Cluster Development Incentive Package : STI

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TALENT MOBILITY

Mobilizing STI talents from universities and public research institutions to assist the private sector in technological upgrading for competitiveness

TALENT MOBILITY

Promote & Facilitate

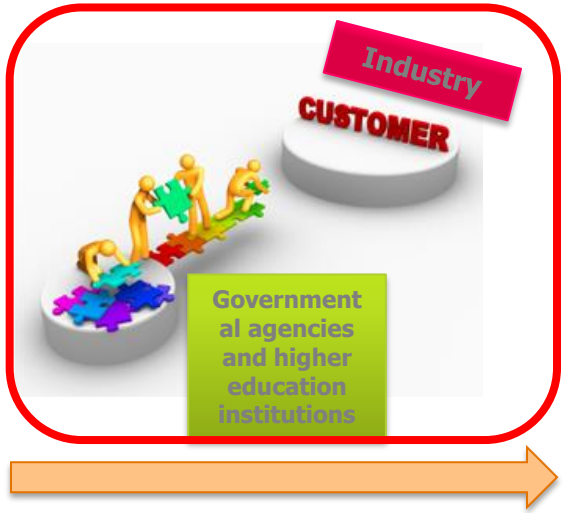
Transforming knowledge in the public sector to commercialization in the private sector

Talent Mobility Programme

Talent Mobility program is a project aims to facilitate the mobility of researchers in governmental agencies and higher education institutions to industrial sector. The researchers are authorized to **work full-time or part-time** for the industry (3 months to 2 years).

University/ Government Research Institute

- High quality S&T personnel
- Research outputs and IP are not largely commercialized
- S&T college students should participate in S&T activities with private sector



Talent Mobility Program: Supporting and Facilitating scheme

Industrial Sectors

- With regard to AEC in 2015 and other global challenges, private sector in Thailand can not rely on labor intensive for competitiveness.
- R&D investment and high-valued products is increasing
- Private sector is in need of researcher and high skilled labor

Cabinet Resolution on 18 February 2015

Approval of the **Talent Mobility** Program to enable STI personnel from public universities and public research institutions to assist the private sector in technological upgrading for competitiveness

1

Counting the time allocated for working in the private sector towards the service time in the public sector

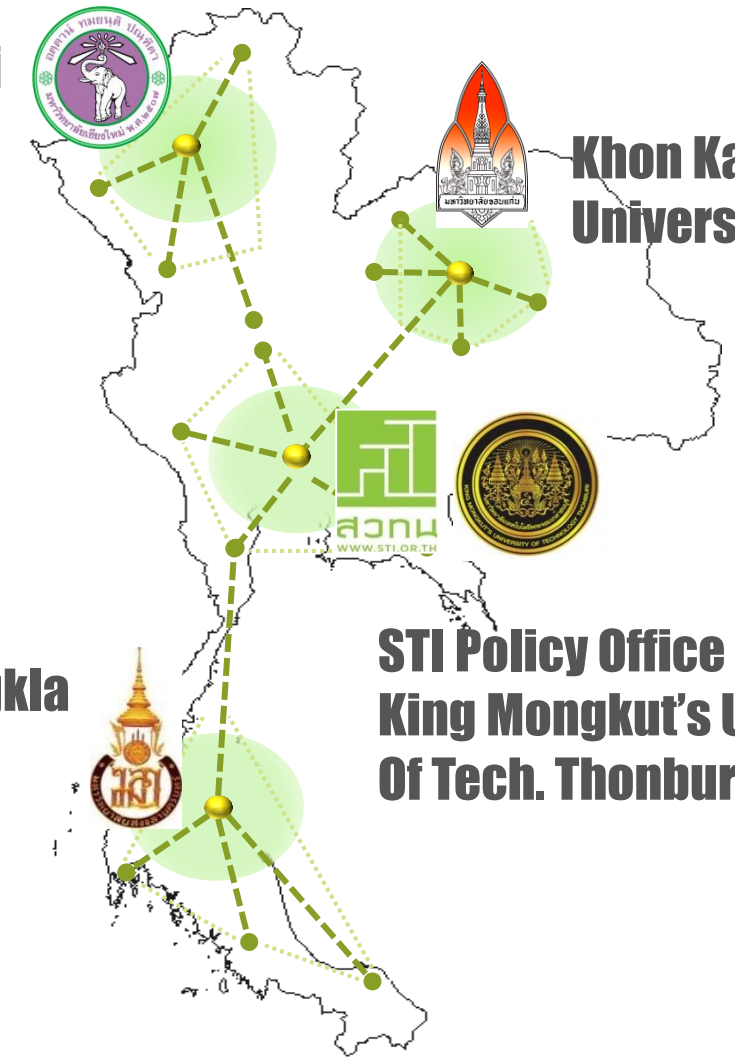
2

Counting the time allocated for working in the private sector towards the service time in fulfillment of government scholarship's obligation

3

Enabling researchers to use the results of their work in the private sector towards academic career advancement

