



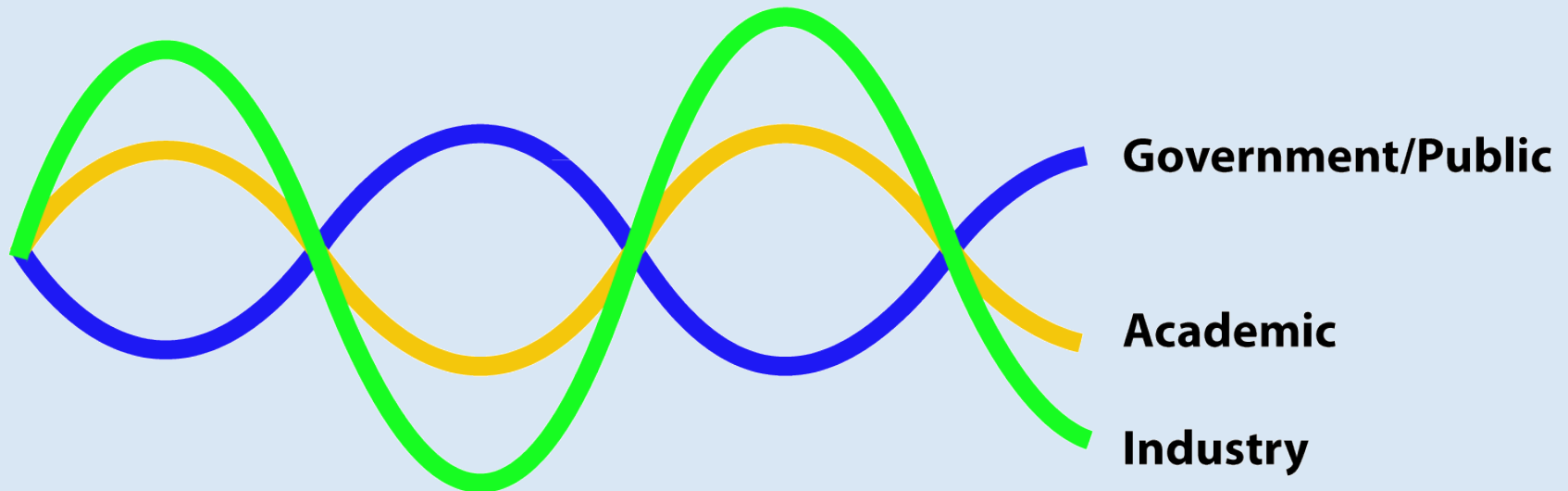
GLOBAL EDUCATION DIALOGUES
The East Asia Series
2013-2014

University- Government- Community-Industry Link: A Quadruple Helix Model?

Perapong Tekasakul

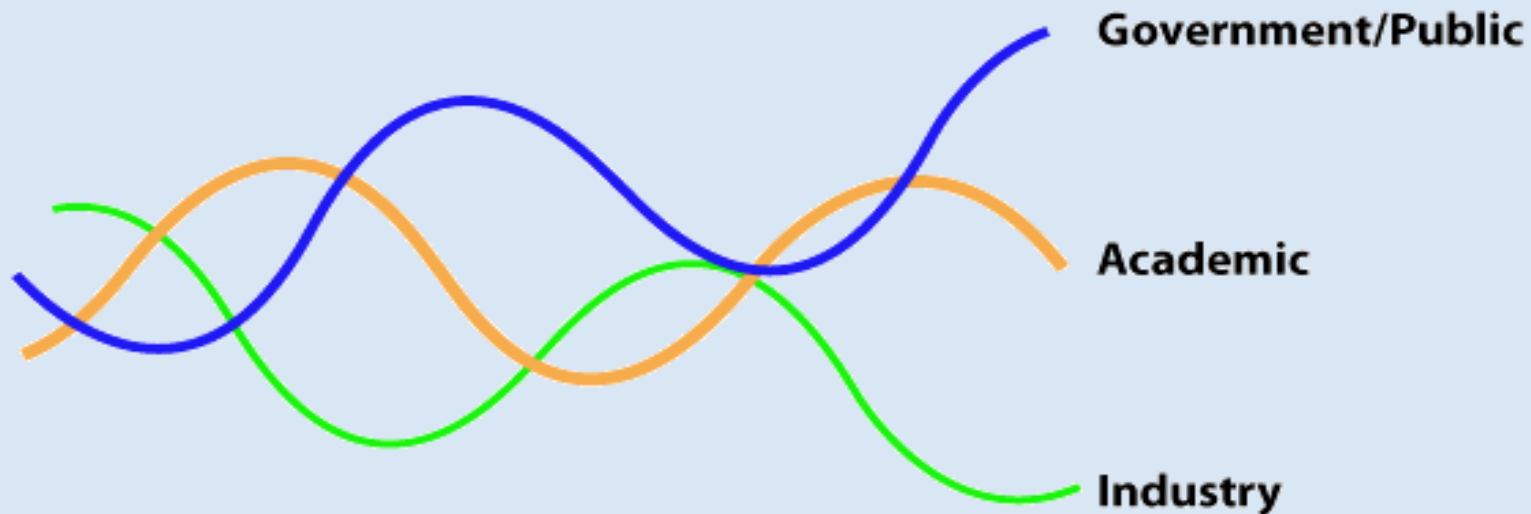
Vice President for Research
System and Graduate Studies
Prince of Songkla University
THAILAND

