

# The Economics of Digital Business Models

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## Digital Business Models

- A General Framework
- Three « Coordination » Dimensions
- Matching:  
*Digital Networks as “Markets”*
- Assembling:  
*Digital Networks as “Production Capabilities”*
- Knowledge Management:  
*Digital Netwk. as Knowledge sharing tools*
- Paths for future research

## The Economics of Platforms

- No disintermediation with digital networks
- Standardized interfaces, but still coordination costs
  - Matching
  - Assembling (ensuring interoperability; ensuring adequation to needs)
  - Access to information and knowledge
- => Platforms to assemble components and adapt digital goods to user needs
- Beyond infomediaries, beyond sole Internet based models

## I

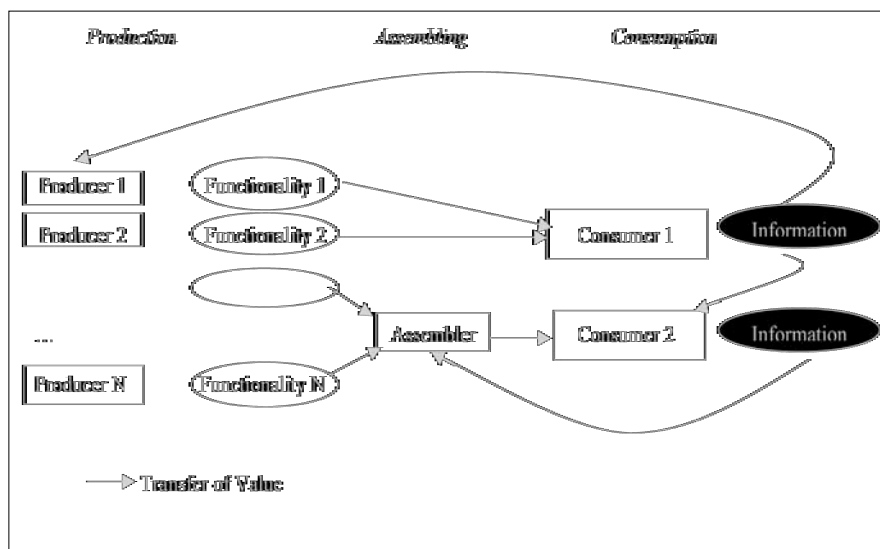
## The Economics of Digital Business Models: A General Framework

A *business model* is a way of organizing exchanges and of allocating various costs and revenues streams such that the production and exchange of a good or service becomes viable, in the sense of being able to sustain itself on the basis of the income it generates

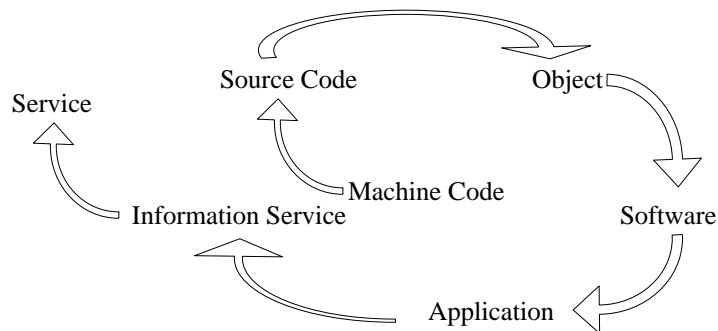
## Digital Activities as Modular Activities

- *Digital goods and services are of a modular nature* (Lancaster, Economides)
- *Digital activities are characterized by three basic operations*
  - *Production of Functionalities*
  - *Assembling of Functionalities into Services*
  - *Consumption of Services*
- *Users (or consumers) are not neutral in the process of value creation*
  - *Consumption Generates Information*
  - *Consumers can self-assemble Services*