Network of **Talent Mobility** Clearing Houses



TM Clearing Houses

Bangkok, Chiang Mai, Khon Kaen, and Hat Yai

TM Database

- Over 30,000 researchers and experts
- Private-sector demand

TM Roadshow & Fairs

- Public relations
- Initial assessment of private-sector demand

Matching & Mobilising

Linking researchers with industry

Regulation & Awareness

- Promoting university regulatory reform
- Creating public awareness

Talent Mobility Pilot Project
2014 and 2015

PARTICIPATING INSTITUTIONS

- Chiang Mai University
- Prince of Songkla University
- Khon Kaen University
- Federation of Thai Industries
- National Science & Technology Development Agency
- Srinakharinwirot University
- Kasetsart University
- King Mongkut's University of Technology Thonburi
- Mahidol University
- Rajamangala University of Technology Thanyaburi
- Rajamangala University of Technology Lanna
- Chulalongkorn University
- Thailand Creativity & Design Center
- King Mongkut's Institute of Technology Ladkrabang
- Naresuan University
- Office of the Higher Education Commission

✓117 researchers and 86 research assistants (students) have been mobilized from 56 projects in 54 companies (5 Large enterprises and 47 SMEs)
✓100 cooperative projects in the pipeline (waiting for matching).

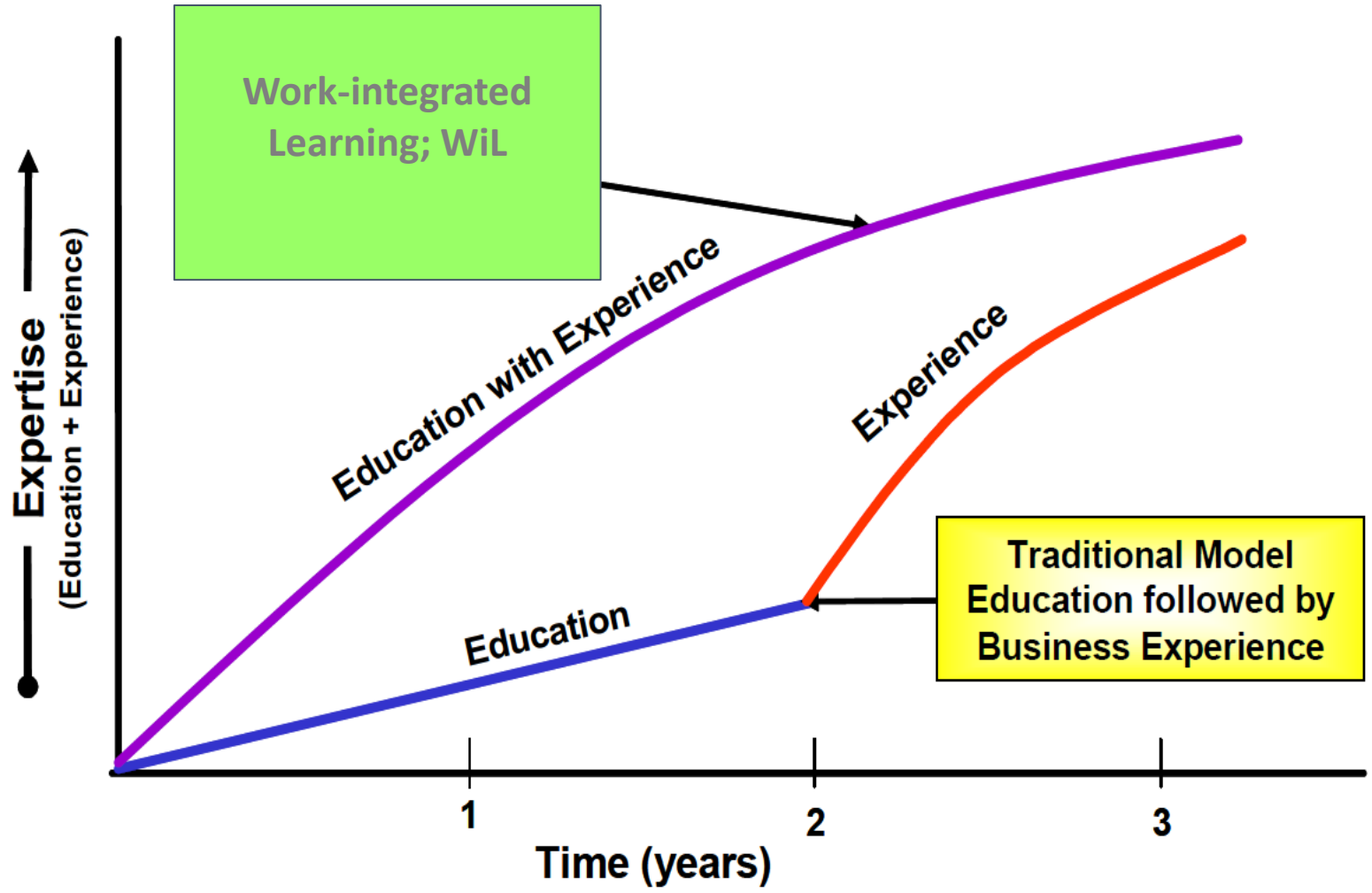
*Updated October, 31, 2015

TALENT MOBILITY

www.talentmobility.or.th

STI WiL Program

WIL philosophy



- Productivity + Knowledge
- Increase employability rate
- Reduce skills mismatch
- PPPP model on Human Resource Development (Condition promoted by BOI scheme)

