



MBOT AND THE FUTURE OF TECHNICIANS

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Presentation Outlines

- **Background**
- **National Agenda**
- **Technicians in MBOT**
- **Challenges**
- **Wayforward**



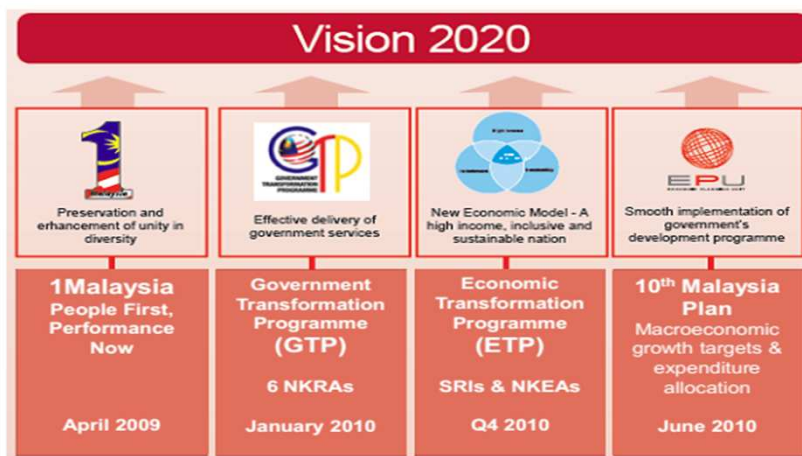
MALAYSIAN SCENARIO ...

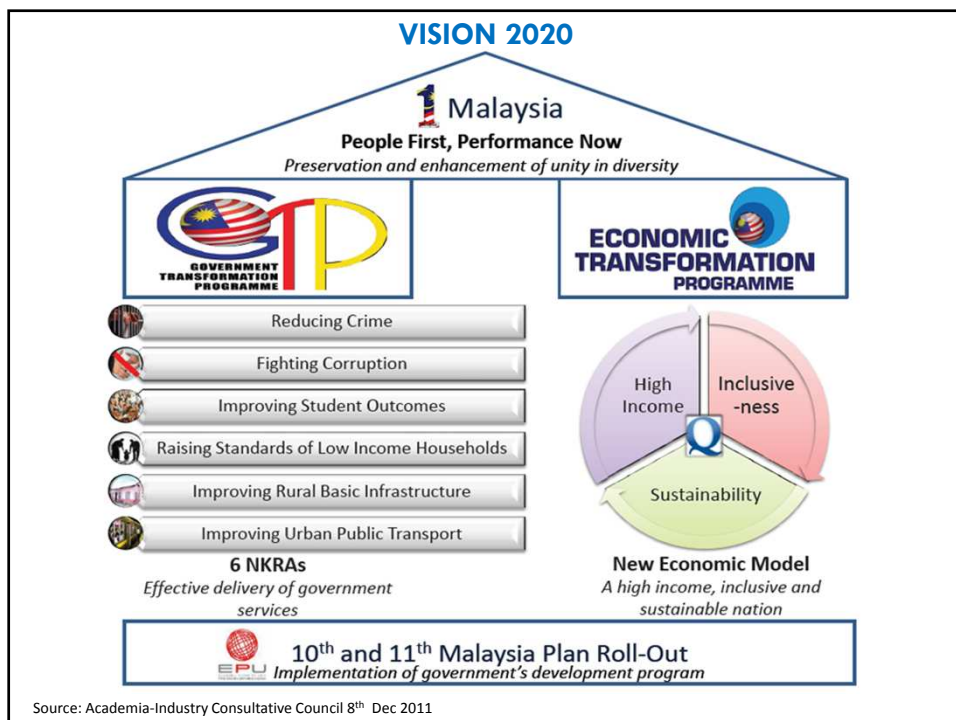
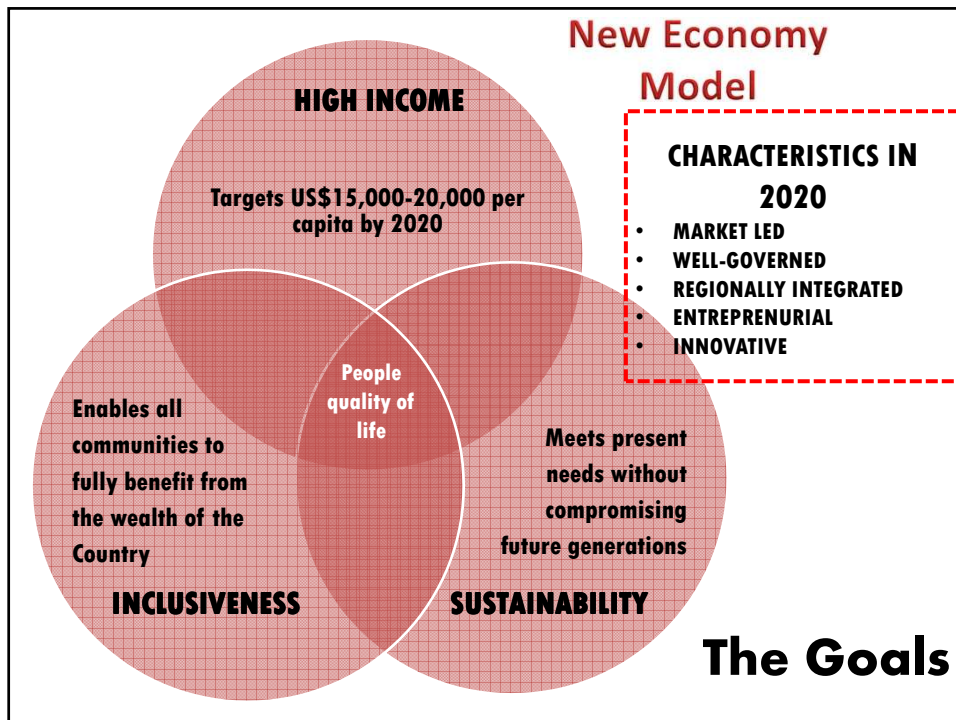
VISION 2020 NEW ECONOMIC MODEL