## A Framework to Analyze DBMs

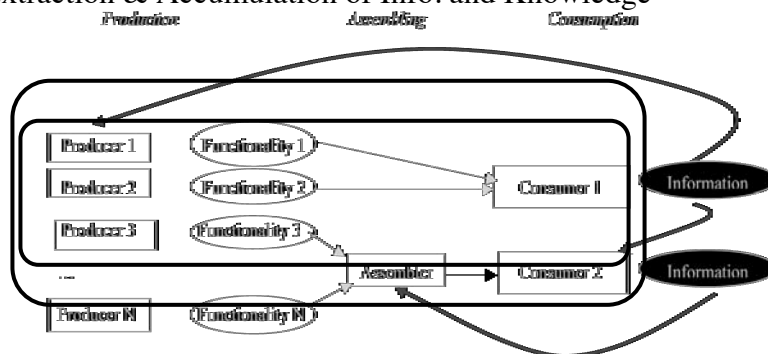


## A “Fractal” Approach to Digital Goods and BM

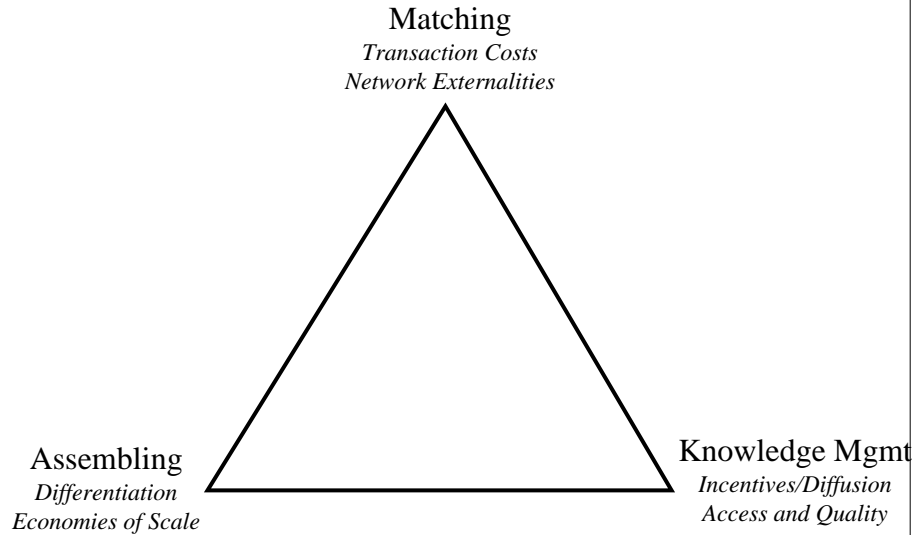


## Three « Coordination » Dimensions

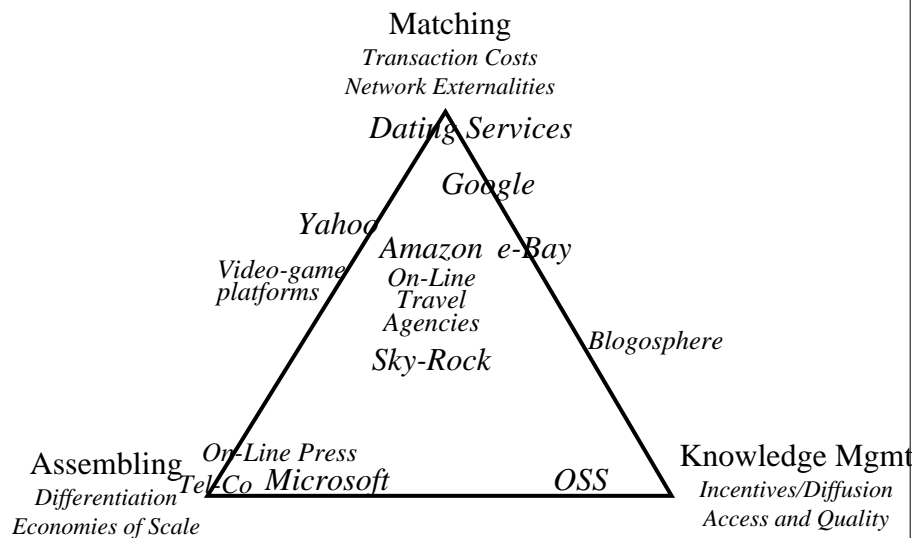
- **Matching:** *Digital Networks as “Markets”*  
Transaction Costs & Meeting Efficiency
- **Assembling:** *Digital Networks as “Production Capabilities”*  
Assembling Costs, Adaptation to Users Needs and Value extraction strategy
- **Knowledge Management:** *Digital Netwk. as Knowledge sharing tools*  
Extraction & Accumulation of Info. and Knowledge