From: John Aaron, Alice Rowland, Christina Rude, James Wessel, Apprenticeship and Economic Advantage: A Blueprint for American Industry and Public Policy in the 21st Century, White Papers, Milestone Planning and Research, Inc., http://milestoneplanning.net/whitepapers/Apprenticeship Article Final.pdf

Via STI, KMUTNB, RMUTL, "Work Integrated Learning in Thailand"

Work-integrated Learning Mechanism

- Measuring and Evaluation
- Network building
- WiL Standard platform

Government

- Facilitate
- Tax incentive
- Manpower development policy
- Regulation
- Seed Funding

- Mega Project
- 20 Ministries
- Project initiate

WiL

- High quality teachers
- Competency based curriculum

Industry

- Set competency
- Set standard
- Co-investment (฿)

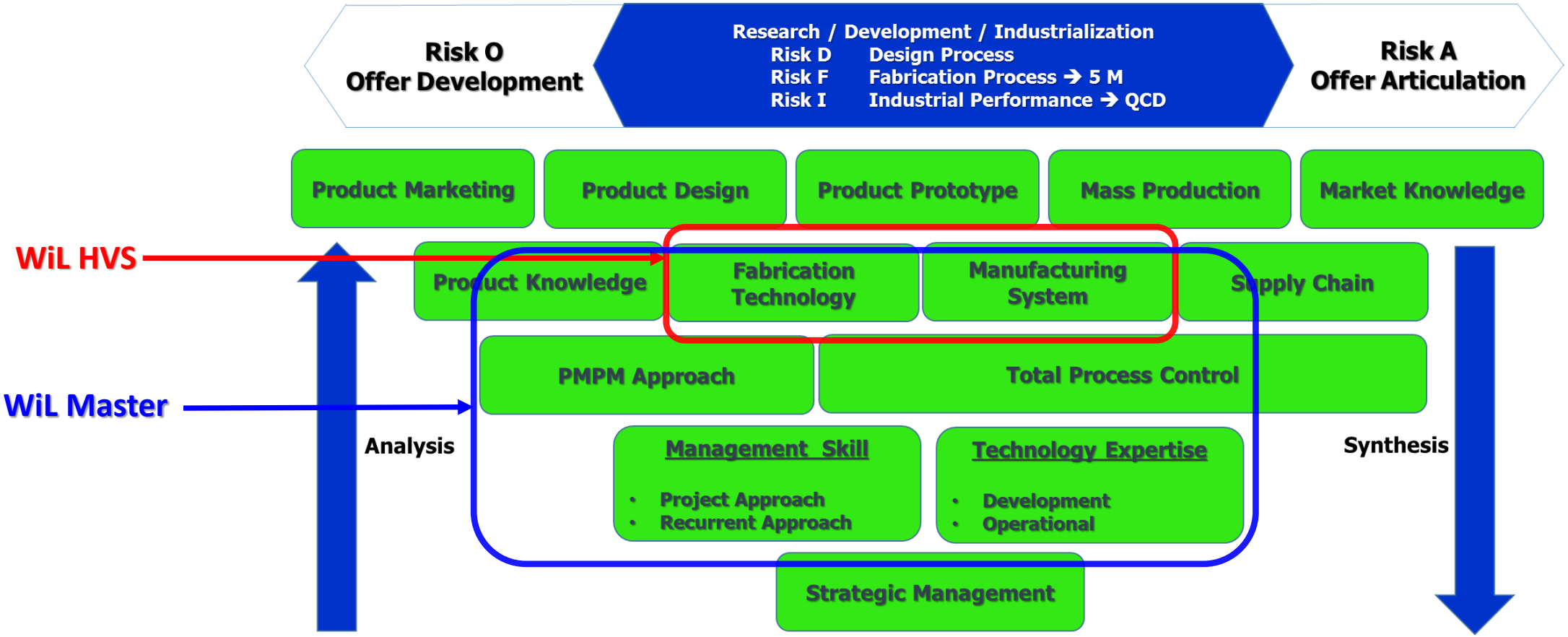
High quality workesr in strategic sectors

