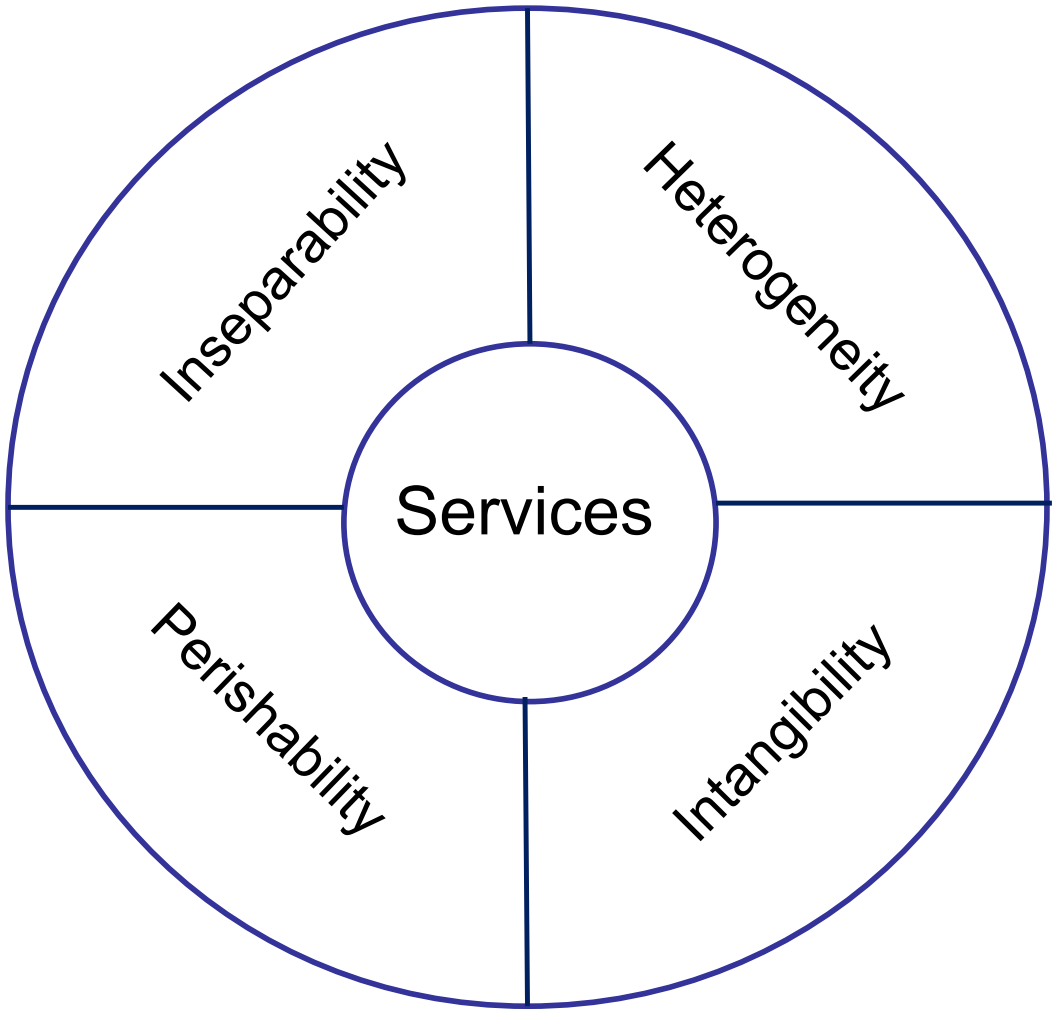
IHIP Characteristics of Services

What are the characteristics that distinguish services from goods and vice versa?



Zeithaml, Parasuraman and Berry, 1985

Distinguishing Services from Goods

Inseparability

- Services are created and consumed at the same time
- Services cannot be inventoried
- Demand fluctuations cannot be solved by inventory processes
- Quality control cannot be achieved before consumption

Consideration: Does the ability to tailor and customize goods to the customers' demands and preferences mean that these goods also have an inseparability characteristic?

