

Industrial Zone Land Use and the Construction of Regeneration Institution

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Outline

- I.** Introduction
- II.** Industrial district & Institution supply in Industrial zone
- III.** Industrial cluster & evolution
- IV.** Industrial zone regeneration & innovation networks
- V.** Institution for the regeneration of industrial zone
- VI.** Conclusion

I. Introduction

Regeneration vs Cluster

- Industrial cluster has a life cycle.

Industrial zone vs Industrial district

Institutional capability vs Institution supply

- Incentive of the institution design is required for industrial zone regeneration.

II. Industrial District

Definition:

ID is a sizeable and spatially delimited area of trade-oriented economic activity which has a distinctive economic specialization, be it resource-related, manufacturing, or services (Park, S. and Markusen, A., 1994).

Implication:

It is clear that adopting this definition implies considering a cluster or an industrial district essentially as a synonym to describe a reality of a location that provides "...the *glue* that makes it difficult for smaller firms to leave, encouraging them to stay and expand, and attracting newcomers into the region" (Markusen, 1996).

II. Institution Supply

in Industrial zones -- Overview

Institution Supply in Industrial zone :

- **Purpose of development policy:**
regional equilibrium and regional characteristics
- **Development organization institution:**
public sector, private sector and developer
- **Applying system:** simple, complex, floor area zones
- **Rent and sell**
- **Price institution:** cost and market price
- **Property rights system:** public or private ownership
- **Industry introduction system:** tax and subsidy
- **Management institutions:** public or private sectors
- **Organization institution :** informal service organizations

II. Institution Supply in Industrial zones

-- purpose of development policy

- Scale failure?
- Industrial land banking?
- Regional equilibrium?

II. Institution Supply in Industrial Zones

-- Organization development institution

- Efficiency?
- Complement?
- Competition?

II. Institution Supply in Industrial Zones

-- Land use control institution

Traditional land use institution:

- Government intervention:
Government failure
- Designed mainly for manufacturing
Cluster effect?
- Current industrial park land use:
Complex industries

II. Institution Supply in Industrial Zones

-- **Renting and selling, price and
the property right institution**

- Land competition?
- Market failure?
- Land lock-in?

二 工業區制度供給 --台灣地區編定工業區發展型態

傳統型

林園工業區

雲科工、南科工

科技型



智慧型

南軟工業區

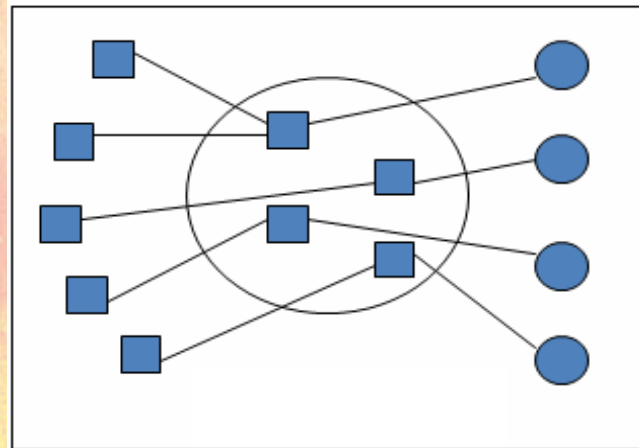
土城、五股等工業

綜合型

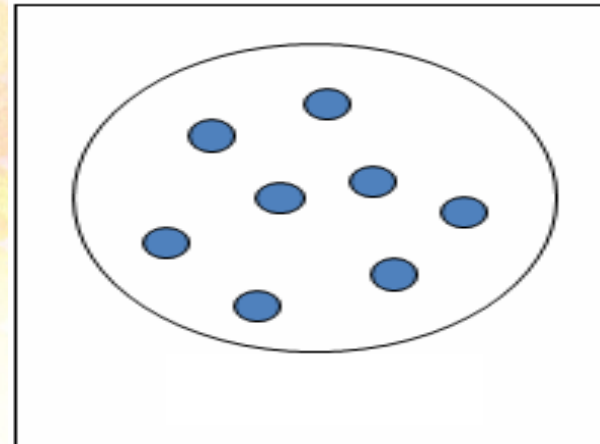
II. Institution Supply in Industrial Zones