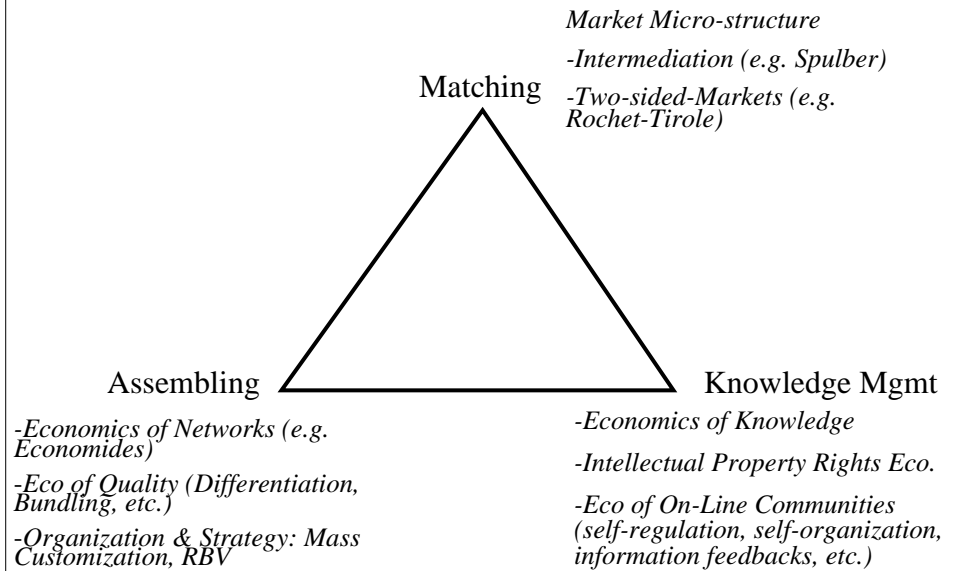
## 3 Dimensions to Contrast DBM



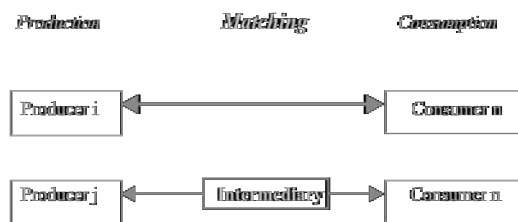
## 3 Dimensions to Contrast DBM



## II. Three Related Literatures



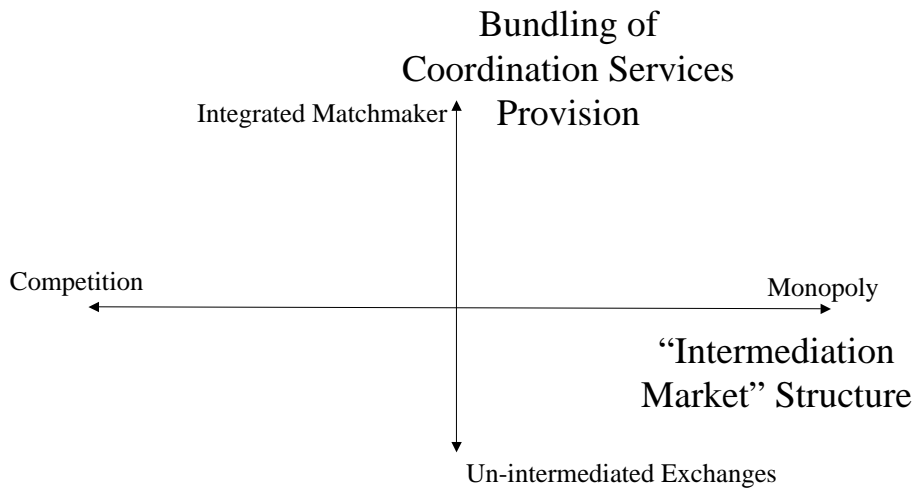
## The Economics of Intermediation: Transaction & Matching Efficiency (Market Microstructure)



