# *iDesign*

# : A Design Framework for Service Innovation

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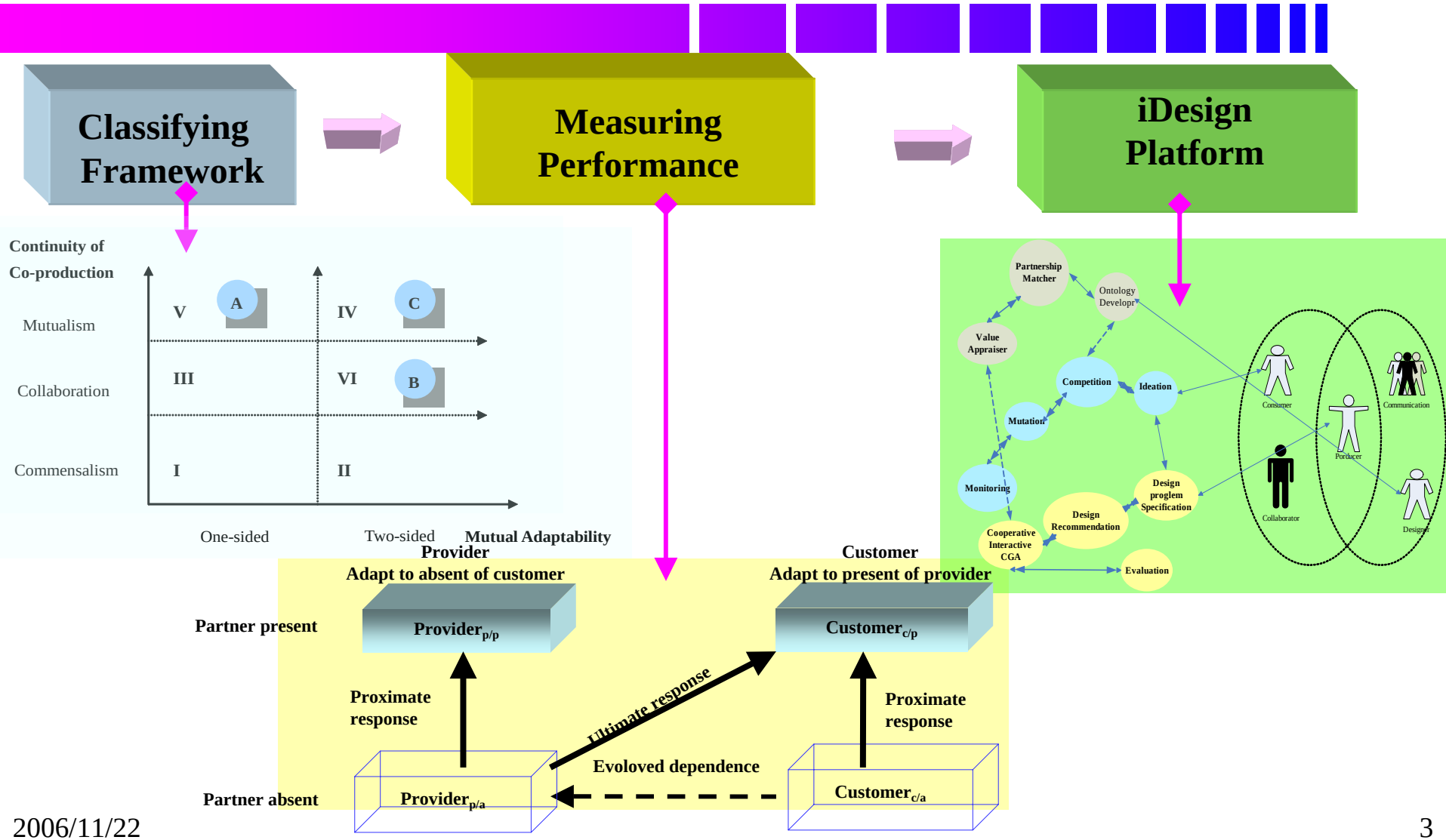
# Introduction

- **iDesign** is a framework to classify **value co-production relationships** underlying **ecology perspective (e.g., mutualism)**.
- Two dimensions of framework, **continuity of value co-production** and **mutual adaptability**, characterizing the **service exchange**.
- From the ecology perspective, the different **criteria** that can be used to test for the **performance of mutualism**.
- Three applications of **service systems** in iDesign fulfill the s**ervice innovation.**

# Overall Framework

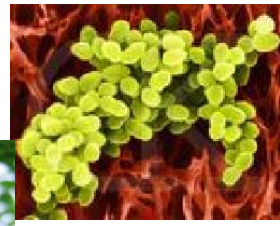


# Motivation

- Migrating to **Service** and **Experience Economy**
- The New Dynamics of **Service Science**
- Service Exchange of **Value Co-Production**
- **Service Innovation** for Design Industry

# Designing Service-Exchange Process Using Symbiosis Concept

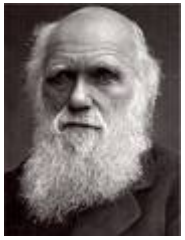
- ***Mutualism*** :
  - This is a **mutually beneficial** interaction between individuals of two species (i.e., provider, client)
  - **obligatory mutualism** (e.g. becteria vs. algae)
  - **nonobligatory mutualism**. (e.g. ant vs. tree)



- ***Communalism*** :
  - When two different species exist together, **one of species has benefit** because of their union, but another has also no any loss. (e.g. earthworm vs. farmer)

# Continuity of Value Co-production

- ***Mutualism*** :
  - **Mutually beneficial interactions** between individuals of provides and customers
  - **destined partner**
  - **direct effect**
- ***Collaboration*** :
  - **Mutually beneficial interactions** between individuals of provides and customers
  - **No destined partner**
  - **direct effect**
- ***Commensalisms*** :
  - **One-sided beneficial** interactions between individuals of provides and customers
  - **destined partner**
  - **direct or indirect effect**



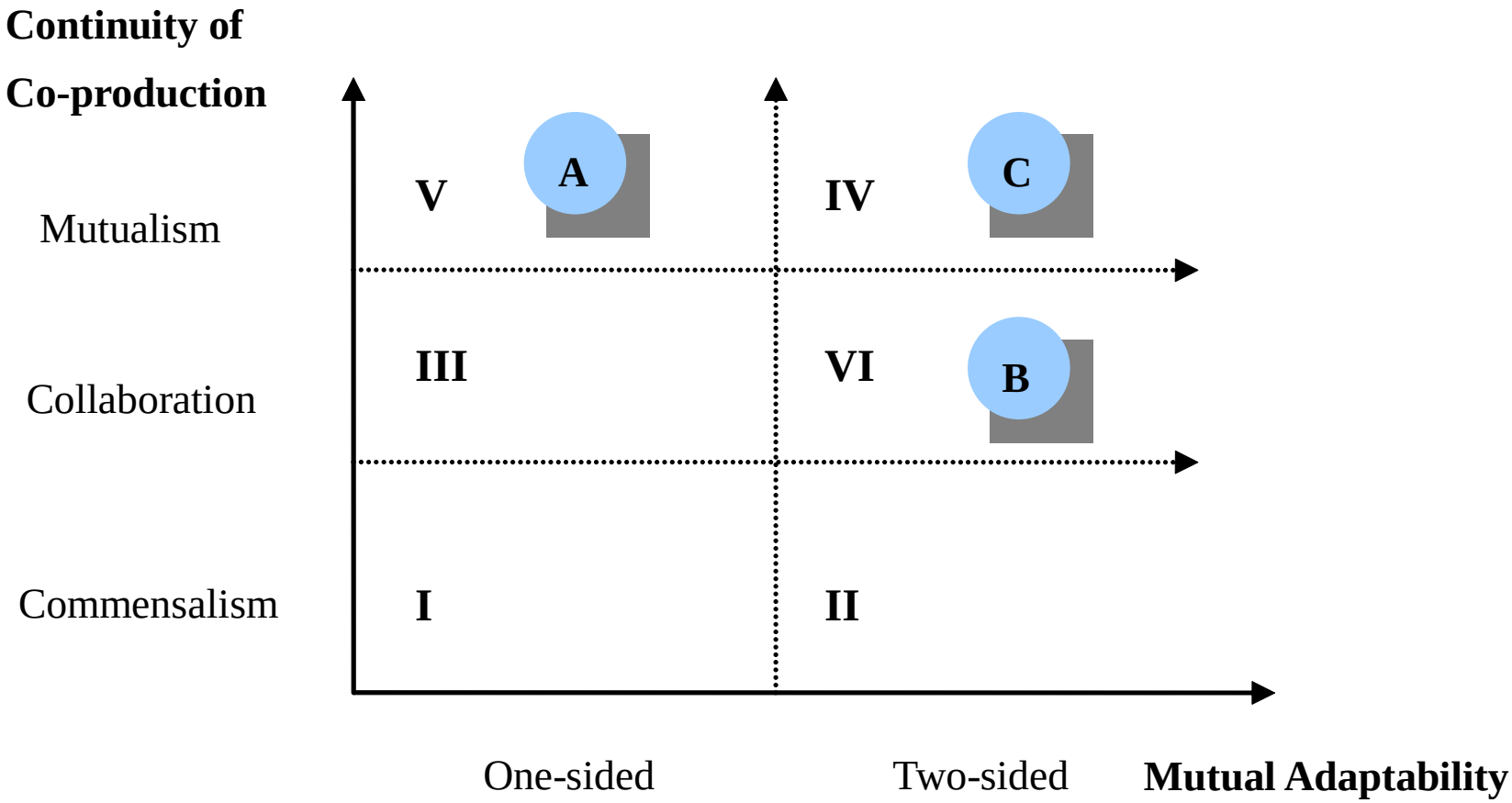
# Degree of Mutual Adaptability

- Darwin's evolution theory
- To identify the **adaptability** in the behaviors of provider & client in **service exchange**:
  - **One-sided :**