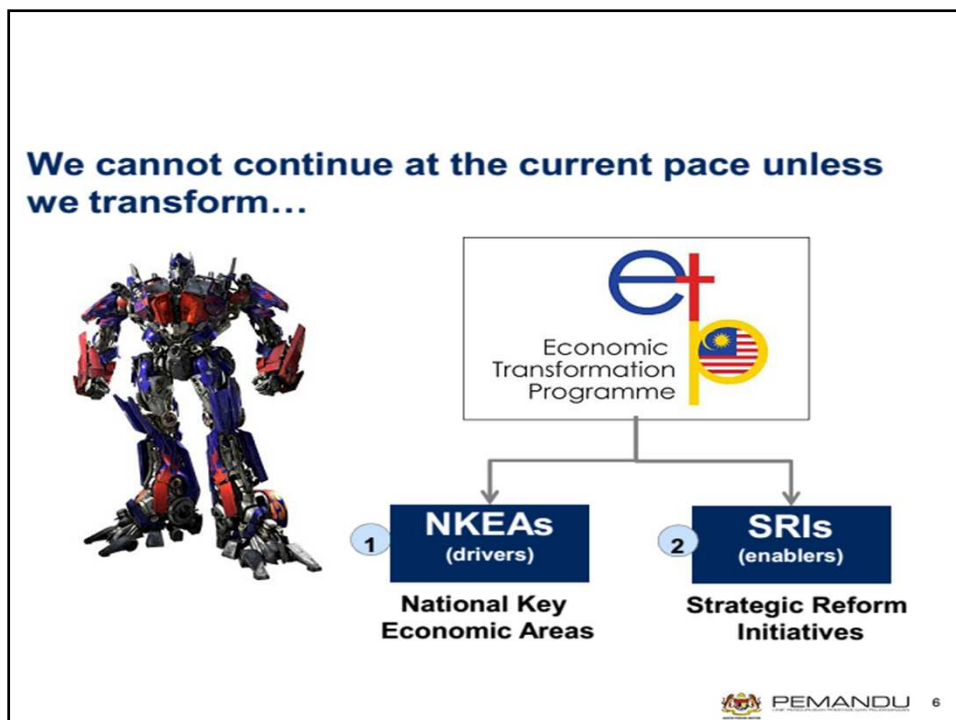
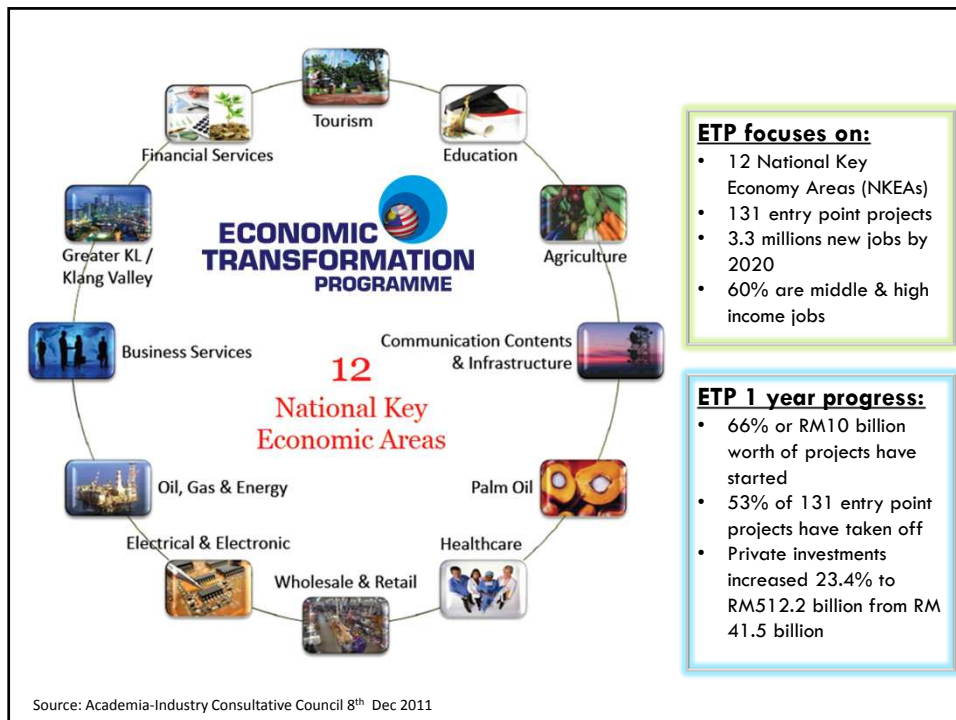


