



BEST PRACTICES ON SUSTAINABILITY OF TBIs

**MALAYSIA'S JOURNEY TOWARDS BUILDING 4TH GENERATION TBIs AND THEIR
ASEAN COOPERATIVE SCHEME IN BUSINESS INCUBATION**

'AZRA'I BIN HJ. SHU'IB

**General Manager, Technology Park Malaysia
Philippine TBI Summit**

**24 November 2017
Cebu City, Philippines**



ABOUT ME

- ex-banker;
- serial entrepreneur;
- World Bank – certified incubation & commercialization trainer;
- certified Coach and Master Trainer;
- registered Angel investor & VP of Malaysian Business Angel Network (MBAN);
- Japanese-trained business counselor and LCA expert
- adjunct professor (entrepreneurship and commercialisation), UniKL British Malaysian Institute

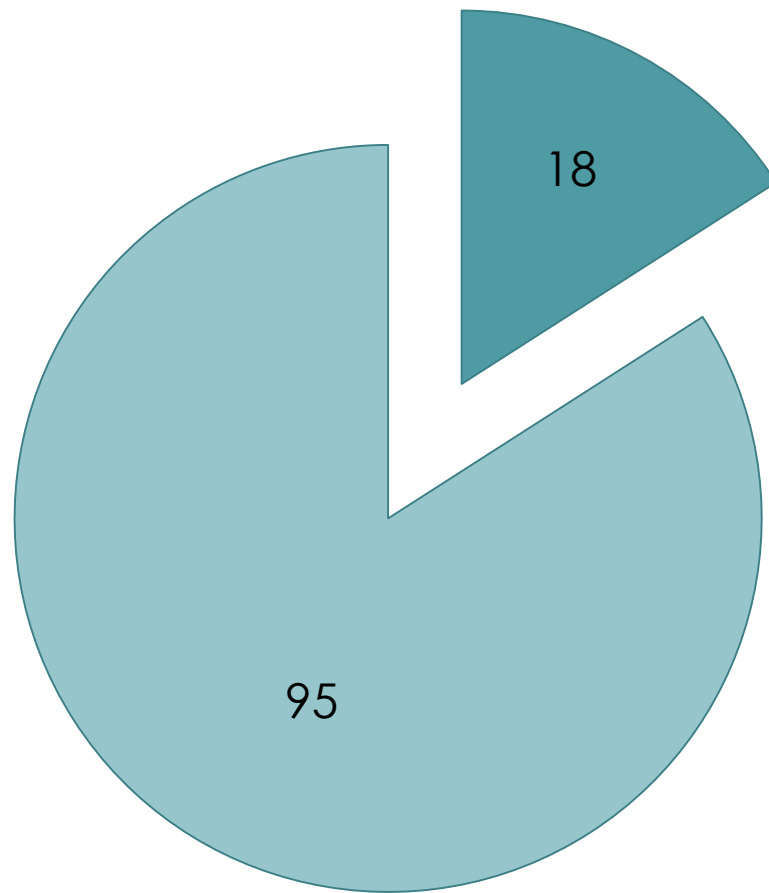
AND MOST IMPORTANTLY

Passionate technopreneur builder

INCUBATION LANDSCAPE IN MALAYSIA

Challenges, actions & moving forward

INCUBATION LANDSCAPE IN MALAYSIA

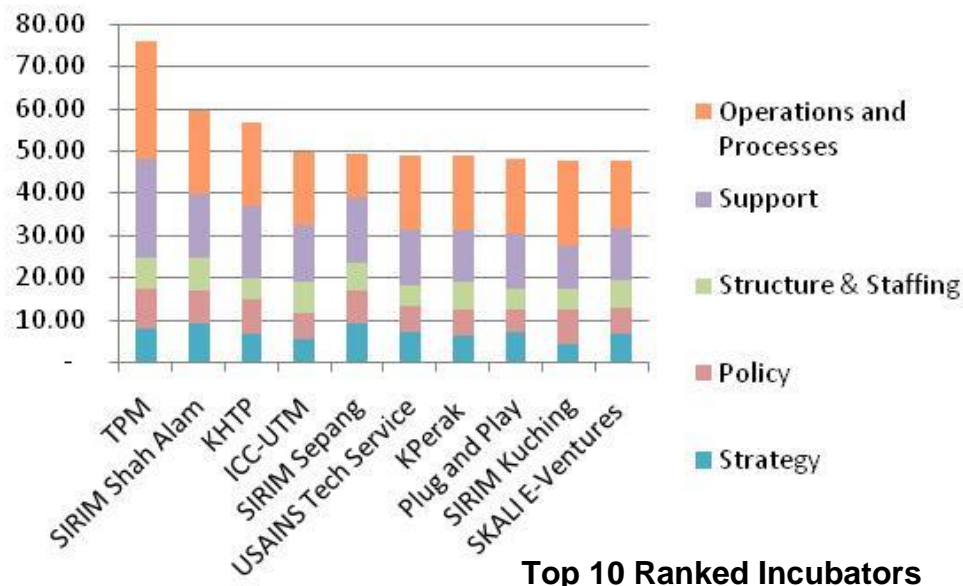
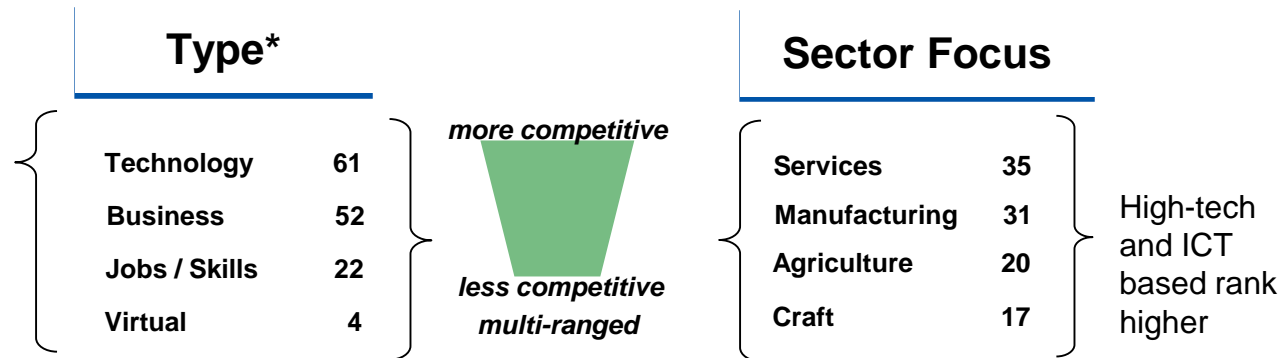


■ Private ■ Government

113

active
incubation centres

High-tech and ICT based incubators are more competitive and rank higher than the rest



Top 10 Ranked Incubators

Findings

All top 10 incubators are high-tech and ICT based.

For sector focus, research-based manufacturing ranks higher than agriculture-based incubators, where for services, all of the top ranking incubators are MSC-Status incubators.

The top 5 incubators are 3rd Gen Level and above; TPM as the most competitive, is a 4th Gen incubation centre.

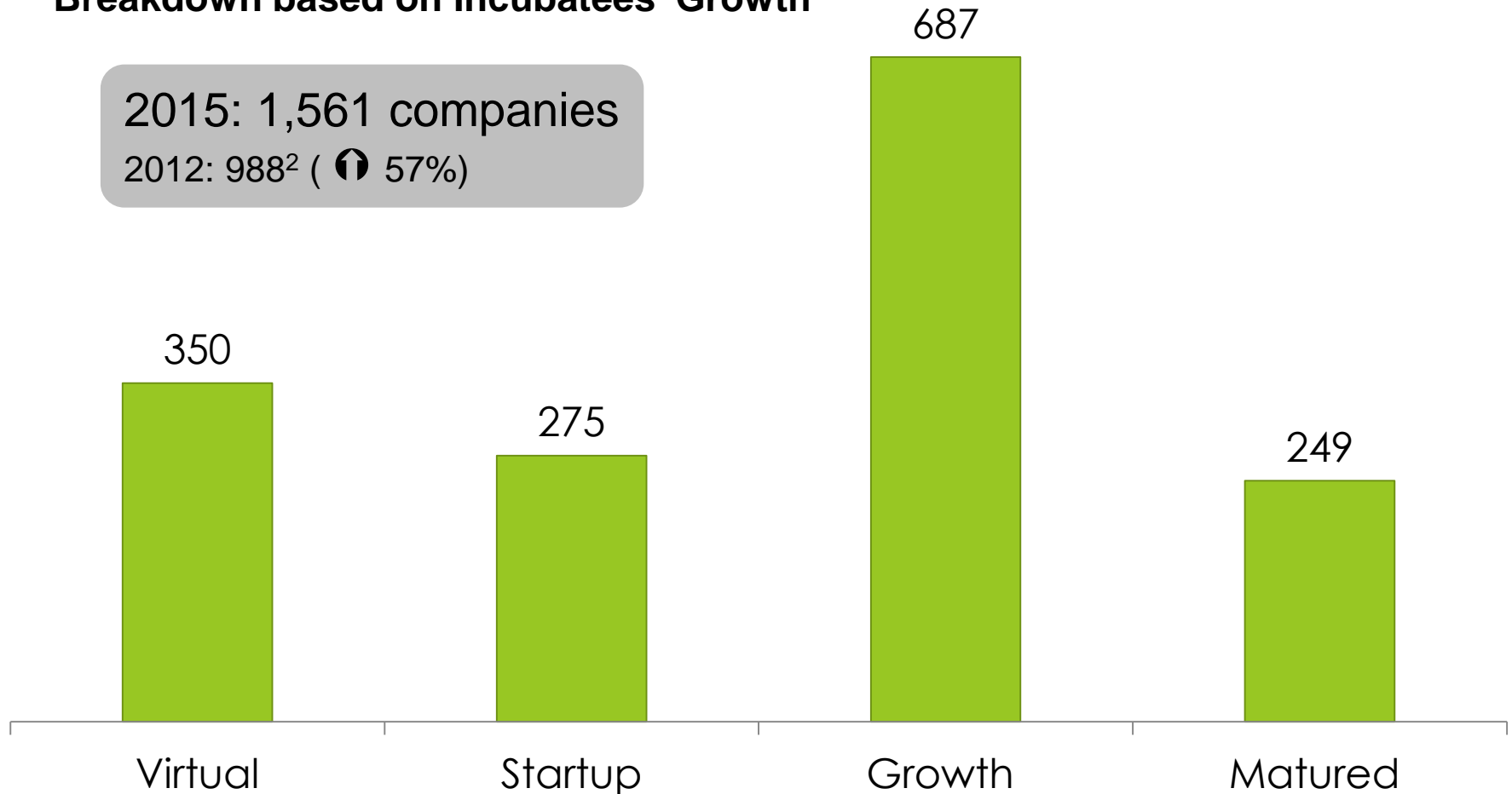
* - Nos in Type do not add up to a total of 113 as some incubators are multi-types