Heterogeneity

- From the client's perspective, there is typically a wide variation in service offerings
- Personalization of services increases their heterogeneous nature
- Perceived quality-of-service varies from one client to the next

Consideration: Can a homogeneous perception of quality due to customer preference idiosyncrasies (or due to customization) also benefit the goods manufacturer?

Distinguishing Services from Goods (2)

Intangibility

- Services are ideas and concepts that are part of a process
- The client typically relies on the service providers' reputation and the trust they have with them to help predict quality-of-service and make service choices
- Regulations and governance are means to assuring some acceptable level of quality-of-service

Consideration: Do most services processes involve some goods?

Perishability

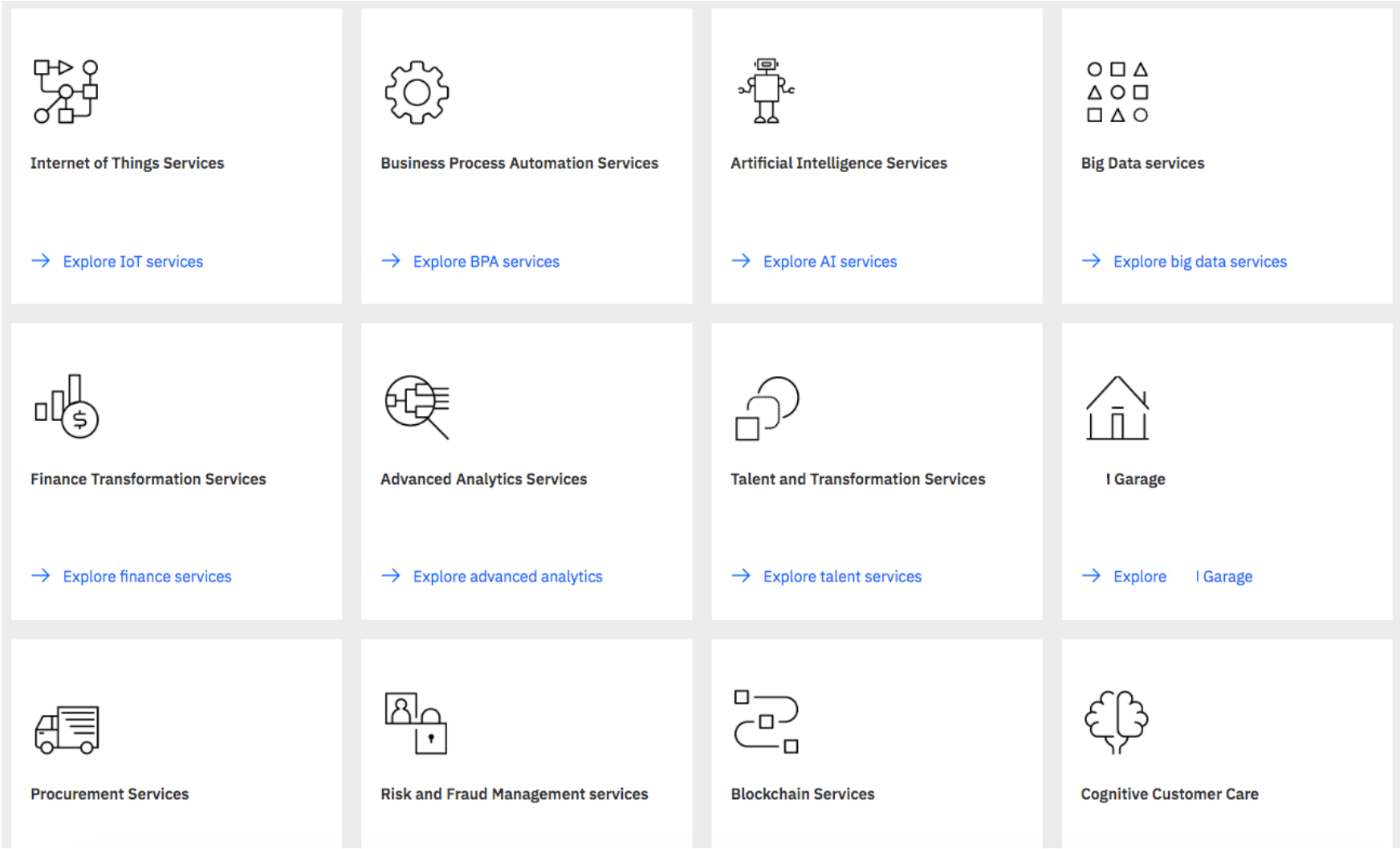
- Any service capacity that goes unused is perished
- Services cannot be stored so that when not used to maximum capacity the service provider is losing opportunities
- Service capability estimation and planning are key aspects for service management

Consideration: Do clients who participate in some service process acquire knowledge which represents part of the stored service's value? What might the impact be?

