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Industrial Parks: Problems and Solutions with the Help of TRIZ

Индустриальные Парки: Проблемы и Решения с Помощью ТРИЗ

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Outline

- Scenario of the problem
- Contradiction Analysis
- Function and Su-Field Analysis
- Solutions

Scenario of the Problem

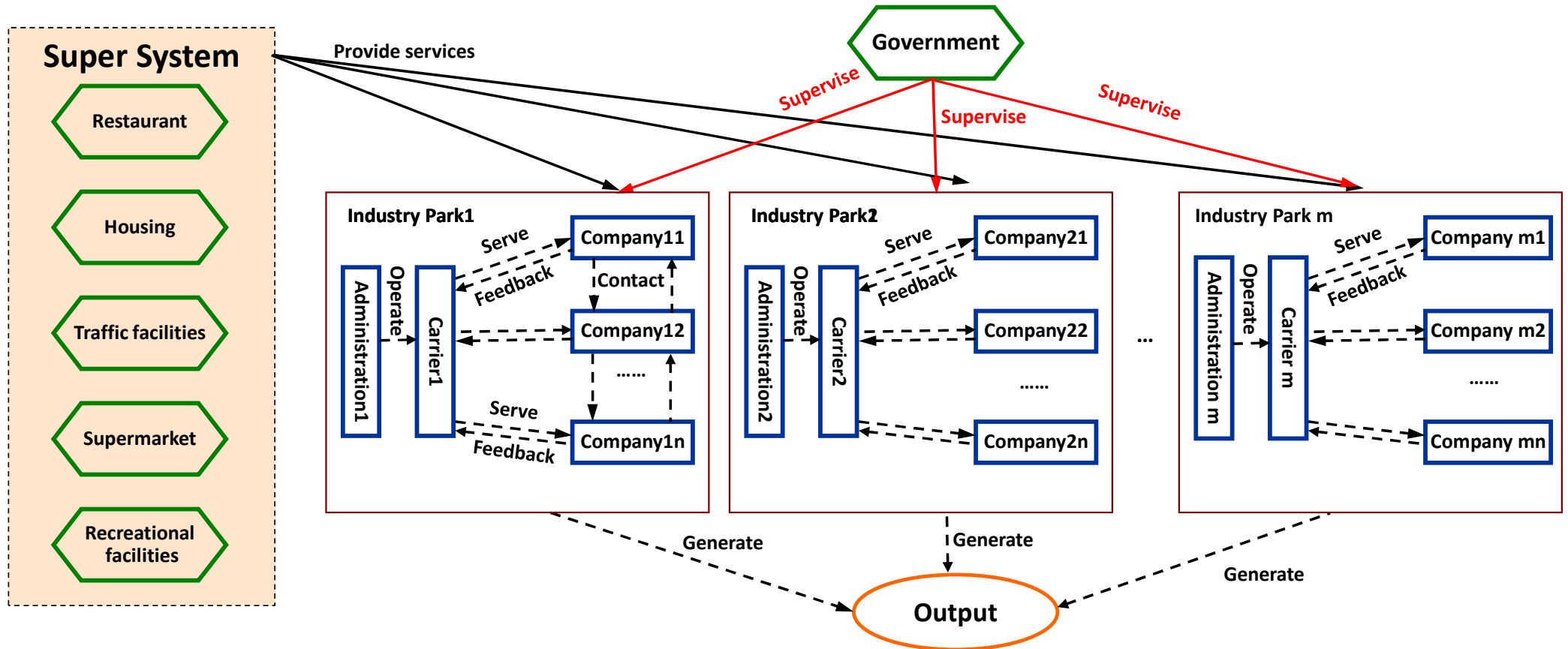
- In China, There are many traditional industry parks built in the late 20 century in some large cities, especially in the urban district
- For many years, these parks have made a great contribution to the development of cities
- After several decades, Many parks are starting to fall into operational difficulties due to poor management, infrastructure and fiscal revenues, which making them difficult for the park continuing to play a role in promoting regional development
 - Scattered, small and disorganized layout
 - Lack of impetus for traditional industries
 - Property Service for Park administration
 - Many idle carriers: such as buildings, plants, incubators, etc