ROAD TO 2020

Malaysia's has introduced 4 pillars to achieve Vision 2020



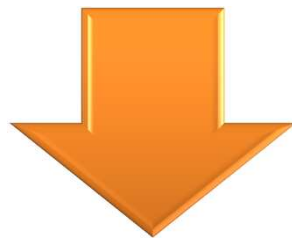




SCENARIO of INDUSTRIES IN MALAYSIA 1970 - 2000



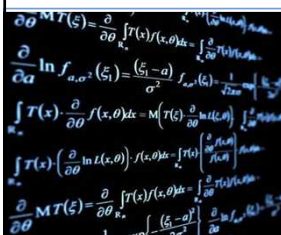
FOREIGN DIRECT INVESTMENT – set up manufacturing plants.



LOCAL; RESEARCH AND DESIGN COMPANIES – very few.

MALAYSIAN TECHNICAL AND ENGINEERING EDUCATION SCENARIO

1970 and 80s



**THEORY-ORIENTED;
DESIGN AND RESEARCH-based**

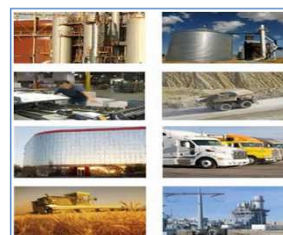
1990s



TRANSITION

Setting up of technical Institutions & University colleges

2000 onward



PRACTICE-ORIENTED

Technical universities established

TEVT is critical in the 10th Malaysia Plan

Target

40%² skilled workforce¹ by 2020

1,031,000 more managers & professionals

1,434,000 more skilled workers

482,000 more semi-skilled workers

Policy guidelines from the 10th Malaysian Plan

Improving the Perception of TVET and Attracting More Trainees

- ...a national media campaign will be developed and rolled-out...
- 69 out of 88 technical schools will be converted into vocational schools ... six new vocational schools will be established by 2015 ...

Upgrading and Harmonising TVET Curriculum Quality in Line with Industry Requirements


- ...standardize TVET curriculum...
- Recognizing and equating various levels of Malaysian Skills Certificate with certifications issued by TVET providers
- ...a Board of Technologists Malaysia will be established
- Malaysia-Japan International Institute of Technology will be established as an independent institute

Developing Highly Effective Instructors

- Highly experienced industry personnel...to become instructors ...
- part-time working arrangements will be expanded
- ...Centre for Instructor and Advanced Skills Training (CIAST) will be expanded..
- A new centre for instructor skills training will be developed to add a further training capacity of 800 instructors each year

Streamlining Delivery of TVET

- The current funding approach of TVET will be reviewed...provide financial assistance to students to study at Malaysian Skills Certificate Level 3
- The performance rating of TVET institutions will be utilized when making decisions for buying places...in private TVET institutions
- A total of RM 150 million will be set aside to train 20,000 school dropouts during the Plan period



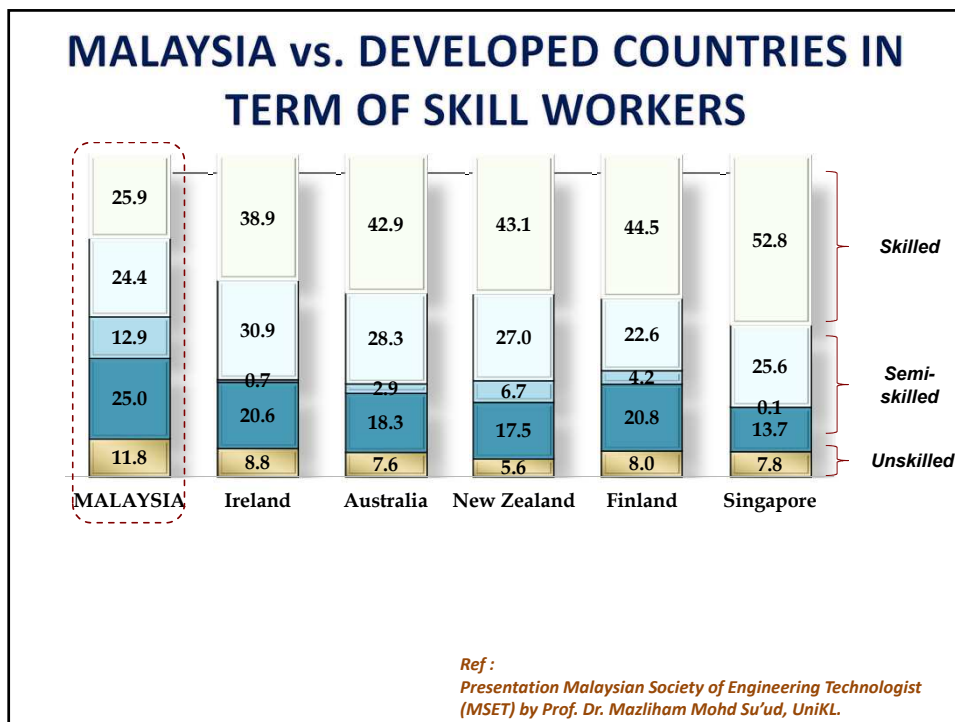
¹ Skilled workforce defined as those with at least SKM 3 certificate, diploma, or degree certification semi-skilled defined as those with at least SKM 1 or 2 certification, while unskilled workers have only SPM certification. A 40% target is projected by Ministry of Human Resource, and a 50% target committed to in the 10th Malaysian Plan ² Target based on MOHR estimates, different from 10th Malaysia Plan published targets of 50%