Current services thinking

- A service is a provider-to-client interaction that creates and captures value while sharing risks
- Services are value that can be rented
- Services are the application of specialized competences (skills and knowledge)
- Services are autonomous, platform independent, business functions

Example: Complex B2B services



Exercise

- Try to compare digital and traditional services with the IHIP model
- See what
  - Is the same
  - Is new
  - … and perhaps understand digital service better

The Results

Characteristic	Applicable	Explanation
Intangibility	Yes	I dati sono intangibili; il processo di servizio è qualcosa di intangibile
Heterogeneity	Yes/no	
Inseparability	No	
Perishability	No	

The Results (2)

Characteristic	Applicable	Explanation
Intangibility	Yes	Even more than physical services that often include a strong servicescape component
Heterogeneity	No	Due to digital delivery, they are standardized; quality can be kept
Inseparability	No	Digital services are on-demand; moreover, the service quality can be verified before delivery
Perishability	No	Resources are on-demand and scalable, the service is always stored in local memory or cloud

Conclusions

- Because IHIP is a poor fit, a better model for digital services is proposed
- The IHIS model:
  - **Intangibility**; intangible and consume a minimal number of physical resources
  - **High technology**; require little or no human intervention (thus similar to self-service)
  - **Invariance**; identical & consistent by measurable quality
  - **Scalability**; much more scalable due to digital distribution (no need to consider time, place, or labor)

2° Service Systems

System characteristics

- A system is any set of available variables selected by an observer to identify fundamental objects, the influential attributes of the objects, and the relationships of these objects that result in a phenomena
- **Basic assumptions**
  - Objects can be tangible or intangible
  - Objects have attributes
  - There are relationships amongst the objects
  - There are relationships amongst the object attributes

