

# **Systematic and Strategic Approach for Technology Transfer and Commercialization Supported by Government**

*September 2017*

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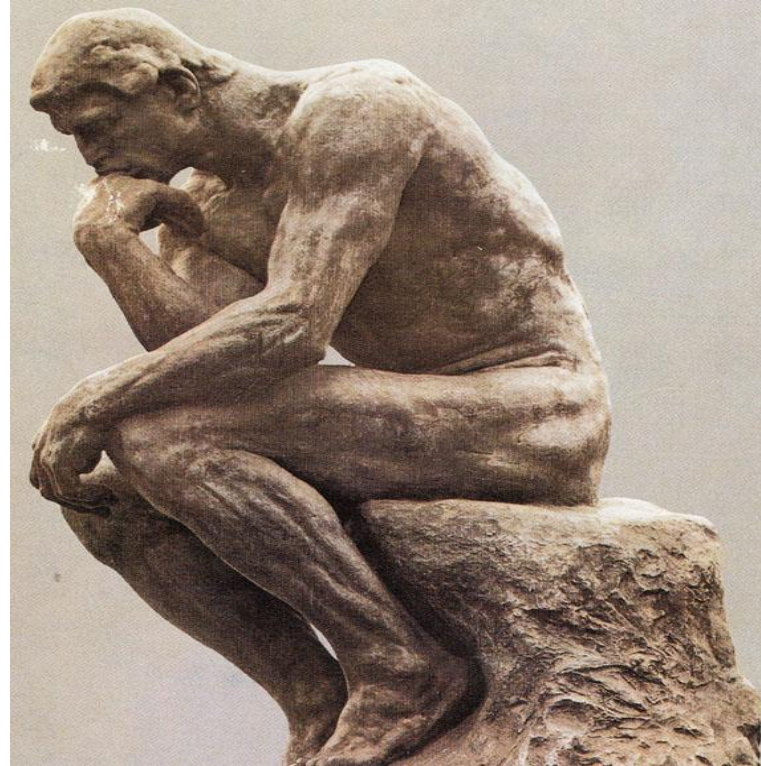
- I. Introduction of Technology Transfer and commercialization by the operation of the Innopolis regional clusters in Korea**
  
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  - 2. Export Voucher Support and System by Government/SMBA/ KOTRA (Korea Trade-Investment Promotion Agency)

# **I. Introduction of Technology Transfer and Commercialization by the operation of the Innopolis regional clusters in Korea**

# Who leads

## “Technology Transfer & Commercialization”

- Government / Universities / Institutes
- Global Companies
- Venture Enterprises
- Small & Medium Sized Companies
- **Consultants / Consulting Companies**



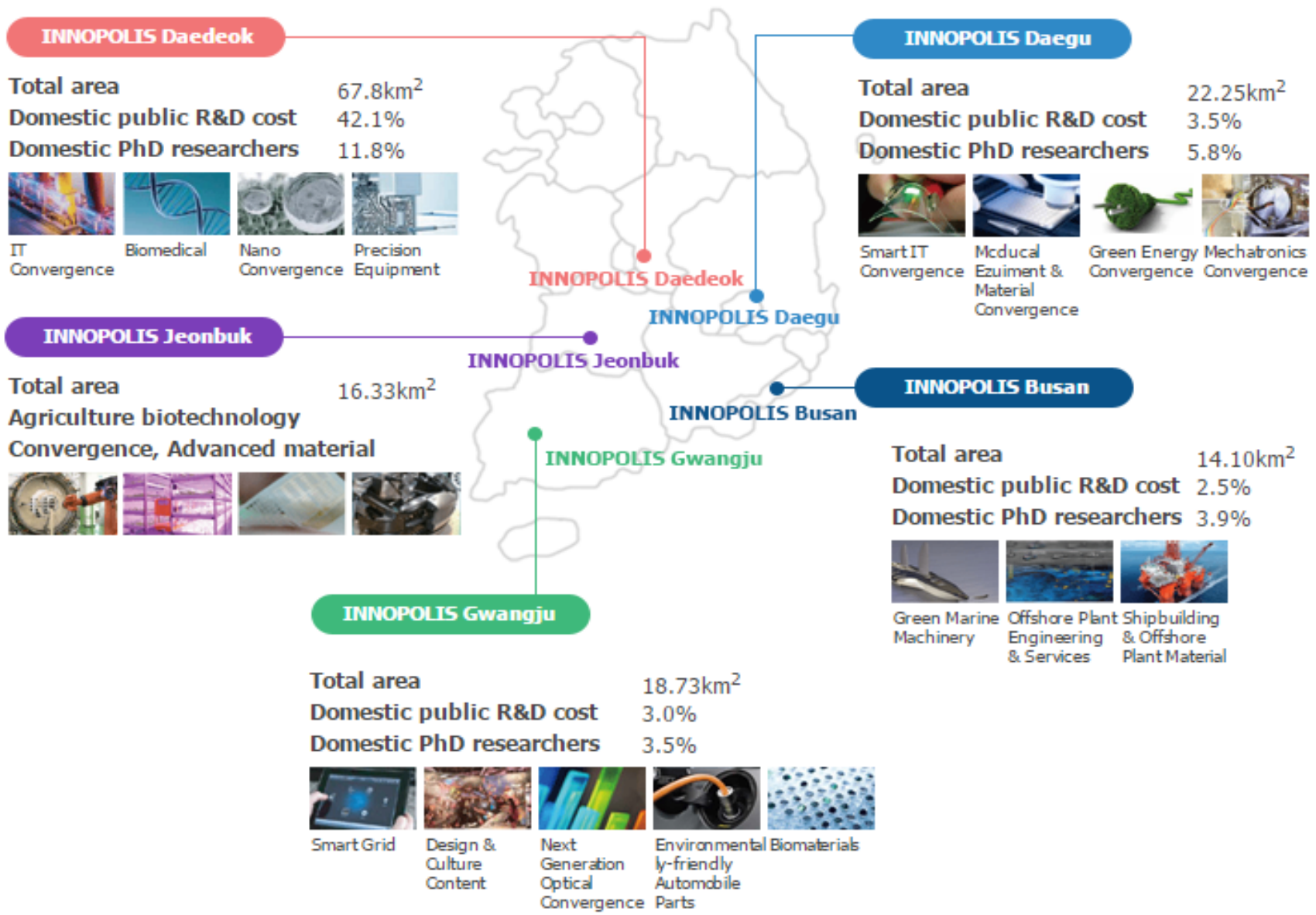
**Think **Globally** and Take Action **Locally****  
**Korea –"Knowledge Assets" by Human Resources**  
**is the Key to Success**