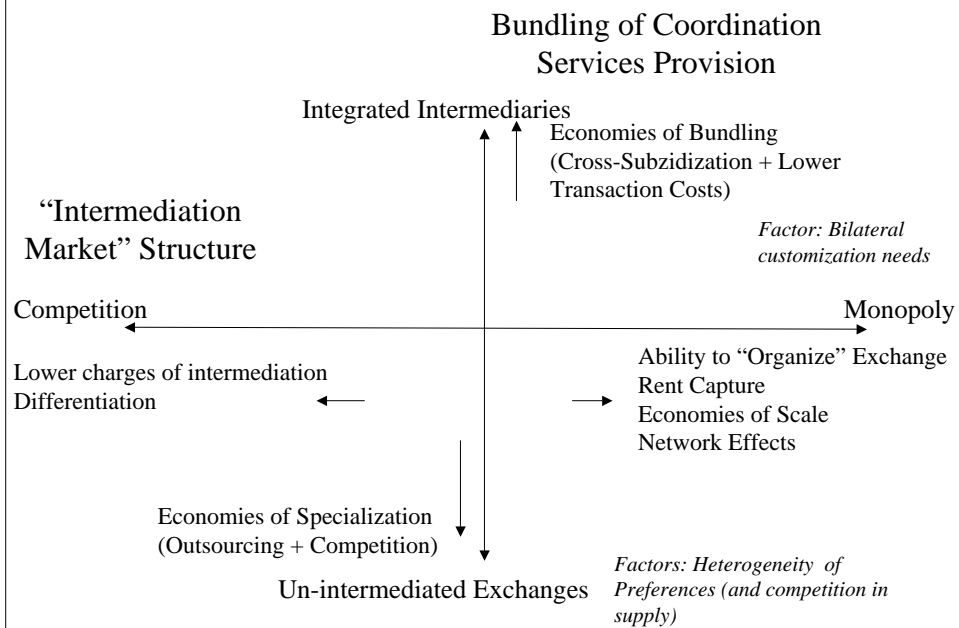
1 The Economics of Commercial Intermediation: *Externalities among functions*

2 Two Sided Markets: *Externalities among agents*

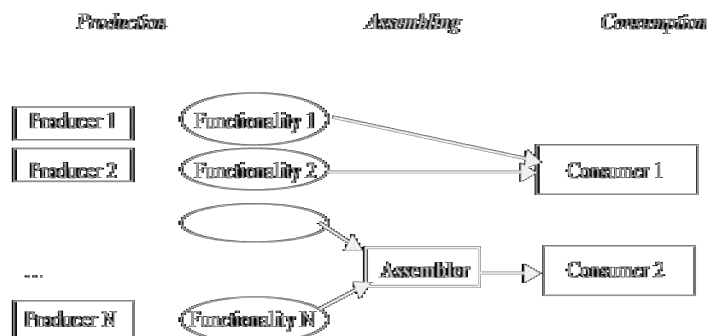
## Two Transactional Dimensions to Contrast Matching DBMs



## Transactional Tradeoffs



## The Economics of Assembling: Qualitative Matching in a Context of Mass-Customization



## The economics of Assembling

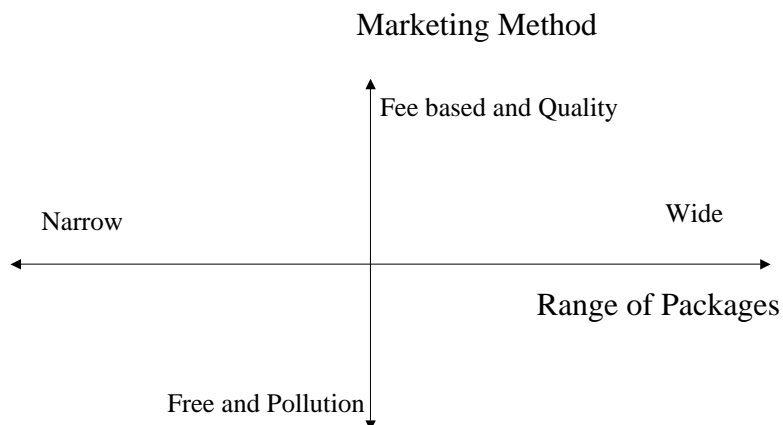
- Assumptions
  - Competition among packages with contrasted differentiation and pricing capabilities due to the nature of the core modules
  - Quality dilemma:  
Diversity vs. Interoperability (user friendliness, reliability, etc.)
- Choice of an assembling scheme
  - Non-Excludable Modules (i.e. high cost of exclusion, low incentives to exclude) => Free but “pollution”
  - Excludable Resources
    - either free but pollution
    - or fee based (subscription)