SOURCE: 10th Malaysia Plan

On the supply side, there is also a significant pool of students for expansion of TVET

Segment	Size Today Thousands	Segment description	Projected capture rate in 2020
Basic education dropouts	30 ¹	<ul style="list-style-type: none"> Basic education dropouts, i.e. students leaving school prior to taking SPM 	50%
SPM leavers directly entering workforce	100	<ul style="list-style-type: none"> Unskilled workers entering workforce without further qualifications, out of which 40k have no SPM credits 	30%
Foreign students	0.2	<ul style="list-style-type: none"> Foreign students coming to Malaysia for Skills Training Malaysian Skills training curriculum exported abroad 	16,000
Lifelong learning for unskilled and semi-skilled workforce	8,400	<ul style="list-style-type: none"> Upskilling of those already in workforce 	20%
Higher level SKM 3 and 4	40	<ul style="list-style-type: none"> SKM 1 and 2 holders who do not currently go on to pursue SKM 3 and 4 	50%

¹ Number of students leaving the national education system could be higher, up to 80k
SOURCE: MOHR



FACTS AND FIGURES

- 40,000 skilled workers needed by 2015 in oil and gas [KSM 2013];
- RM 3.7 billion budget 2013 technical and vocational [KPM];
- Australia ~ AUD 2 billion annually to provide skilled workers;

FACTS AND FIGURES

40% or 1.3 millions skilled worker needed by 2020 for Malaysia to be high income nation.

In Malaysia, 10% joined vocational and technical after high school whereas in German, Finland and Austria 50 – 80%.

By 2020, 1.3 million workers TVET; ~ 700,000 diploma holders from polytechnic and other institutions

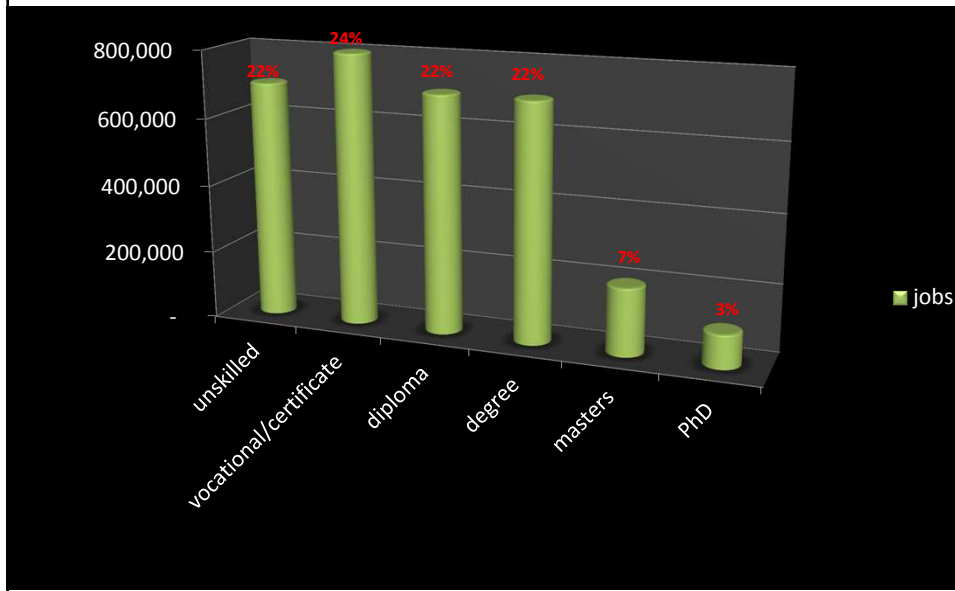
FACTS AND FIGURES : SCORE

by 2030, REQUIRES 435,000 manpower;

52.2% skilled and semi-skilled;