# 1. History - **Innopolis Daedeok**

- **Growth Engines of Advanced Korea Industries started a 'Innopolis Daedeok' over 45 years ago, in 1973**
- **Initiated – to Build Modern Infrastructure for basic and applied Technology projects**
- **Moving forward – to become global center and turn new technologies into successful businesses**

## 2. Overview of INNOPOLIS in Korea

- **Fosters INNOPOLIS as innovation clusters**
  - to create “Knowledge Assets “
  - to facilitate commercialization in a bid to help create **“National Growth Engines”**
- **Business Conditions**
  - **Geographically Isolated**
  - **Import 97% of Energy Resources such as oil, gas and others**

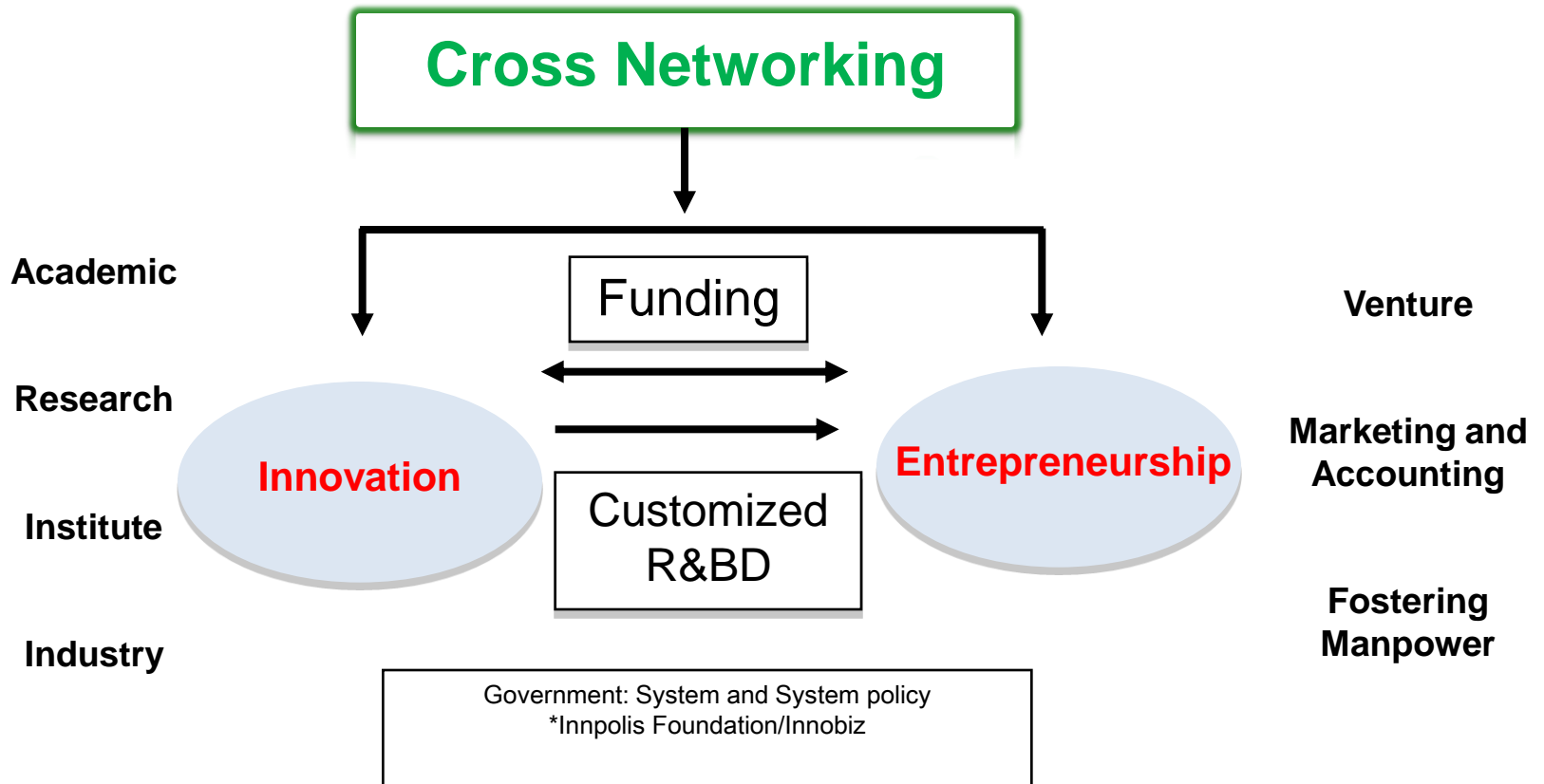




# 3. R&D Output and Commercialization Activities

Technology Search	Matching Commercialization	Growth Support
Identify Promising technology	Support for technology transfer	Technology commercialization services
Evaluate technology value	Planning for commercialization	Start-up accelerator support
Develop technology for commercialization	Match with INNOPOLIS Campus	INNOPOLIS fund and technology financing