Academic

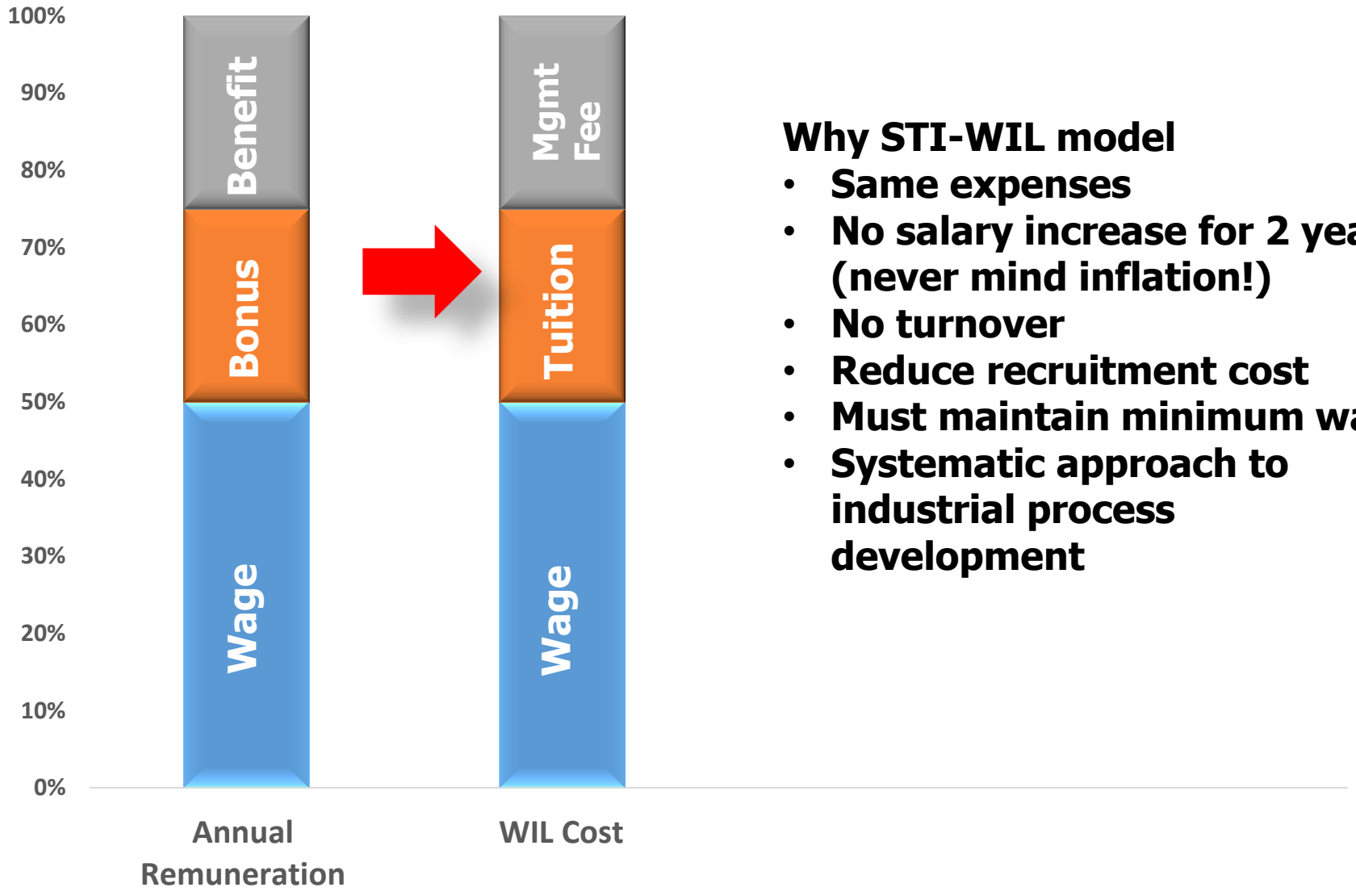
- Curriculum development
- Teaching
- Co-investment (In-kind)