INCUBATEES DEVELOPED

Breakdown based on Incubatees' Growth

2015: 1,561 companies

2012: 988² (↗ 57%)



Note¹: Compilation of Incubation Data, January 2016

Note²: Study on Effectiveness of Incubation Programme, 2012 (SME Corp. Malaysia)

COMMON CHALLENGES

- Awareness among SMEs
- Coordination / communication among incubation centres in creating high impact programmes & SMEs
- Keeping up with technology (skills / knowledge / facilities)
- Capacities & capabilities of incubator community

Incubation centres in Malaysia are coordinated by the National Incubation Committee*, with six focus areas:

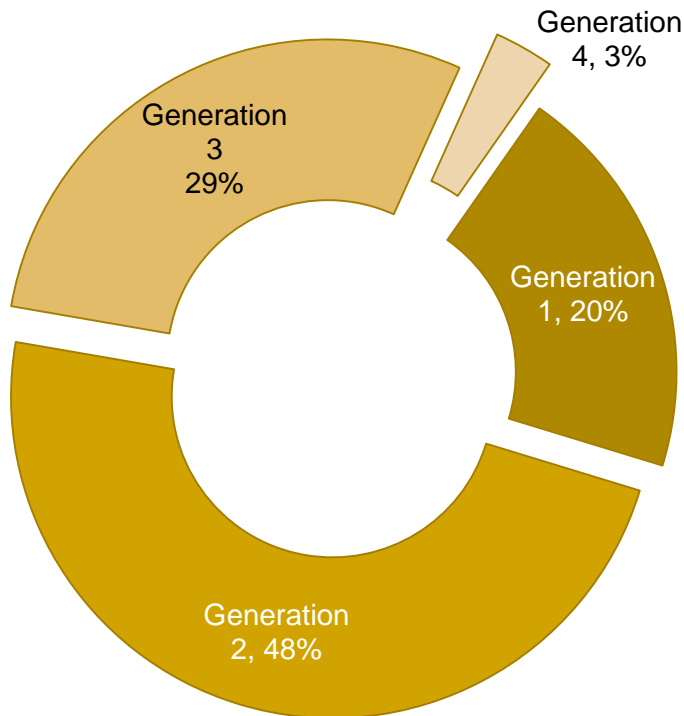
- Standardisation of incubation practice through the Malaysian Standard on Incubator Management
- Capacity building for incubation community
- Domestic and international co-incubation
- Promotion and marketing of incubatees
- Fostering collaboration with institutes of higher learning
- Creating vibrant funding ecosystem for SMEs

**Notes:*

- 1. Jointly led by Ministry of Science, Technology and Innovation and TPM*
- 2. Reporting to the Hon. Prime Minister, Malaysia through the National SME Development Council*