Tech Search Forum Patents EXPO	Promote Research institute spin off companies	Overseas investment attraction

# 4. Networks



# 5. Company Support System

## “INNOPOLIS Research institute spin-off company”

### 1. Definition

- an enterprise established by a legally qualified body (public research institute/industry-academe cooperation, technology holding company, etc.) within an INNOPOLIS
- to commercialize its technology as registered according to the special R&D Zone Act.

### 2. Conditions

- individually or jointly, shall own over 20% of the capital company
- establish it within a INNOPLOIS
- commercialize the technology transferred from a public research institute

### 3. Benefits

- Tax deductions
- Support for linkage with the target business

As of August 2016

Classification	Daedeok	Gwangju	Daegu	Busan	Jeonbuk	Total
No. of enterprises	109	11	10	6	2	138

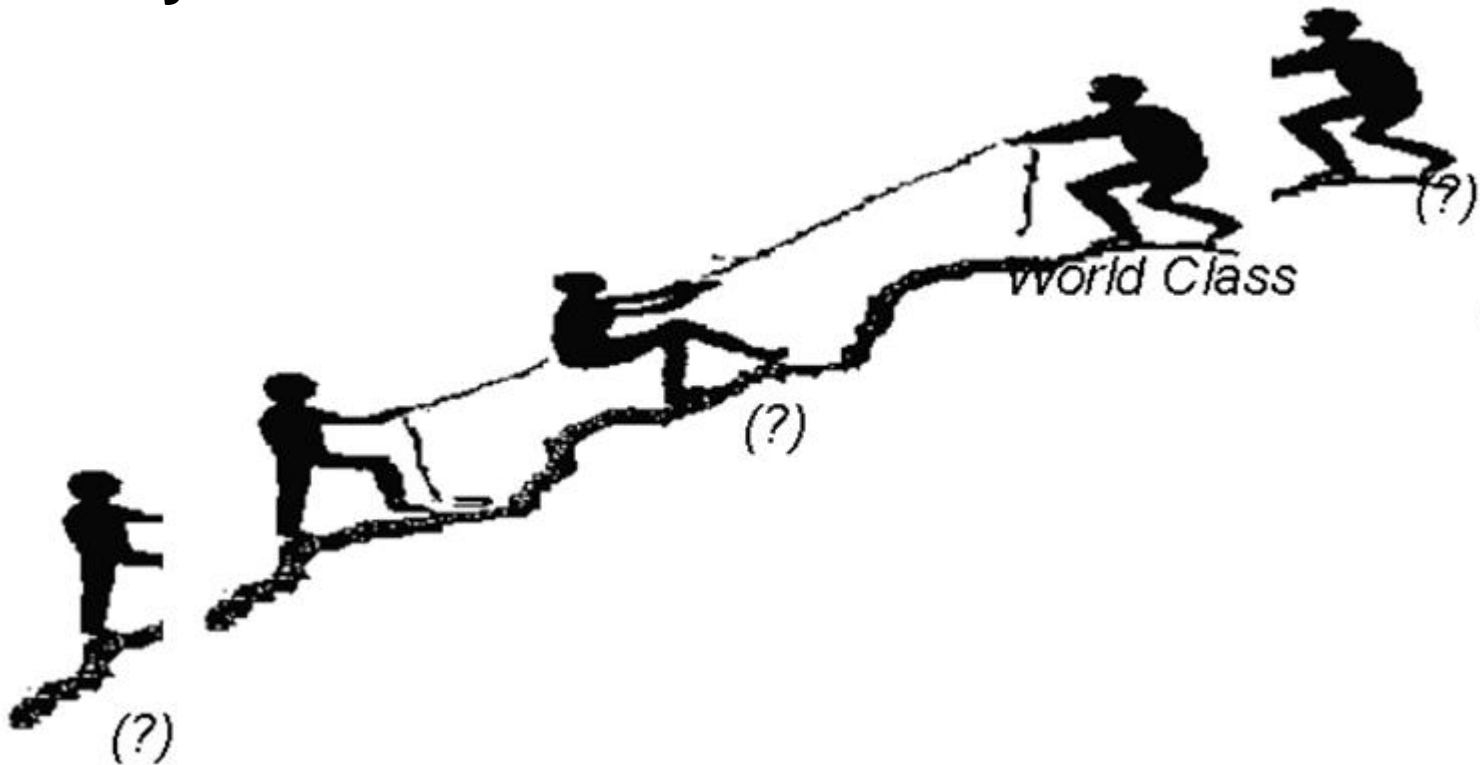
## **II. Systematic and Strategic Approach for Technology Transfer and Commercialization in Power Business Sector**

