of funding for operations, equipment and marketing. Regulatory assistance with MOH and relevant professional associations. Most of the leaders of these associations are now on Naluri’s Board of Advisors.	Improved AI Food Journal Image Recognition with 120 new food classes at >80% accuracy. Integrated two new bluetooth connected health devices for patient monitoring: blood pressure machines and glucometers. Expanded natural language processing algorithm for depression detection to include Bahasa Malaysia with an accuracy of over 90%.	 <div>Medical & Healthcare</div>	 <div>Augmented Analytics & Data Discovery</div>

SHOWCASE

ADVANCED TECHNOLOGY APPLIED IN SOCIO-ECONOMIC SECTORS

COMPANY	DESCRIPTION	NTIS SUPPORT	OUTCOMES	SOCIO ECONOMIC DRIVER	TECHNOLOGY DRIVER
NEXAGATE SDN BHD	NSI 4.0 Unified Cybersecurity Management is designed for detecting suspected malware or threats, to monitor and analyze the communication between IoT devices and gateways, and eliminates potential security loopholes and IoT attacks.	Provision of funding. Technical Support. Product validation and verification.	Successfully conducted its testing. Currently integrating IoT sensors, simulated threats and vulnerability assessments within the Sandbox.	 <div>Smart Technology & Systems</div>	 <div>Cyber-Security & Encryption</div>
NOMATECH	Malaysia’s new variety of red rice with a low Glycaemic Index (GI) suitable for diabetics.	Provision of funding.	Successfully commercialised the rice product. Awaiting Department Of Agriculture's approval for commercial planting of red rice in Peninsular Malaysia and export permit.	 <div>Water & Food</div>	 <div>Bioscience Technology</div>
VECTOLABS	NEMA, a Smart Controller device for LED Street Lights, uses LoRa (Long Range) technology for asset management in smart cities.	Provision of funding. Facilitated collaboration with UITM Microwave Research Center for a testing site.	Testing to be conducted in Putrajaya area. Undergoing deployment and product validation.	 <div>Smart Cities & Transportation</div>	 <div>Sensor Technology</div>

WORDS FROM THE TECH INNOVATORS



CHEONG JIN XI
CHIEF EXECUTIVE OFFICER
POLADRONE SOLUTIONS SDN BHD

A SAFE SPRAY!

Working with the NTIS team has been great, and has led to our solution, the Oryctes agriculture spraying drone, being commercialised at an accelerated speed. We have been able to connect with key clients and regulatory stakeholders for our solution to be used nationwide and in a sustainable manner.

Through the Sandbox, the CAAM recently rolled out three CAD directly relating to UAS (drones), allowing the industry as a whole to operate with more clarity and safely.

We hope that the NTIS continues to engage with key stakeholders to ensure that advanced technologies can be implemented in a sustainable manner to bring about a positive impact for Malaysians across the country. More companies and partners should definitely seize the opportunity to be a part of the Sandbox to explore, test and eventually scale their solutions!



ADRIAN ABDUL GHANI
DIRECTOR
MSD INNOVATION SDN BHD

STEP FORWARD, STEP UP!

It has been a thoroughly rewarding journey for MSD Innovation as the NTIS has given nascent companies like ours a much needed boost. The NTIS has enabled many promising tech-based companies to roll out and “test drive” their technologies prior to full blown commercialisation. We are truly appreciative of their foresight.

Companies should come on board as the NTIS is an ideal platform to learn and improve in preparing for commercialisation. The NTIS provides a conducive environment for solutions to be tried out and gives participants a leg up in strengthening their product development.



AZRAN OSMAN-RANI
CEO AND CO-FOUNDER
NALURI HIDUP SDN BHD

HEALTH IS A TOUCHSCREEN AWAY

The NTIS team has supported us throughout our journey - from the early scoping of the objectives of our Sandbox, to ensuring we remain on track to deliver against those objectives.

Without the NTIS Sandbox programme, we would not have been able to develop our technologies so quickly. We hope to see more Sandbox-type grants in the future that will help Malaysian companies develop innovative solutions for the nation.

WORDS FROM THE TECH INNOVATORS



AHMAD NAGUIB BIN SHAARI
HEAD OF OPERATIONS
AKAR INDAH ENGINEERING SDN BHD

IT’S A DIRTY JOB FOR ROBOTS

The NTIS has truly helped our company test our products, services, business models and delivery mechanisms in a live environment. We were tasked at developing solutions to address waste management and garbage handling issues faced by the Majlis Bandaraya Ipoh (MBI) in Pasar Ayam Amanjaya, to ensure cleanliness at the wet market.