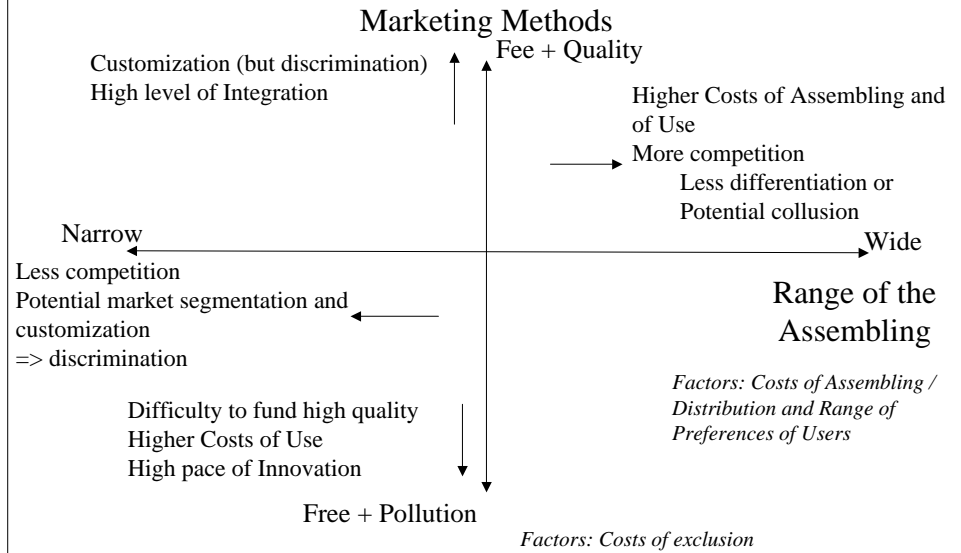
## Dynamic Competition in Assembling

- First Step: Competition within models  
(e.g. among “media” and among “access providers”)
  - Free but “pollution” based on side revenues => Incentives to enhance audience by combining an increasing number of functions => Low integration / No exclusivity (because of incentives to minimize costs of assembling, necessity to enlarge the audience)
  - Fee based => Subscription because of the nature of the economy (fixed costs) => Incentives to enhance the attractiveness by combining an increasing number of functions => High integration / High quality (because of the will to provide enhanced services)
- Second Step: Competition between models
  - Dominant player on each market: incentives to expand the market by penetrating the other’s market
    - Free low quality access for the “media” company
    - Contents for the “access provider”
  - Two scenarii
    - Same model for the two players (Mixed direct and indirect revenues)
    - Competition between high quality (professional) services and low-quality (mass-market) services

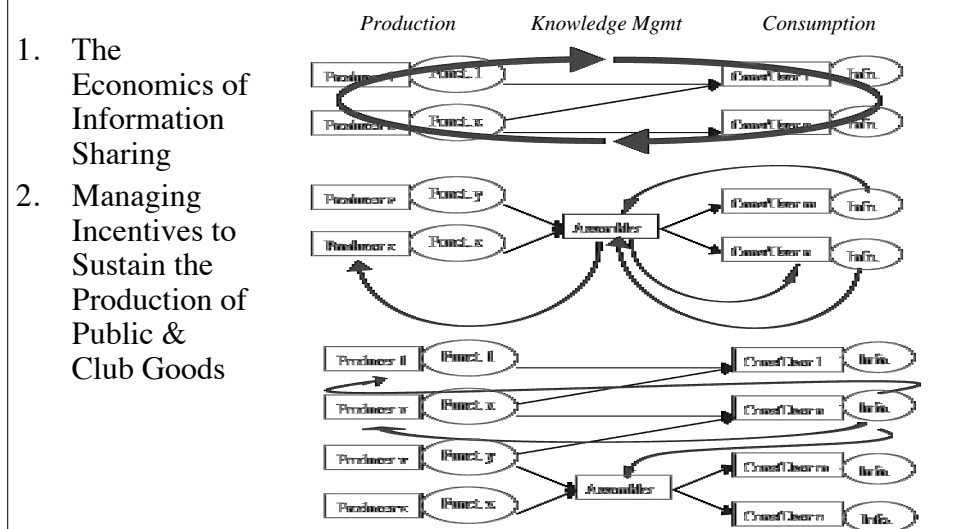
## Two Assembling Dimensions to Contrast DBMs