MS on Incubation Management

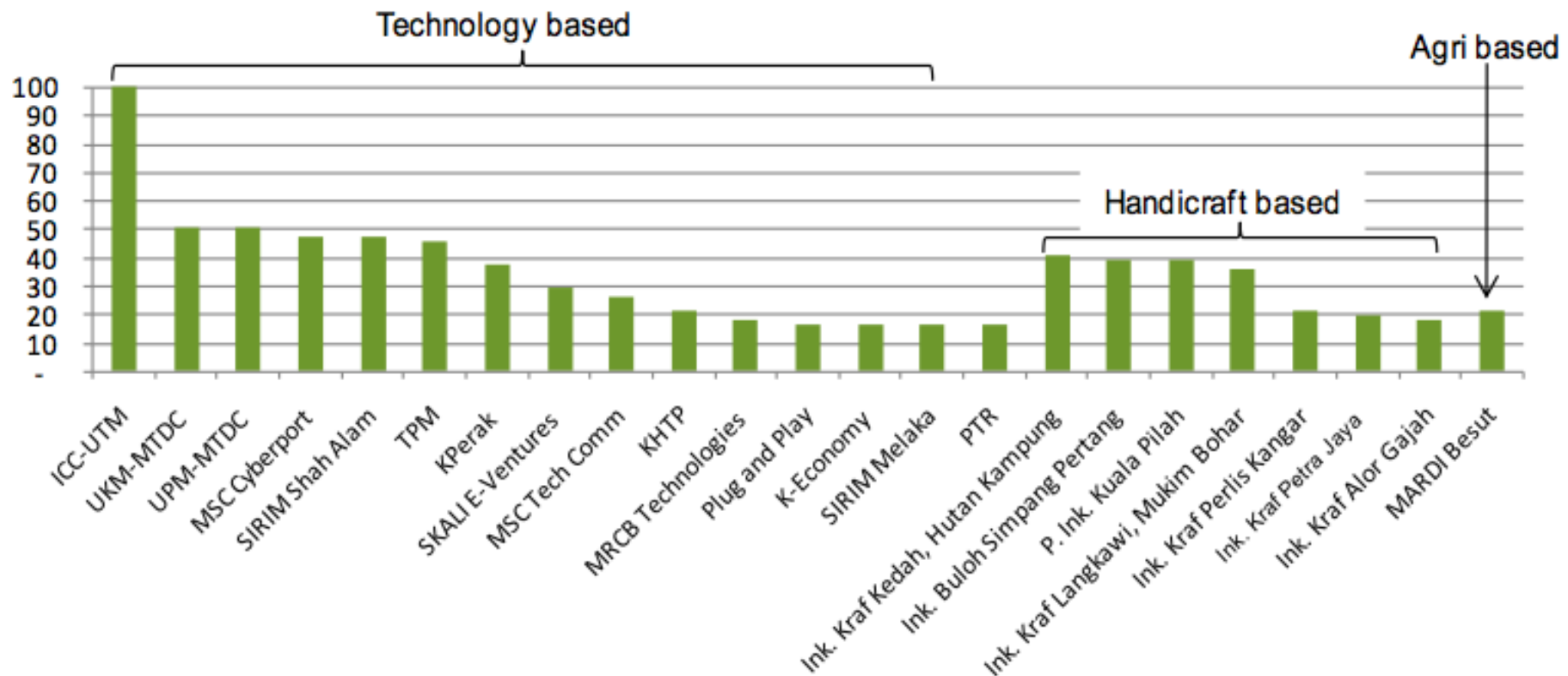
TYPES OF SERVICES OFFERED²



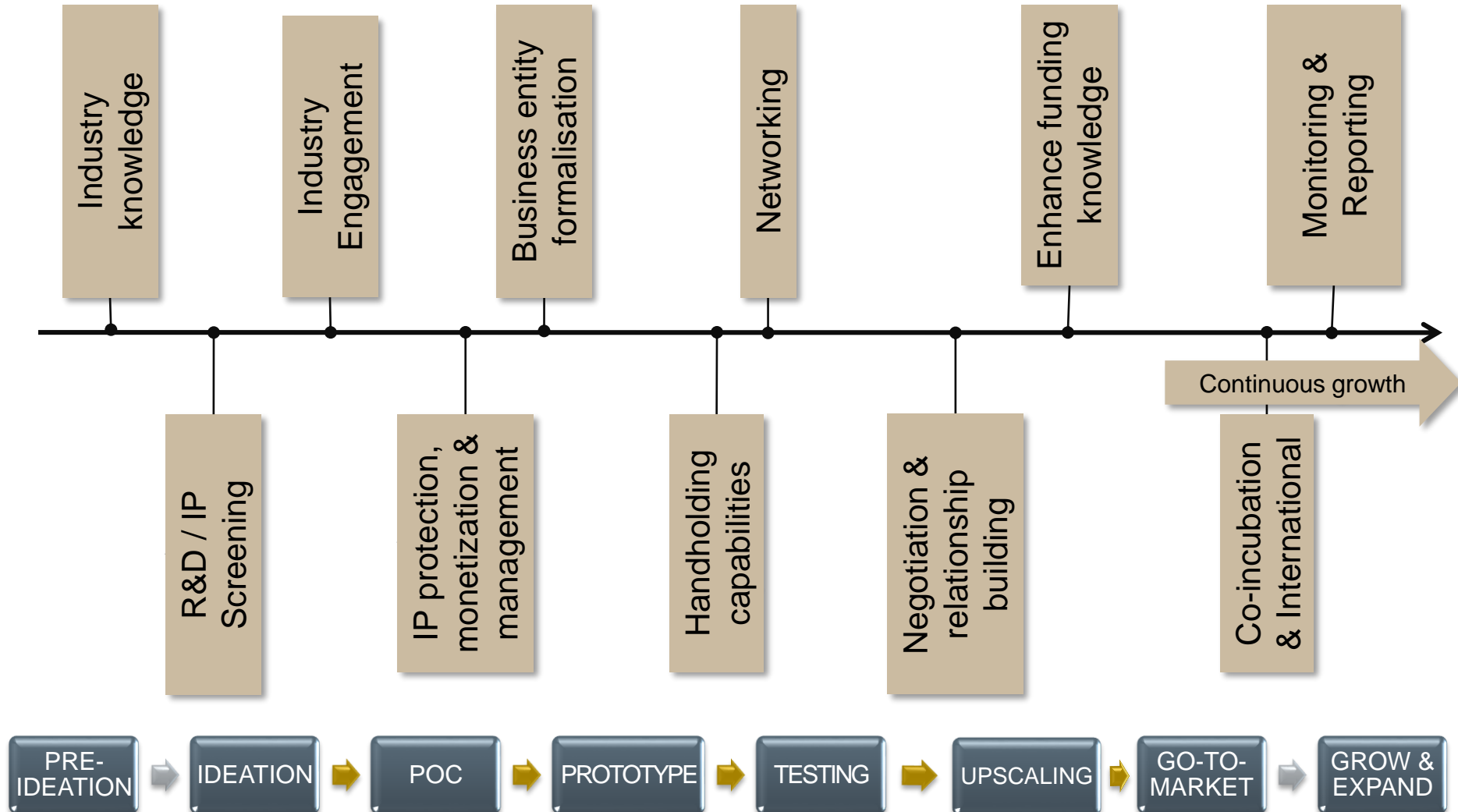
Gen.	Services Offered
1	<ul style="list-style-type: none"> • Space (Land & Building) for Lease
2	<ul style="list-style-type: none"> • 1st Generation; • Shared-Facilities ; and • Technical Advisory
3	<ul style="list-style-type: none"> • 2nd Generation; • Technology Labs, Production Facilities and amenities; and • Business & Technical Advisory
4	<ul style="list-style-type: none"> • 3rd Generation ; • Comprehensive & Integrated Support Services ; • Collaborative Arrangement with IHLs / RIs; • Virtual Incubation; • Co-incubation; • Co-venturing; and • Internationalisation

Source: International Business Innovation Association (InBIA), USA & Study on Enhancing the Effectiveness of Incubation Centres as a Support Mechanism for SME Development in Malaysia” by SME Corporation Malaysia, 2012

Incubation centres that are of 3rd Generation and above (generally technology based) are found to have more highly qualified incubator managers to provide the necessary advisory support services for incubatees



Recommended Skillsets

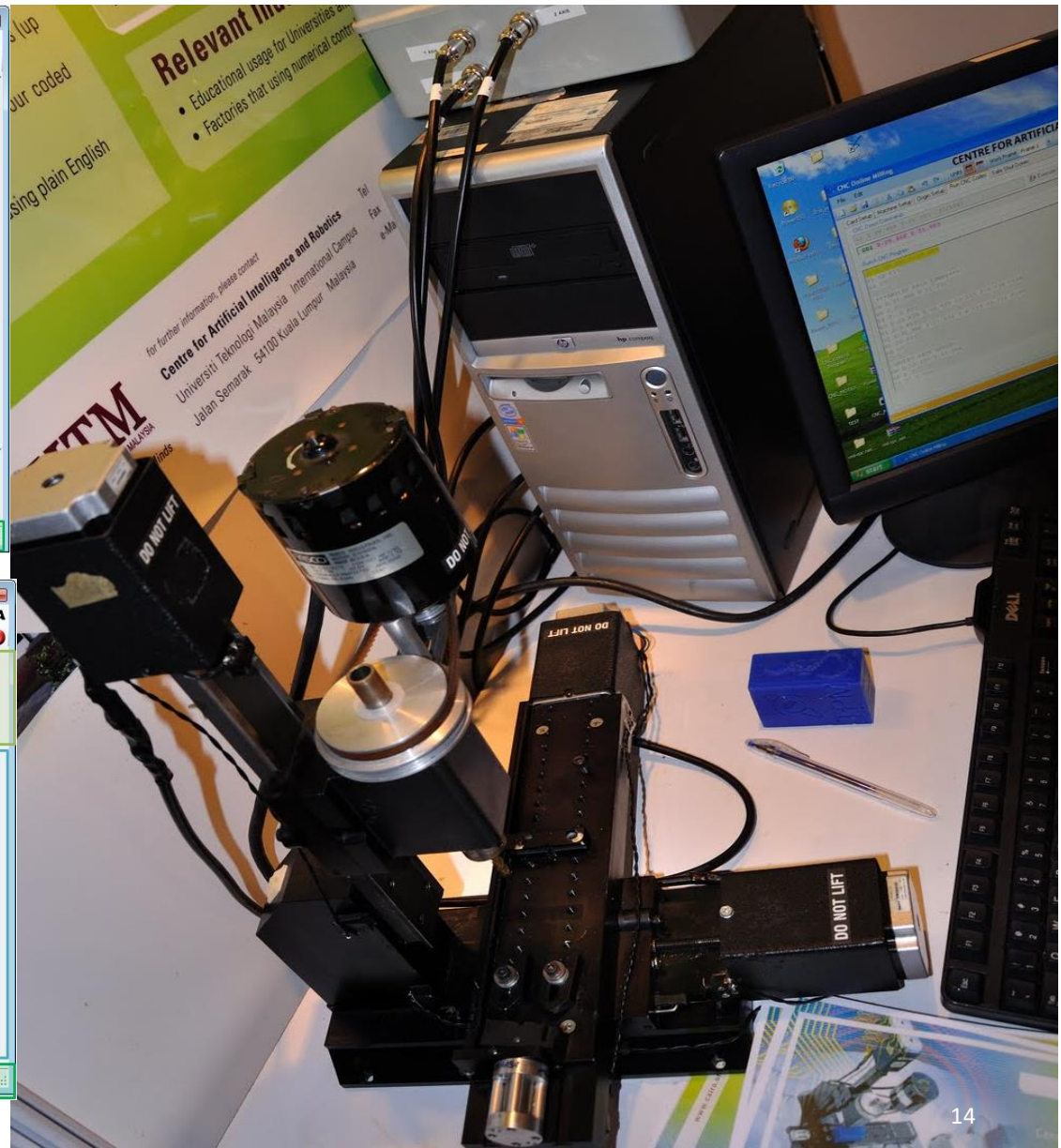
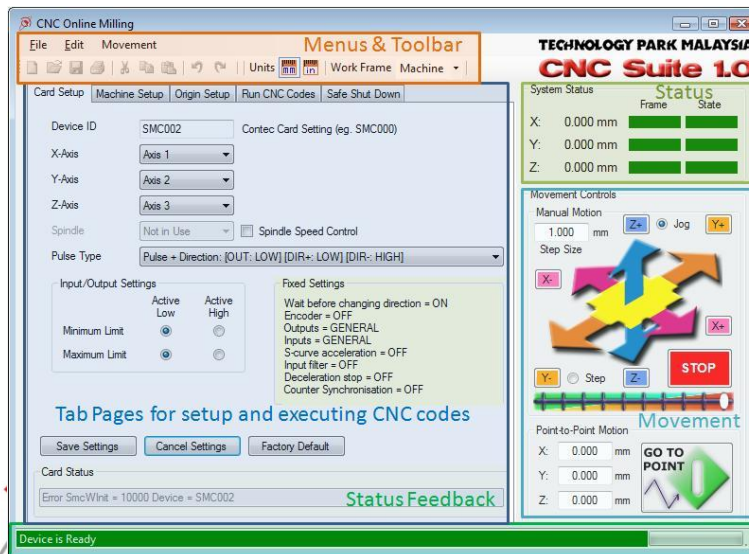
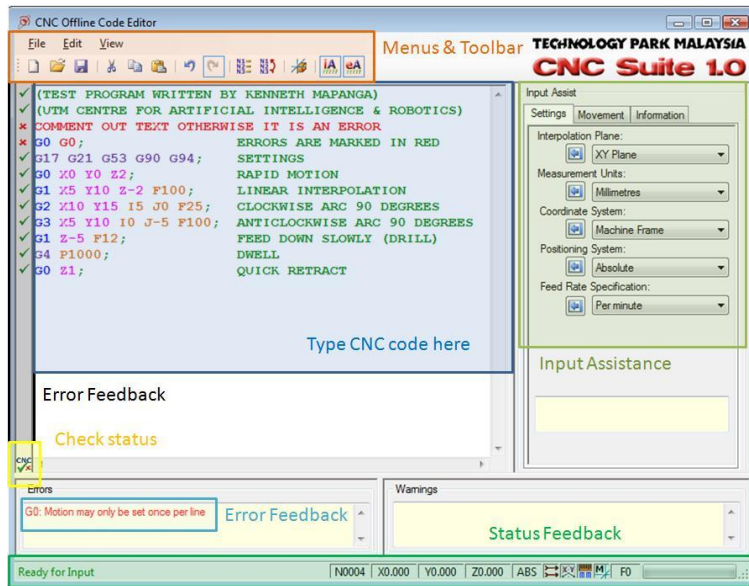


There are 16 Ministries and 63 agencies involved in SME development...