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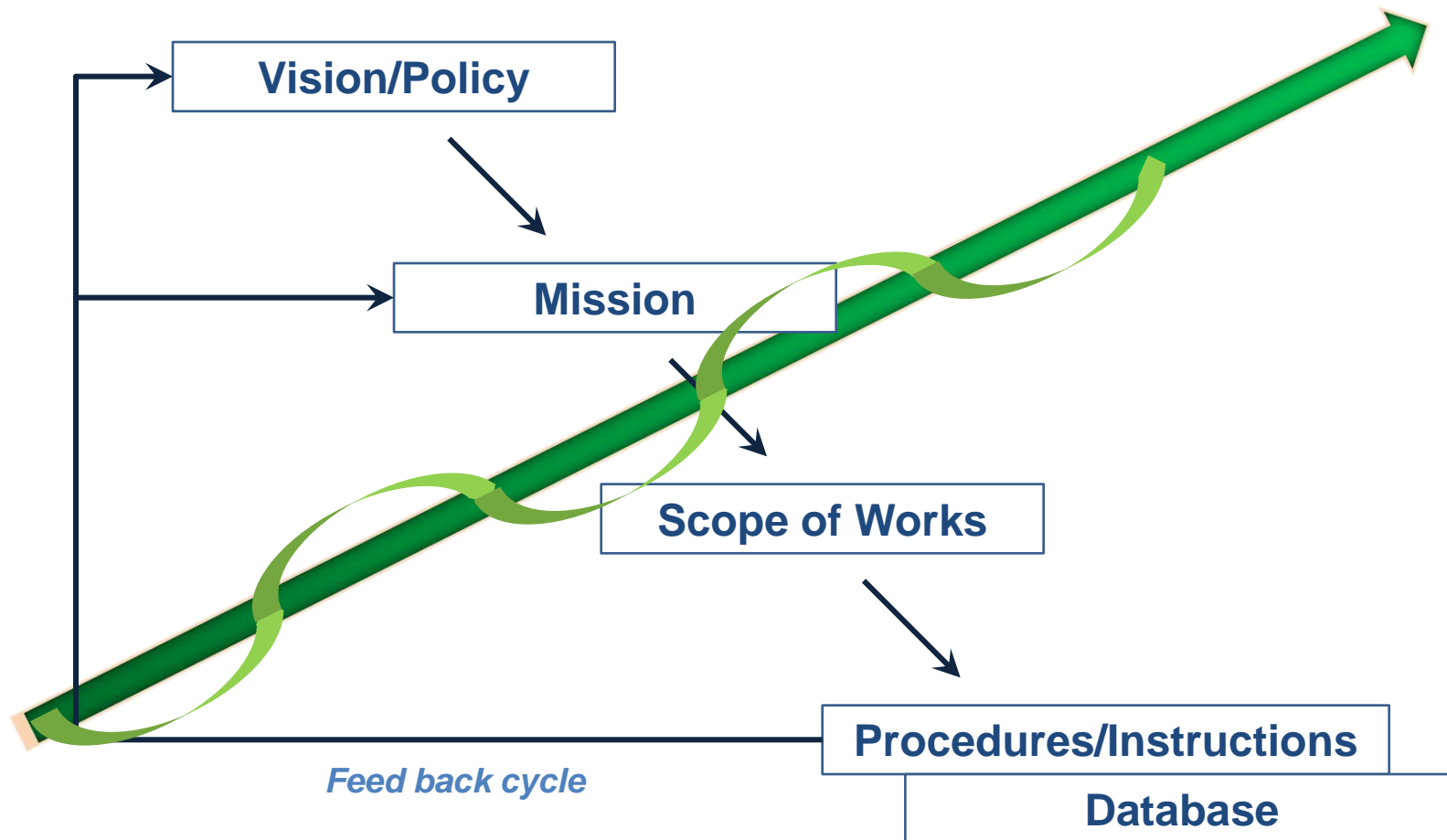
- 1. Vision and Policy**
- 2. Vision-Policy deployment and flow**
- 3. General approach for Power business**
- 4. Gap analysis and countermeasures**
- 5. Planning with Time Frame**
- 6. Local and Global Market Assessment**
- 7. Change Factors with Business Environments and Interrelationships**
- 8. Strategy Development & Deployment**
- 9. Power Business Entities(Typical)**
- 10. Scope of Work Services(Typical)**
- 11. Paradigm Shift for Global Company**
- 12. Industrial Codes and Standards**
- 13. Three(3)Factors for PM Capability**