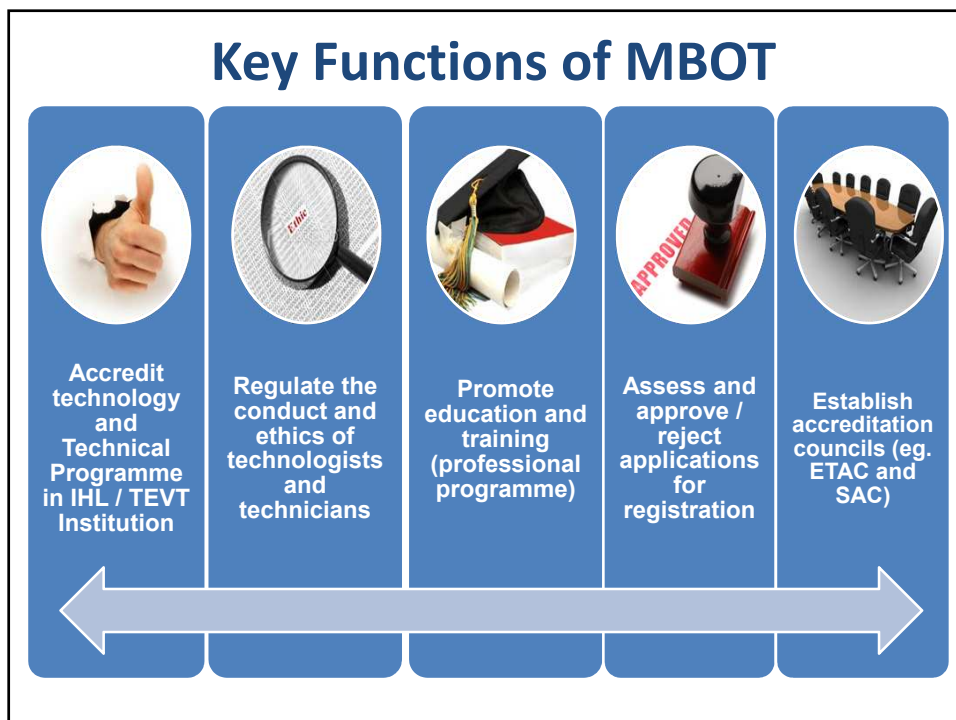
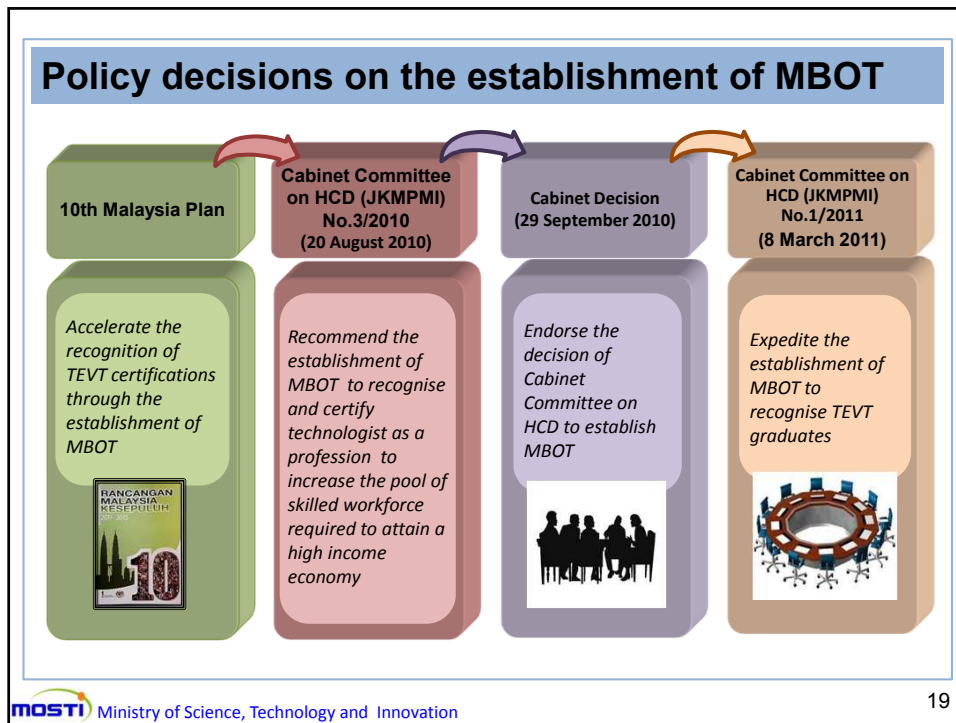
70,000 engineering-related.

