Thailand's Embarking on National Quality Infrastructure

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Content

- National reform
- National Quality Infrastructure Reform
- MOST Initiatives
- Quality and Metrology – Towards Quality Culture

National Reform

New Engine of Growth

National Reform

- “Reform” is the national agenda and this administration agenda
- Laying down necessary reforms needed for national security. i.e. social security, economic security and environmental security
- Establishing & implementing national long term strategy: National Strategy (2015 – 2034)
- New economy strategy: Super clusters and growth engines

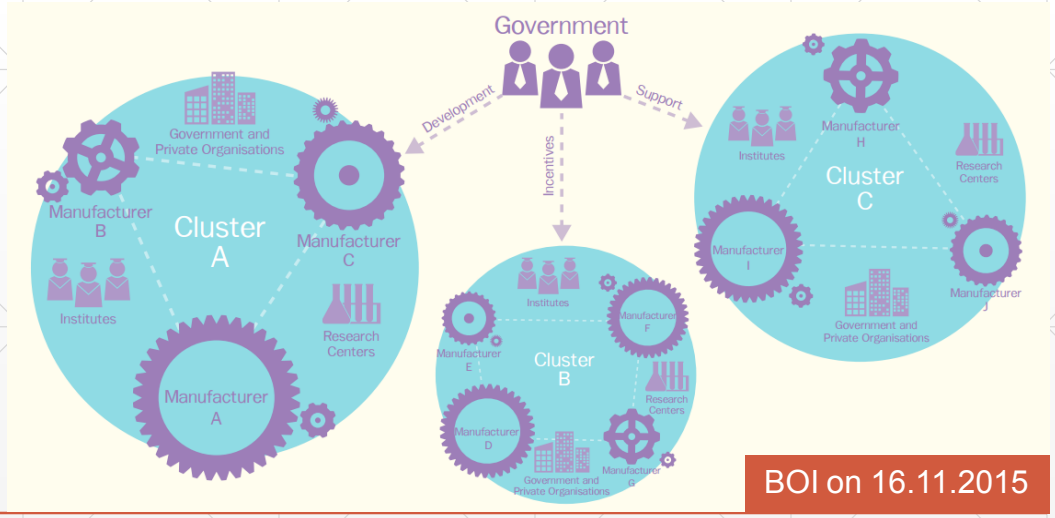
Moving Ahead with Cluster Development

Six super industrial clusters

- Automotive and Parts
- Electrical Appliances, Electronics and Telecommunication Equipment
- Eco–friendly Petrochemicals and Chemicals
- Digital-based
- Food Innopolis
- Medical Hub

Two targeted clusters

- Agro-processing Products
- Textiles and Garment



BOI on 16.11.2015

New Engine of Growth: Ten targeted industries

Five existing industries: Enhance current industries to continue the growth

- Next-Generation Automotive
- Smart Electronics
- Affluent, Medical and Wellness Tourism
- Agriculture and Biotechnology
- Food for the future

Five new industries: Develop future Industries to achieve the leap growth

- Robotics
- Aviation and Logistics
- Biofuels and Biochemicals
- Digital
- Medical hub

will be given investment privileges

Basic Infrastructure to Improve Industrial Clusters

Knowledge-Based Industries

i.e. R&D, Biotechnology, Engineering Design, Vocational Training Centers, Scientific Laboratories, Calibration Services

Logistic Industries

i.e. Commercial Airports, Rail Transport, Loading/unloading Facilities for Cargo Ship, Inland Container Depots (ICD), International Distribution Centers (IDC)

National Quality Infrastructure Reform

Why NQI Reform?

Current situation

- Having all MSTQ components, each with international recognition
- Lack of coordination between responsible organisations
- Incoherence in strategies & plans
- No national NQI policy or NQI development plan

Fragmented & Slow to respond to needs of economic sector

Foreseeable benefits of reform

- Improvement of coordination would yield greater efficiency and lesser duplications
- Faster development with clearer direction and better alignment with national strategy and plans
- Quicker respond to needs
- Becoming more visible

Efforts

- Proposing NQI reform to National Reform Council
- Participating in debates
- Organising seminars, workshops and NQI tours
  - Dinner talk: Prof. Dr. Joachim Ullrich, President of PTB
  - Metrology Arena in Thailand 2016: Quality Infrastructure for Food and Water Safety (Organised by NMIJ, AIST, Japan in cooperation with NIMT, TISTR & DSS)
  - QI for Competitive and Innovative ASEAN & NQI Workshop (Sponsored by MOST, PTB and JICA-Thailand)
- Working with the press
  - NQI Press Tour