# 1. Vision and Leadership

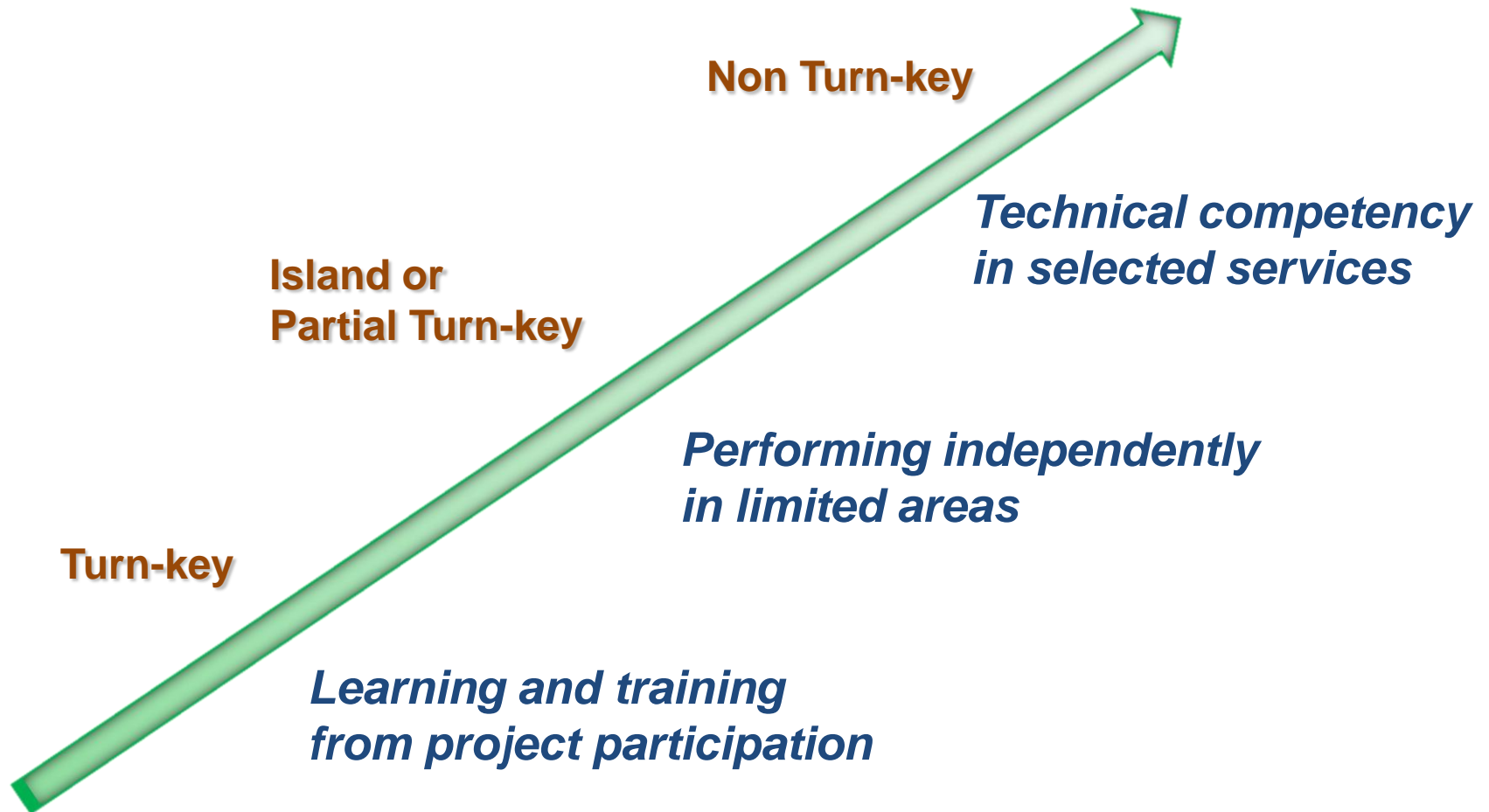
- From awareness to excellence
- Where you stand?



## 2. Vision-Policy Deployment and Flow



# 3. General Approach for Power Business





## 4. Gap Analysis and Countermeasures

- **Factors to be considered**
  - Major components and BOP items
  - Key entities : Local vs Global
- **Internal Human Resources**
  - Driver vs Follower
  - Vision and Mission
- **External supporter(s) : Consultants / Partner(s)**
  - How to select them
  - Baseline : Fair Rule and Mutual benefits

## 5. Planning with Time Frame

- Strategic Approach for achieving Technical Competency Including Training : **"Technology Self-reliance Plan"**
- Increasing Management Capability / Understanding PM R&R
- Establishing Quality Assurance Program and Procedures Including Restructuring Organizations And Functions
- Expanding Projects Participation
- Expanding Business Areas With The Partners, such as AE, Major Components Suppliers