Scenario of the Problem (Cont'd)

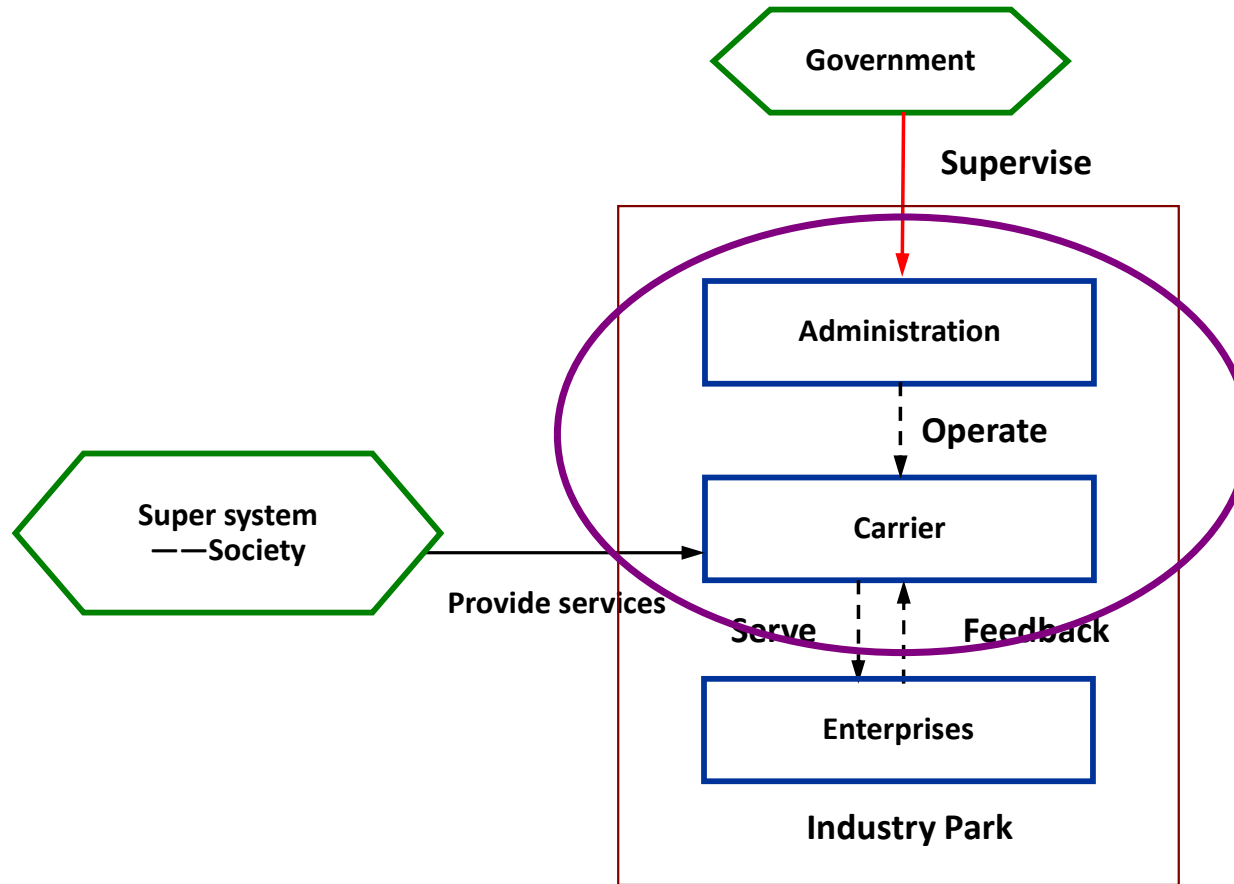
- Difficulties of regional development by relying on the industry park:
 - Existing industry parks can not carry new functions to promote the development of industry
 - The new industry park needs a lot of input, but for abilities limited
- A new construction mode of the industry park should be designed to adapt to the current development environment