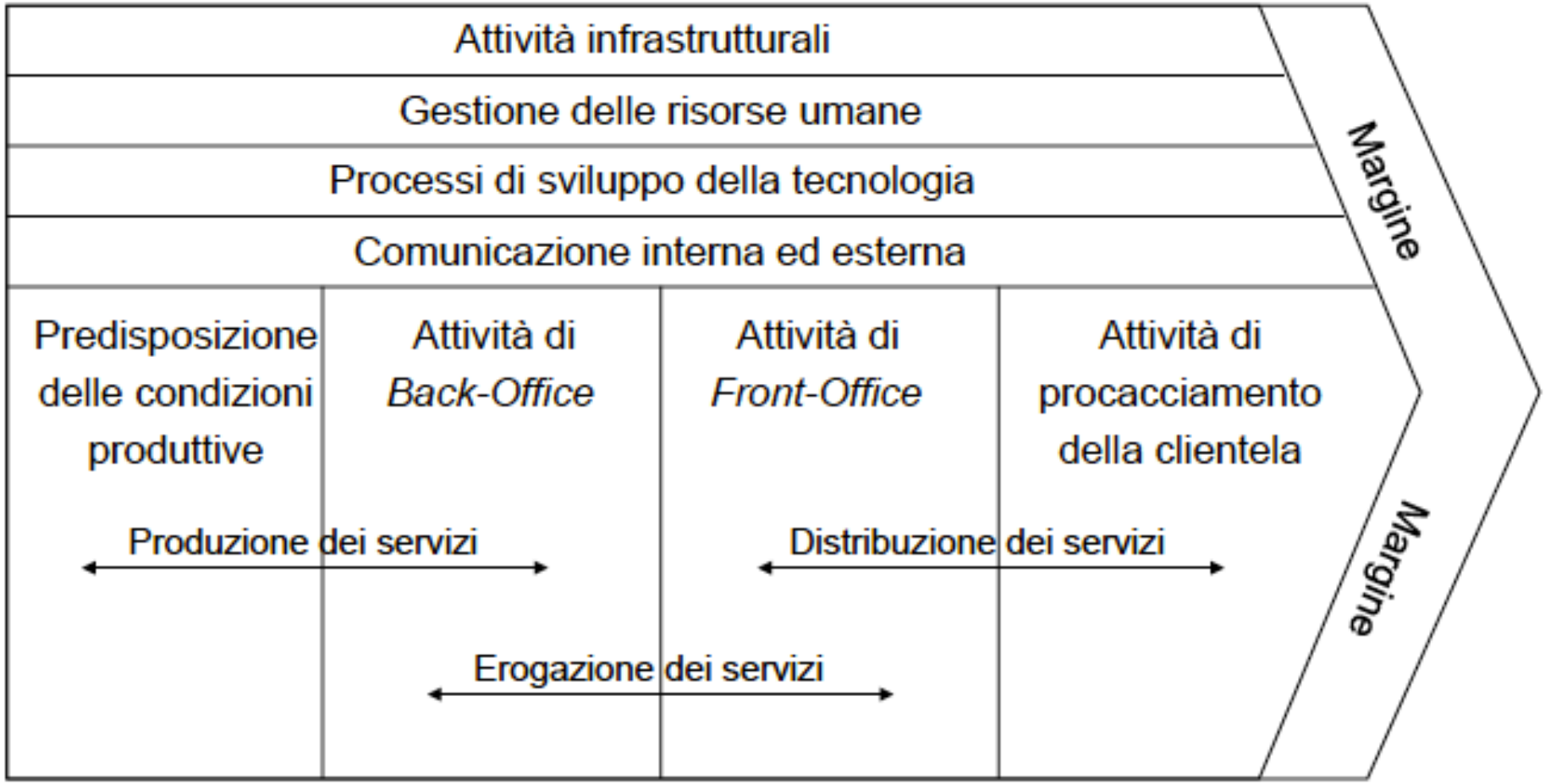
System Examples

Type	Description	Key Characteristic	Examples
Natural Systems	Biological, geological, or climatological phenomena that occur in the natural world	Constitutionally organic	Animal Earthquake Weather
Manufactured Systems	Designed creations or artifacts of living beings	Having designed subsystems defined as components, parts, or assemblies	Automobile Computer House Bee hive
Socio-technological Systems	Combination of natural and manufactured systems	Interaction elements between sociological and mechanical aspects	Business Government **Services**

Service System

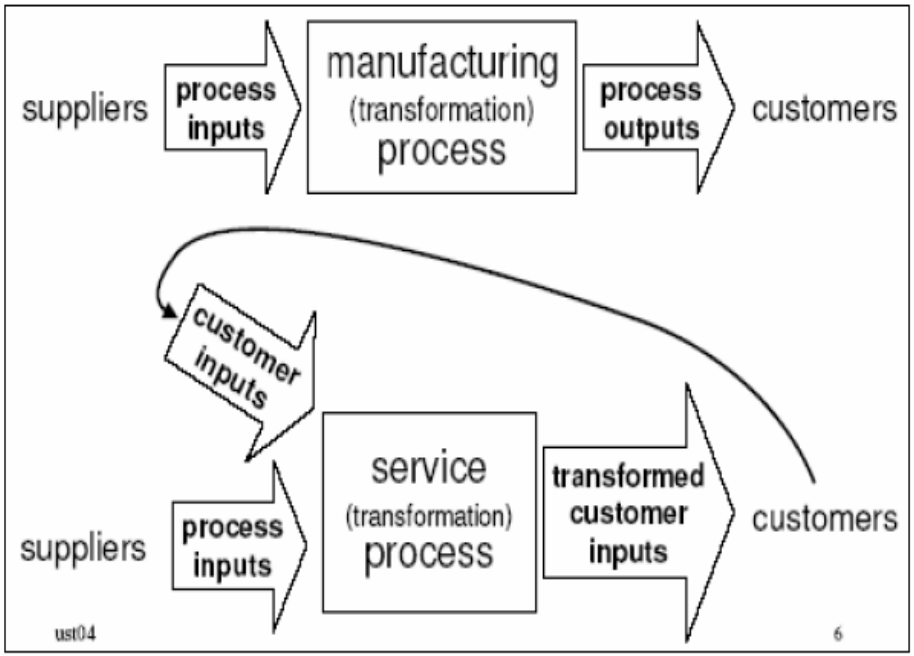
- Socio-technological System
  - Any number of elements, interconnections, attributes, and stakeholders interacting to satisfy the request of a known client and create value
- Combination of natural and manufactured systems
  - **Humans, Processes, and Goods**
- Interaction elements between sociological and mechanical aspects
  - **Customization activity**
  - **Co-productive interaction between the provider and client**
  - **Economic transaction and creation of value**