In May 2021, our autonomous robotics solution was successfully utilised at the market, and since then we’ve provided our solutions to various cooperatives, including FELDA. From there, we have been invited to develop solutions for the agriculture and horticulture sectors, factories and smart city development ventures both locally and abroad, including in Japan by the Sebu Soko company.

Without a doubt, the NTIS is a really good catalyst for the development of local tech-focused companies. Through them, we have also been able to work together with various ministries and agencies to ensure the successful implementation of our solutions.



KAMARUL MUHAMED
FOUNDER AND CEO
AERODYNE GROUP

SETTING OUT NEW PATHWAYS

Our journey with NTIS has enabled us to advance the agriculture industry in FELDA and our country. Through our work in the Sandbox, we are able to create jobs for the next generation of settlers by introducing exciting technology so that they can continue the hard work of their family in newer and better ways.

We hope that more solutions can be tested through NTIS - thus creating more opportunities for our future generation, towards nation-building, especially after what we have been through with the pandemic.



KENNEDY WAI CHEE YOUNG
FOUNDER AND CEO
HELLOWORLD ROBOTICS

HELLO, WORLD

NTIS is a great programme for innovative startups like ours. With the help of the NTIS, we expanded our robotics delivery service to more test sites at DRZ Iskandar.

ENGAGING THE ECOSYSTEM



MILESTONES

In the past 12 months, consistent engagement with industry partners through briefing sessions, events, workshops and deep dive masterclasses helped drive momentum for NTIS.

2020

5 JUNE
2020

ANNOUNCEMENT OF
PENJANA + NTIS

NTIS, an initiative under the National Economic Recovery Plan (PENJANA), was announced in June 2020. Apart from helping to grow the national economy, NTIS also advances the use of emerging technologies in different sectors.

15 JULY
2020

NTIS OPENS FOR
APPLICATION

The Ministry of Science, Technology & Innovation (MOSTI) announced that applications to participate in NTIS are open and can be applied on NTIS website at sandbox.gov.my

19 AUGUST
2020

LAUNCH OF THE NATIONAL
TECHNOLOGY AND INNOVATION
SANDBOX (NTIS)



Finally, doors are opened and smoother pathways created for Malaysian inventions to get to market. NTIS will be the testbed for technologies that address issues faced by the nation, socially or sectorally.

28 NOVEMBER
2020

LAUNCH OF SANDBOX FOR
AGRICULTURE AND MEMORANDUM
OF UNDERSTANDING (MOU)
BETWEEN NTIS AND FELDA



An MOU was signed to officiate the launch of the NTIS Sandbox at FELDA Mempaga. The session was streamed LIVE on social media.

8 DECEMBER
2020

LAUNCH OF SANDBOX
FOR SMART CITIES AT THE
DRONE AND ROBOTIC ZONE (DRZ)
AT ISKANDAR PUTERI



The DRZ Iskandar in Iskandar Puteri unlocks new opportunities for integrated smart city living as NTIS participants test out various solutions here.

MILESTONES

In the past 12 months, consistent engagement with industry partners through briefing sessions, events, workshops and deep dive masterclasses helped drive momentum for NTIS.

GOVERNMENT SESSIONS

2021

6 MARCH 2021

LAUNCH OF SANDBOX FOR SMART CITIES WITH URBAN DRONE DELIVERY AT CYBERJAYA



AirAsia partnered with NTIS in a pilot project to test the long-term viability of delivery drone services, and to assess the capability, experience, approval process, deployment readiness and service expansion of drone operators.

8 MARCH 2021

AGRICULTURE ROUNDTABLE

Leading industry players from startups, the corporate sector and investors participated in a discussion centred on Malaysian agriculture technology trends, challenges and priorities.

Participants in the multi-stakeholder session shared insights on how to foster close collaboration between government agencies, entrepreneurs and solution providers in Agritech.

29 MARCH 2021

CAAM PROVIDES UPDATE ON (UAS)/DRONES

The Civil Aviation Authority of Malaysia (CAAM) met with drone operators to provide clarity on regulations relating to UAS/Drones, specifically the recent Civil Aviation Directives (CAD).

Discussions centred on establishing a formal regulatory-industry platform to co-develop and revise regulations concerning UAS/Drones, increasing the number of applications into programmes focusing on Drones and Robotics and drone-related projects.