-- Industrial cluster types of industrial zones in Taiwan

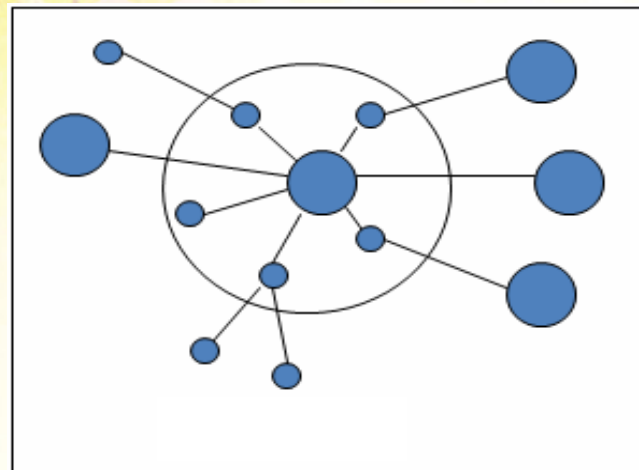
Satellite
Platform



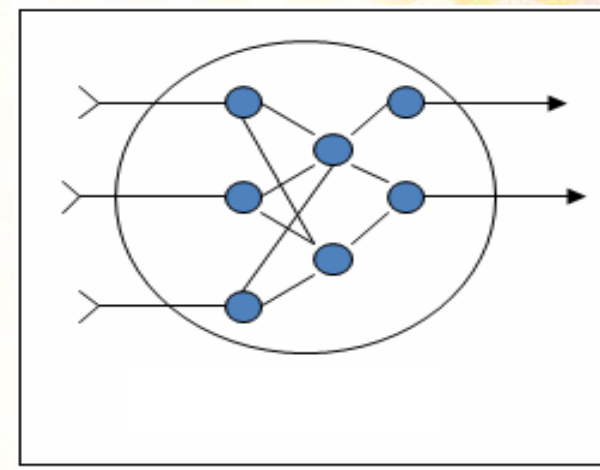
Marshallian ID



Hud-and-spoke



Italian ID



II. Institution Supply in Industrial Zones

-- Industrial knowledge types (including the three biggest manufacturing industries)

Knowledge-intensive manufacturing

includes aviation, automobile and other transportation, telecommunication, computers and office automation equipment, pharmaceutical and chemical products, semiconductor, science instruments, electric machinery and machinery.

Non-knowledge-intensive manufacturing

includes all kinds of manufacturing except knowledge-intensive one.

II. Institution Supply in Industrial Zones

-- Institutional innovative capability

- High innovation capability
(input approach)
- Low innovation capability
(output approach)

II. Institution Supply in Industrial Zones

-- Institutional capability

- Incentive institution design?
- Institution thickness?

II. Institution Supply in Industrial Zones

-- The diversity of industrial districts should be considered

Policies for industry introduction should be compatible with the regional competence of each industrial district.

Local integration policy

Capital domain ID

- Maintain local integration policy
- Premium financial services
- convenient facilities for daily life

Science based ID

- Reinforce local integration policy
- Building knowledge infrastructure
- Infrastructure construction
- Encourage industrial cluster development
- SME assistance programs

Capacity needed ID

- Reinforce local integration policy
- Infrastructure construction
- SME assistance programs
- Establish incubator
- Help to create industrial cluster

Cluster needed ID

- Maintain local integration policy
- Building knowledge infrastructure
- Academic cooperation
- Cooperation among firms
- Industrial cluster regeneration