The Triple Helix Model



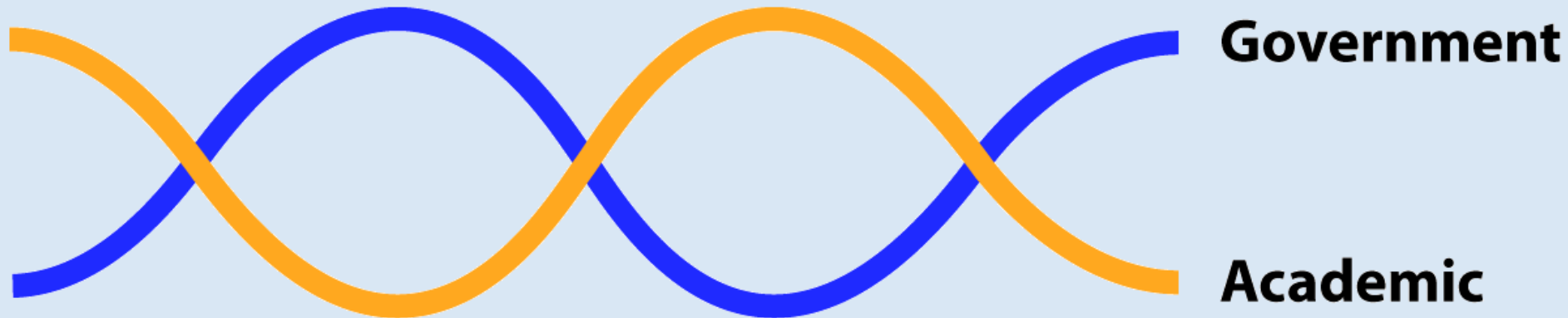
- Industry/enterprise: increase of competition in the market -> **Demand**
- Academic/university: increase of competition for research fund -> **Supply**
- Government: Increase of national competitiveness -> **Resource**

In Thailand ...



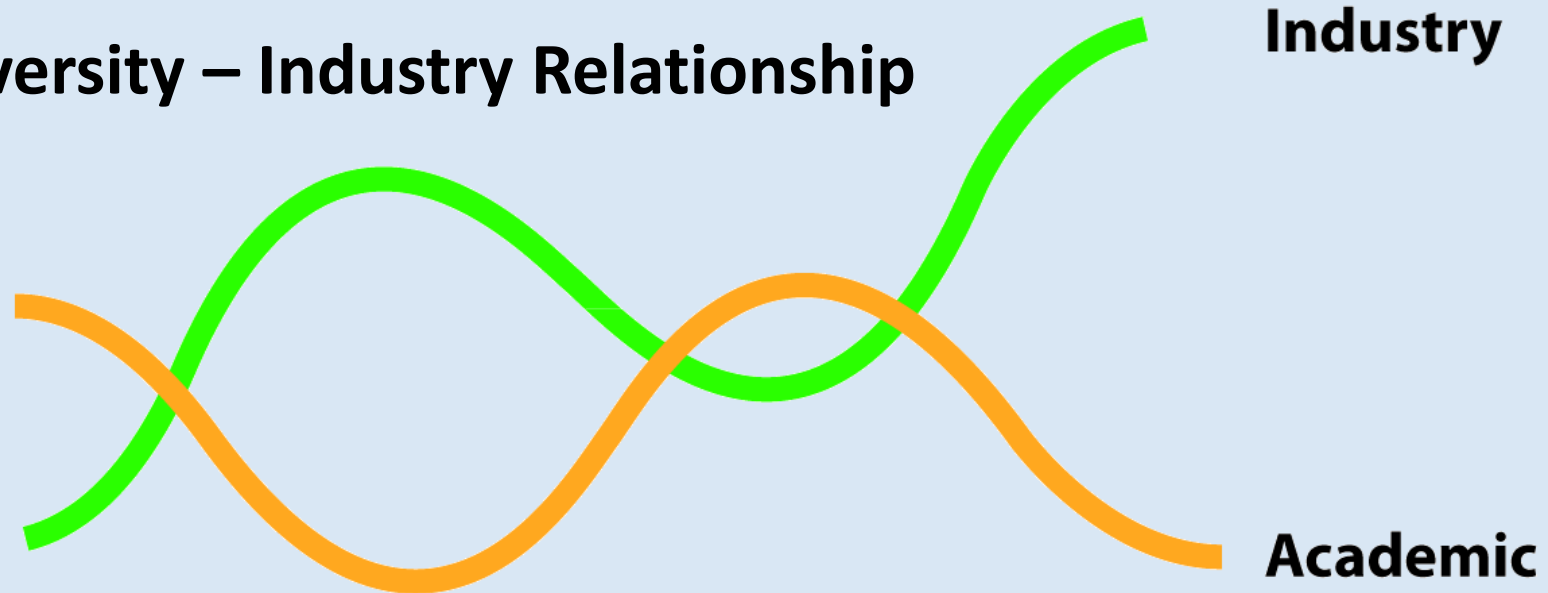
- Tri-parties relationship is uncommon.
- Government has policies in S&T development but commitment is not strong.
- Academics are heavily responsible for industry development.
- Industry focuses on production rather than R&D with exception of large corporates.