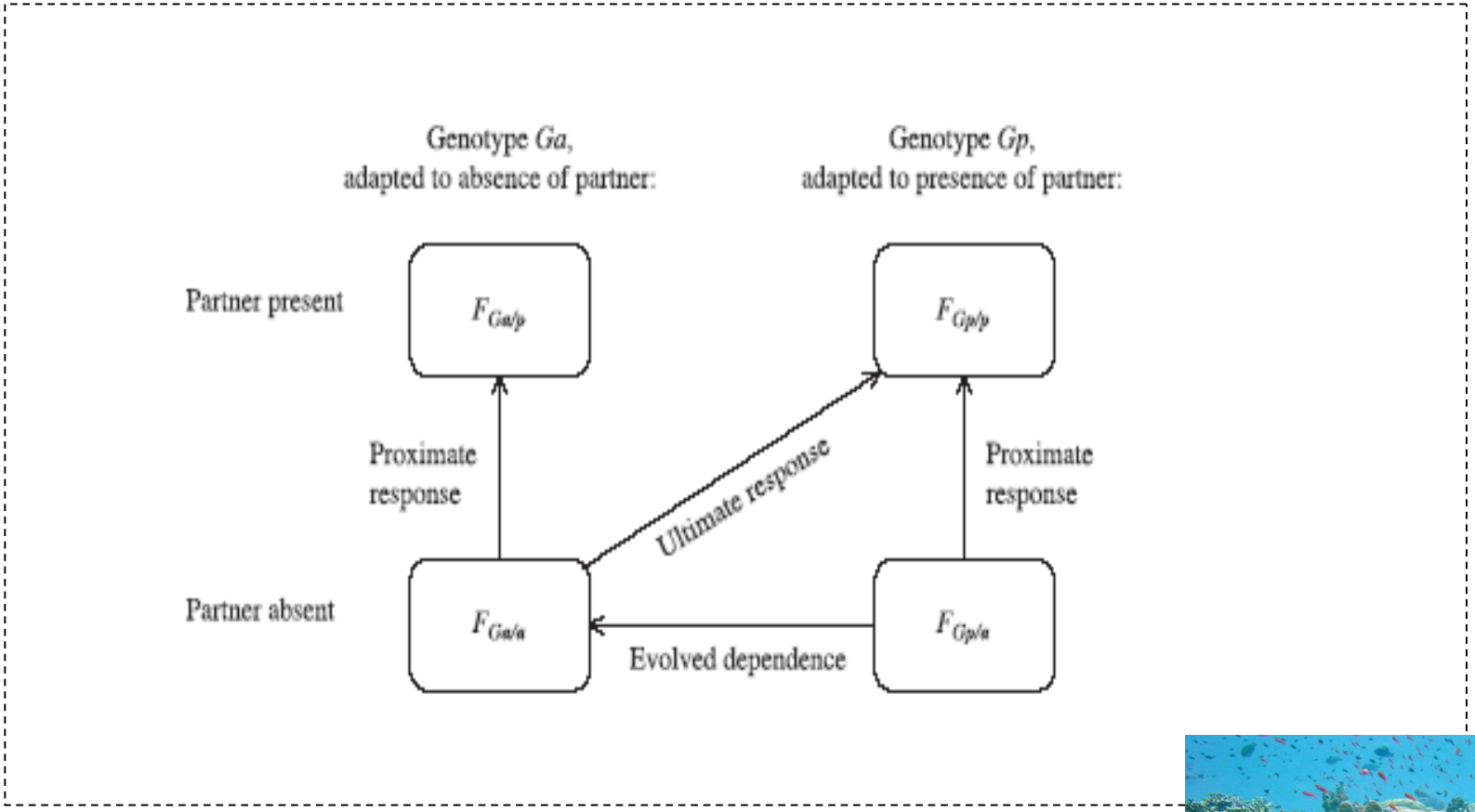
    Highly adaptive ability in one-sided (i.e., provider or client)
  - **Two-sided :**

    Highly adaptive ability in two-sided (i.e., provider & client)

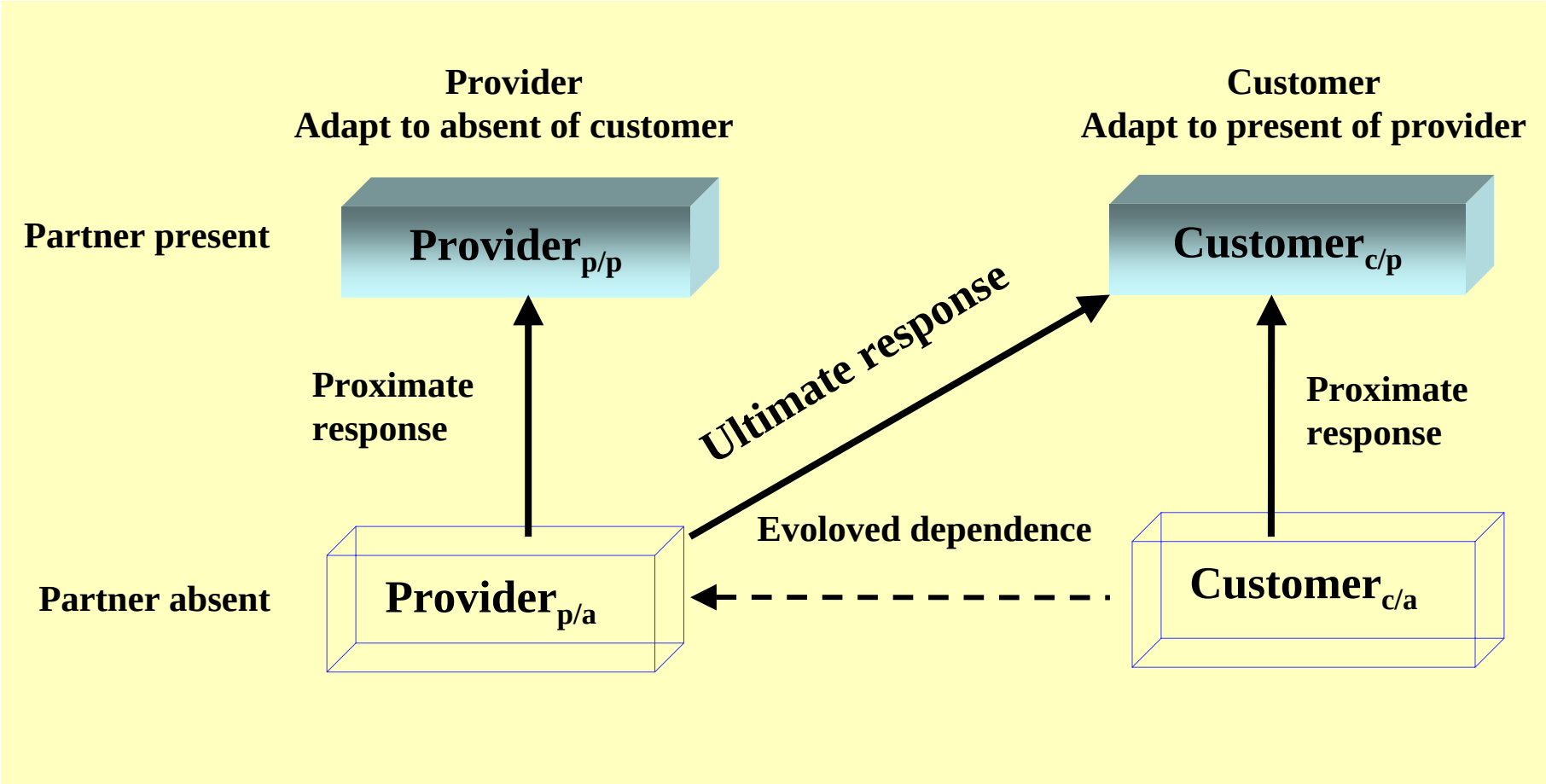
# A Classifying Framework (iDesign)



# Differences between the Performances Measure



# Performance of Mutualism

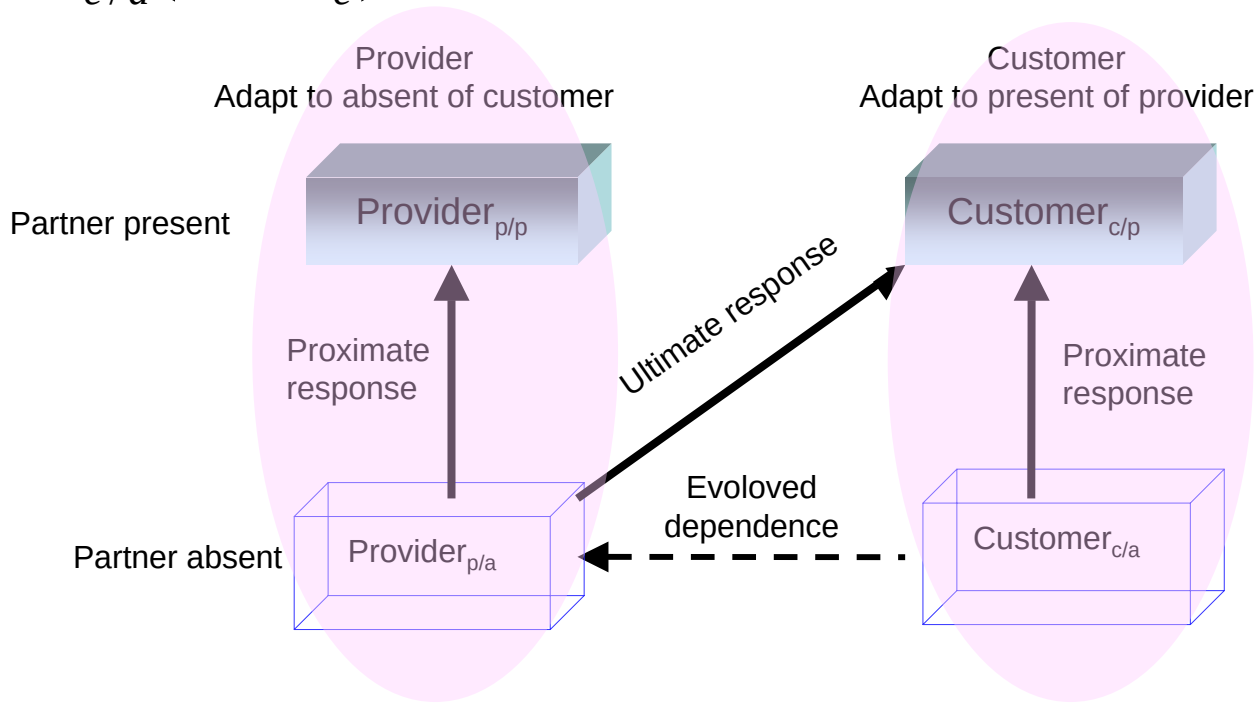


# Measuring Performance of Mutualism (1/3)

- **Proximate Response (PR)** :