STI-WIL model

One STI-WIL = Two programs



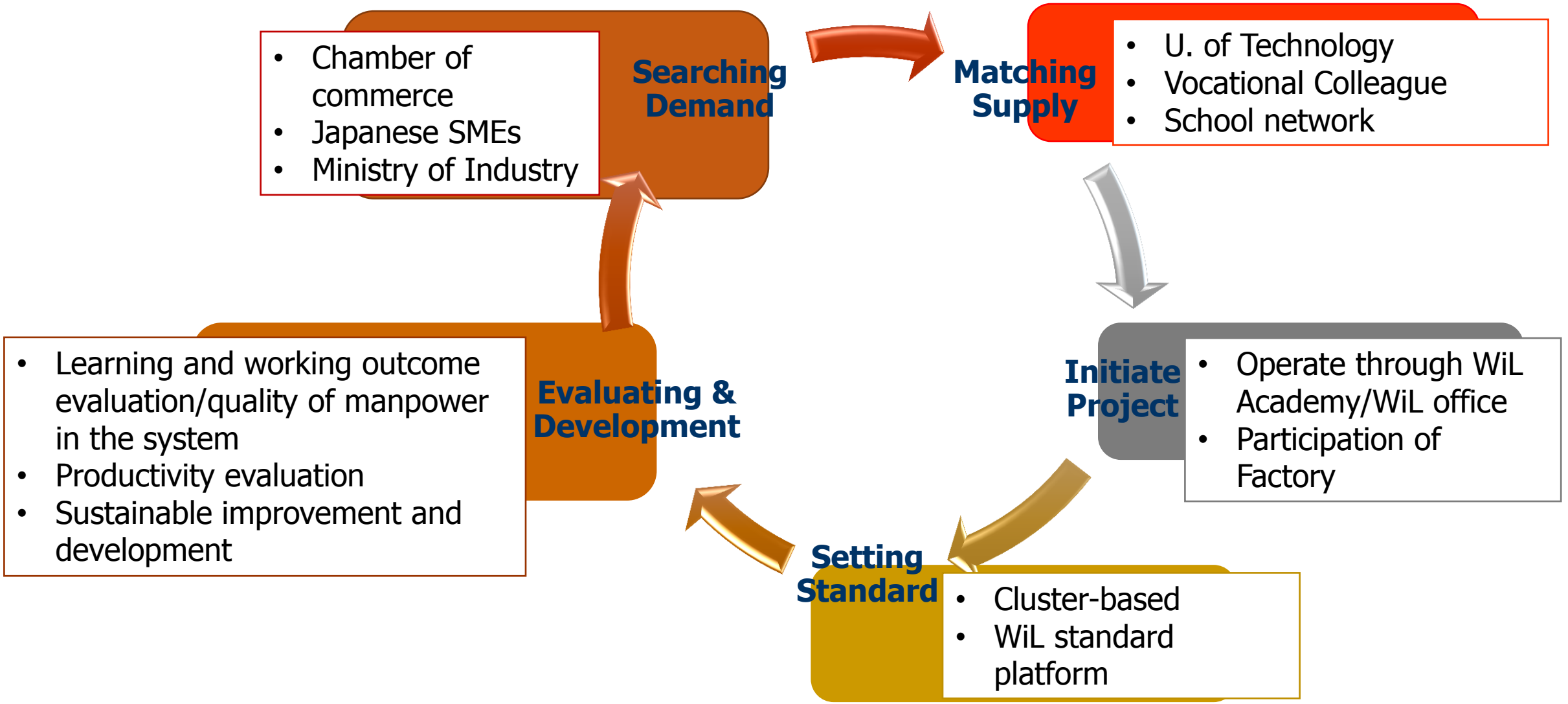
STI-WIL Cost Comparison



Why STI-WIL model

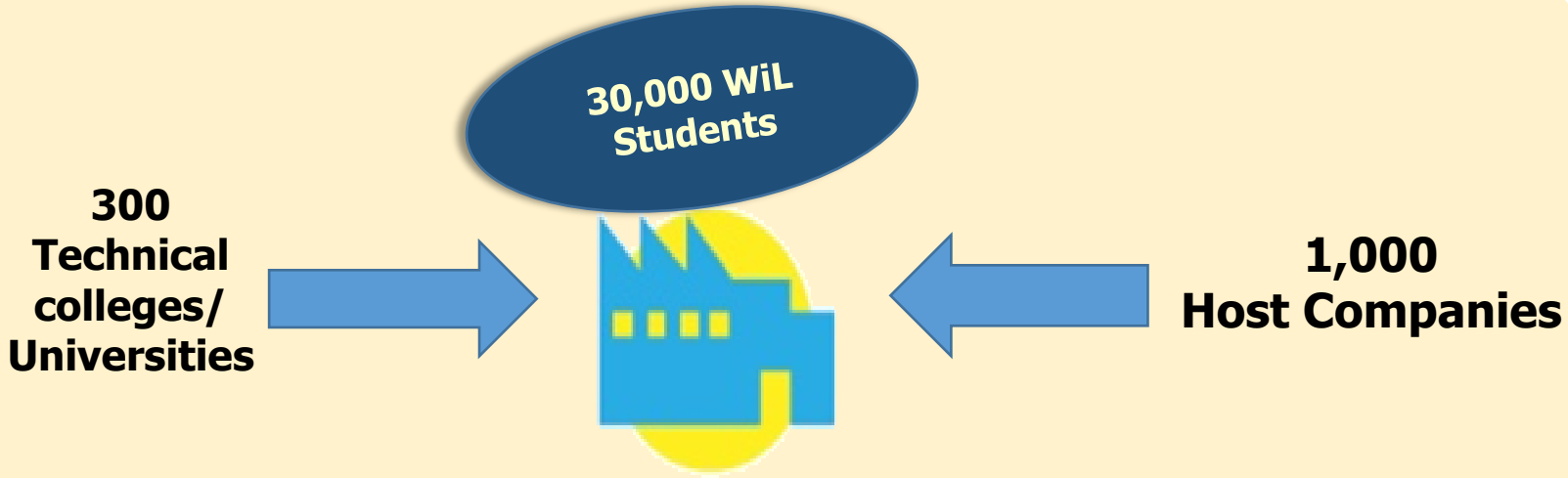
- **Same expenses**
- **No salary increase for 2 years (never mind inflation!)**
- **No turnover**
- **Reduce recruitment cost**
- **Must maintain minimum wage**
- **Systematic approach to industrial process development**