## 6. Local and Global Market Assessment

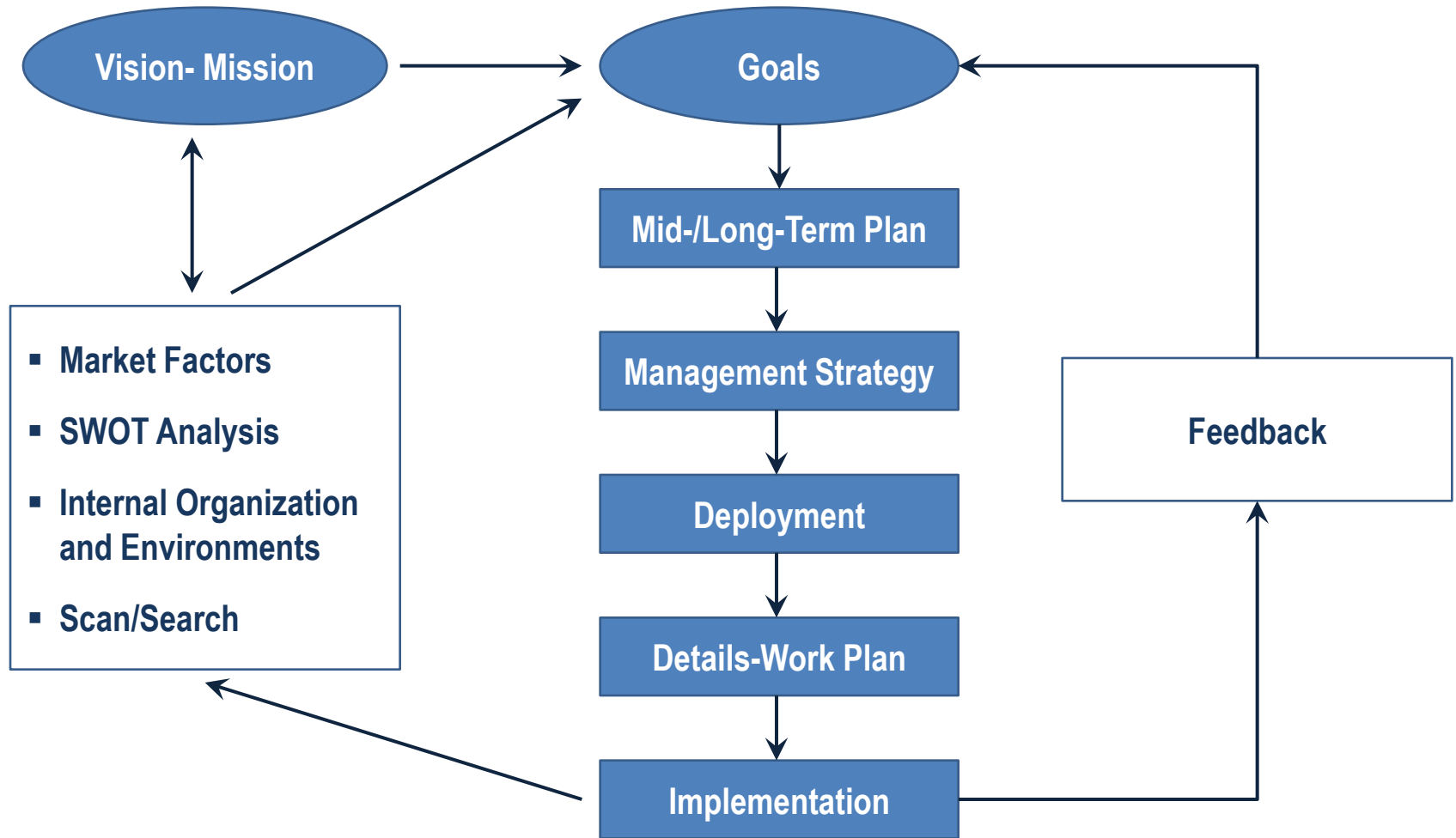
- Understanding “**Power Business Sector**”
- Technical Competency: Strong vs Weak Areas
- Organizational and Manpower Status
- Management Capability and System
- Quality Assurance Program/Procedures
- Available References, such as codes and standards
- External trends-regulatory / industrial sectors, etc.

# 7. Change Factors

## With Business Environments and Interrelationship



# 8. Strategy Development & Deployment



## 9. Typical Power Business Entities

- Architectural engineering service provider
- Boiler Steam Supply System supplier
- Turbine generator supplier
- Balance Of Plant(BOP) Equipment Supplier(s)
- Fuel Supplier(Coal, Gas...)
- Construction Service Provider
- Operation and Maintenance (O&M) Service Provider
- Commissioning Start-up/Operation Service Provider

# 10. Scope of Work Services (typical)

- Power Plant Construction and Operations
- Routine, Periodic and Preventive Maintenance
- Periodic Inspection and Testing
- Engineering/design support services (Configuration Management)
- Procurement support services (SCM)
- Equipment repair/replacement (Reliability Management)
- Licensing support services (Green Policy)
- Quality assurance and surveillances (Safety First)
  - Quality Cost Management

# 11. Paradigm Shift for Global Company

	Present Paradigm	Future/New Paradigm
<i>Leadership</i>	Control and Supervision	Coach, Mentor, Participation
<i>Organization Structure</i>	Tall Organization	Flat and Slim Structure
<i>Decision Process</i>	Directive	Consultative
<i>Relationship(Employees)</i>	Competitive	Cooperative
<i>Management Focus</i>	Internal Organization	<b>Customer-oriented and Challenging</b>
<i>Quality</i>	Focus on Defect Removal	Focus on World-class Approach- Quality Oriented
<i>Empowerment</i>	Pyramid Structure	<b>Predetermined Level and Scope</b>
<i>Management Strategy and Change</i>	Negative Culture for Change	Speedy Change and Positive Culture
<i>Ownership</i>	Weak (I only work here)	Strong (I am the organization)
<i>Improvement</i>	Problem Solving	<b>Gradual Improvement and Innovation</b>
<i>Rewards</i>	Regular Work Base	Performance Base