6 – 8 APRIL 2021

NTIS CONSULTATION WITH APPLICANTS

Eight consultation sessions were held to assist and advise prospective participants with their application to the NTIS.

27 MAY – 19 AUGUST 2021

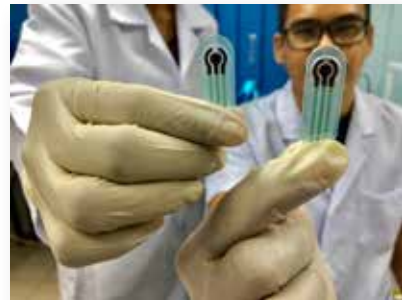
CHIEF INNOVATION OFFICERS (CIO) MASTERCLASS



A 12-week programme (May-August 2021) to equip 26 Ministry CIOs with the knowledge and expertise to effectively lead an innovation unit and be change agents within their Ministries. The programme is designed to accelerate the technology and innovation process within the public sector. 22 Ministries have developed their technology solutions in "Prototype in Glide/Figma" to address their Ministries' Problem Statements and have established their Ministries innovation unit.

19 AUGUST 2021

NTIS' FIRST STARTUP GRADUATES



BIOGENES TECHNOLOGIES, a Malaysian-based startup in the field of molecular diagnostics and genomics is the first NTIS participant to complete all project milestones for their COVID-19 aptamer and rapid test kit. This is Malaysia's first commercially-ready multi-disease digital rapid test kit.

A person wearing a VR headset and holding controllers in a futuristic setting. The background features vertical light bars and a blue glow.

ENHANCES FUTURE PATHWAYS

EXTENDING INTO THE FUTURE

Innovation is the bright spark that never sleeps. Fueled correctly, that spark will never fade. As such, we continue working towards our goals.

INCREASING THE NUMBER AND QUALITY OF APPLICANTS

In the year ahead, we will promote the NTIS through closer and continuous engagement with various stakeholders. The eligibility criteria will be updated to provide better clarity and transparency to potential applicants and Innovation Acceleration Network (IAN) partners.