Focus Area	No. of Programmes	Financial Allocation (RM mil)	Expected Beneficiaries
Access to Financing	31	3,843.0	417,416
Human Capital Development	31	83.1	21,800
Market Access	30	107.1	7,175
Innovation & Technology Adoption	20	208.1	7,004
Infrastructure	13	112.0	550
TOTAL	125	4,353.3	453,945

Source: SME Integrated Plan of Action (SMEIPA) 2016, SME Corp. Malaysia

TPM – UNIVERSITY COLLABORATION



UPM – TPM COLLABORATION



Collaboration roles:

- TPM: Design, fabricate & commercialize
- UPM: Idea & concept



Rolled Pineapple Tart Machine

CURRENT PROTOTYPES

- Eazy Cooker (a multifunctional machine to make jam, chilli sauce and tomato ketchup)
- Coconut AutoSqueezer (a machine to grate and extract coconut milk from coconut)
- Pineapple Multi-peeler Plus (a machine to remove the skin and core of a pineapple to obtain the flesh)
- Nata De Coco Dicing Machine (a machine to cut the raw of Nata De Coco into uniformly diced product)
- Koye Kacang Forming Machine
- Rolled pineapple tarts Machine

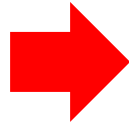
INDUSTRY COLLABORATION

COMPOSTECH: ORGANIC FOOD- WASTE PROCESSING MACHINE



- Process food-waste into organic compost
- Duration taken for whole process is 24 hours
- Is a brainchild of Sumber Handal Sdn Bhd (TPM's client company) and machine is designed and built by TPM Engineering
- Has been purchased by PLUS to be placed at its R&R for food waste management

INDUSTRY COLLABORATION



CONVENTIONAL OUTBOARD (EKOR BIAWAK)

- Limited to forward movement.
- Requires two manpower for fishing operation.
- Parking difficulty in jetty

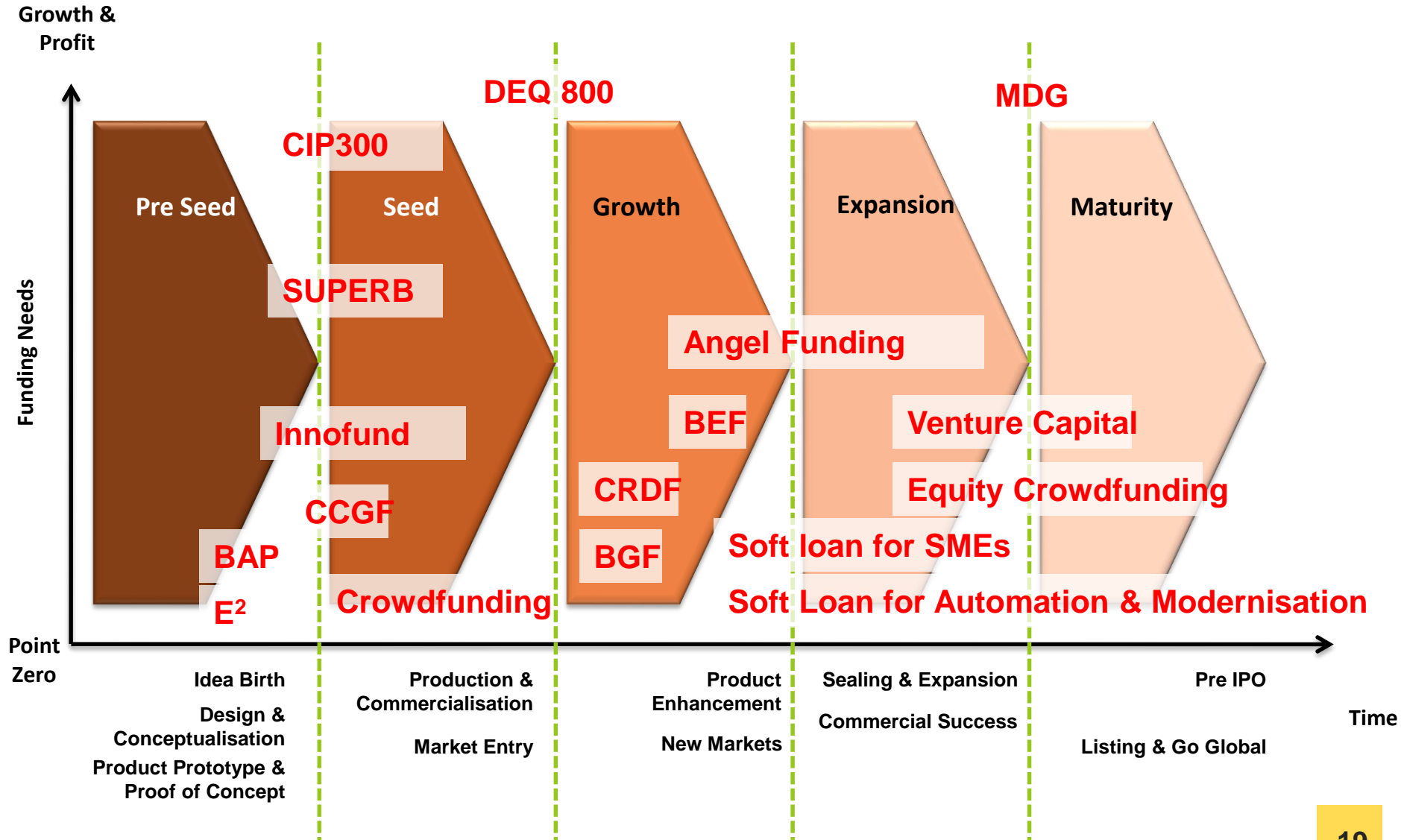


RED 1 ENGINE

- Brainchild of En. Rizuan Hasim, an ex fisherman
- Designed & fabricated by TPM Engineering
- Advantages:
 - Able to run in shallow waters with the integration of “Air cooled gearbox”
 - Reversing capabilities
 - Improved fuel efficiency
 - One integrated unit



Funding Ecosystem



TYPES OF MSMEs INITIATIVES

FISCAL INCENTIVES

PIONEER
STATUS

INVESTMENT TAX
ALLOWANCE

MSE STATUS

NON-FISCAL INCENTIVES

GRANTS

SOFT LOANS

INFRASTRUCTUR
E

GUARANTEE
SCHEMES

CONSIDERATION FACTORS

- Type Company
- Product Development stage
- Business Development Stage
- Fund utilizations
- Risks

TYPES OF FUNDING

GOVERNMENT / PRIVATE

Soft Loan

Grant

Venture Capital

ALTERNATIVE FUNDING

Angel Investment

Private Equity

Crowdfunding

Equity
Crowdfunding

P2P

LEAP Market

CONSIDERATION FACTORS

- Risks
- Business Stage
- Fund utilizations

ACHIEVEMENTS, 2015



222

products launched



2,776

workers employed



RM226.74 mil

domestic sales



RM7.88 mil

exports



TPM's EXPERIENCE

Sharing of Best Practices



Incorporated 1st Sept 1996

686 Acres

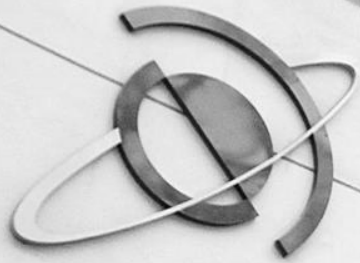
Located @ Bukit Jalil
(Regionalisation:
East Coast (Pahang) &
Northern Malaysia (Perlis))

MSC Status & BioNexus
Designated Location

Owned By MOF Inc.

Under Purview Of MOSTI

VISION



TECHNOLOGY PARK MALAYSIA
CORPORATION SDN BHD

**To be a world class Technology Park
that drives the national innovation and
knowledge-based economy for wealth
creation and societal well-being**

MISSION

- Nurture knowledge-based enterprises by providing expertise, facilities, equipment and support services
- To facilitate R&D, innovation and commercialisation activities by providing advanced infrastructure, equipment and facilities.
- To promote and stimulate an intellectual, creative and innovative community.
- To facilitate government and private sector smart partnerships.
- To provide a platform for the establishment of strategic business and technology linkages.