University – Government Relationship



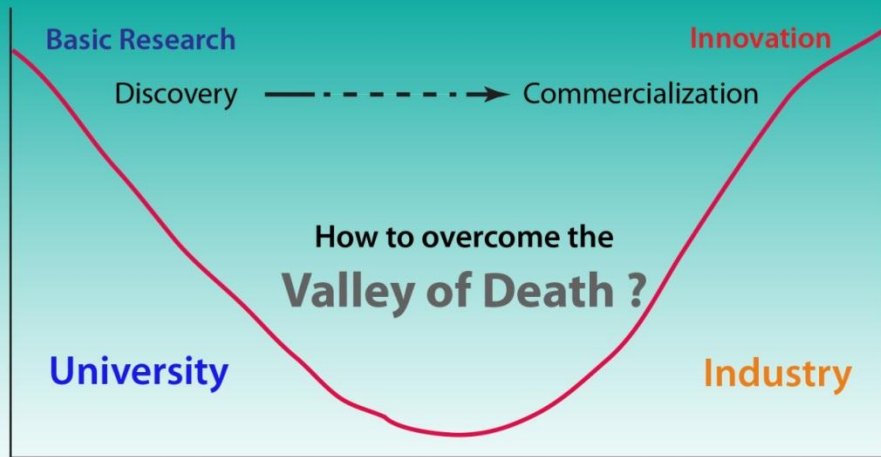
- Strong relationship between federal government and public universities through annual research budget.
- Some relationship between local governments and universities based on community development. S&T development is rare.

University – Industry Relationship

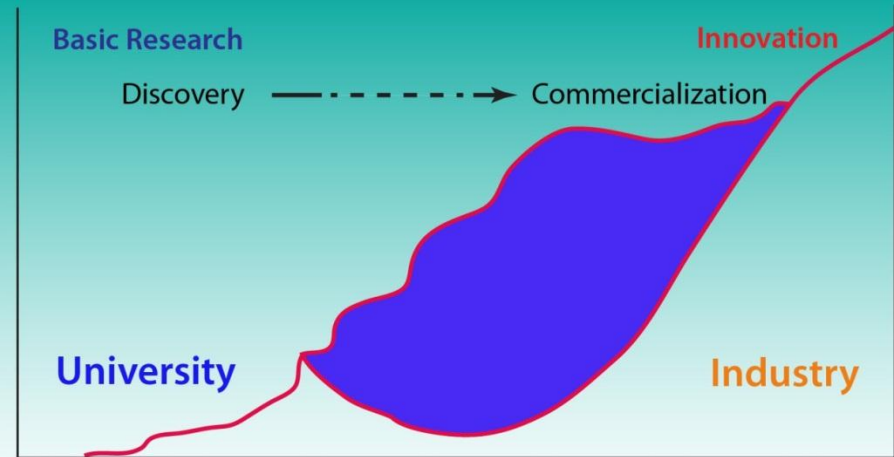


- Universities focus heavily on basic research and are self focused while industries require rapid product and process development.
- Many universities are now shifting direction to help develop industries. Most activities involve consultation.

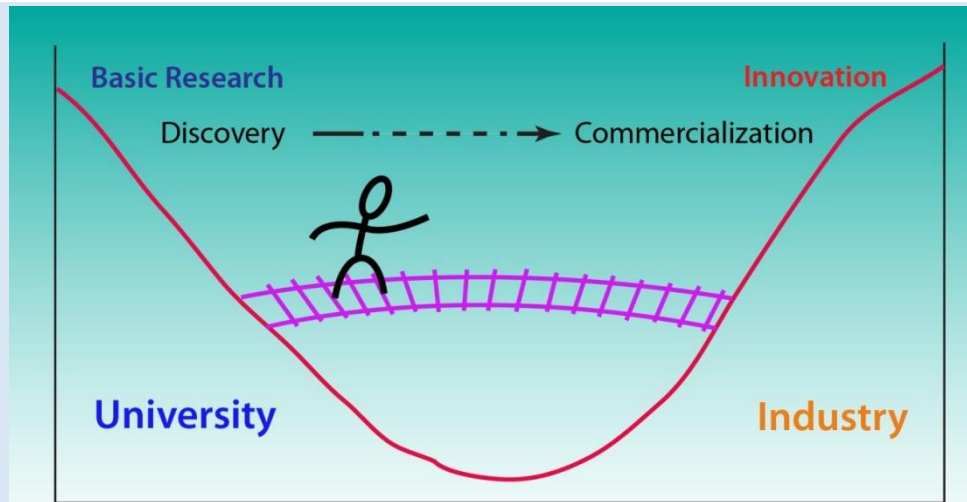
Overcome valley of death



Level of Development →



Level of Development →



Level of Development →

**PSU – Southern
Industry
Strategic Plan**

**Knowledge-based
Economy**

**Manufacturing
Service Industry**

Agro-Industry

Agriculture

Government - University - Industry Relationship

- Science Park
- Talent Mobility
- G-U-I Research grants (TRF, OHEC, NRCT, ARDA, NSTDA)
- 200% Tax Reduction Research Scheme