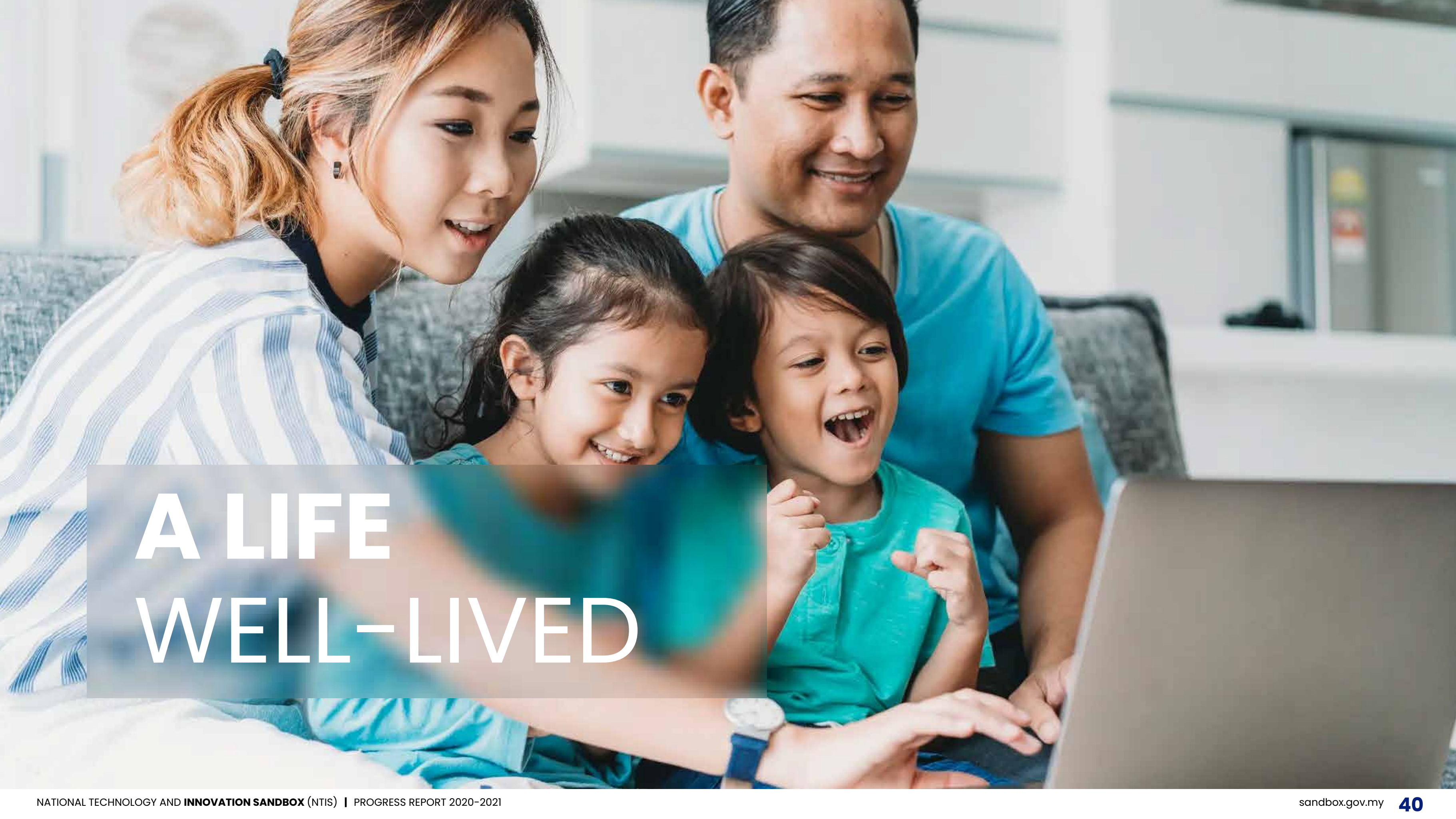
More details at <http://sandbox.gov.my>

CLEARING THE PATH TO EXPEDITE REGULATORY PROCESSES

Regulation stands as one of the most critical enabling factors to advance innovation. As such, we will continue to clear the path for innovations to take flight, by continuously engaging with regulatory bodies to solve inefficiencies and reduce complexities.

BY THE END OF 2021





A LIFE WELL-LIVED

THE FUTURE IS CLOSER THAN WE THINK

Five years from today, you wake up to the voice of your AI home assistant giving you an update on your day, and more importantly, about the people you love.

Your mom, who had heart surgery a year ago uses a smartwatch to monitor her blood pressure and heart rate. These daily readings are sent, safely and with confidentiality, to her doctor and to you, her registered emergency contact. You also get an alert for her next medical appointment in two days.

Your spouse, a doctor in the rural areas of East Malaysia, just texted to say that the delivery drone carrying urgent medical supplies has arrived, along with a 'care package' that you personally prepared with her favourite food.

You have breakfast, and check on your electric car which has been fully charged from the solar panels installed on your rooftop. Clean, renewable energy, after all, is the way to go. Electric cars are the cheaper alternative, too.

You drop your kids off at their smart school, then drive to meet clients at a cafe where an autonomous robot takes your lunch order.

After the meeting, you make a quick stop at the hair stylist where you put on VR glasses to complete the rest of your work day there, thanks to lightning-fast Internet speeds. Everything you do is on the Cloud, anyway.

By the time your children are home, a robot-delivered nutritious, plant-based meal for the family needs a reheat. Your IoT-enabled refrigerator alerts that you're out of eggs and beeps a nearby supermarket to have these delivered in an hour.

You put in a handsome tip for the drone operator who had landed the tray of eggs on your doorstep without a single one cracking!

After dinner, your kids separate the leftovers, putting away organic waste into a special mini-compost bin while paper and plastic waste is incinerated or upcycled into a new piece of "lego-like" toy for their rocket model.

Ping! Another update on mom: her blood pressure has risen sharply. You hurriedly ring her only to find she's watching the Formula 1 race on her new smart TV, and her favourite team is losing. You laugh, tell her to keep cool, and return to help your children complete their homework on their tablets. There is no substitute for time spent strengthening relationships.

As the lights dim, Epsilon, the trusty cyber-security bot takes over, piping in calming music and setting the temperature for a cozy night.

And before long, another day begins.



IT'S AT OUR DOORSTEP

Drones, robots and a suite of autonomous innovations are becoming more ingrained in our daily lives than we'd sometimes like to admit. And these are just the tip of an iceberg as we look out into a future of immeasurable possibilities.

The shift into the future brings with it peace, prosperity and progress.

Together with our partners, collaborators, and stakeholders, the **NTIS will be the catalyst that makes Malaysians unafraid to invent, experiment and give rise to game-changing innovations.**



**KEMENTERIAN SAINS,
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