## 12. Industrial Codes and Standards

- Design, test and inspection on Equipment and Materials
  - Should be applied as applicable
- National Codes / Standards Development Plan
  - Should be connected to the **Technology Transfer and Self-reliance Plan**
  - **"Localization Policy"** included

# 13. Three (3) Factors for PM Capability

1. Qualified Human Resources and Organization
2. Rich Experience Data
3. Challenging Sprit –Mindset

## Key Note

- Turn Key : Delegation to the PM of the Qualified Expert Group/Company
- Semi-Turnkey : Partial Delegation

# **III. Case studies - How to be solved and work with consultants**

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- 1. R&D projects and commercialization by Government / SMBA  
(Small & Medium Business Administration)**
- 2. Export Voucher Support and system by Government/SMBA/  
KOTRA (Korea Trade-Investment Promotion Agency)**

# **1. R&D projects and Commercialization by Government / SMBA (Small & Medium Business Administration)**

# R & D Outputs

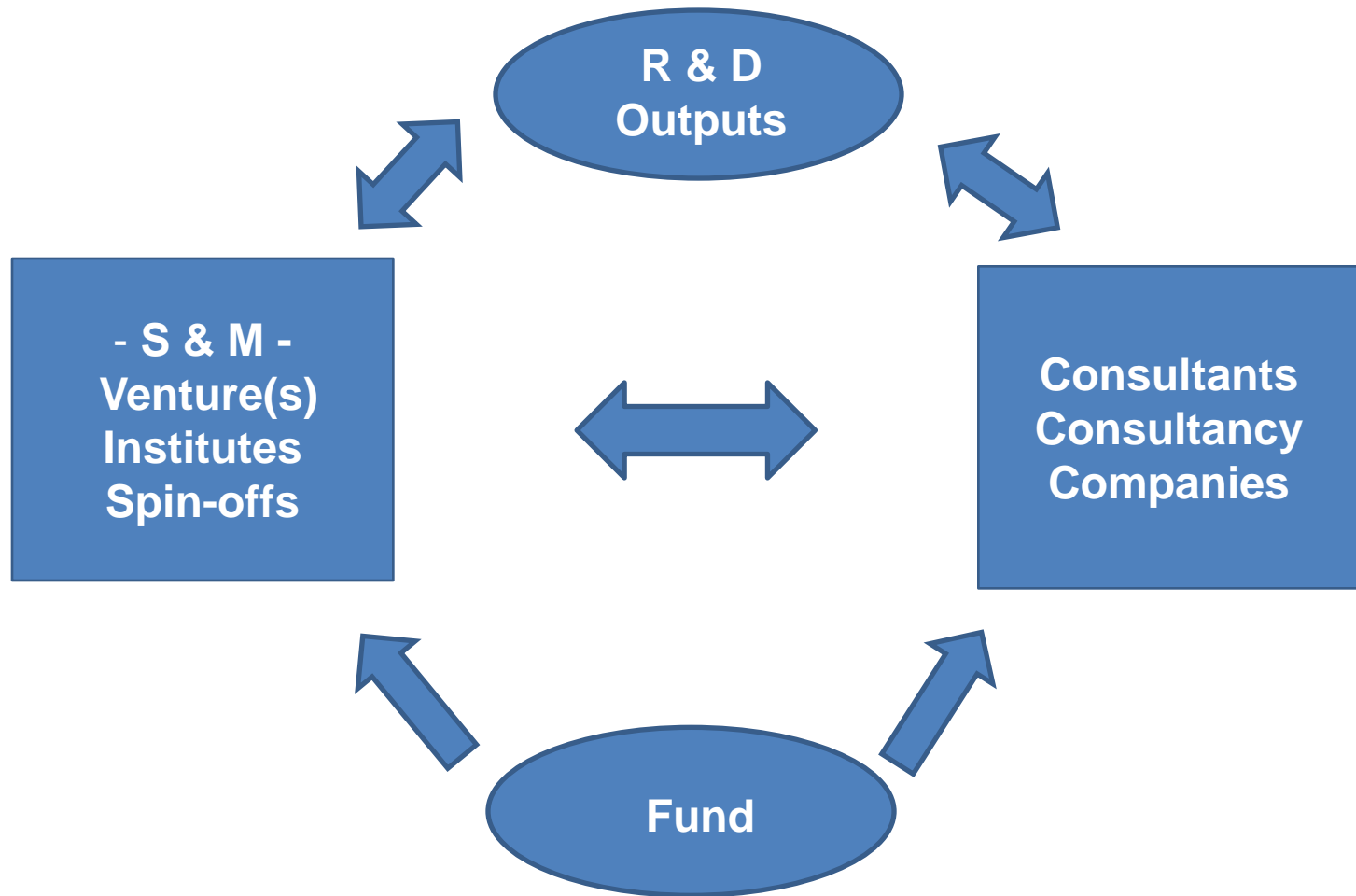
## How to Commercialize?