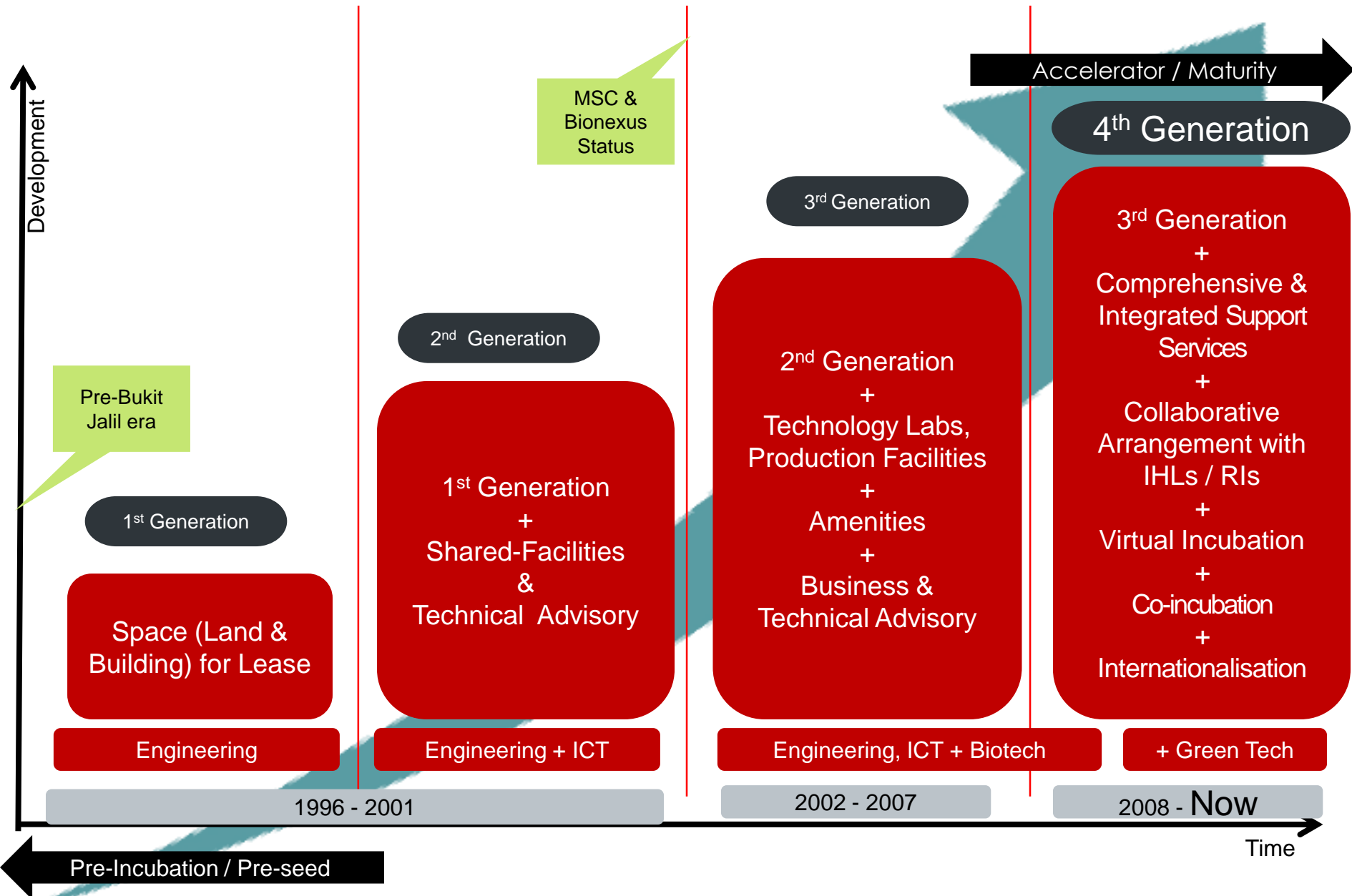


Facilitate and **nurture** knowledge based enterprises by providing **expertise, facilities, equipment** and **support services**



Comprehensive
& Integrated
Incubation Programme

EVOLUTION OF INCUBATION IN TPM

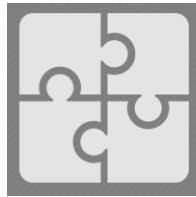


Source: International Business Innovation Association (InBIA), USA & Study on Enhancing the Effectiveness of Incubation Centres as a Support Mechanism for SME Development in Malaysia" by SME Corporation Malaysia, 2012

BEST PRACTICES



Right eco-system within the park



Domestic co-incubation through comprehensive & integrated incubation blueprint



Lean management

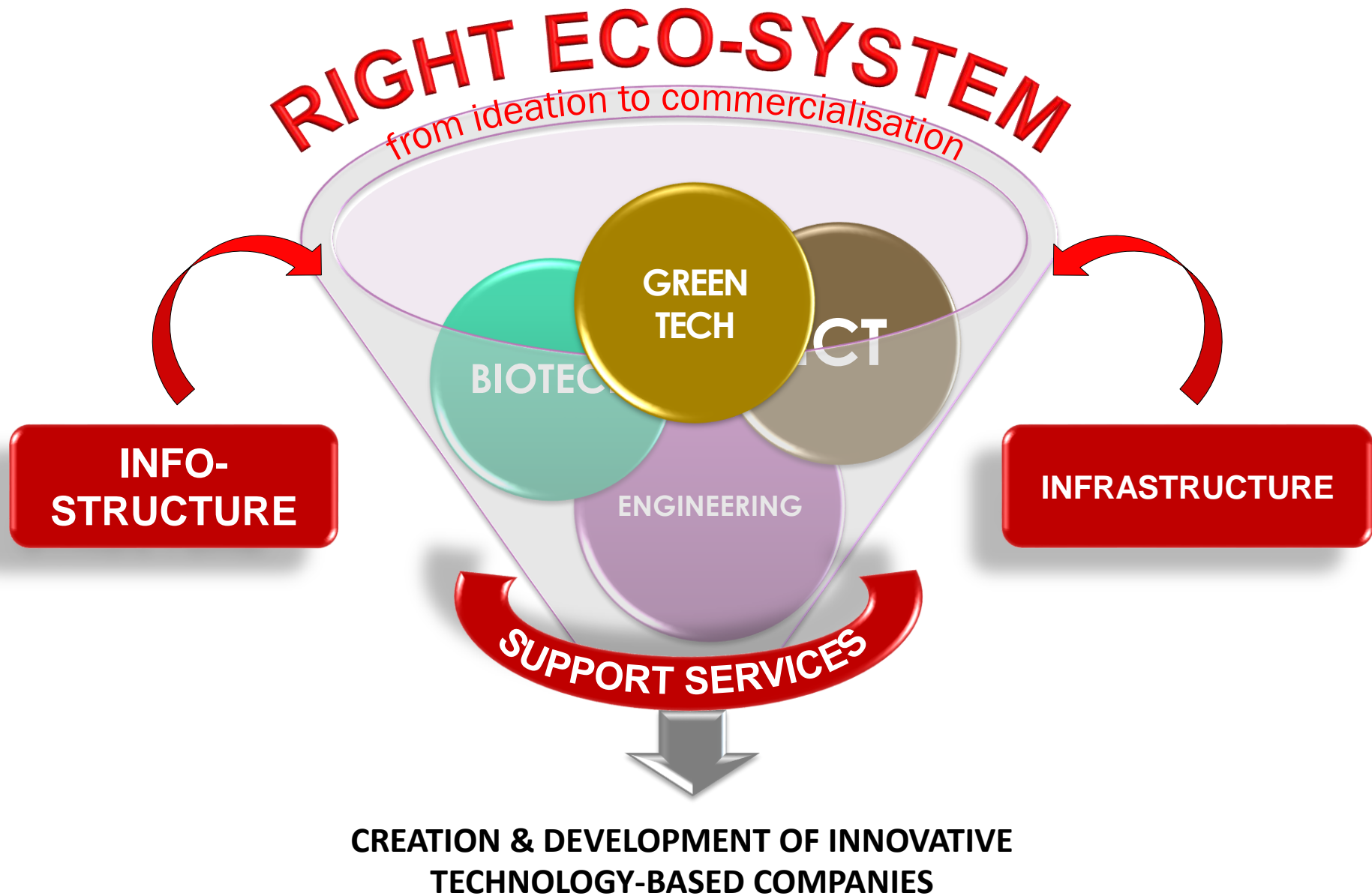


Monetization of support services

BEST PRACTICES



Right eco-system within the park



INFRASTRUCTURE



**TECHNOLOGY PARK
MALAYSIA**

KEMENTERIAN SAINS, TEKNOLOGI DAN INOVASI



**TPM Engineering
Sdn Bhd**

Engineering design, CNC machining, rapid prototyping & manage engineering-related projects + producing innovative engineering products & solutions.



**TPM Biotech
Sdn Bhd**

Product development, contract research, lab services, contract manufacturing & commercialisation of nutraceutical & biopharmaceutical + process & manufacture for Biotech products.