  measuring the proximate response of a provider to the removal of its partner in terms of the performance difference

$$F_{c/p} - F_{c/a} (i.e., PR_c)$$

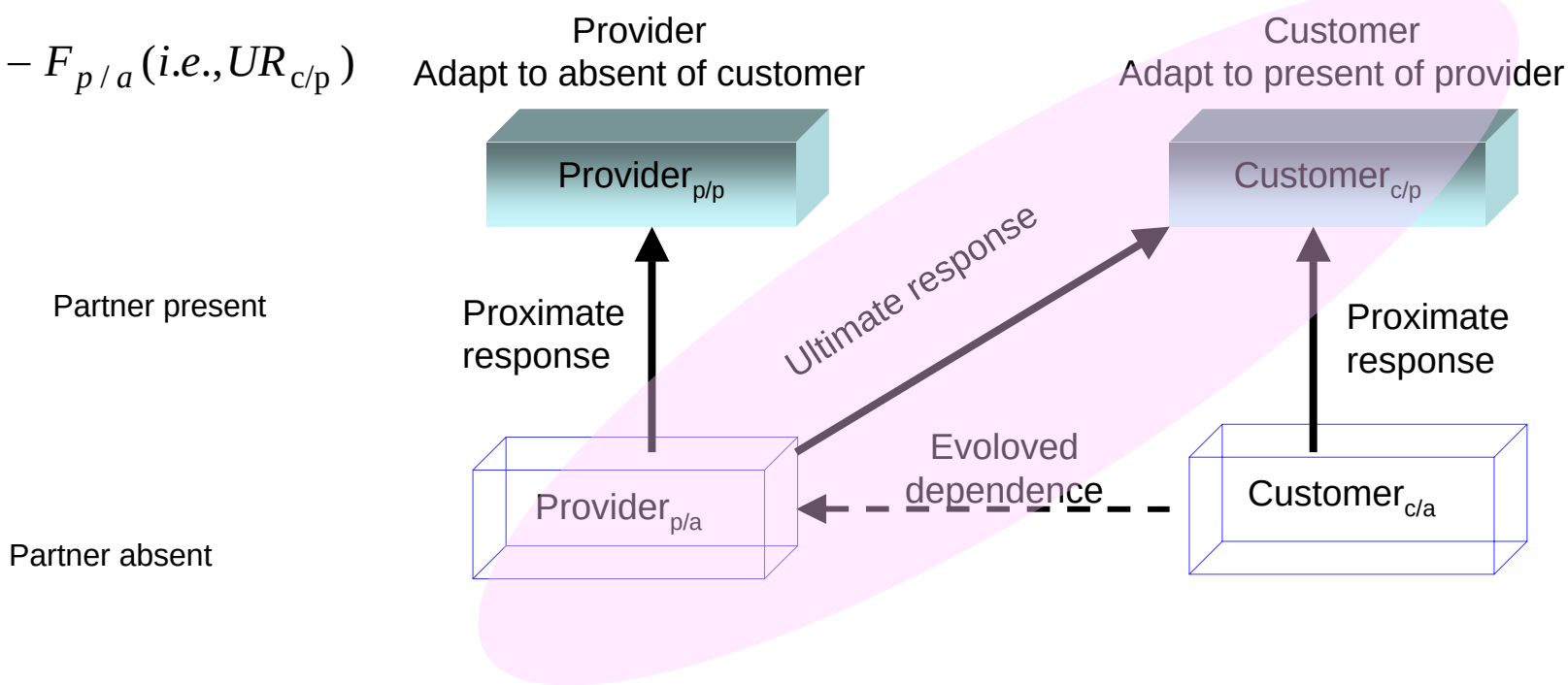


# Measuring Performance of Mutualism (2/3)

- **Ultimate Response (UR)：**

measuring the performance, in the partner's presence, of a provider adapted to the partner, is compared with the performance, in the partner's absence, of customer adapted to this absence in terms of the performance difference .

$$F_{c/p} - F_{p/a}(i.e., UR_{c/p})$$

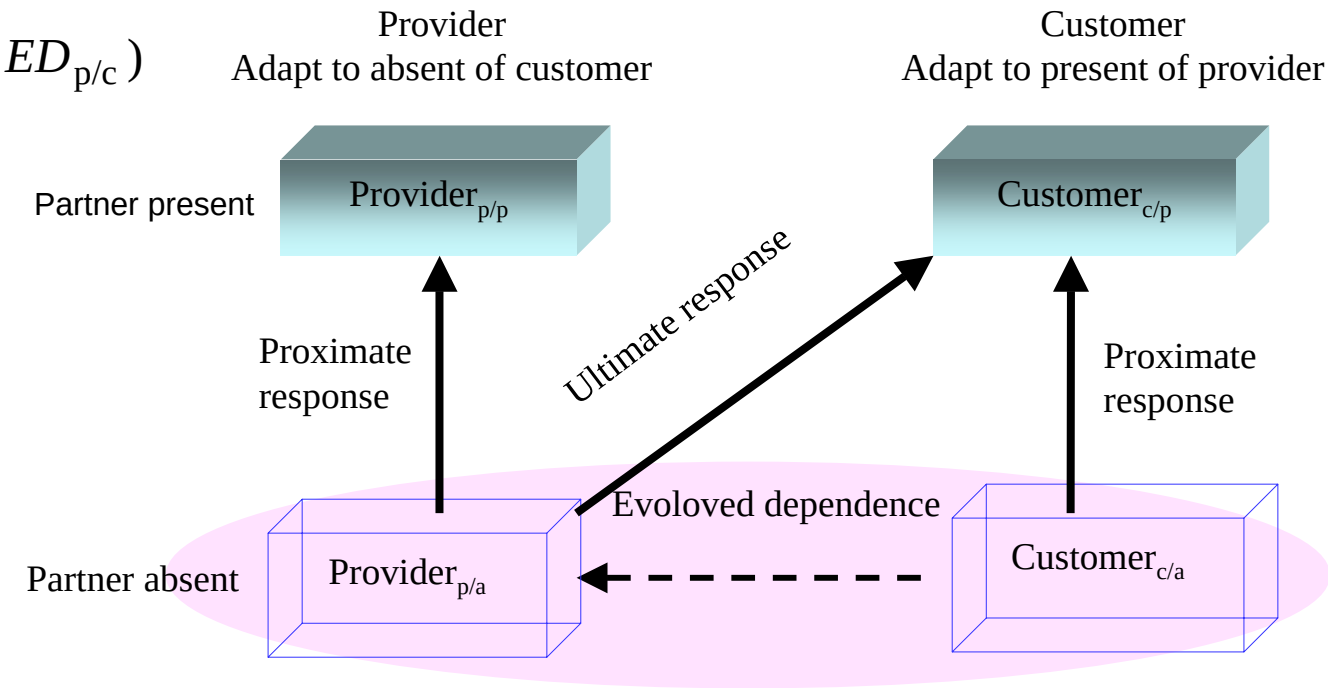


# Measuring Performance of Mutualism (3/3)

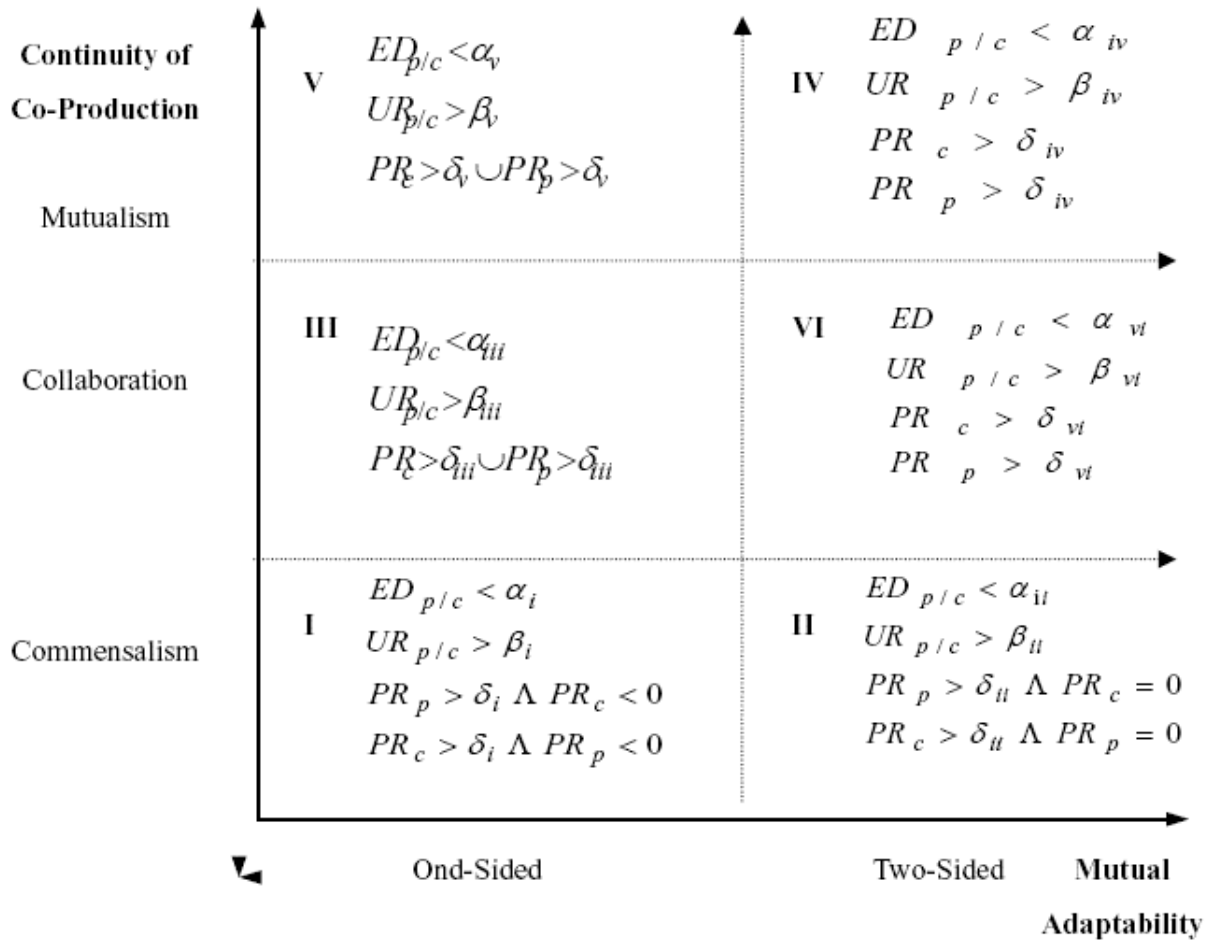
- **Evolved Dependence (ED)** :

  measuring the **performance difference** between the provider that is adapted to the partner's absence and the customer that is adapted to its presence, both measured in the absence of the partner in terms of the performance difference