Policy suggestion for innovation

	Industrial district with relatively non-innovative milieu	Industrial district with innovative milieu
Industrial zones with high innovation capability	<p>Reinforce local integration policies</p> <ul style="list-style-type: none"> ● Building knowledge infrastructure ● Infrastructure construction ● Encourage industrial cluster development ● SMEs assistance project <p>Maintain policies for park innovation</p> <ul style="list-style-type: none"> ● GPN connection ● Attract big-scale companies ● SME integration 	<p>Maintain local integration policies</p> <ul style="list-style-type: none"> ● Premium financial services ● convenient facilities for daily life <p>Maintain policies for park innovation</p> <ul style="list-style-type: none"> ● Attract multinational firm ● GPN connection ● Attract flagship firm
Industrial zones with low innovation capability	<p>Reinforce local integration policies</p> <ul style="list-style-type: none"> ● Infrastructure construction ● SMEs assistance project ● Establishment of industrial incubators ● Help to create industrial cluster <p>Reinforce policies for park innovation</p> <ul style="list-style-type: none"> ● SME services ● SME assistance program ● On-the-job training ● Vertically integrate production network 	<p>Maintain local integration policies</p> <ul style="list-style-type: none"> ● Building knowledge infrastructure ● Academic cooperations ● Cooperations between industry and academic sector ● Industrial cooperations ● Regeneration of industrial cluster <p>Reinforce policies for park innovation</p> <ul style="list-style-type: none"> ● Innovation network connection ● Construct informal social networks ● Building incubators ● Expanding SME market ● Horizontal linkage of production network ● Agencies connecting industrial zones

III. Industrial Cluster & Evolution

-- Industrial cluster

The cluster as market organization, as a specific spatial configuration of the economy.

It is suitable for the creation, transfer and usage of knowledge.

Industrial cluster is composed of interrelated firms which pursue their own interests.

These relationships can be briefly identified as :

- Buyer-Supplier Relationships
- Competitor and Collaborator Relationships
- Shared-Resource Relationships

III. Industrial Cluster & Evolution

-- Manufacturing relationship

- Flexibility
- Specialization
- Complex

III. Industrial Cluster & Evolution

-- Vertical integration in manufacturing industry

Vague border between manufacturing and services industries

III. Industrial Cluster & Evolution

**-- Horizontal linkage of manufacturing:
production services**

Production services should not be considered only
a regional support industry,
but a cross-border one.

III. Industrial Cluster & Evolution

-- Industrial innovation : Creative industry

Creative industry is the main focus of policy for urban redevelopment.

III. Industrial Cluster & Evolution

-- **Network types**

Local network &

Global production network

IV. Industrial zone regeneration & innovation networks

Old industrial zones

- Worn-out infrastructure
- Insufficient infrastructure
- Firm closing
- Impaired industrial cluster
- Fragmented production chain



Regeneration ?

IV. Industrial zone regeneration & innovation networks

Industrial zone regeneration focuses not only on the infrastructure reconditioning but also on industrial activation and cluster. Regional competitive advantages are considered to develop characteristic industries. If, and only if, the group of upstream and downstream partners is reasonably stable can firms hope to benefit from following a network strategy. Innovative environment is essential for industry activity.

IV. Industrial zone regeneration & innovation networks

- **View technology and knowledge innovation as competitive advantages**
- **Emphasize production flexibility and network construction during the production process**
- **Geographical proximity helps network construction**
- **Create a suitable environment for innovations and flexible production networks by constructing infrastructures and formal or informal institutions which related to the supports of local knowledge and technology.**