## Assembling Tradeoffs: The Relationship to the Users

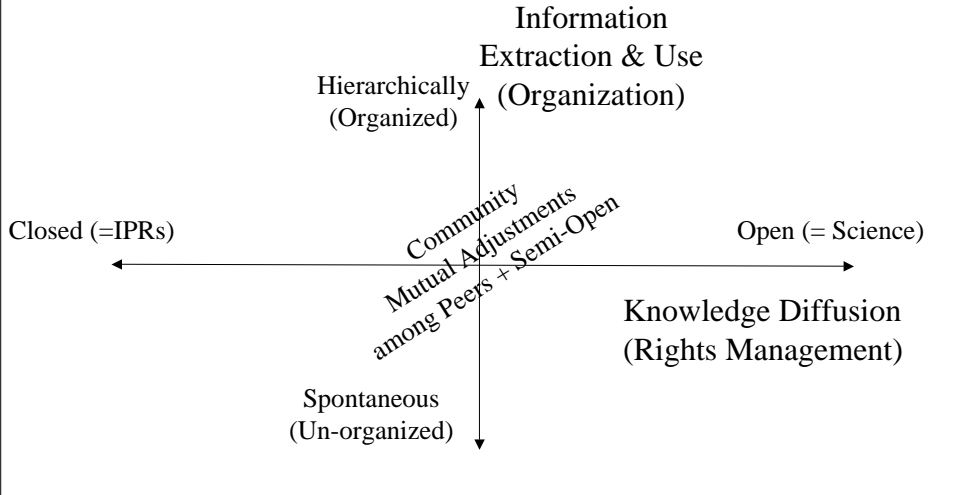


## The Economics of Knowledge Management: Collective Production and Accumulation of Public Goods

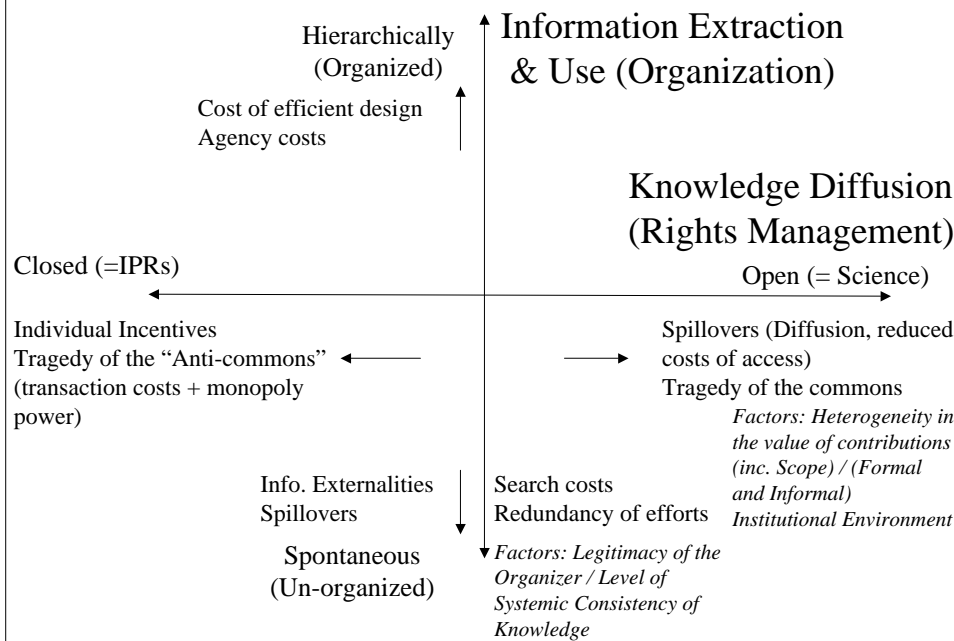


| <u>Digital Networks as Tools to Accumulate &amp; Generate Heterogeneous Types of Knowledge</u> |                                   |  |  |
|--|-----------------------------------|--|--|
| Transaction  | Trust                             | Tracking and Reputation Management                                 | <i>E-Bay</i>                           |
|  | Matching                          | Sharing of Knowledge about Capabilities and Needs                  | <i>Amazon C. Of Experience</i>         |
|  | Risk Reduction                    | Facilitating Use by Sharing Learning by Using                      | <i>FAQs Epistemic C. of Users</i>      |
| Assembling   | Products (Components) Enhancement | Gathering of Information about Satisfaction & Solution             | <i>Hot-Lines &amp; Forum</i>           |