Included in National Reform Agenda

Agenda 21:Sci Tech & Innovation Reform

- Management structure & STI budgeting
- STI expenditure
- STI infrastructure and services
- Human resource development & management
- National Quality Infrastructure reform
- Urgent matter – NQI development strategy and roadmap

Revise existing laws

- Standardisation Act is being studied (the framework act)
- National Metrololgy System Development Act is being scrutinised in the National Assembly

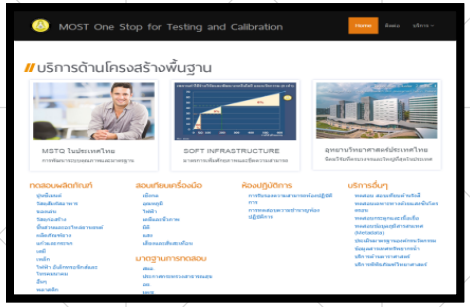
Two Committees & Two Working Groups

- One committee to study and analyse demands of NQI services in industry sectors
- One committee to study and recommend the revision of the Standardisation Act
- One working group to harmonise MOST MSTQ Data and organise MOST One Stop Service
- One working group to harmonise data of standards and testing labs and organise National Single Database

MOST Initiatives

MOST One Stop for Testing and Calibration

One Web



One Stop

One Lab

One Report

Complete & searchable → **Deliver sample or standard** → **Testing or calibration** → **Report or certificate**

National Single Database:

- Standards and Testing Labs Database: completed, harmonised, verified & searchable
- Gaps between standards, regulations, available testing capabilities & services, available calibration capabilities & services, national measurement standards and existing & future needs can be analysed
- Analysis results will lead to national NQI roadmap and development plan

- List of all ministries responsible for NQI
- List of standards by all standardisation bodies
- List of national regulations by all regulators
- List of testing laboratories registered with regulators or accredited
- List of calibration laboratories (to be added)
- List of measurement traceability (to be added)

Examples of what could be extracted from

No standard: Electrical Sockets

Standard: No TIS Standard

Testing Lab: Plenties

Measurement traceablity: Complete

Lack of measurement traceability: Nano health products

Standard: TIS 2691-1,
TIS 2691-2,
TIS 2691-3

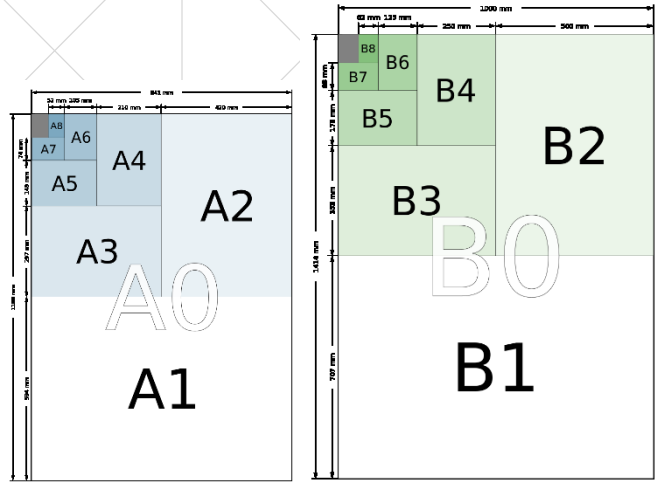
Testing Lab: NSTDA, DMSc, CU, CMU and etc

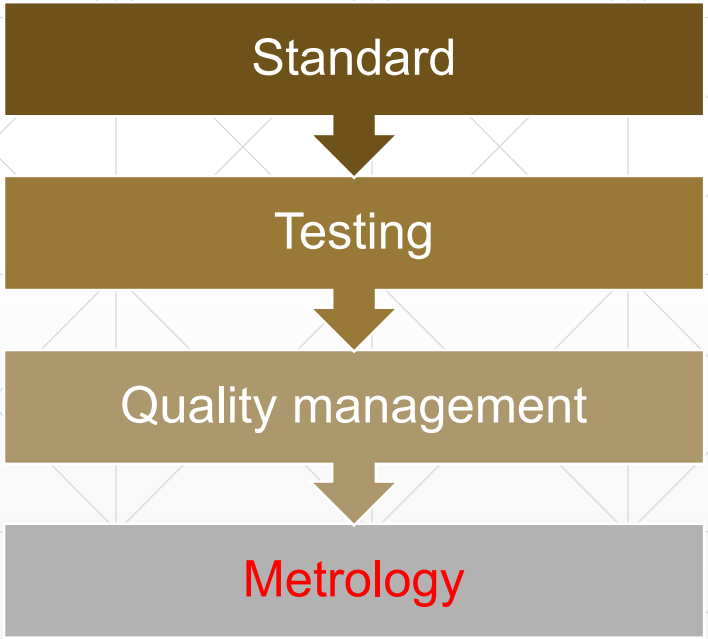
Measurement traceablity: Only a few have from oversea