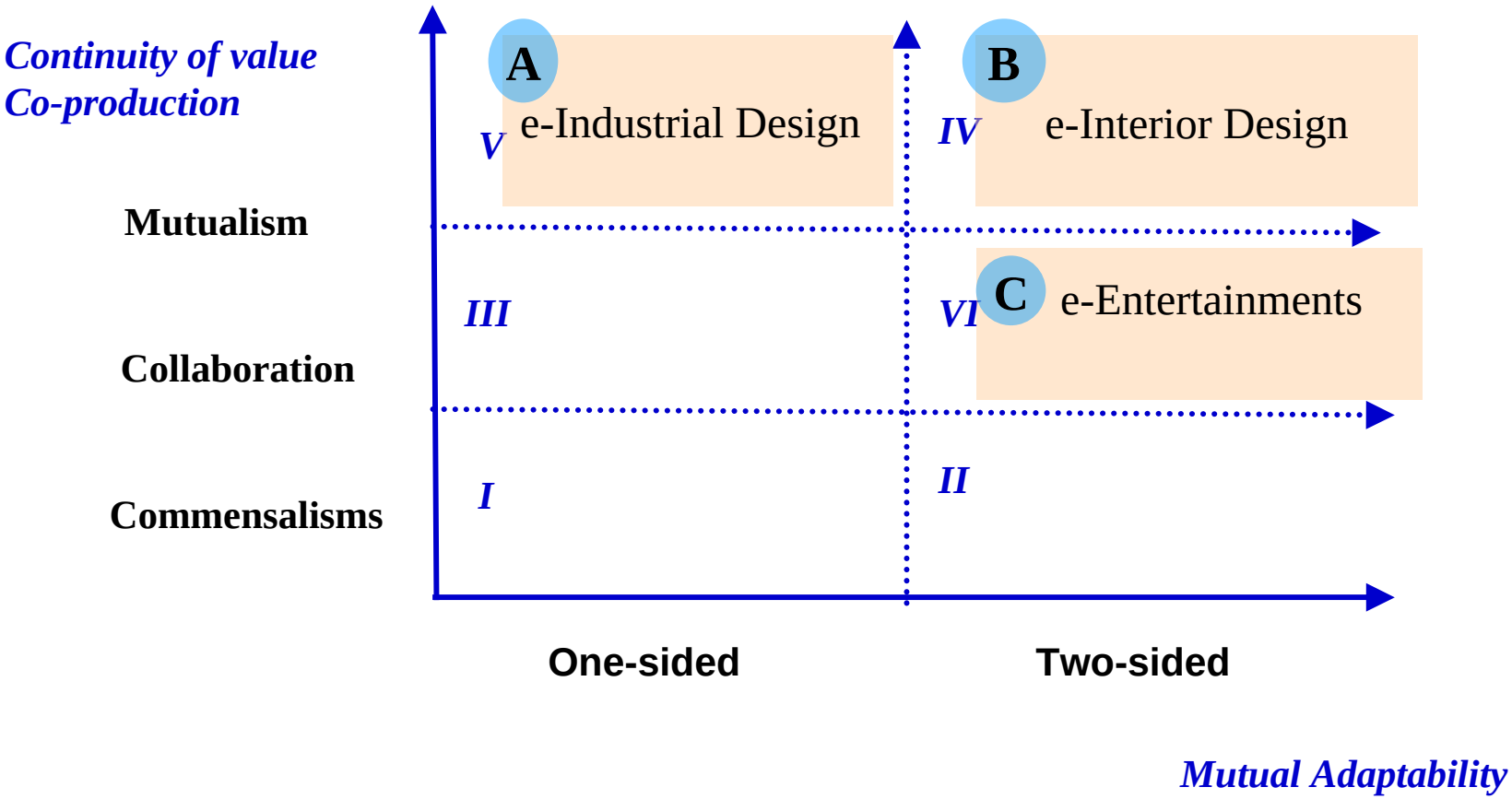
$$F_{p/a} - F_{c/a}\,(i.e., ED_{\mathrm{p/c}})$$