|  | Package Enhancement               | Gathering of Information about Consumption Decision and Actual Use | <i>Fidelization + Tracking</i>         |
| Cognition  | Collective Accu. & Distrib. of K. | Sharing of Existing Stock of Knowledge and Info Goods              | <i>P2P Open Archives Epistemic Cs.</i> |
|  | Innovation                        | Collective Management of Innovation Processes                      | <i>OSS</i>                             |

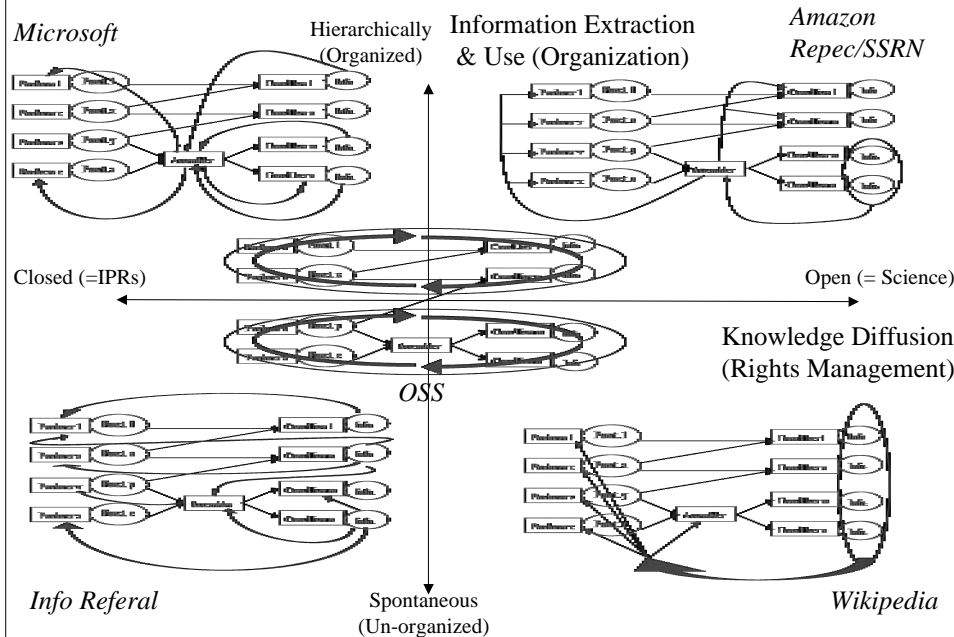
Two Dimensions to contrast DBMs according to their ability to Use and Accumulate Knowledge



# The "Collective" Dimension

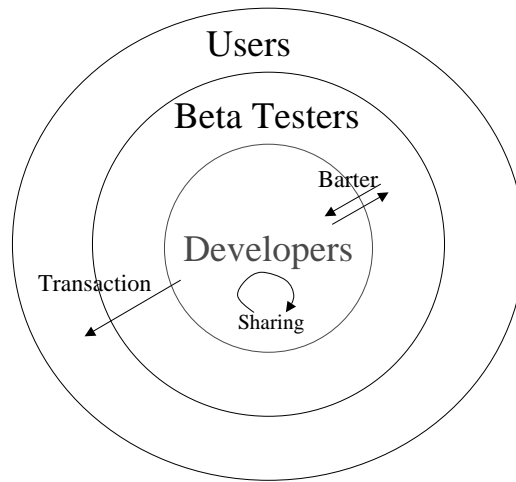


# Some Examples



## Managing Incentives to Sustain the Production of Public & Club Goods: A multi-tier perspective

The Example of OSS



## Three Pairs of Trade-offs

*“Coordinational” Typology vs.  
“I.O.” Typology  
(Varian & Shapiro)*