3.3 millions NEW JOBS



The Establishment of Malaysia Board of Technologists (MBOT)






To elevate the standing and recognition of Technologists and Technicians

- Technologists and technicians are currently not recognised and certified as professionals by any professional body
- Technologists and technicians will be accorded international recognition through membership of MBOT in various international accords
- Institutions will be motivated to offer technology and TEVT programmes

To increase the pool of skilled workforce required to attain a high income economy

- Only 28% of the total workforce is employed in the higher skilled jobs category reflecting a huge pool of unskilled workforce
- Potential pool of 100,000 students (22% of total students enter the workforce after SPM) who are technically inclined
- Of the total 3.3 million jobs to be created under ETP by 2020, 700,000 jobs require skilled workforce with diploma in TEVT




RATIONALE FOR MBOT

To improve public perception of TEVT and attract more students

- On average, 10% of students enroll in TEVT institutions annually (low compared to 44% in OECD countries) reflecting the unattractiveness of TEVT
- 38 diploma / advanced diploma engineering and technology courses offered by 30 polytechnics will be accredited
- 30% of the 5,639 skills programmes that are technical-based will be accredited
- More students will be motivated to enroll in TEVT

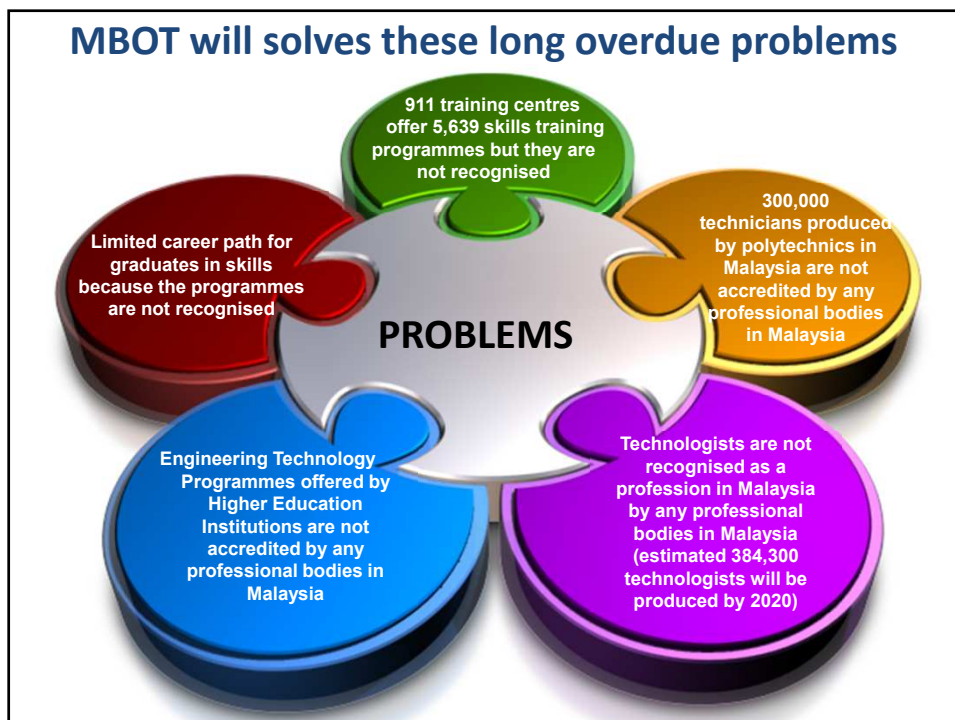
To protect public safety and health through...

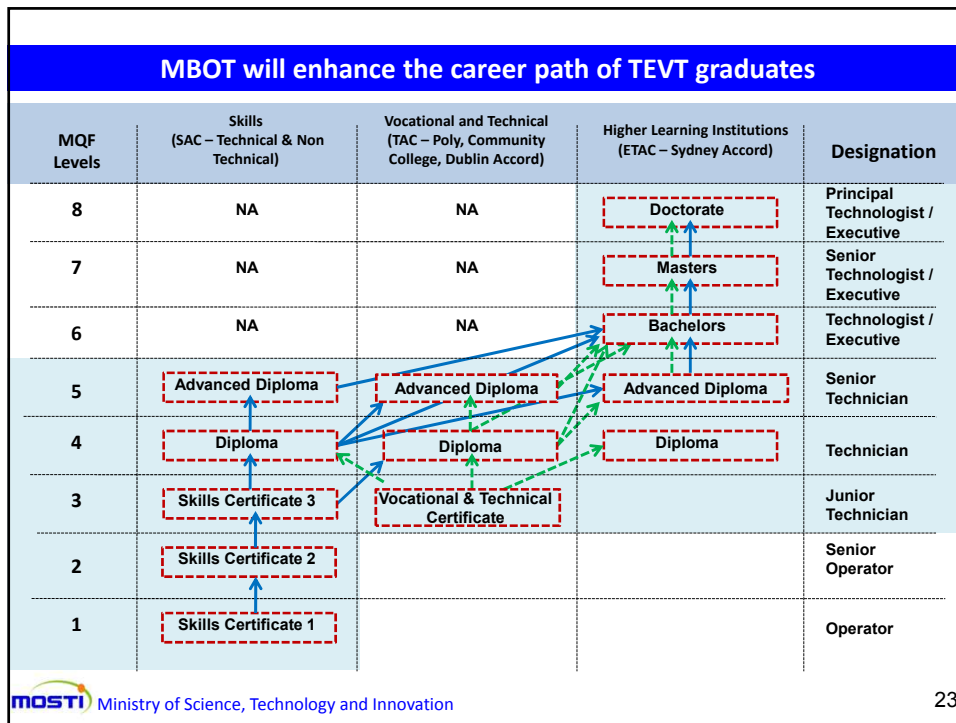
- Quality assurance (qualification, accreditation, training)
- License professional technologists / certified technicians to offer professional technology and technical services
- Regulate code of conduct and ethics of technologists and technicians



Ministry of Science, Technology and Innovation

21





TECHNOLOGISTS AND TECHNICIANS BILL 2012 [2013?]