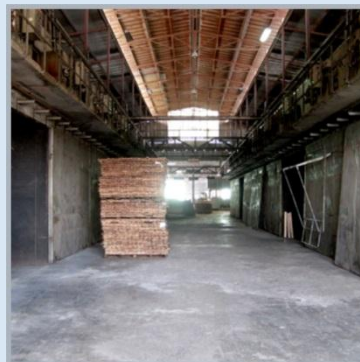
SMEs in Thailand

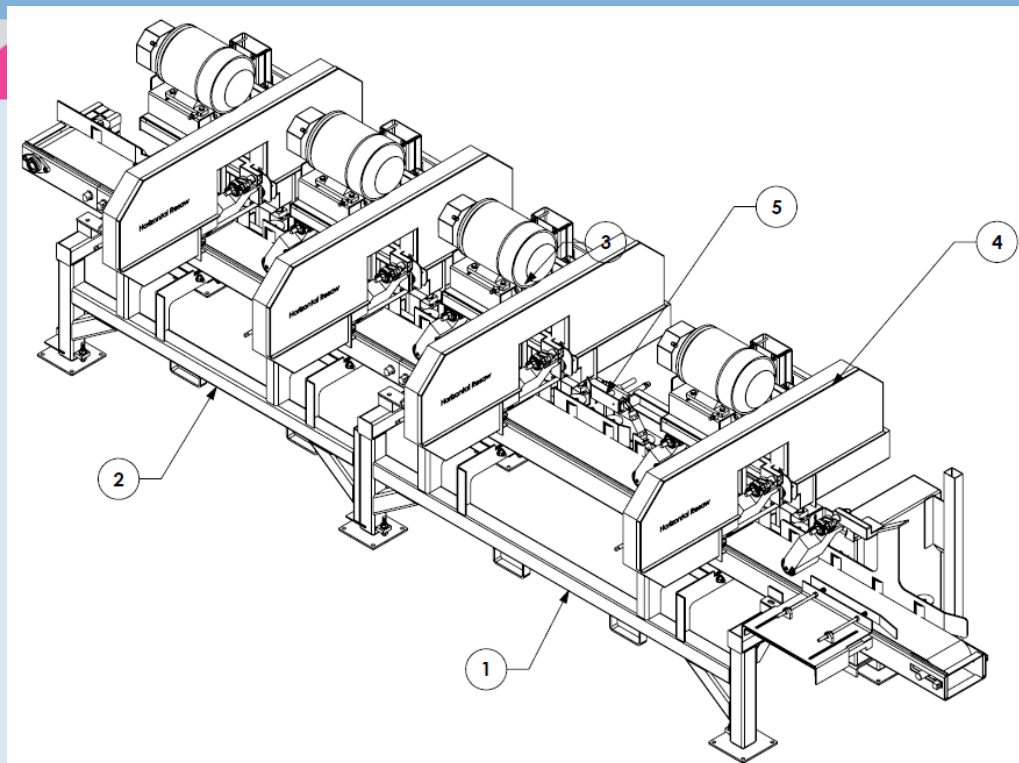
- SMEs contribute to 98% of private sector
- 78% of total employment
- 36.6% of GDP
 - Service industry
 - Manufacturing
 - Agro-Processing
 - Textiles
 - Automobiles
 - Trading



R&D for Industry

Rubber-wood -- Export value > US\$7,000M/year





Current Saw

- Low efficiency
- Not suitable for small/medium size wood
- Require skill workers

New Saw

- High efficiency
- Good for rubber-wood
- No requirement for skill workers

Development of Science Parks in Thailand

- **Thailand Science Park** started operation in 2002 by National Science and Technology Development Agency (NSTDA)



Regional Science Park Model

- University Based/Supported by government
- Network of supply side (University and RIs)
- Cluster focus (Demand side)
 - North: Rice and biomedical sciences
 - Northeast: Poultry and starch
 - South: Latex and pharmaceutical products
- Science Park Promotion Agency (SPA)
Ministry of Science and Technology