WiL Program Expanding Process



Supporting Measure : SAI, Tax Incentive , (Merit-based) BOI, Talent Mobility Support

Policy Recommendation : 30,000 WiL Students to Industry



- ❑ **Dual Vocational Education**
- ❑ **HVS/Bachelor/Master (STI-WiL =School in Factory)**
- ❑ **Cooperative Education (Bachelor)**

Source: STI

- ✓ **Increase 6,000 MB Annual Employment**
- ✓ **Reduce Operator Cost of Host Company**
- ✓ **Higher Productivity from WiL Students**
- ✓ **10 - 15% Higher Trainability from WiL Students**
- ✓ **Highly Qualified Workforces with Multi-skills**

Source: STI

Government

- Facilitate
- Tax incentive
- Manpower development policy
- Regulation
- Seed Funding

Industry

- Set competency
- Set operating standard
- Co-investment (฿)

Academic

- Curriculum development
- Teaching
- Co-investment (In-kind)

How do I sign up?

1

Initiate project through STI office
- Preliminary data (Company profile, issue on workforce, budget for WiL project)

2

Factory visit 2 times
- Shop floor tour (Manufacturing Process, training system)
- Cost evaluation

3

Project preparation
- sign contract &set up operating committee
- Set up In-house facility and WIL schedule
- Task breakdown structure for team member

4

Start Project!

Dec

Jan

April

June

FOOD INNOPOLIS

A Global Food Innovation Hub
Gateway to Asia
Linkage to ASEAN

Develop Word Class Food Innovation Hub in Thailand

Food Industry in Thailand

- 14th Food Producer and Exporter (in 2013)
- Export Value $30,000 Million (in 2014)
- 9,000 Food Manufacturing Factories
- 960,000 Employees

Source : STI (2014)

FOCUSES OF FOOD INNOPOLIS

Attract world class food companies to invest in Thailand

Promote and support Large companies and SMEs in Thailand to expand to global food value chain

Produce high value added food products and services

Create new jobs and highly skilled professionals related to food industry

Target Companies : MNCs

Target Companies : Thai Large Enterprises

241 Thai LEs & SMEs in food industry

with 3,558 Million Bath R&D spending (in 2013)

Food Packaging

Target Companies : Thai SMEs

FOCUSED SECTORS OF FOOD INNOPOLIS

- Functional Food & Nutraceuticals

- Halal Food

- Premium Seafood & Aquaculture

- Essential Nutrition & Food Ingredients

- Healthy Fat & Oils

- Fruits & Vegetables (Organic)

- Supporting Business for Food Innovation (IT, Packaging, Design, Consultancy)

Food Innopolis @ THAILAND SCIENCE PARK

- 60,000 sq.m. of ready-to-move-in wet and dry laboratory space available for Food Innopolis at Thailand Science Park (TSP). Pilot plant and lease hold land are also offered.
- Situated 20 km. north of Bangkok
- Well-equipped with physical and knowledge infrastructure, the most attractive place in Thailand to invest in research, development and innovation activities.

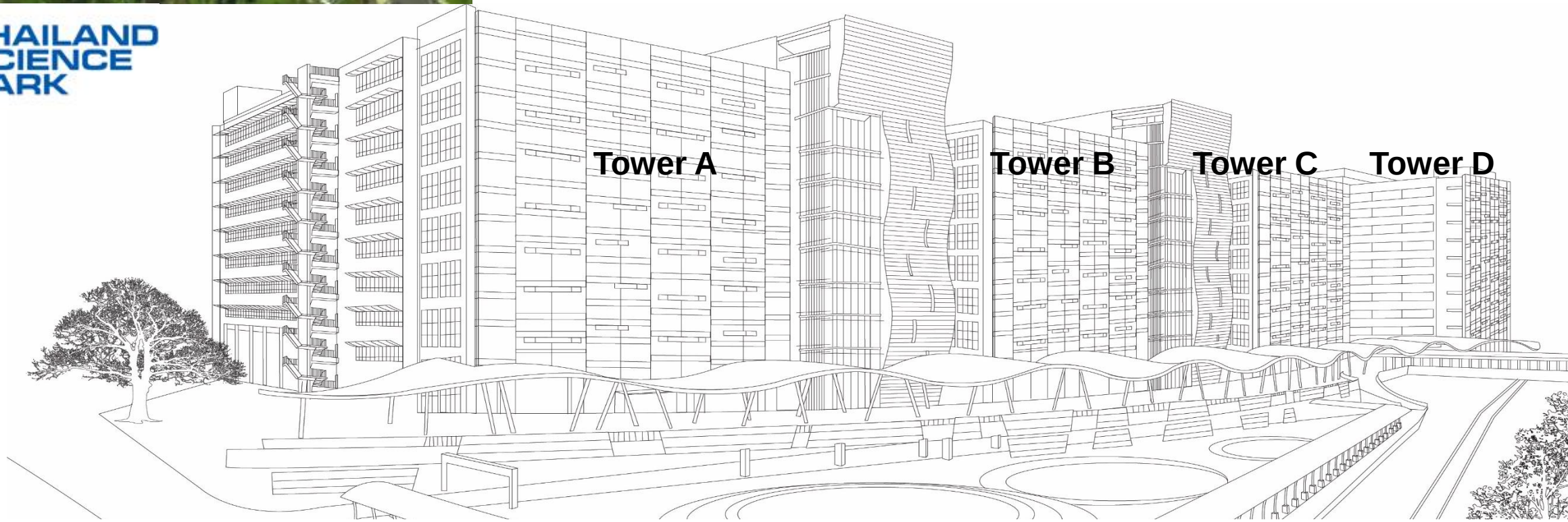
Food Innopolis @ TSP is fully function for R&D activities