- **“technician” means a person in a field of technology who is proficient in the relevant knowledge, skills and techniques with the exception of those who are already registered under any other Acts;**
- **“Qualified Technician” means a person registered under subsection 20(2);**
- **“Certified Technician” means a person registered under subsection 20(4);**
- **“skills” means an acquired and practised ability to carry out a task or job competently;**

Registration of Qualified Technician and Certified Technician

Article 20.

(1) A person who holds a minimum certificate qualification in technology or a technical-related programme which is recognised by the Board may apply to be registered as a Qualified Technician upon payment of the prescribed fee.

(2) Upon application made under subsection (1), and based on the criteria as may be determined by the Board, the Board may approve the application to be registered as a Qualified Technician.

(3) A Qualified Technician registered under subsection (2) who has –

- obtained the practical experience as may be determined by the Board;
- paid the prescribed fee; and
- complied with all the criteria to be determined by the Board,

may apply to be registered as a Certified Technician.

(4) Upon application made under subsection (3), and based on the criteria as may be determined by the Board, the Board may approve the registration of a Qualified Technician as a Certified Technician.

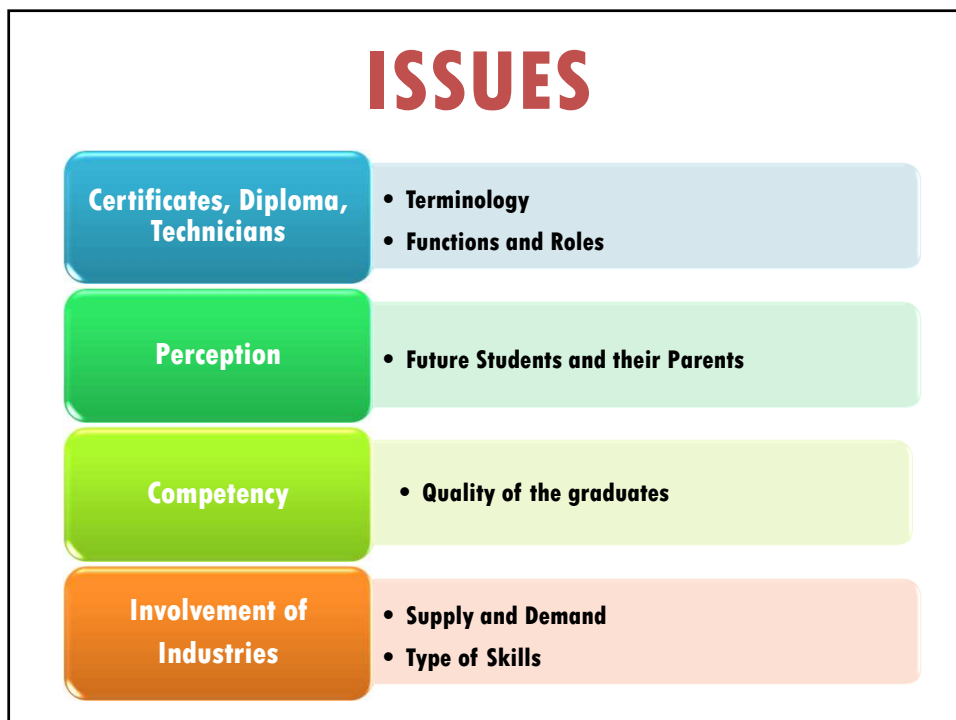
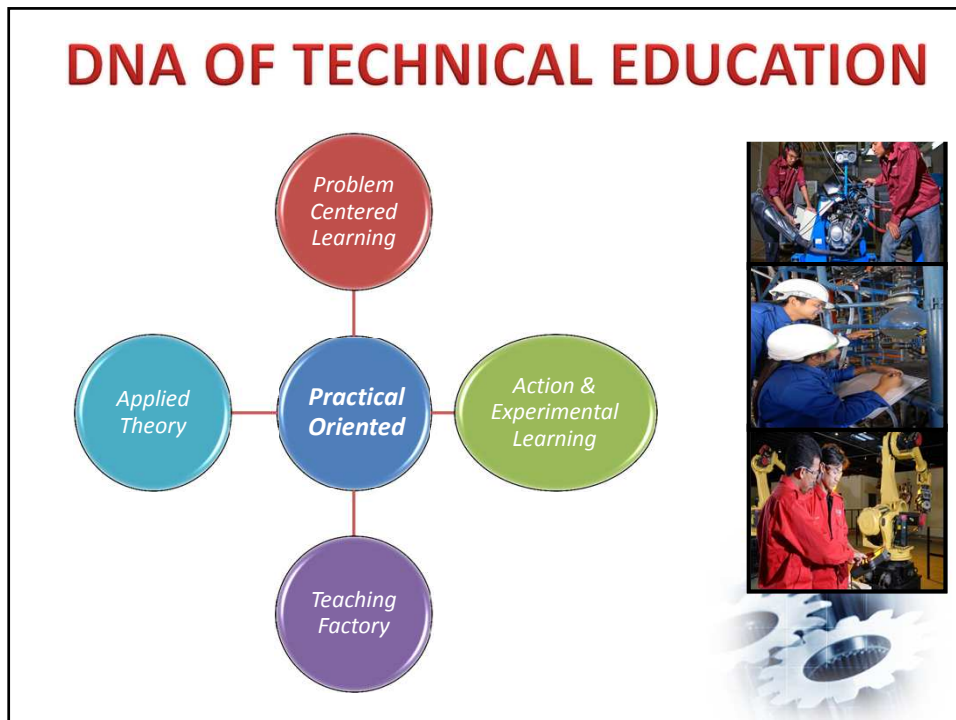
Certified Technician