Prince of Songkla University Science Park



Independent Office Within University: University Council



ศูนย์บ่มเพาะวิสาหกิจ อุทยานวิทยาศาสตร์
มหาวิทยาลัยสงขลานครินทร์



OFFICE OF INDUSTRIAL LIAISON
สำนักงานความร่วมมืออุตสาหกรรม

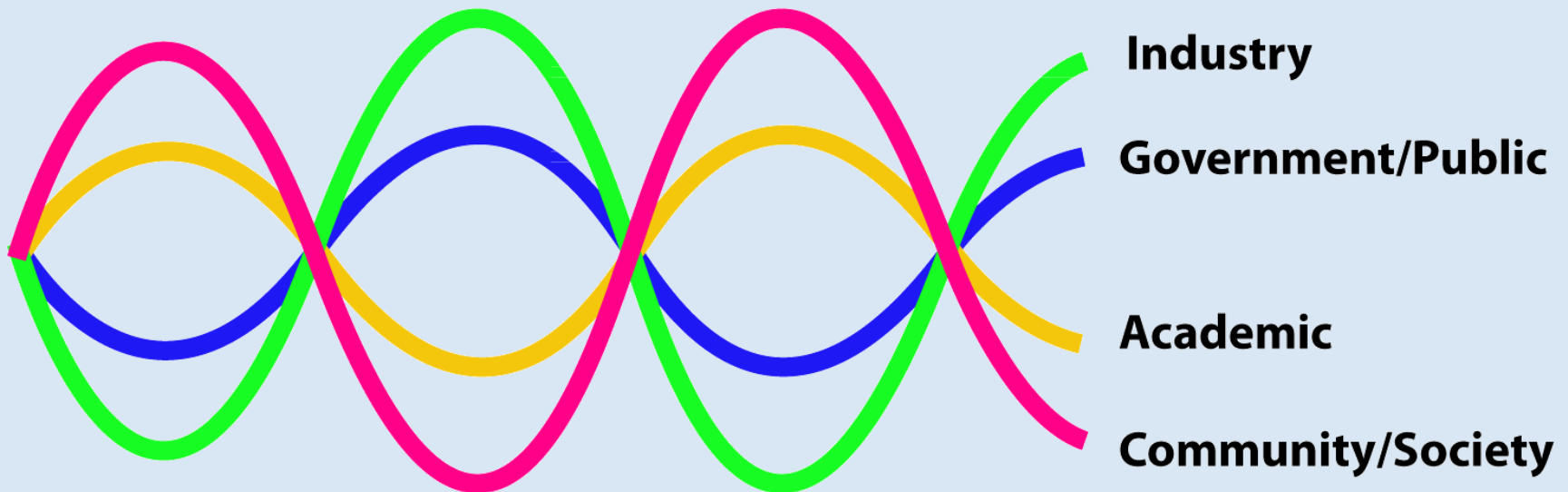


ศูนย์ทรัพย์สินทางปัญญา
มหาวิทยาลัยสงขลานครินทร์

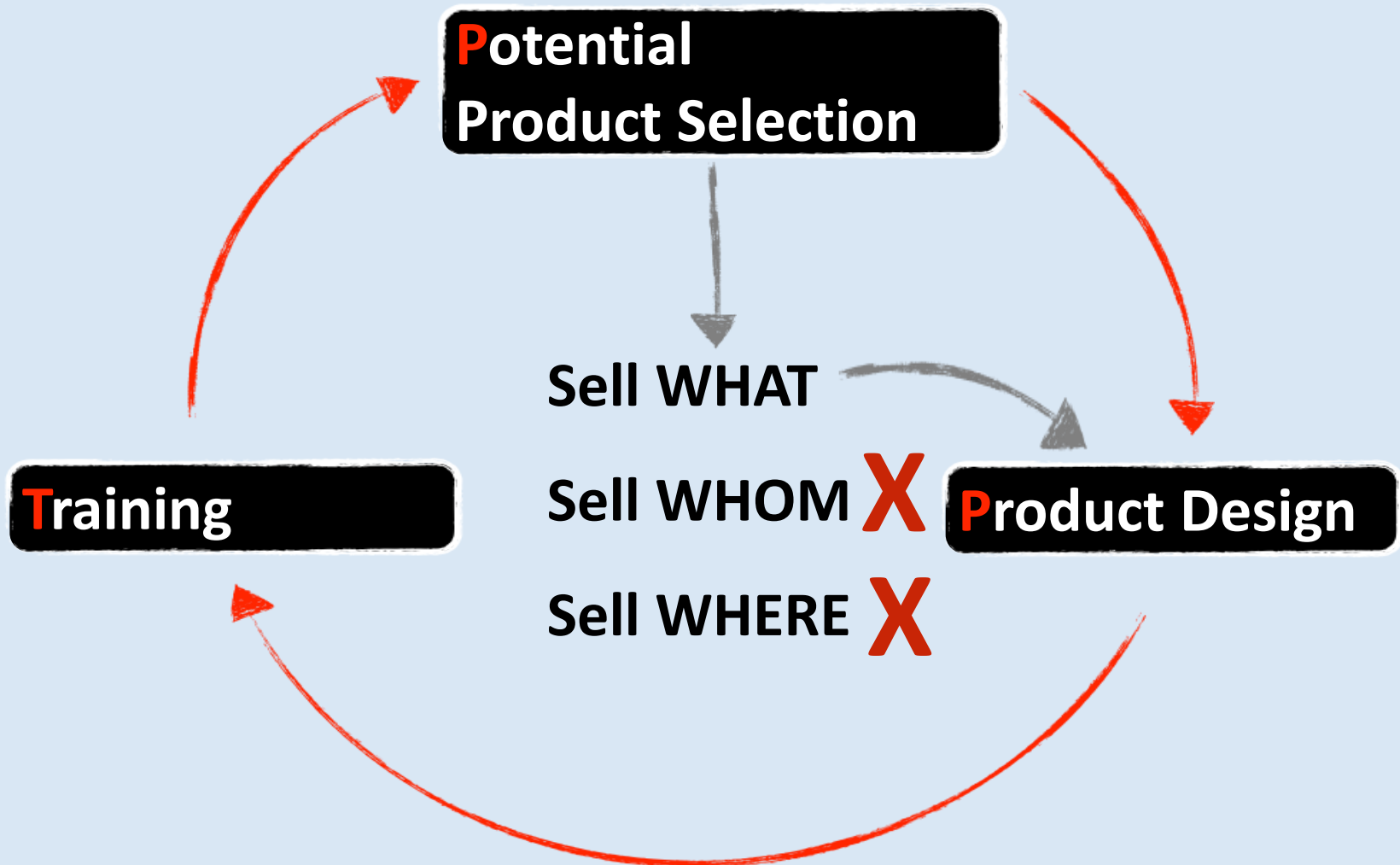
Intellectual Property Office of Prince of Songkla University