Porter Value Chain of Services



Model of Unified Services Theory

- The simplest form of the fundamental business operations model is that of a basic input/output process
- Sampson (2004): the primary differentiation factor between the traditional economic transaction model and the service system model is that in the service system model the customer (i.e., client or consumer) provides inputs into the process itself.

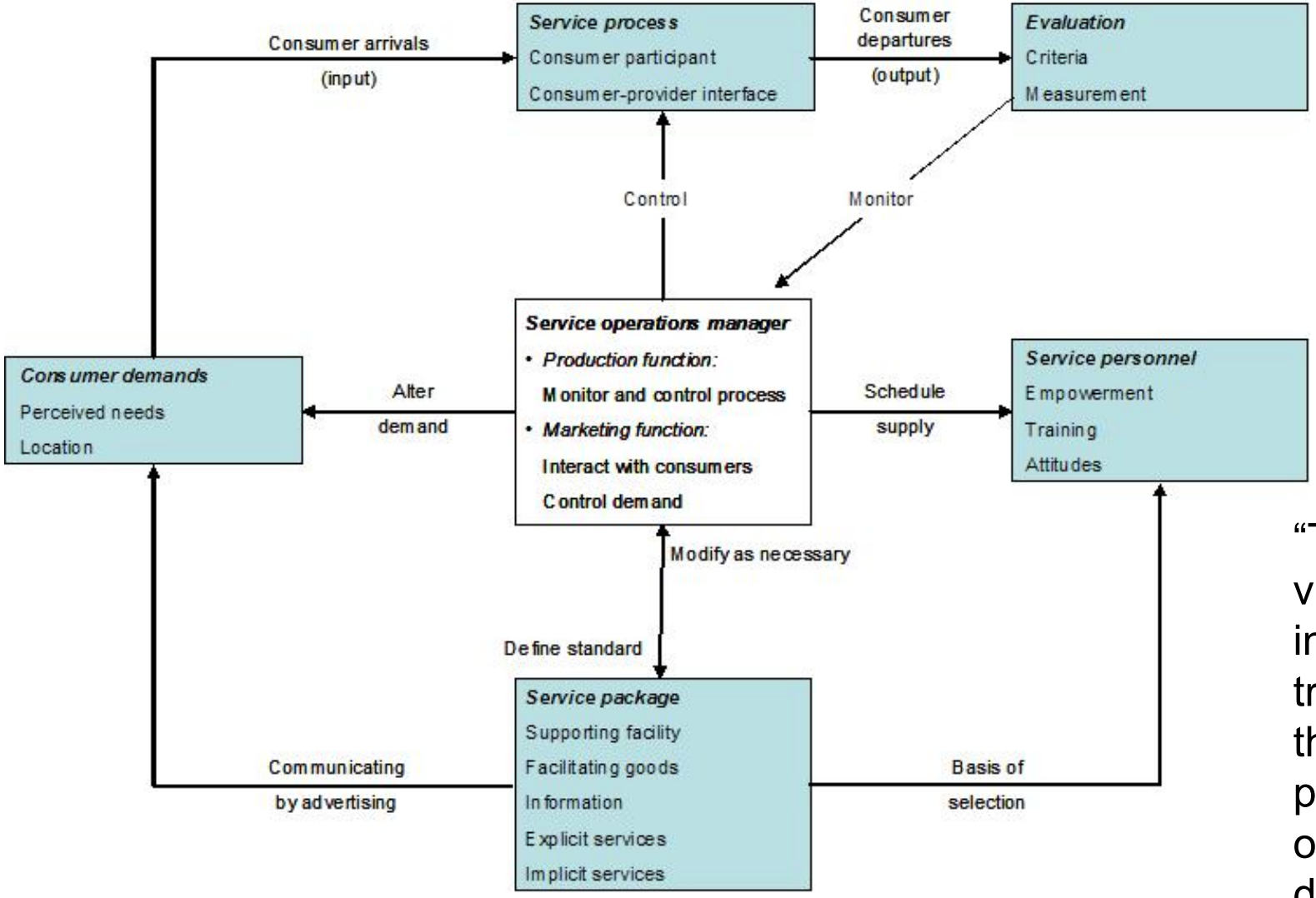


(Sampson, 2004, p. 6)

Co-production

- The customer co-produces the value (or benefit) along with the service provider via ongoing interactions