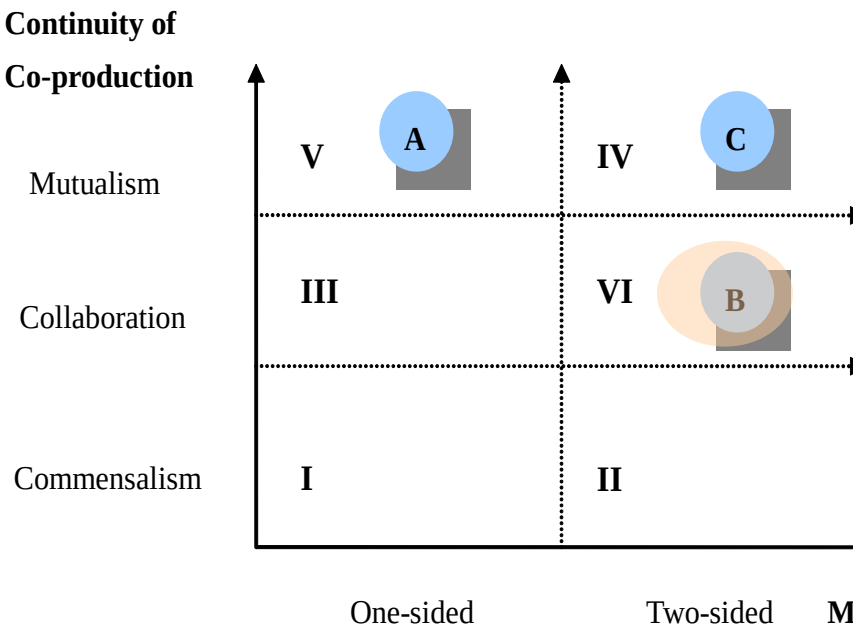
# Service Performance Criteria

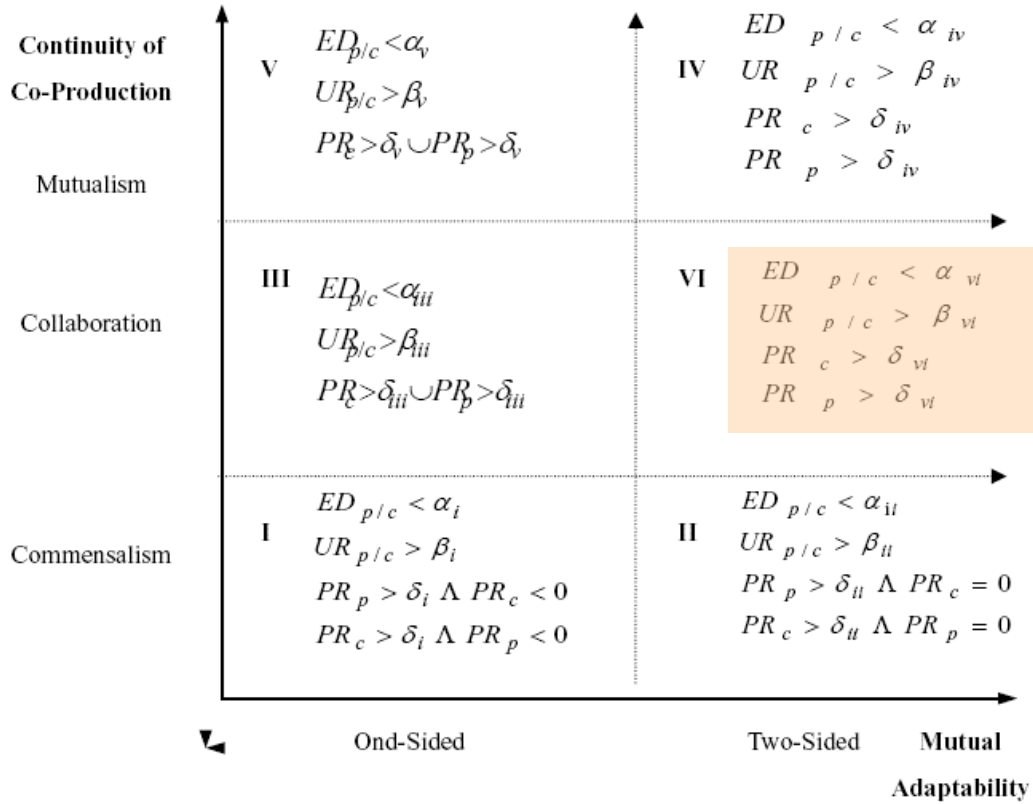


# Service Science for Design Industry -- Three Service Systems



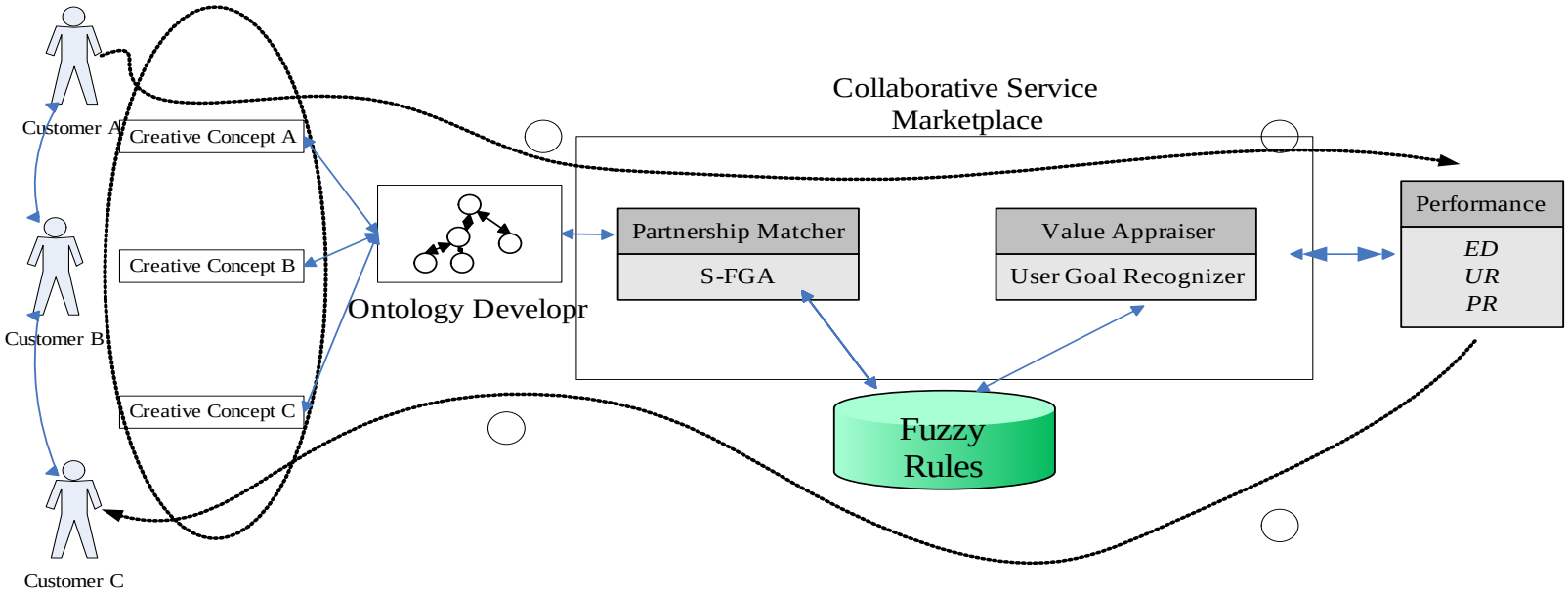
# Service System Examples I – e-Entertainments



B

# A Collaborative Digital Content Design Service Marketplace with a Semantic-Based Fuzzy Genetic Mechanism



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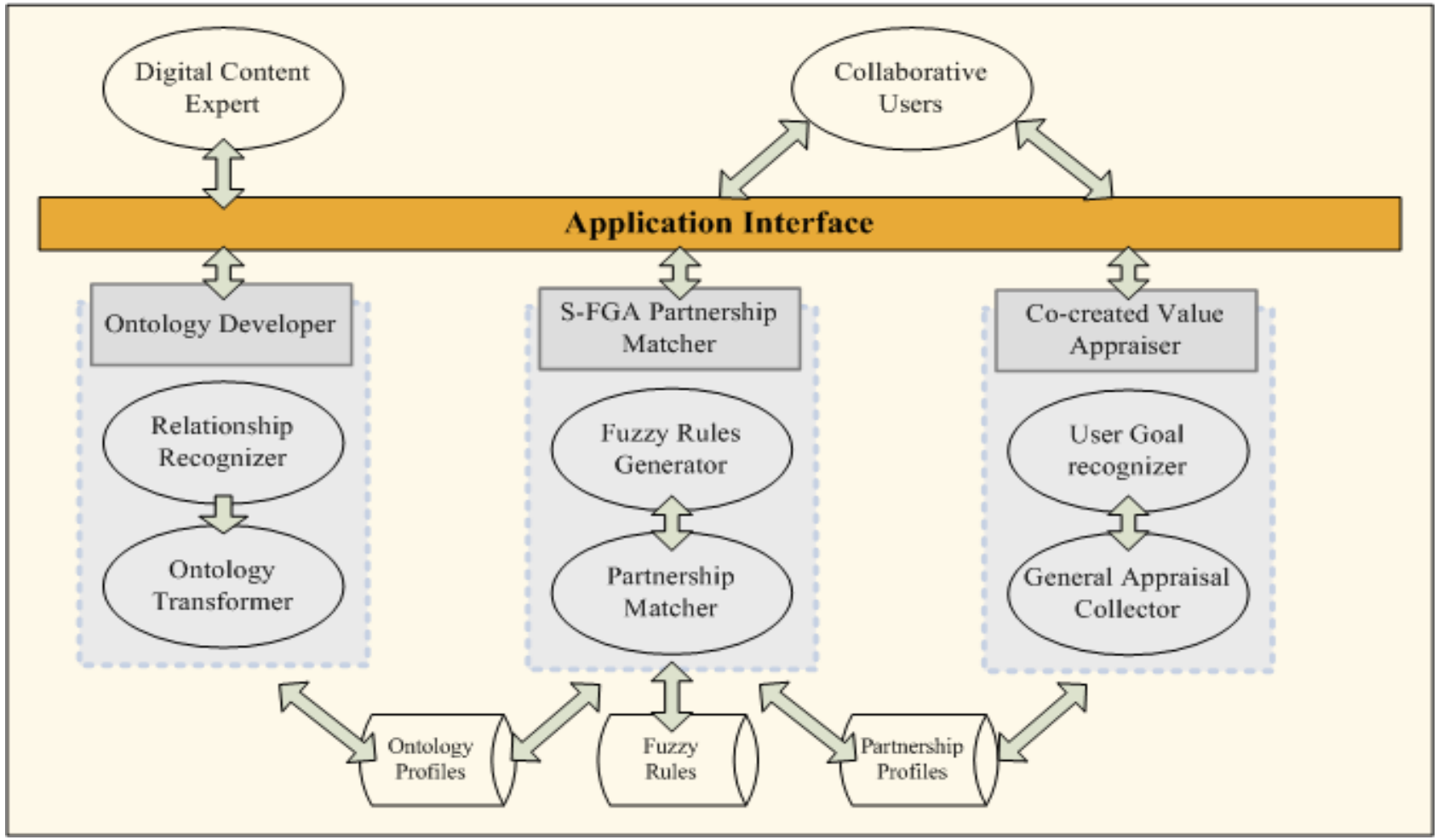
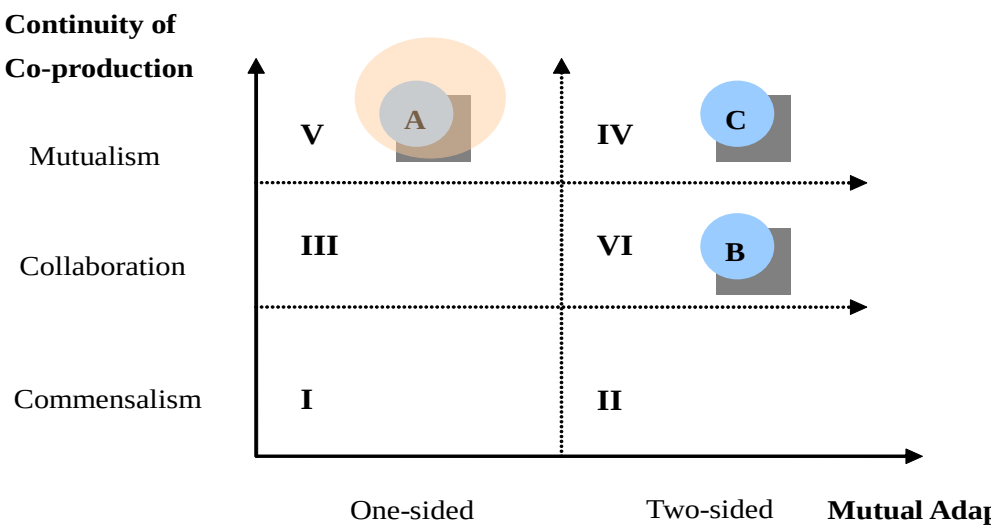
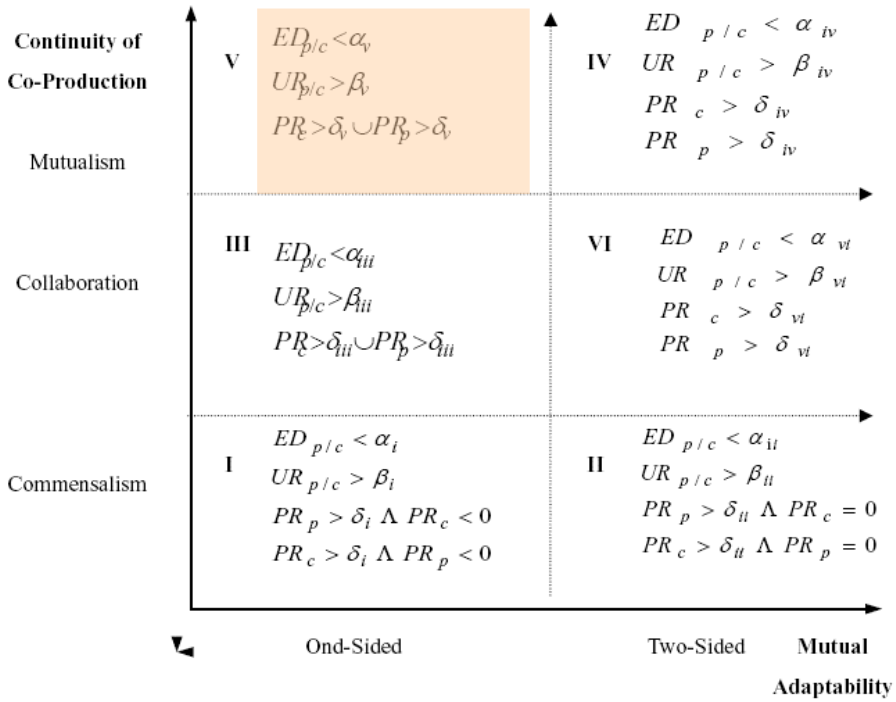