TPM IT Sdn Bhd

Provision of broadband services, data centre, project management, consultancy services, manage operations & maintenance of ICT infrastructure in TPM

**Incubation & Technopreneurs
Development**

**Centre for Technology
Commercialisation (CTC)**

Biotech Incubation Centre

**Innovation Incubation
Centre (IIC)**

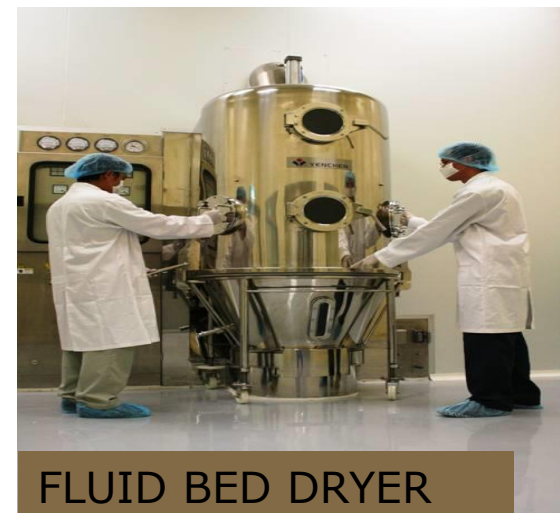
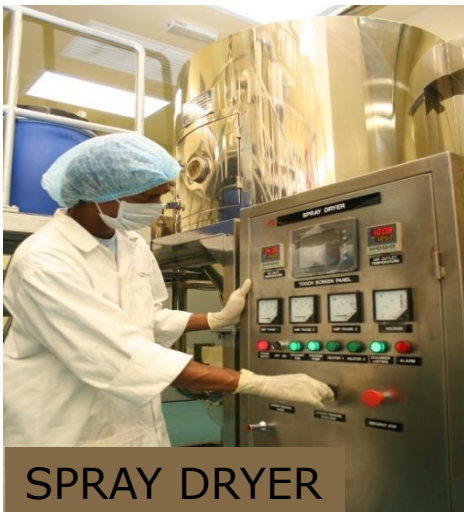
TPM ENGINEERING



TPM ENGINEERING



TPM BIOTECH



Physical Office



Shared Facilities



Shared Facilities



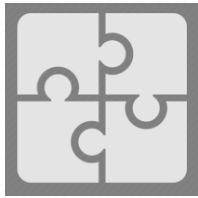
Virtual Office



USD 75 / month

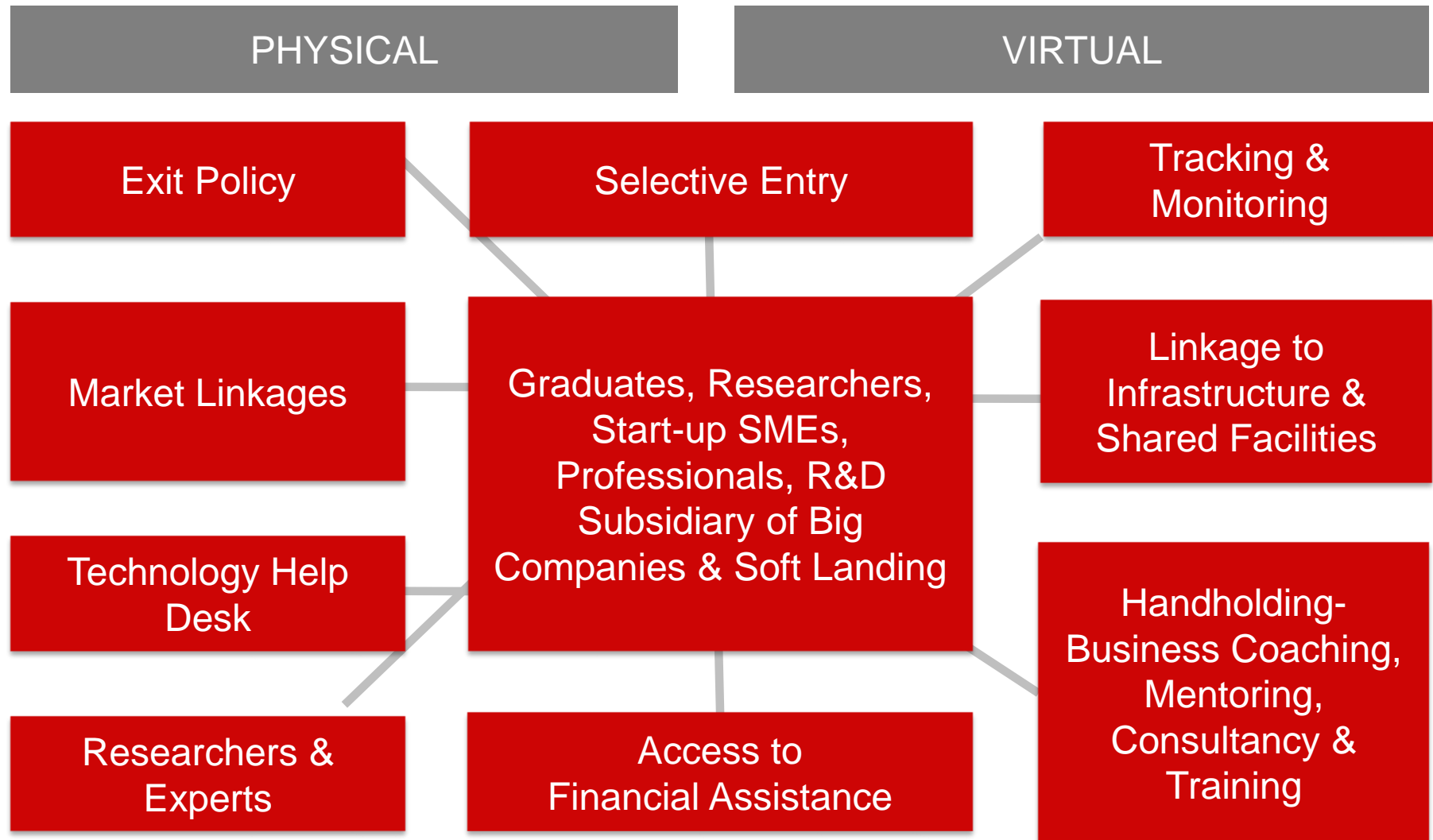
- Prestigious address for business correspondence
- Mail and parcel management
- SMS or email notification
- Local fax number which able to receive and transmit fax
- Hot-desking and co-working space
- Shared facilities
- Access to equipment, machinery and testing
- Access to IP, Market & Technology database.
- Access to handholding services from TPM
- First right of refusal to programmes conducted in TPM

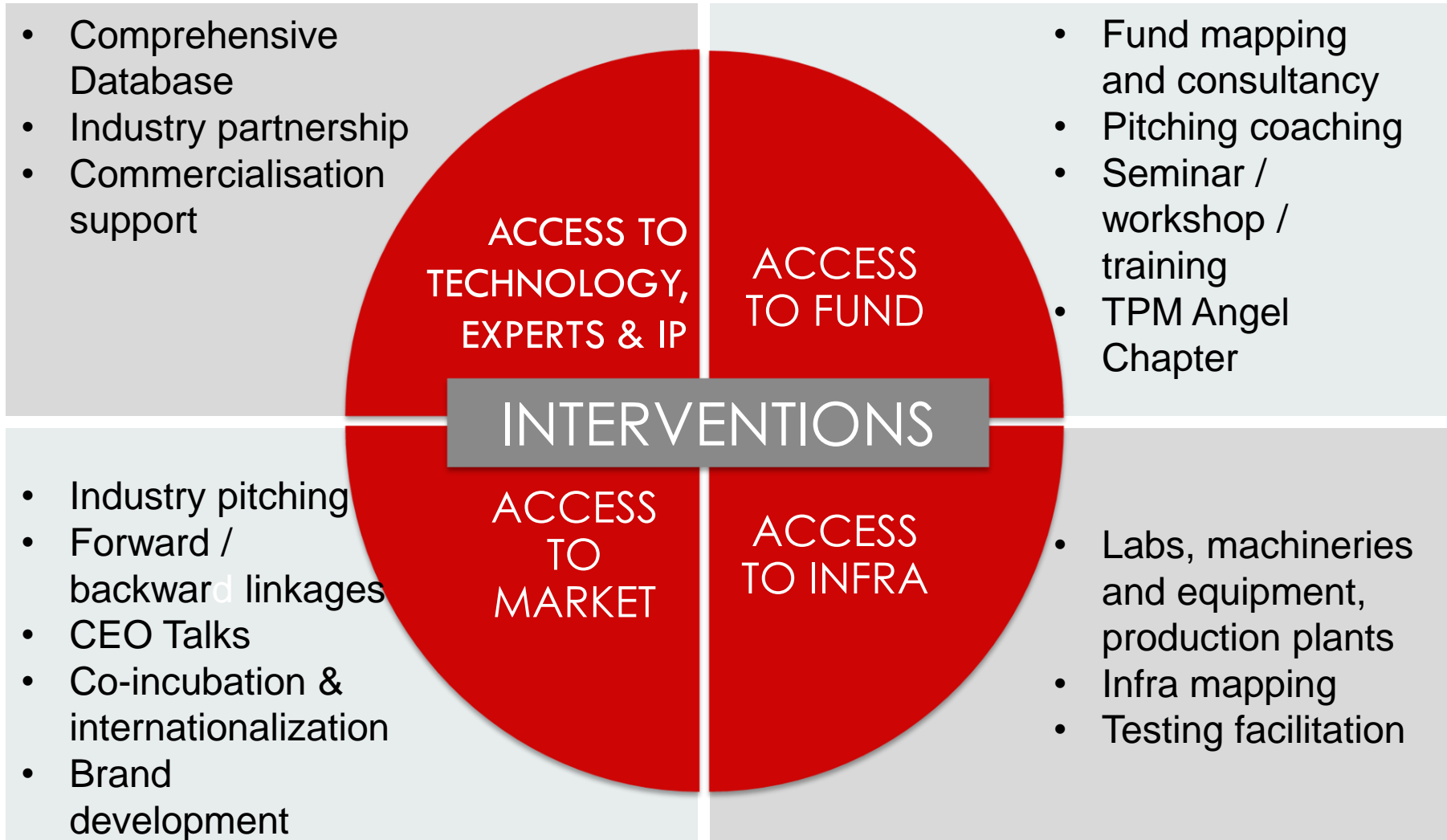
BEST PRACTICES



Domestic and international co-incubation
through comprehensive & integrated
incubation blueprint