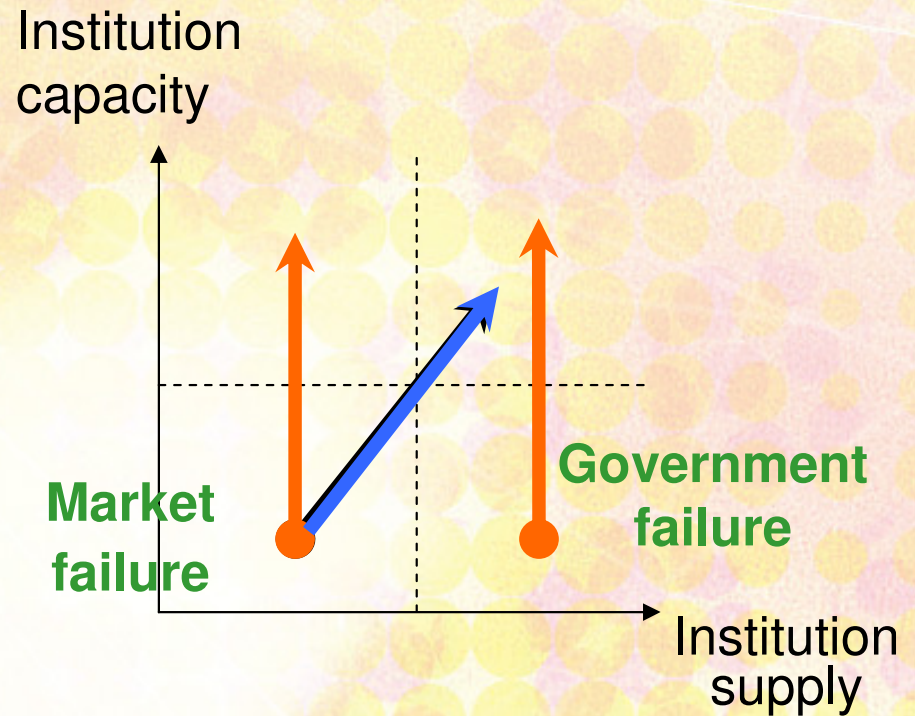
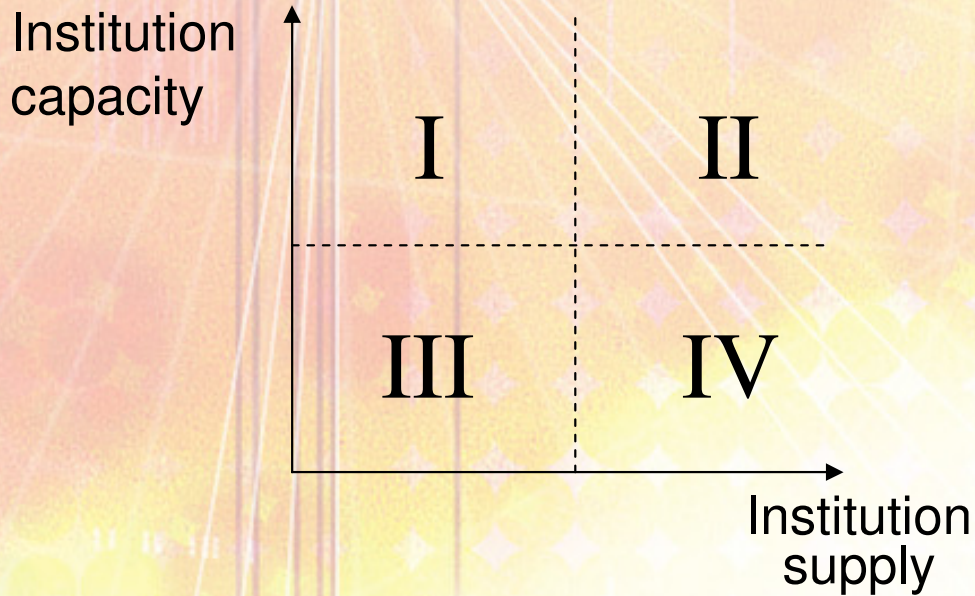
IV. Industrial zone regeneration & innovation networks

-- Actors in innovative networks

- Knowledge creation networks
- Production networks
- Capital flow networks
- Mediated supporting networks
- Knowledge transfer networks
- Technology collaboration networks
- Social networks