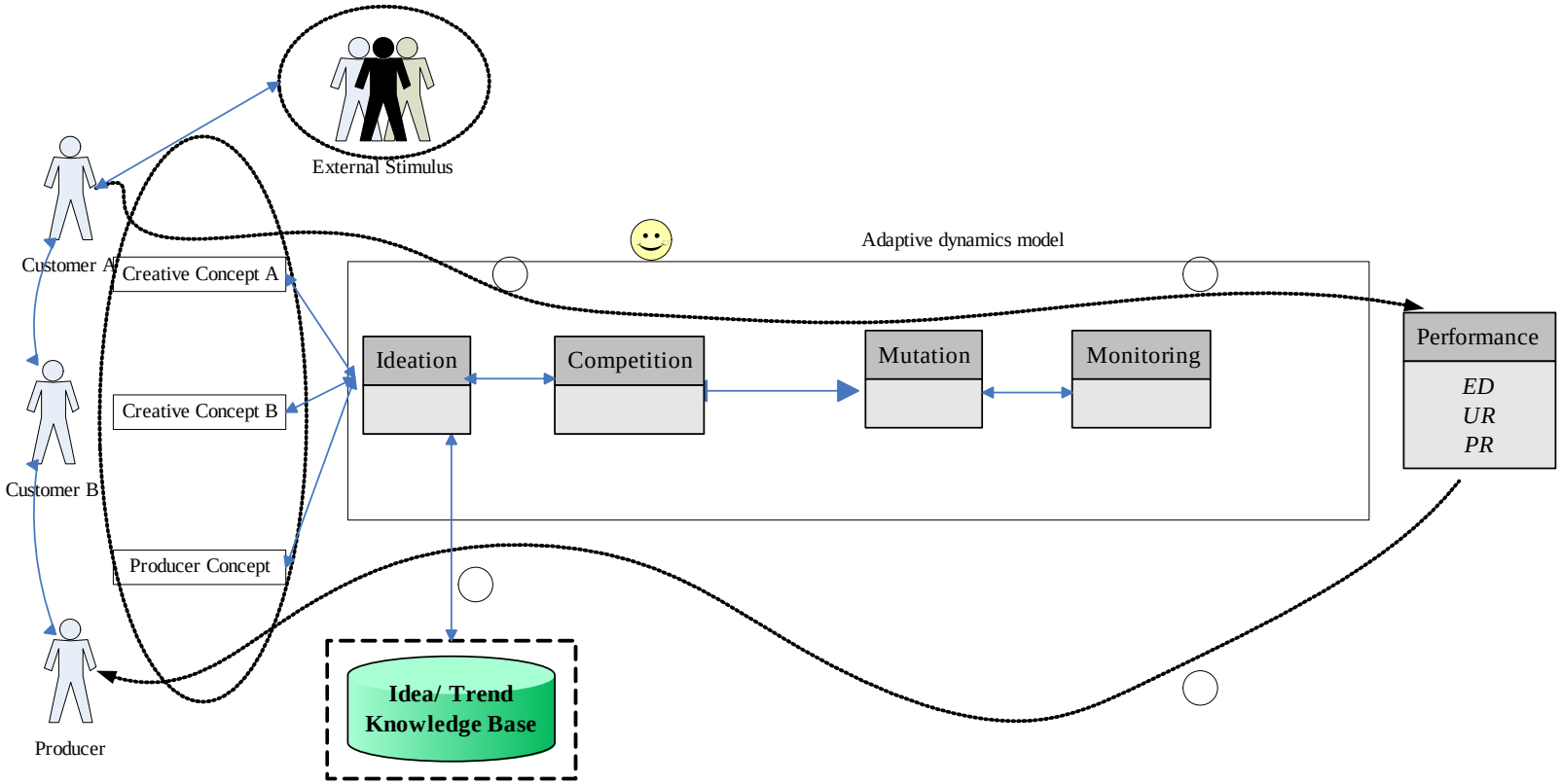

(Yen-Cheng Wu, Wei-Feng Tung, Soe-Tsyr Yuan, 2006)

# Service System Example II – eIndustrial Design



# A Mutualism-Based Idea Management for Mobile Phone Design Service



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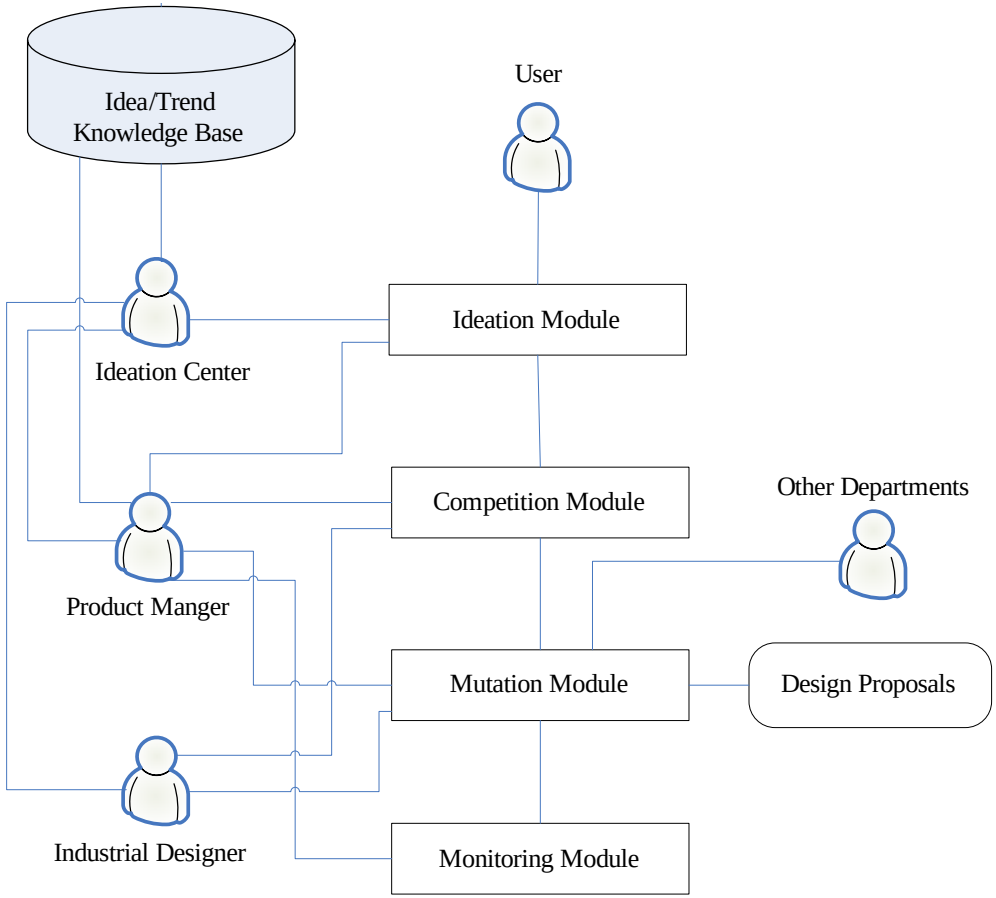
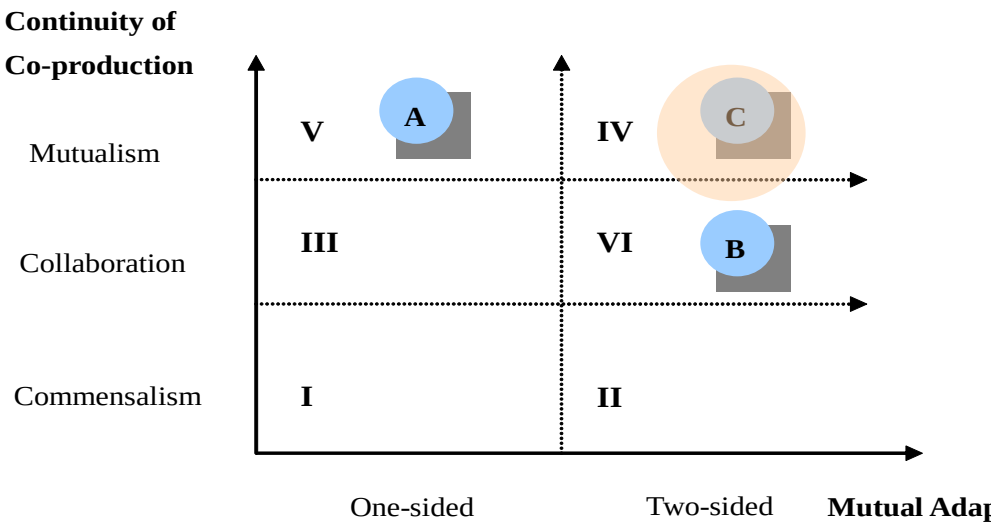
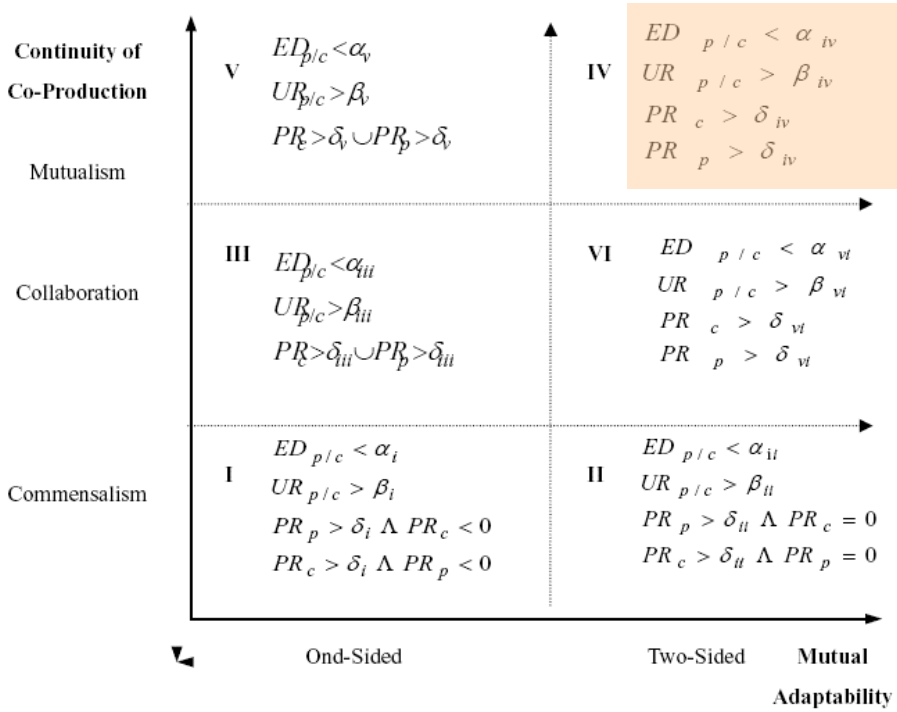