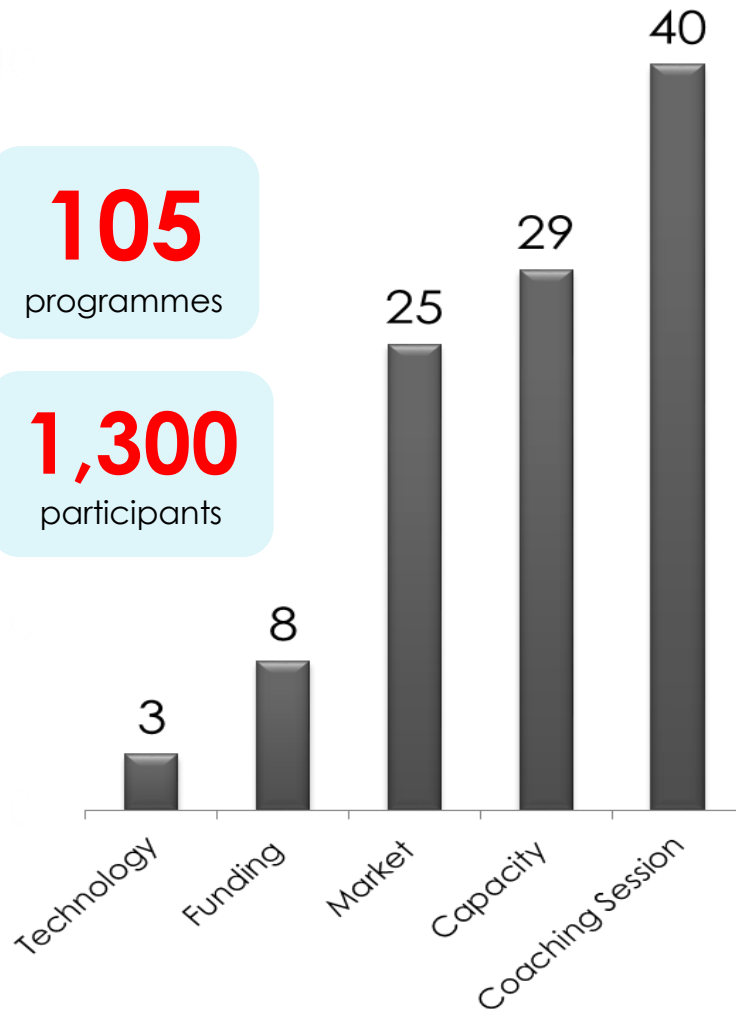
INCUBATION BLUEPRINT





Comprehensive & integrated incubation program adopting handholding approach via coaching, mentoring, training & consultancy

Programme Highlights, 2016



Major programmes:

- Roundtable discussion & business matching programme
- Pitching for funding
- Pocket talks (market, funding, branding)
- Gap analysis coaching
- Commercialisation Kick Off Project
- Development of the MS on Incubation Management

Source: Data Collection, Jan 2017

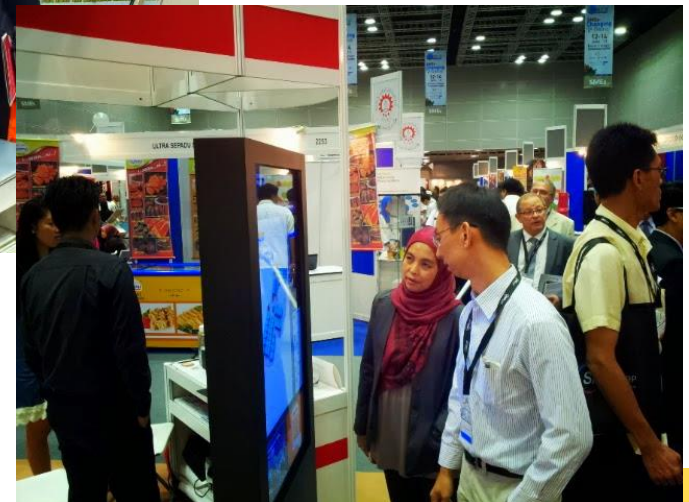
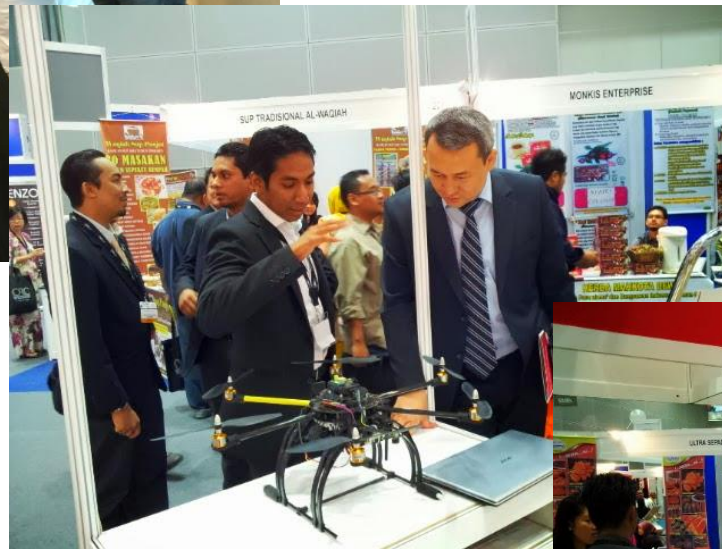
One-to-One Coaching / Product Briefing / Roundtable Discussion



Market Access Programmes



Market Access Programmes



INTERNATIONALISATION THROUGH CO-INCUBATION

Definition of Co-Incubation

Local Incubators

+

International
Incubators



Market Access

Capacity
building

STARTUP



Funding

Technology

Technology

Infrastructure



Among Co-Incubation Partners

- Bandung Tech Park, Indonesia
- Appleseed, Singapore
- Software Park Alliance, Thailand
- Hatching Tech, Vietnam
- SBC & DMC Korea
- Hong Kong Science Tech Park, Hong Kong
- Shanghai Technology Innovation Centre

Benefits of Internationalisation

- Collaborative Research
- Pave way for international market access
- Collaborative arrangement with international experts & market linkers
- Linkages to international supply chain
- Partnership with leading industry
- Attract cross border investment & funding

BEST PRACTICES



Lean management

LEAN MANAGEMENT

- Minimal manpower
 - 7 **trained** incubator staff to manage 90 physical incubatees and 110 virtual incubatees
- **Leverage** on:
 - Other Departments' resources
 - Other entrepreneur development organisation
 - External experts to provide services on various areas

OUR TEAM



TN HJ. 'AZRA'I SHU'IB
General Manager
Master Coach



AMIR ROHAIZAT MEOR RAZAK
Manager / Business
Coach



IZNIZA AFZAN MUSTAFA ALBAKRI
Manager / Programme
Developer



Hj MOHAMMAD NADZIM AHMAD NAZMI
Senior Executive / Project
Management & Funding Expert



Nurul Ammirah Binti Ab Rahman
Executive / Program
Administrator



Razanna Bt Nawawi
Executive /
Capacity Building &
Mentor Expert



MOHD MUHIZAM SHAHID
Executive / Service Provider
Expert

Our Experts

35

panel companies

- >30 coaches
- >40 trainers
- >100 industry mentors
- >10 IP experts
- >10 consultants

100++

**technical & business
modules**



BEST PRACTICES



Monetization of support services

MONETIZATION OF SUPPORT SERVICES

CORE EXPERTISE

Transformational Coaching Programmes (Hero to Superhero, Zero to Hero)

Technical and Business Skills Training

Incubator Manager Training Programme

Project Monitoring

Themed pocket talks, seminar, workshops

CLIENTS

MITI, myNEF, TELEKOM, FITEC, MDeC

MITI, Cyberview

National Incubation Committee

- MOSTI's Facilitation Fund, TERAJU's SUPERB
- INSKEN

Entrepreneur development organisation

MONETIZATION ACTIVITIES


- **Coaching, mentoring, training & consultancy**
 - Bundling of core expertise and incubation space for identified clients
 - Co-create & Co-develop programmes with identified partners to expand range of clients
- **Referral fee & Commission**
 - Introducer fee
- **Commission**
 - Successful sales
- **Project Monitoring**
 - Managing grant assistance programme & disbursement