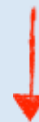
The Quadruple Helix Model



- Regional universities were established to help development of local communities/societies.
- Development of local community requires knowledge transfer from universities.
- Local governments focus their resources in development of communities.



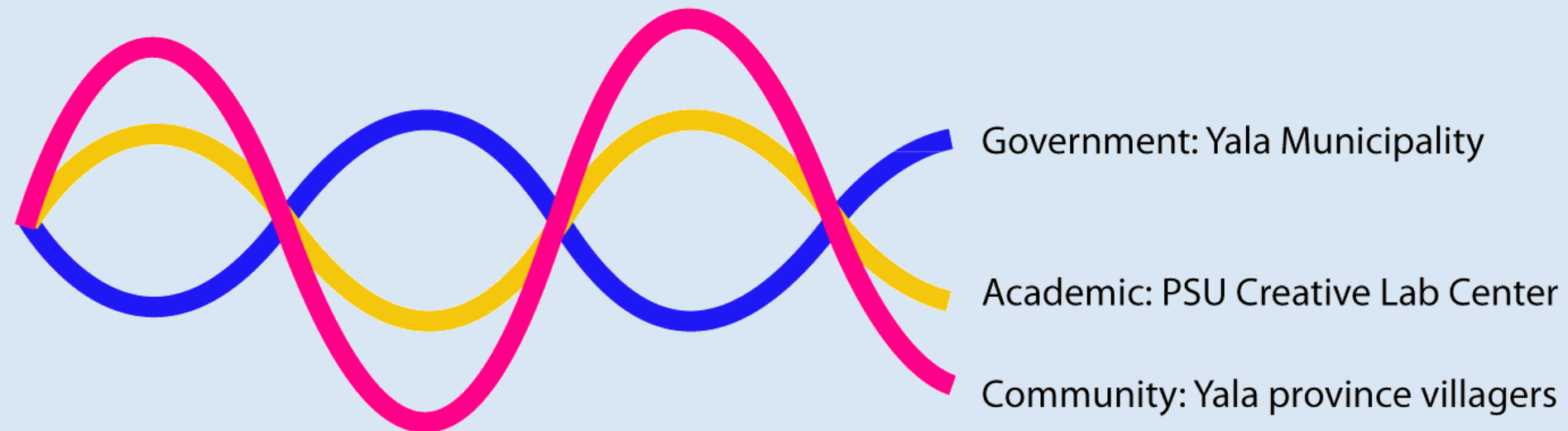
A Banana Tree Story



Product before development < \$0.75

Initial stage

A triple helix involving community



Local government is determined to enhance quality of living of community people by adding value to their products using knowledge from academic institutions.