(Je-Ren Tsai, Wei-Feng Tung, Soe-Tsyr Yuan, 2006)

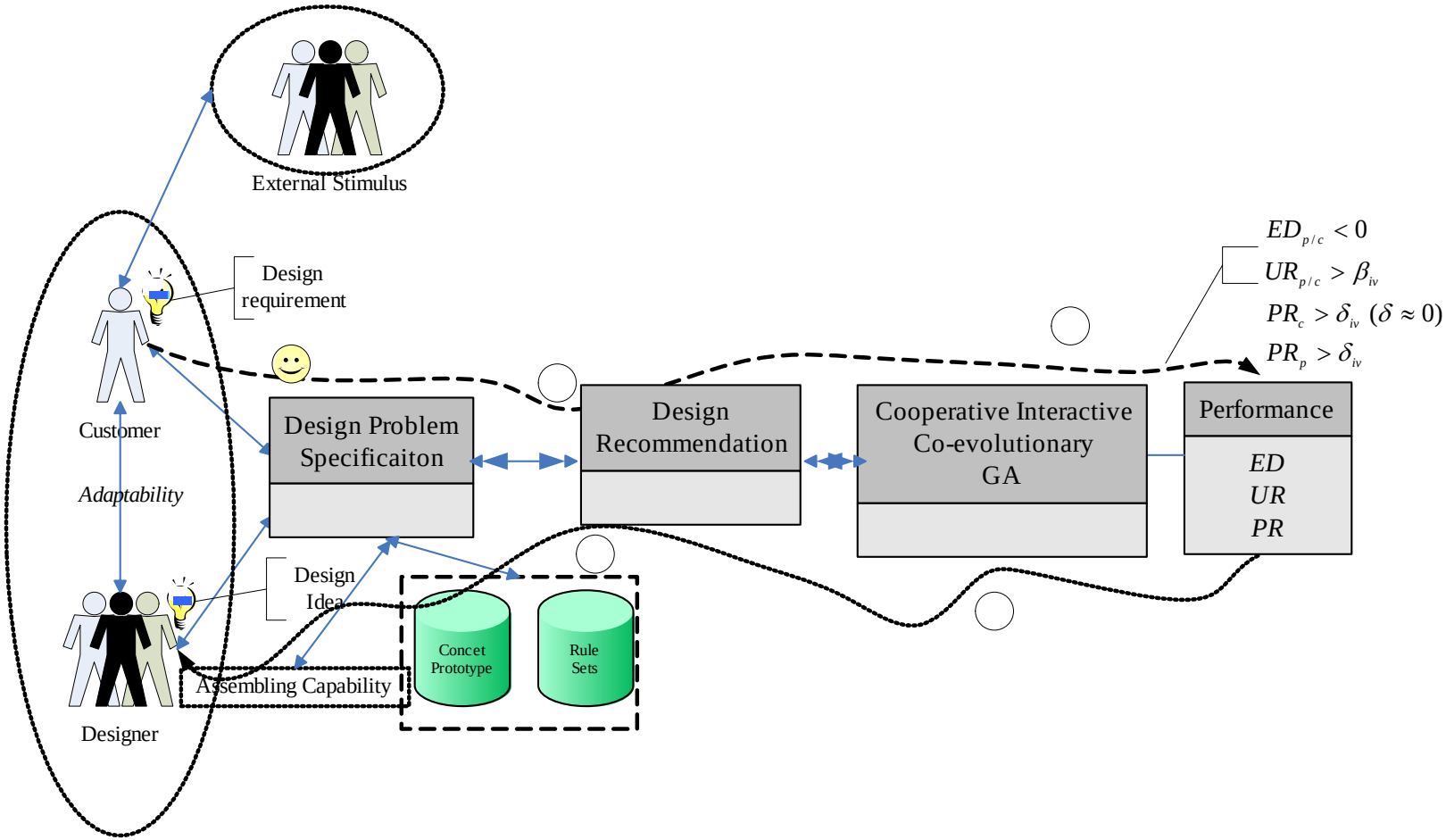
# Service System Example III – e-Interior Design