Problem Analysis: Function Model



Problem Analysis: Simplified Function Model



Problem Analysis: Contradiction

- IFR:
 - A park that can play the role of promoting the development of cities and boosting innovation by itself.
- The better way for achieving IFR: Building a new park
- Problem: lack of lands in the urban district of large cities
- So a more suitable way for the cities is transformation of existing parks, which is easier to achieve IFR
- But more difficult to reconstruct existing parks than building new ones
- A technical contradiction:
 - **IF**: reconstructing existing parks
 - **THEN**: easier to achieve IFR (Ease of operation)
 - **BUT**: more difficult for reconstruction (Ease of manufacture)

Problem Solving: Inventive Problems

Inventive Principles	Solutions
No.2: Taking Out	Selecting the idle carriers from all the industry parks in the urban districts of larger cities
No.5: Merging	Combining the idle carriers as a whole park by merging in time
No.12: Equipotentiality	Establishing interconnected links within the combined idle carriers

- Solutions:
 - Integrating existing idle carriers as a whole “new” park
 - Chain Mode: Unifying planning, unifying operation, unifying management
 - The enterprises can enjoy the same quality of service in different carriers
 - Functions planning for the carriers on different locations

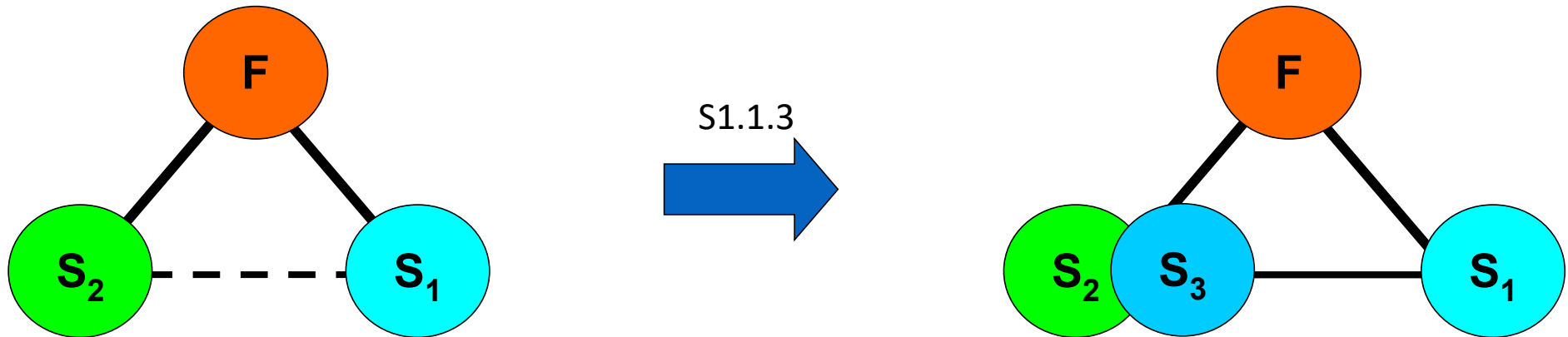
Problem Solving: Secondary Problem

- Secondary Problem: How to define the functions for the carriers on different locations
- Trends: Structure Evolution—Diversity Increase

Lines	Example
1. A homogeneous system of identical objects 2. A homogeneous system with a different but similar object(s) 3. A heterogeneous system of different objects 4. A system of objects with opposite properties	1. Software industry in all the carriers 2. Software industry for this park except IT Outsourcing in one carrier 3. Software and Integrated Circuit Design in different carriers 4. Software and Hardware in different carriers