- Proximate with four national research centers Over 2,000 full-time researchers, of which around 500 are Ph.D. scientists.
- About 70 tenants located onsite with about 500 staff, of which around 300 are research, development and innovation personnel.
- TSP is also adjacent to 3 leading universities and within short distance to industrial estates nearby.

Food Innopolis @ TSP

- Available since Nov 2014
- New phase of TSP, support ~ 150 tenants and ~ 2,000 professional in addition to current phase.
- Gross area of 124,000 sq.m., where ~60,000 sq.m. dedicated for Food Innopolis.

THAILAND SCIENCE PARK



NSTDA's technology capabilities related to food industry

TSP Tenants related to food industry

MITR PHOL Innovation & Research Center, RPD THAILAND, TÜV SÜD PSB Thailand, BETAGRO LET'S MAKE LIFE BETTER, BETTER PHARMA, zoetis, CDIP Innovative Instinct, ECOLAB, SUNGROUP, SHAYO-AA LAB CENTER, DECC Design & Engineering Consulting Service Center, AIR PRODUCTS, STJL, EMSLAND GROUP using nature to create, MILTON BIOTECH LIMITED, Innofresh

NSTDA Laboratories

Breeding: Molecular Breeding

BIOTEC a member of NSTDA

- Plant Molecular Genetics and Biotechnology Laboratory
- Aquatic Molecular Genetics & Biotechnology Laboratory
- Shrimp-Virus Interaction Laboratory

Food processing & feed additive

BIOTEC a member of NSTDA, MTEC a member of NSTDA

- Food biotechnology Research unit
- Food Rheology Laboratory
- Cassava and Starch Technology research unit

Post Harvest & Packing:

MTEC a member of NSTDA

- Polymers Research unit

Farm Management: :

MTEC a member of NSTDA, BIOTEC a member of NSTDA, NECTEC a member of NSTDA, NANOTEC a member of NSTDA

Biological control & preventing , Photonic Sensors, Monitoring, controlling and modelling system, Encapsulation and coating

Animal Health: Antigen, Vaccine, test kits

BIOTEC a member of NSTDA

- Virology and Cell Technology laboratory
- Monoclonal Antibody Production Laboratory

Food Quality and Food Safety System

BIOTEC a member of NSTDA

- Quality Control and Quality Assurance System
- Food Safety Standard
- Risk Analysis (Risk Assessment, Risk Management and Risk Communication)
- Diagnostic Technology
- Traceability System
- GAP, COC, GMP, GHP, HACCP

Thailand's Core Competencies in Food Sector

Advanced Technology & Innovation

- Nutri-genomics/Pharmacogenomics
- Food biotechnology
- Diagnostic Technology
- Enzyme Technology
- Food Chemistry
- Food Rheology
- Post-harvest technology
- Smart Packaging
- Advanced Materials
- Clinical Trial/Physiology
- Laboratory animal facilities
- Traceability/Food Safety
- LCA analysis /Climate Modelling
- Water/Carbon Footprint
- GPS,RFID, Forecasting Tool

Functional Food & Nutraceutical Innovation

- Sensory Evaluation
- Nutritional and Food Safety Evaluation
- Food Waste Utilization
- Food Fermentation Technology
- Product Development & HVA Food products
- Machinery Design and Development
- Food Engineering
- Material Substitution
- Extraction and Purification for Functional components
- Nutrition & Toxicology
- Thermal Process Evaluation
- Design and Packaging

Agro & Food Processing Innovation Linkage

- Food Processing
- Certification of Food Products for Export
- Certification for Thai FDA Registration
- Molecular Plant Breeding
- Smart farm management tech/ crop modelling
- Organic farm management/Good Agricultural Practice (GAP)
- Closed system cultivation
- Soil/water Technology
- Post harvest Technology
- Food Lost/ Fuels and Energy from Biomass
- Agricultural Biotechnology
- Agro Machinery
- Livestock Lab & Veterinary Sciences