Article 18. No person shall, unless he is a Certified Technician –







- (a) approve and certify the manner or conduct of technical services to be carried out;
be entitled to describe himself or hold himself out under any name, style or title –
 - (i) bearing the words “Certified Technician” or the equivalent in any other language;
 - (ii) bearing any other word whatsoever in any language which may reasonably be construed to imply that he is a Certified Technician;
 - (iii) using the abbreviated title “Tc.” for Certified Technician before his name with the approval of the Board; or
 - (iv) using the abbreviation “C.Tech” for Certified Technician and his specialisation after his name with the approval of the Board;
- (c) use or display any sign, board, card or other device representing or implying that he is a Certified Technician; and
- (d) use the stamp as determined by the Board.

CHALLENGES

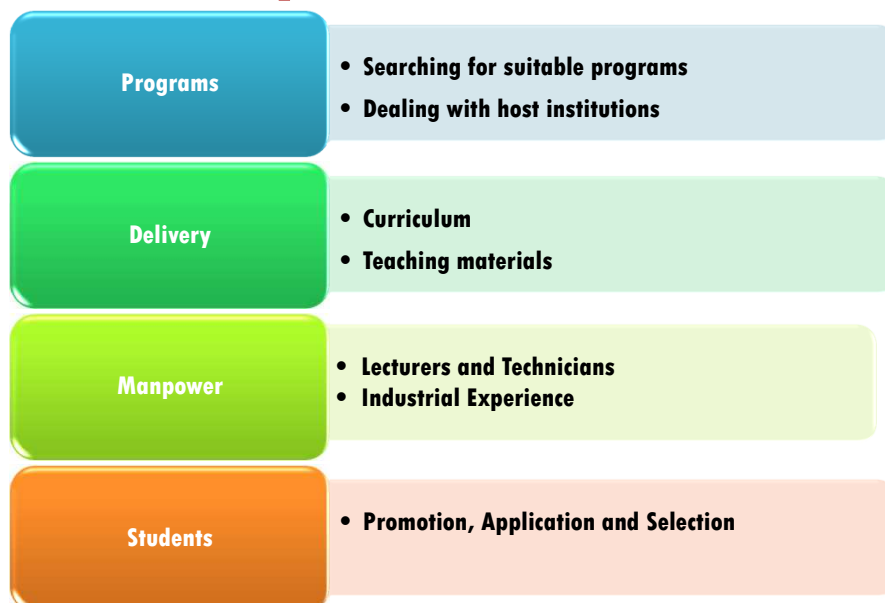




The Right Model

COUNTRY	BOARD	SCOPE	ACCORD
Malaysia 	Board of Engineers Malaysia (BEM)	Engineering Programme	Washington
UK 	Engineering Council (EC)	Engineering, Technology, Construction & Build Environment	Washington Sydney Dublin
Canada 	Canadian Council of Technicians & Technologists (CCTT)	Bioscience, Building, Chemical, Civil, Electrical, Electronic, Forestry, Geomatics, Instrumentation, Industrial, Information Technology, Mechanical, Petroleum & Geosciences	Sydney Dublin
	Engineers Canada	All Engineering fields	Washington
USA 	Accreditation Board for Engineering and Technology (ABET)	Education in Applied Science, Computing, Engineering and Technology	Washington Sydney
Australia 	Institution of Engineers Australia (IEA)	All Engineering fields	Sydney Washington
Ireland 	Engineers Ireland	All Engineering fields and ICT	Washington Sydney Dublin

Implementation



Buying In

STAKEHOLDERS

SHAREHOLDERS

society

industry

government



students

ministry

Accreditation and Recognition