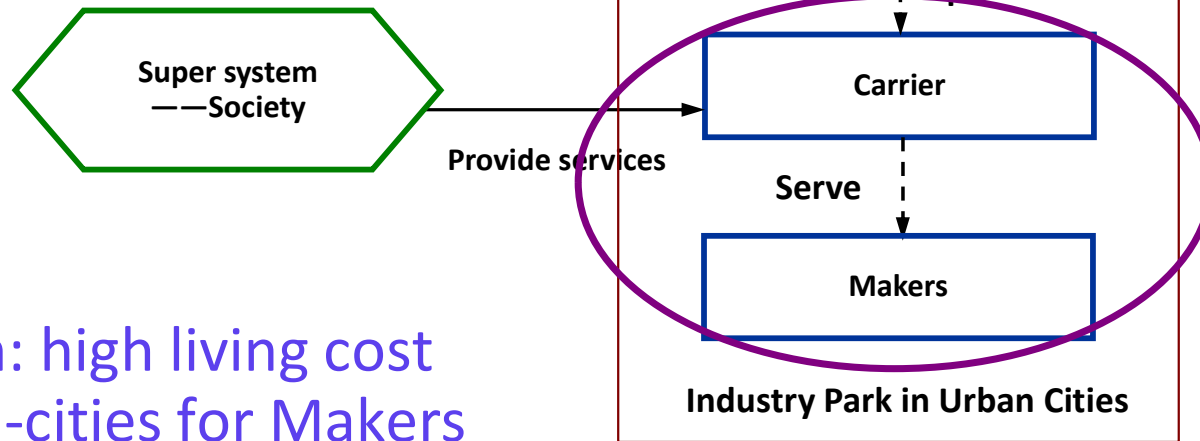
Problem Solving: Su-Field Model

- S_2 : Administration
- S_1 : Carrier
- F: The operations and services from the administration to the carrier
- S_3 : A new object—Professional organization (team)



Derivative Problem

- Goal for makers: Living in Peace and Working in Contentment
 - Working: Carriers
 - Living: Super-system

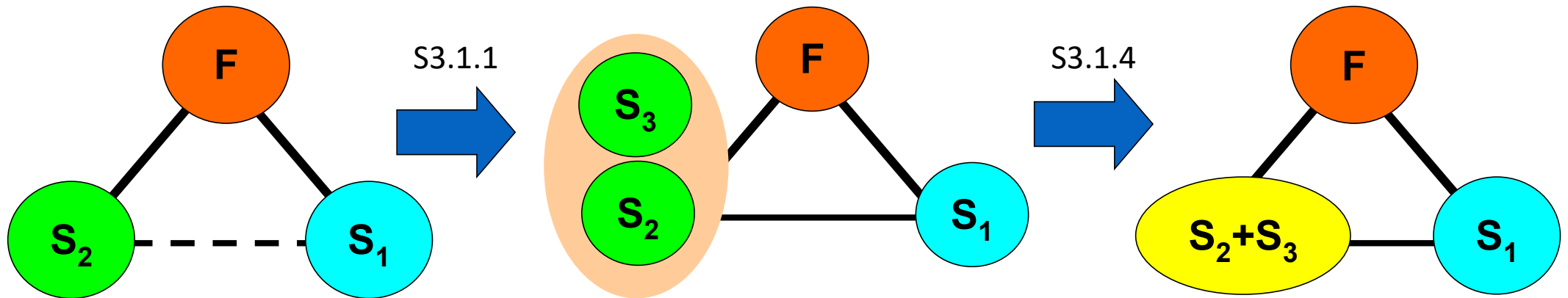


- Problem: high living cost in urban-cities for Makers



Derivative Problem Solving

- S_2 : Carrier
- S_1 : Maker
- S_3 : Carrier for living
- The carrier with functions of working and living: Startup=Home



Solutions

- Integrating all the idle parks and operate them as one park
 - Establishing a new administration for all the idle parks
 - Chain Mode: Unifying planning, unifying operation, unifying management
 - Increasing the differentiations for the carriers on different locations
 - Introducing professional teams for operation
- The function of the government should also be transformed from supervising and intervening to helping the companies
- Carriers for makers
 - Function: Living in Peace and Working in Contentment
 - Apartments for makers: A house can be regarded as a startup and maker's home
 - Measures for reducing the living cost of makers: Tax incentives and waivers, One-stop services, Infrastructure for Public Service, Service for the basic necessities of life, etc

Summary

- In the future, the way of expanding the scale for industry parks are not suitable for the future development
- More possible ways:
 - Changing business model
 - Adjusting industrial planning
 - Improving the competitiveness of industry parks
 - Balancing Economic development and people's livelihood
- A new transformation Mode: **Zero-cost entrepreneur community**
 - Transition to a community: integrating work, life, leisure and entertainment
 - Start-up Apartment: Unifying the location of home and company for makers
 - Introducing professional team for operation

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Thank you for your attention!
Спасибо за внимание!

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