C

# A Design e-Service Delivery with an Ontology-Based Cooperative/Interactive Co-Evolutionary Mechanism



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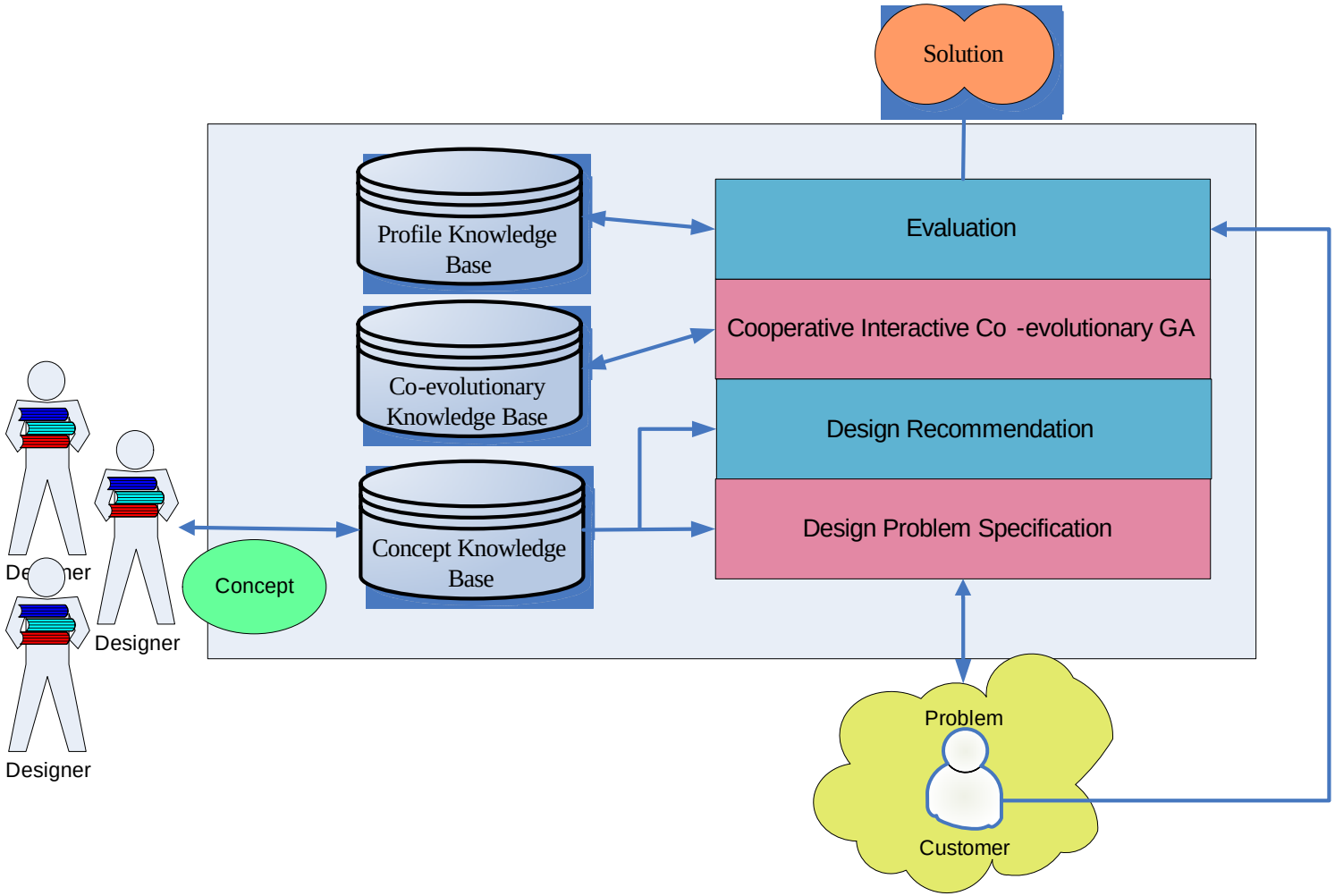
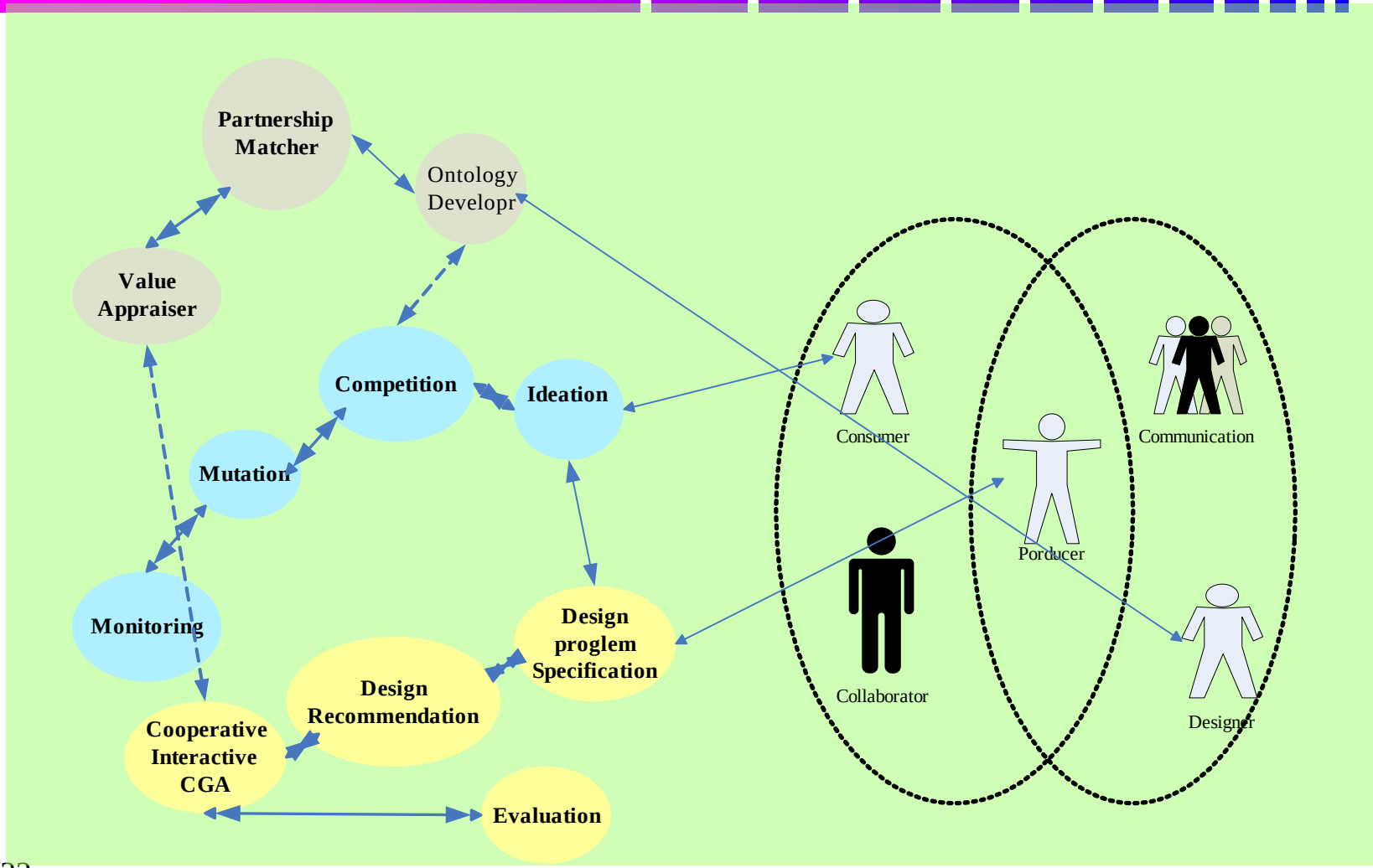
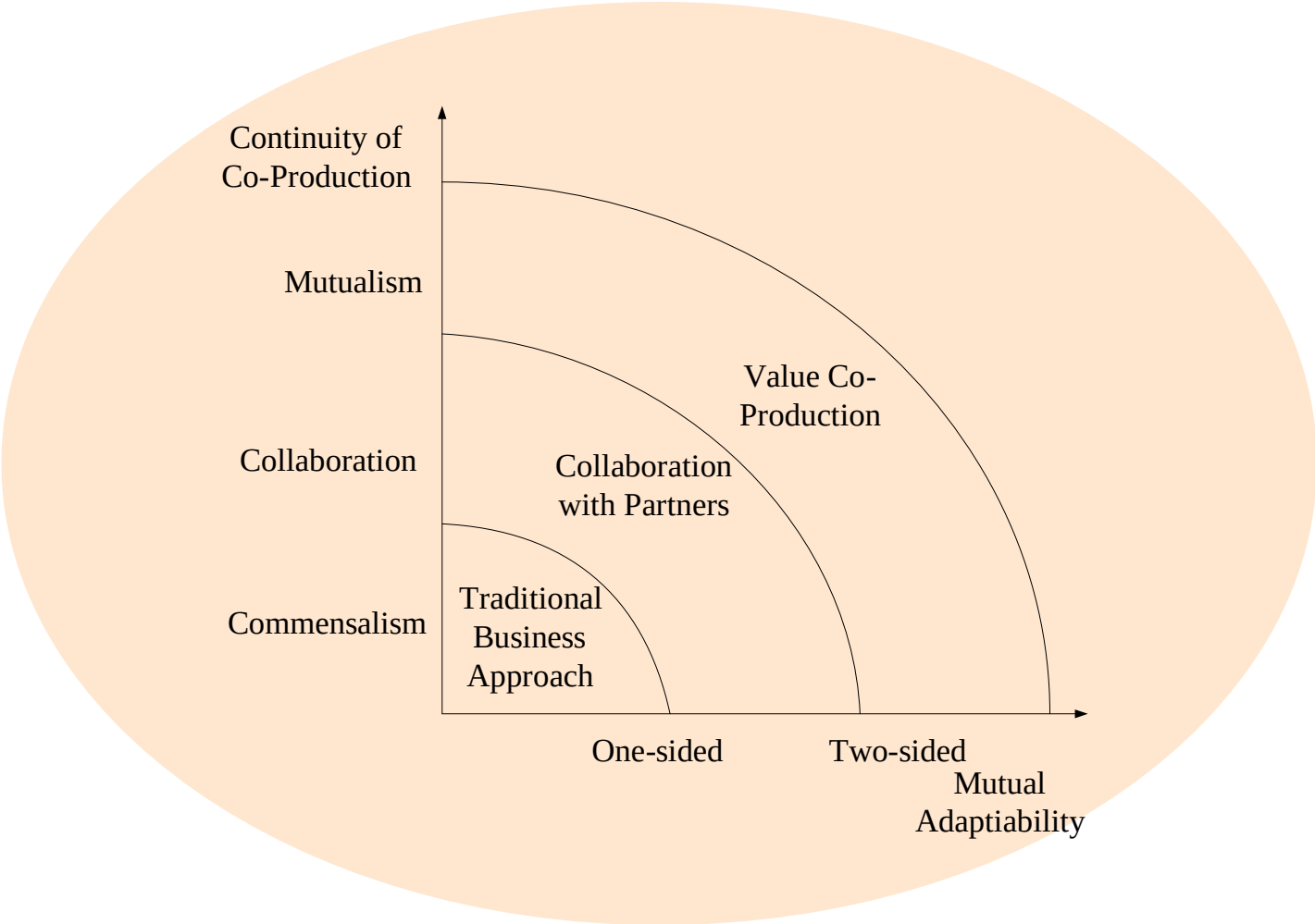



(Hui-Shan Chi, Wei-Feng Tung, Soe-Tsyr Yuan, 2006)

# iDesign Platform

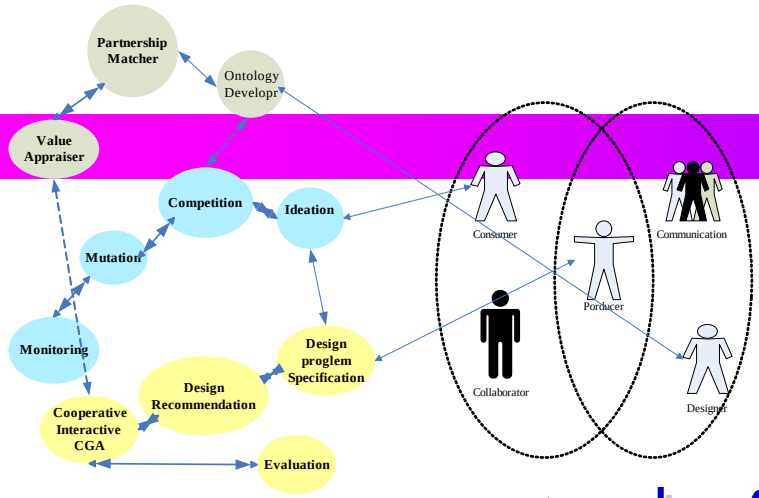


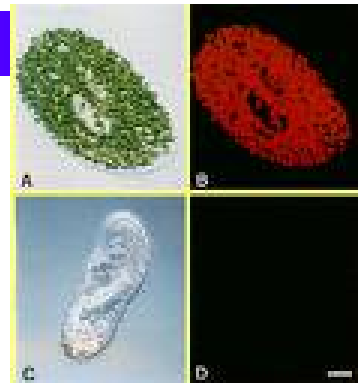
# Managerial Insight (1/2)



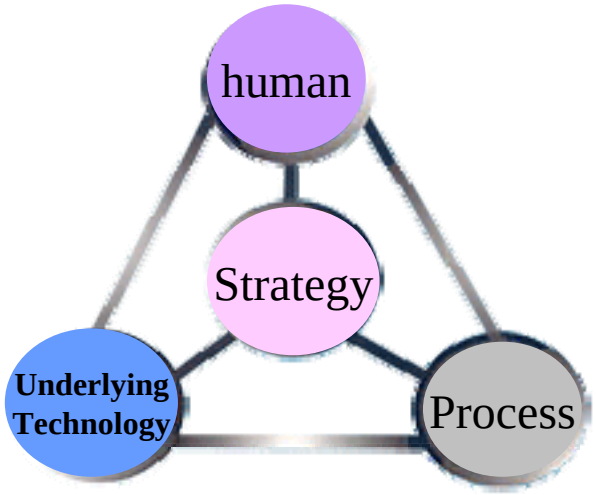
# Managerial Insight (2/2)

| | Product | Service | e-Service |
|---|---|---|---|
| **The basis of Value** | Product offering | Service offering | **The service exchange of co-production** |
| **Goal of Innovation** | New production | New service | **Innovated value co-production service** |
| **Locus of Interaction** | Once at the end of the value chain | The process and interaction of service | **Repeatedly, anywhere, and anytime in the system** |
| **Producer-Customer Relationship** | Transaction-based exchange | Service-base exchange | **Set of interactions of the partners** |
| **Productivity / Customer Satisfaction** | Low / High<br>High / Low | Low / High<br>High / Low | **High / High** |
| **Focus of Quality** | Quality of product and internal processes | Quality of provider-customer interactions | **Quality of the interactions of the partners and the value of co-production** |



# Thanks for Your Attention




Q&A