V. Institution for the regeneration of industrial zones

- Avoid institution lock-in, The path of institution change



good (ideal)	good
common	bad

 Institution adaptation
 Institution supply

REGENERATION

V. Institution for the regeneration of industrial zones

-- The path of institution change

Cluster

Public goods
Institutional environment
Weak ties
Formal institution

Network

Club goods
Institutional arrangement
Strong ties
Formal & Informal institutions

V. Institution for the regeneration of industrial zones

-- The adjustment of development policy



V. Institution for the regeneration of industrial zones

-- Policy adjustment in cluster of industrial zones

Cluster regeneration for industrial zone (new regionalism)

- **Considering local industrial cluster**
- **Complementary of near industrial zones**
- **Attract multinational firms and flagship firms to locate**
- **Support trend-setting industries:
Energy-saving industry, Low-carbon industry
and Biotech industry**

V. Institution for the regeneration of industrial zones

-- Innovative network construction: institution modification

- **Attract organizations involved in innovative networks to locate**
- **Allocate land for innovative networks use**
- **Preserve land for innovative networks use**

V. Institution for the regeneration of industrial zones

-- The path of change in institutions

Utilize proximity to construct connection:

Without connections, there is no competitiveness

- Facility proximity (incubators, research center)
- Organizational proximity (core firms 、 flagship firms)
- Geographical proximity (science parks, local sources)

V. Institution for the regeneration of industrial zones

-- The change of property right institution & the innovation of rent-and-sell system

Private land ownership

- Sell (for financing balance)
- Rent-to-sell (006688 system)
- Private development
(current development policy of industrial zones)

Public land ownership

- Rent (TIF development model)
- Sell and rent back (industrial cluster reconstruction)
- Sell and buy back (construct innovative networks)
- Government development (land banking policy)

V. Institution for the regeneration of industrial zones

-- The path of change in institutions

Institution design for public sector (Government role)

- Supervision
- Assistance

Institution design for private sector (Market role)

- Privatization of public services
- Private management committee of industrial zone
- Private union of management committee of industrial zone

V. Institution for the regeneration of industrial zones

-- Adjustment of land use institution

Land management improve
the value of industrial zones

- **Institution for land use**
- **Institution for architecture design**

V. Institution for the regeneration of industrial zones

-- the path of change in institutions

Hardware infrastructure

- Public sector : infrastructure, public facilities and garden beautification
- Private sector : factory renewal

Modifying the floor area ratio is a method for industrial zone regeneration.

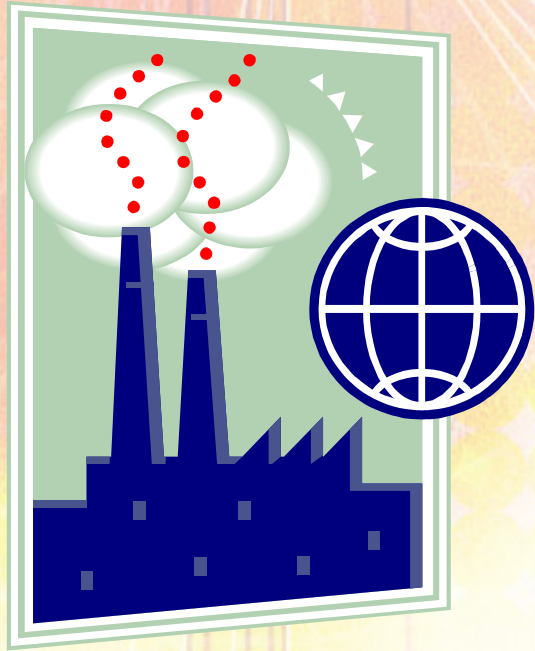
VI. Conclusion

- **Urban renew \neq Industrial zone regeneration**

The law of industrial zone regeneration

- **Industrial zone regeneration \neq new industrial zone development**

Regeneration organization : the roles of central government, local government and development companies.



Thank You