**- Match -**

- Read the value of “R&D results”
- Disclose what they are

# Target Purpose

- to support S&M sized companies with competitive technology
- to drive  
**“technology development and its commercialization”**
- through
  - Consulting companies specialized in the business areas of technology trade and M&A
  - Assessment and evaluation of the value



**US\$ 5,000/ea (Total:12,300 Co.s)**  
**- Total Budget( US\$ 178 M.)**



# Operation Body (Ex. Consulting Companies)

## 1. Conditions to Participate

- Specialized in Consulting Business works
- Government-run Institutes/Fund Management Co.s

## 2. Role and Responsibility

- Fund Management and Payment Control
- Management of the participating companies
- Education and Training Services for consultants and/or specialist involved
- Performance Analysis and feedback

## **2. Export Voucher Support and system by Government / SMBA / KOTRA (Korea Trade-Investment Promotion Agency)**

# Export Voucher Business

- **What is the Voucher?**
  - Gift Certificates for Export Support Services
  - Operated by Government (SMBA / KOTRA)
- **Target**
  - Small and Medium sized companies
  - Consulting Companies with Lesson-Learned Experiences and Know-How
- **Purpose**
  - To Expand Export Business

# Areas for Consulting Services

- **To support “First Step to Export Business”**
- **To develop “Global Business Items”**
- **To establish Branch Offices/Movement to Overseas Country**
- **To be familiar with Global Practices through Education & Training courses**

# Consulting Service Areas for Strategic Development

- **Mid and long term plan**
- **How to find overseas partner(s) / buyer(s)**
- **International Qualification and Certification Programs**
- **Overseas Market Survey**
- **Nurturing Global Leading Companies: Benchmarking**
- **PR / Advertising - Participation in Overseas Exhibitions**

# Selection Criteria - Examples

**A: Domestic Companies without Export Experience.**

**B: Midsized Companies with Sales of less than USD \$1B.  
and Exports (Earnings) less than USD \$50M.**

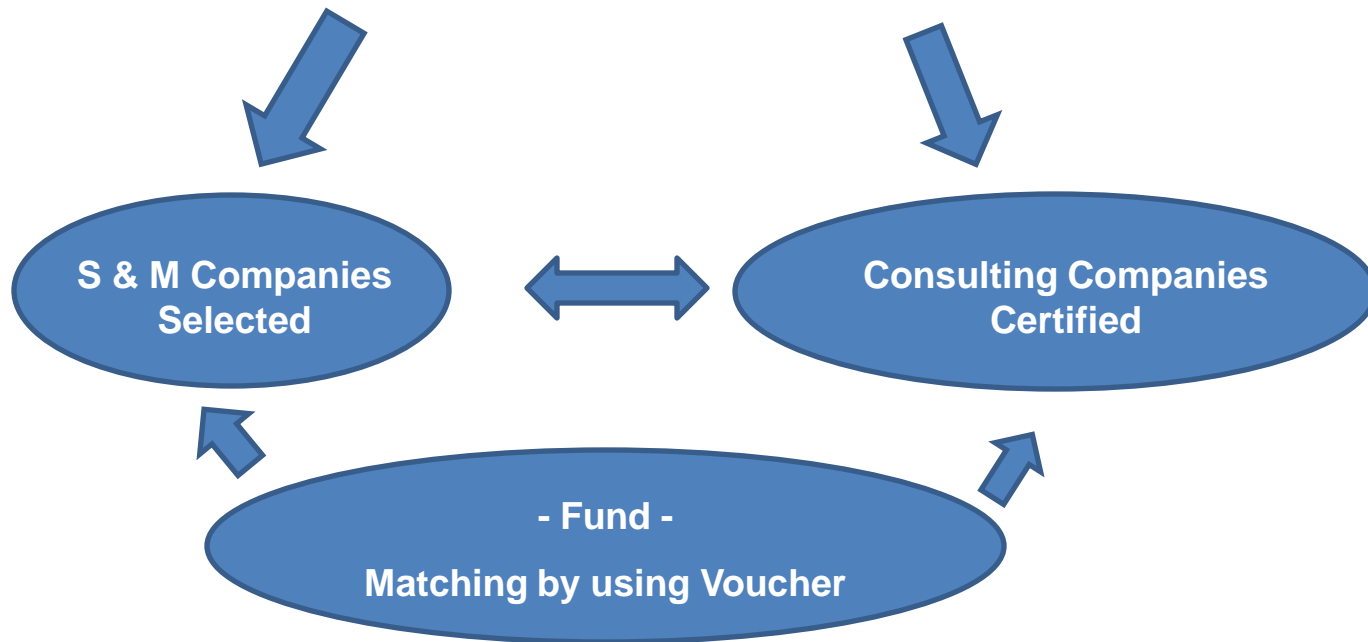
**C: Companies that increased its annual sales or regular  
employees by more than 20% in 4 recent years.**

# Voucher Support Scale - Examples

	Voucher Total	Government Support Subsidiary Ratio	Company Ratio	No. of Companies
A	US \$20,000	US \$14,000 (70%)	US \$6,000 (30%)	100
B	US \$200,000	50%	50%	100
C	US \$10,000	70-50%	30-50%	620

# Process for Consulting Business through Voucher

## Rules and System Announcement by Government



### Key Note

- SMEs **Lead** and **select** Service Areas/consultants
- Government/Consulting Companies **support** SMEs



# What's Required / Recommended

## -Need for Change-

- **To cope with “Business Environment”**
  - weak competitiveness/non-value-added areas are abandoned or outsourced
- **To Develop “Business Collaboration”**
  - Strategic choice to strengthen its core competencies to survive in competition
  - Alliance Expansion (Internationalization)

# Thanks You!

## Q & A