Metrology and Quality – Towards Quality Culture

Metrology: a cornerstone of NQI

NQI is a system, so it needs to work systematically





ISO 216:2007

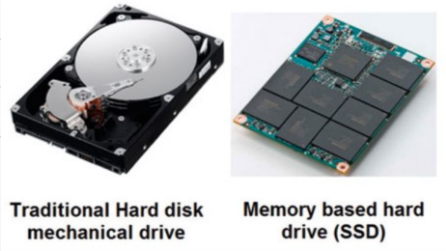
Writing paper and certain classes of printed matter -- Trimmed sizes -- A and B series, and indication of machine direction

- ✓ Paper in the A series format has a $\sqrt{2} \approx 1.414$ aspect ratio, rounded to the nearest millimetre.
- ✓ A0 is defined so that it has an area of 1 square metre before rounding.

Standard defines required properties of product or process in known measurement units with specified tolerance

Metrology in Thailand: first fifteen years

- NIMT was established in 1998 by the Metrology System Development Act (1997) mainly as result of merging of calibration units of DSS and TISTR
- National Metrology System Development Master Plans (1 & 2)
  - Concentrated on building NIMT's measurement capabilities, international recognition and calibration lab network
    - Capabilities aimed at supporting industrial sectors
    - Network aimed at delivering measurement traceability to industrial sectors
  - Mainly to support export industries



Why do we measure?

- We do a measurement in order to get information
- We need information to make decision

Right measurement performed correctly

Correct & impartial information

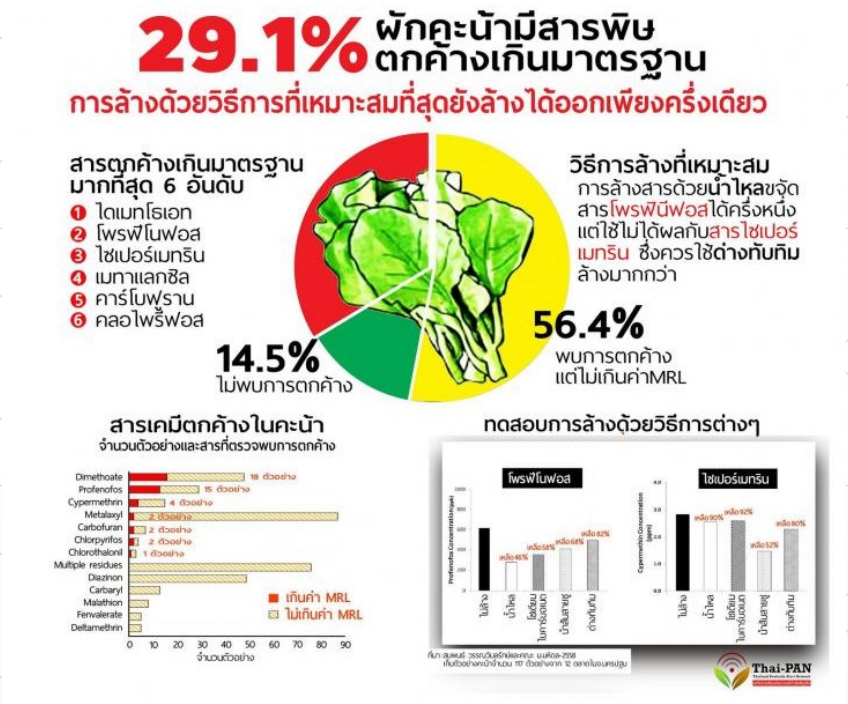
Right decision

Safe or unsafe,
Fair or unfair,
Sick or well,
Justified or unjustified,
Efficient or inefficient, …

First we take measurements, ... then we take measures.

Universal Rights to Quality

Export vegetables to EU are tested for > 400 chemical substances



Developing economies “like us” export products of best quality!

We live with what is far more dangerous!

What could be done?

New horizon: Quality Culture

- New goal of Thailand's metrology development is to move the society towards a **quality culture**
- Prosperity of a nation has many aspects and depends on various issues, metrology can be relevant in all this aspects and issues
  - Metrology is still a driver of science, technology and innovation
  - Metrology still underpins industry
  - Metrology remains crucial for trade exchanges

Quality Culture towards the Region of Quality

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