**Potential
Product Selection**

Marketing Study

Training

Product Design

Sell WHAT
Sell WHOM
Sell WHERE

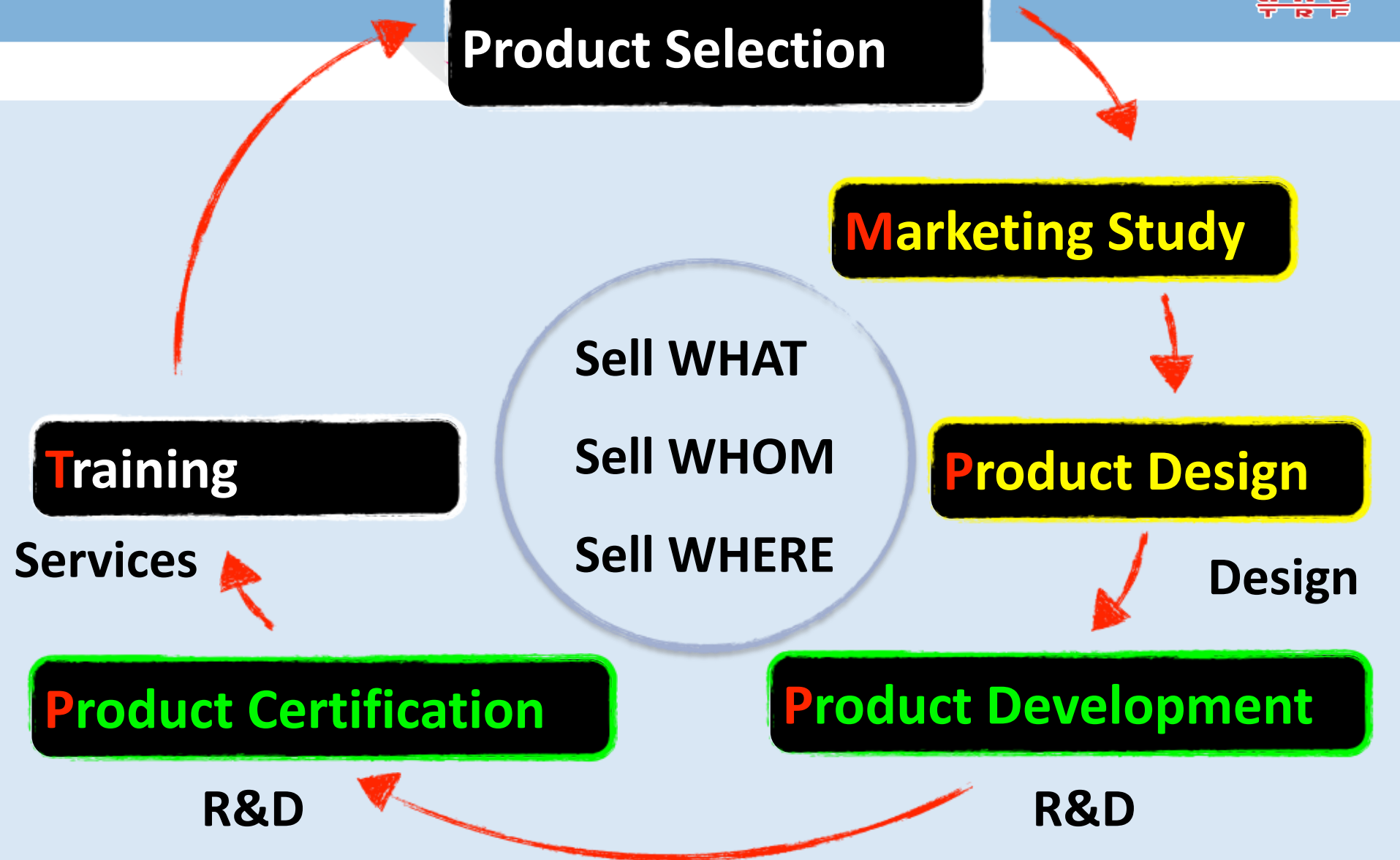
Design

Product Certification

Product Development

R&D

R&D

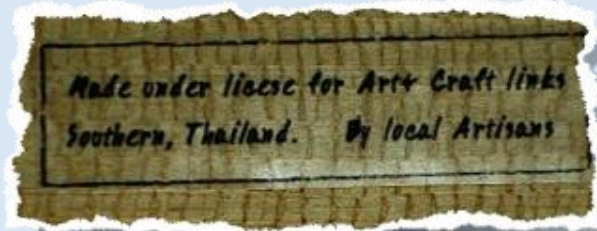






Product Development

By: Design & Branding





Before



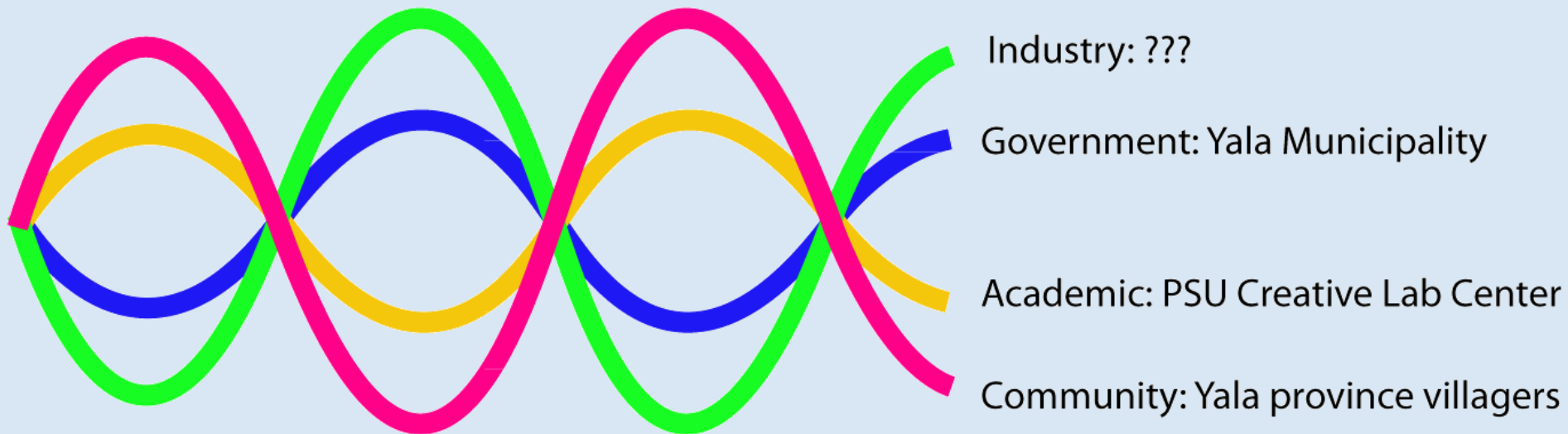
After

Value Addition



Next stage

A quadruple helix involving industry



Expansion of the market to include export, an industrial production scale is required. A few models will be tested. This includes entrepreneurship incubation and collaboration.