INTERNATIONAL AFFILIATION & PARTNERS



Creating Communities of Innovation





INTELLIGENT CIRCULATION
WHILE DRILLING (ICWD)

SUCCESS STORIES

iCWD
INDUSTRY'S FIRST INTELLIGENT VALVE SYSTEM



iCWD
Intelligent Drilling Circulating Sub



iCWD
iCWD



Product Name	iCWD Intelligent Drilling System (by MIT Innovation Sdn Bhd) is the industry first intelligent drilling valve system that provides remote-controlled operation using agile activation. iCWD provides significant time-saving, safety and efficiency improvement features, that reduce the cost of well construction
Current Status (Commercialisation)	<ul style="list-style-type: none"> i. An MoU signed with Halliburton Energy Services Inc. on 4 June 2015 at the Malaysian Petroleum Club KLCC ii. Signed commercialization agreement with PETRONAS during Offshore Technology Asia Conference (OTC) on 23 March 2016 iii. 38 IPs (3 granted 35 pending) valued at RM400mil
Target Market	Oil & Gas exploration/drilling companies and technology providers
Strategic/ Business Partnership (s)	PETRONAS and HALLIBURTON ENERGY SERVICES INC.
Latest Update	<p>2 systems have been deployed by Halliburton Energy Services Inc. in August 2016 at on-shore oil wells in Oklahoma USA</p> <p>8 systems have been deployed by Petronas in East Cost, Sabah & Sarawak</p>

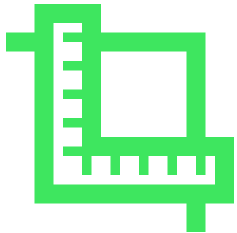
Interventions



Connected to grant provider, obtained USD1 million



Connected to clients (PETRONAS, Halliburton)



Connected to technical assistance & experts for product development & production



- Provided Media Exposure
- Won Supreme Award, Malaysia Commercialisation Year 2016



Prototyping & production centre



Telefon awam pintar dipasang di 2,000 sekolah

KUALA LUMPUR: Menteri Pendidikan, Y.B. Menter MOSTI, Datuk Seri Mahdzir Khalid, telah mengumumkan bahawa 2,000 telefon awam pintar MyFon akan dipasang di sekolah-sekolah di seluruh negara mulai 2016. MyFon adalah telefon awam pintar yang pertama di Malaysia yang menggunakan teknologi 4G LTE. MyFon adalah telefon awam pintar yang pertama di Malaysia yang menggunakan teknologi 4G LTE. MyFon adalah telefon awam pintar yang pertama di Malaysia yang menggunakan teknologi 4G LTE.

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Product Name	MyFon (by Pure Spectrum Sdn Bhd) is a GSM and SIM-based coinless public phone. A starter-pack consist of dual SIM cards that can be used in mobile phones and MyFon public phones.
Current Status (Commercialisation)	Product launched by Y.B. Menteri MOSTI on 24 May 2016
Target Market	Government and Private Schools Have been installed in 128 schools with 50,000 registered users. Example of schools: MRSMs, SM Sains, Kolej Tunku Kurshiah, SM Seri Puteri and etc.
Strategic/ Business Partnership (s)	Celcom, Tune Talk, Ministry of Education and TPM
Latest Update	<ul style="list-style-type: none"> i. Installed Myfon unit at SMK Perempuan Kelsom Kuala Kangsar for TPM Community CSR ii. Education Minister, Datuk Seri Mahdzir Khalid launched Projek Telefon Awam Pintar Pelajar Sekolah (TAPPS) MyFon on 27 June 2016 at Sekolah Menengah Kebangsaan (SMK) Syed Ahmad, Kedah iii. Ministry of Education in discussion with MCMC to provide 50,000 units of MyFon to primary and secondary schools nationwide

Interventions



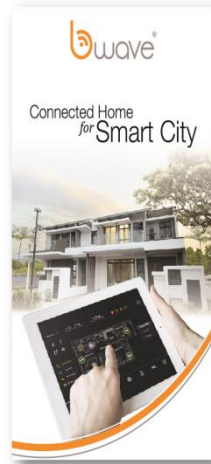
- Connected to funding provider, obtained USD50,000 grant



- Media coverage
- Market access through exhibitions
- Malaysian Commercialisation Year Finalist
- Product Launching by Minister, MOSTI



- Connected to potential clients
- Adopted under one of TPM's CSR initiatives



Product Name	BWave IoT Platform (by BNetwork Sdn Bhd)
Current Status (Commercialisation)	<p>A universal gateway communication platform for IoT devices from different technologies. Bwave can support IoT technologies such as Zwave, ZigBee, EnOcean and Insteon.</p> <ul style="list-style-type: none"> • 2 IPs pending valued at RM6.8mil • Starter Kit for household consumers was launched during SMIDEX 2016 17~19 May 2016. Received 27 orders and have delivered 18 sets at the value of RM50,670
Target Market	<ul style="list-style-type: none"> • Telcos • Property Developers • Smart City Authorities • Household Consumers
Strategic/ Business Partnership (s)	Property Developers and Telcos
Latest Update	To enhancement product with sound sensor alarm developed by UniKL BMI

Interventions



- Connected to funder
- Secured USD 400,000 grant



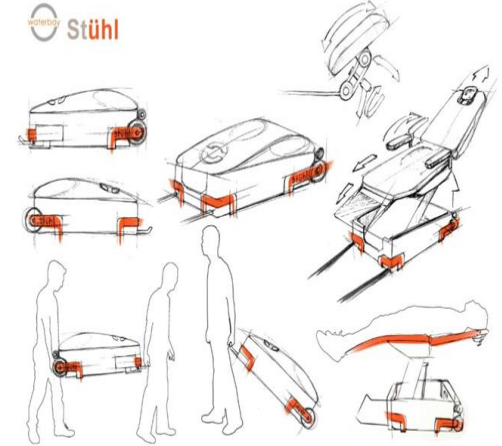
- Media coverage
- Market access through exhibitions
- Category Winner, Malaysian Commercialisation Year 2016
- Product Launching by Minister, MOSTI



- Participant under Living Lab Initiative in TPM



- Connected to potential clients
- Adopted under one of TPM's CSR initiatives

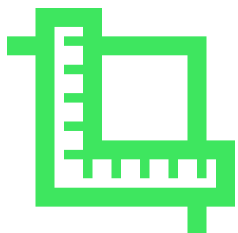


Product Name	STUHL: Portable Treatment Chair (by Waterbay Sdn Bhd) Portable treatment chair for medical usage. It is lightweight, easy to carry, semi-automatic and ergonomic.
Current Status (Commercialisation)	Beta Testing. Refinement of STUHL Ver. 2 Soft launched during 4 th . Malaysian Dental Technologies Conference & Exhibition 30 Sept'16 ~ 2 Oct'26, Berjaya Times Square
Target Market	<ul style="list-style-type: none"> • Government/private dental clinics • Military • Universities/schools • Off-shores ships/platforms • Household consumers
Strategic/ Business Partnership (s)	Dental clinics and medical devices/equipment suppliers
Sales revenue/ Licensing Fee / Royalty	RM200,000
Latest Update	Received LO to supply 3 units of STUHL Ver. 2 to Klinik Pergigian Butterworth, Kubang Semang and Bukit Panchor in Penang

Interventions



- Connected to funder
- Secured USD 100,000 grant
- Connected to investor
- Media coverage
- Market access through exhibitions
- Nominee, Malaysian Commercialisation Year 2016



Connected to technical assistance & experts for product development & production



- Participant under Living Lab Initiative in TPM



- Connected to potential clients
- Signed MoU with marketing partner in the Middle East

EVENTS & ACTIVITIES

TEAM BUILDING



CAPACITY BUILDING / TRAINING



IDEA BOOTCAMP



SITE VISIT & INSITU COACHING



INSITU COACHING



PR SUPPORT FOR INCUBATEES



SEMINAR / POCKET TALKS / WORKSHOPS



EXHIBITIONS





**TECHNOLOGY PARK
MALAYSIA**

MOVING FORWARD

New Initiatives

- Board for Hire
- Technology Facilitation Fund
- Co-Venturing
- Commercialisation Centre of Excellence
(TTO, Living Lab, Quadruple Helix
Initiatives, Prototyping & Production
Centre)

INVITATION FOR COLLABORATION



CO-INCUBATION INITIATIVES

Co-development of programmes & incubatees from TPM and TECH PARK/TBIs through the concept of “passing the baton”



CROSS-FERTILISATION OF INCUBATOR MANAGERS

Secondment of incubation managers between TPM and TECH PARK/TBIs for experience sharing



VIRTUAL INCUBATION PROGRAMME

Sharing of resources through a dedicated incubation portal

<http://mymobileuni.com/tpm>

THANK YOU

COACH HJ. 'AZRA'I BIN HJ. SHU'IB

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azrai@tpm.com.my