AVAILABLE RESOURCES FOR FOOD INNOPOLIS

3,000 Researchers with Ph.D in Food Science and Technology

10,000 Students in Food Science and Technology

150 Food Laboratories

20 Pilot Plants (80,000 m^2)

11 Faculties related to Food and Agriculture

7 Research Institutes

Privileges and Incentives for FOOD INNOPOLIS

Government's Incentives

For SMEs and Start-up

- Tax reduction (10 % for 2 years)
- **Tax exemption for Start-up (**5 years)

BOI (Super Cluster)

- 8 years exemption of CIT + 50% reduction (5 years)
- 10-15 years exemption of CIT for selected industry
- Import tax exemption for machines and equipments
- PIT exemption for experts
- Permanent Residence status for foreign experts
- Land ownership for foriegners

MOST's Supporting Packages

Human Resources

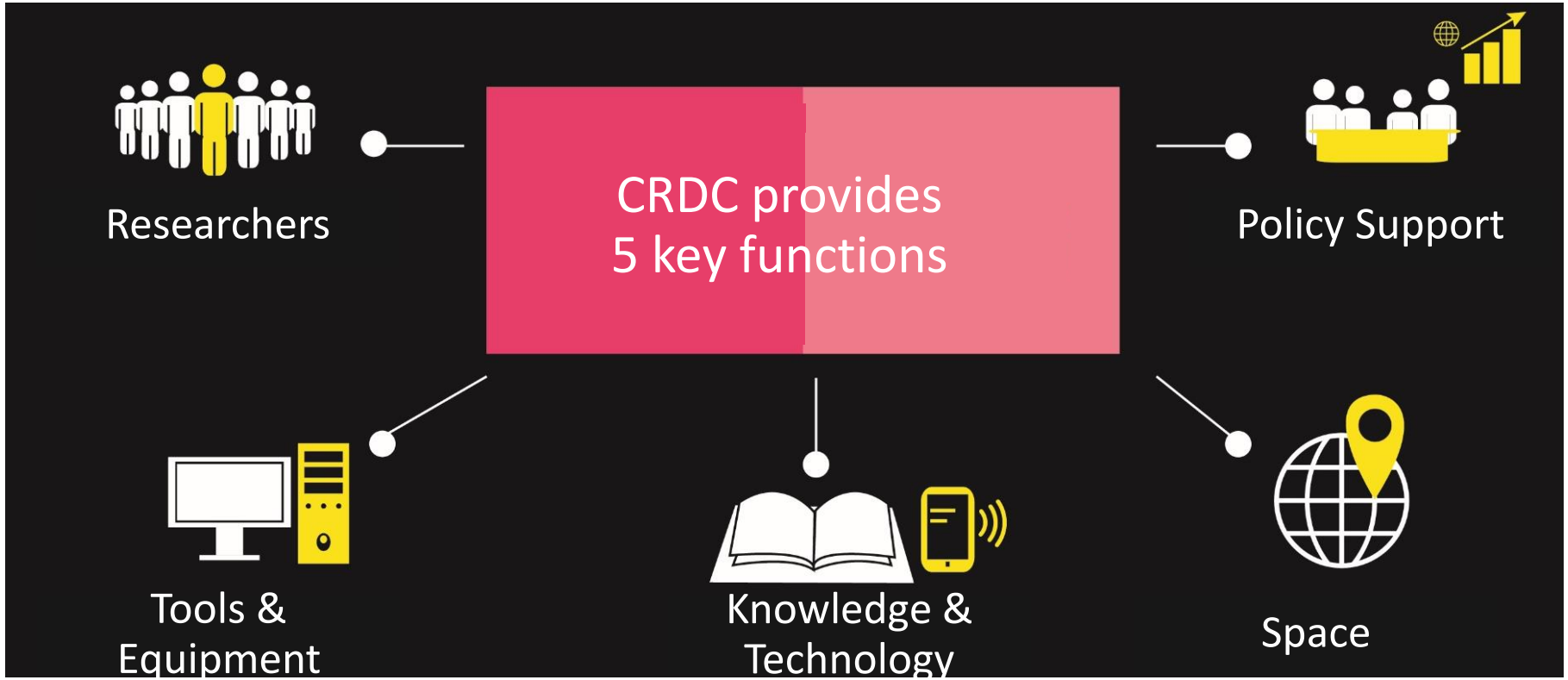
- Talent Mobility
- Work-integrated Learning Program
- Advanced Technology Training for industry personnels

Technology and Innovation Packages

- Innovation Voucher
- Start Up Voucher
- ITAP
- IP Ownership
- Soft loan
- MSTQ

Company R&D Facilitation Center (CRDC)

One stop solution to support Private R&D Investment



Source: National Science Technology and Innovation Policy Office, Thailand


Science
Technology
Innovation
Draws The Future...
Thank You