**Potential
Product Selection**

Incubation
Collaboration

Expansion

Marketing Study

Training

Services

Sell WHAT
Sell WHOM
Sell WHERE

Product Design

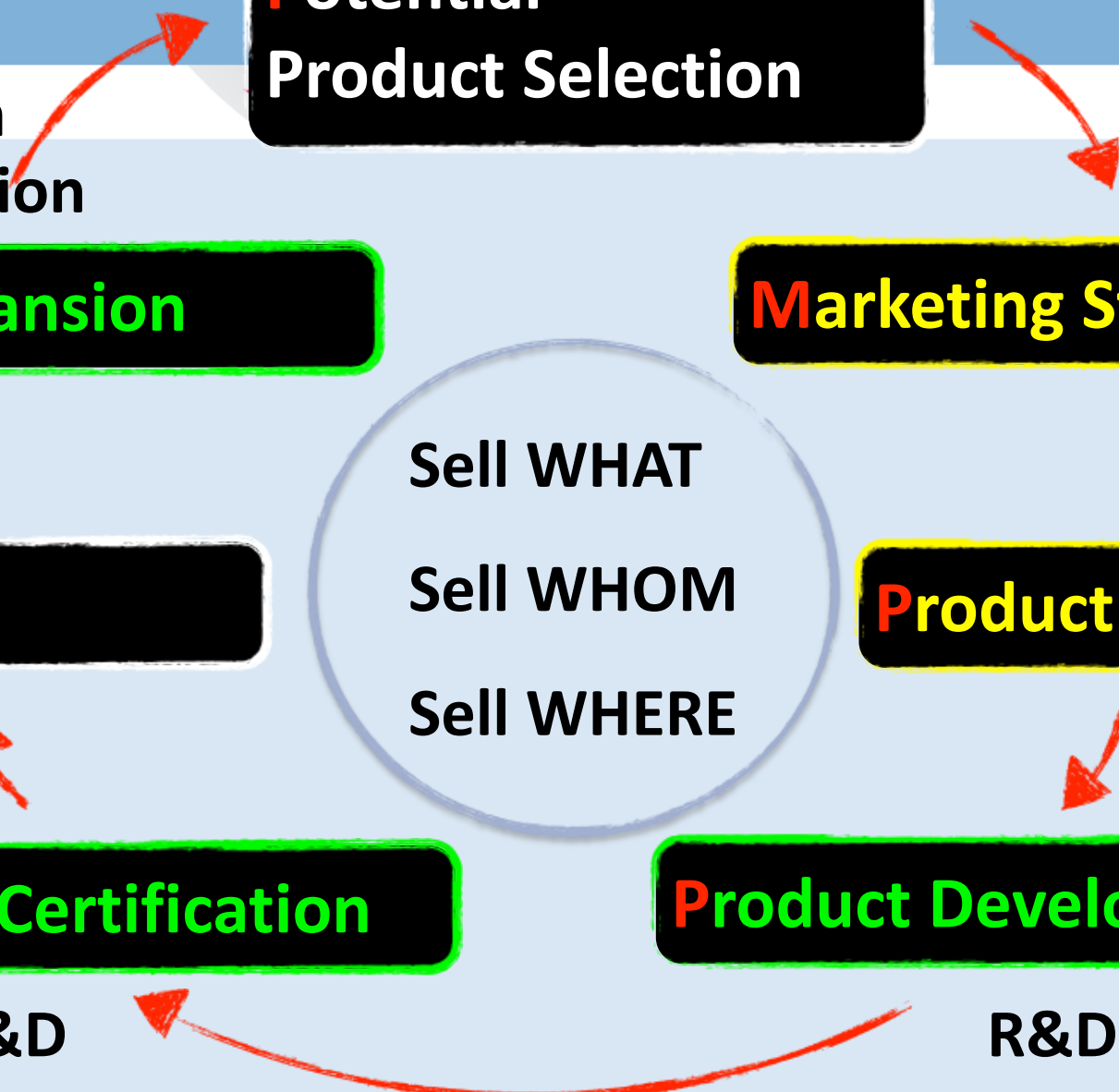
Design

Product Certification

R&D

Product Development

R&D



2 Models

1. Incubation

- Full-scale entrepreneurship by community enterprise.
- Incubation by the Science Park.
- Venture capitals or business angles are needed.

2. Collaboration

- Community enterprise produce the raw material supplied to an industry.
- Industry is responsible for the mass production.
- Cost-benefit scheme has to be agreed based on mutual benefit.

Thank You