- The extent of the co-production varies from
  - indicating preferences, e.g., styling preferences at a barbershop service
  - being an active pseudo temporary “employee” of the service process, e.g., collecting your order at a fast-food restaurant, or scanning your items, bagging, and paying using a supermarket self-checkout service system
- The customer as co-producer has interesting consequences; e.g., the quality of service (QoS) is typically tied to a customer’s (or set of customers’) perspectives and experiences

Open-Systems View of Service Operations

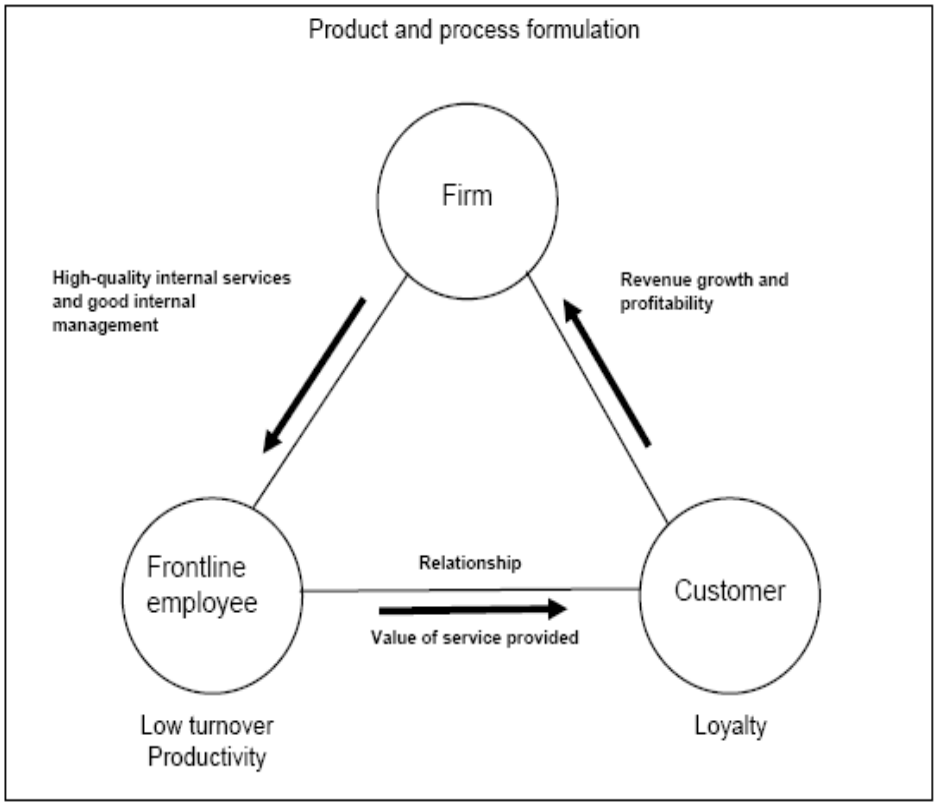


(Fitzsimmons & Fitzsimmons, 2006, p. 30)

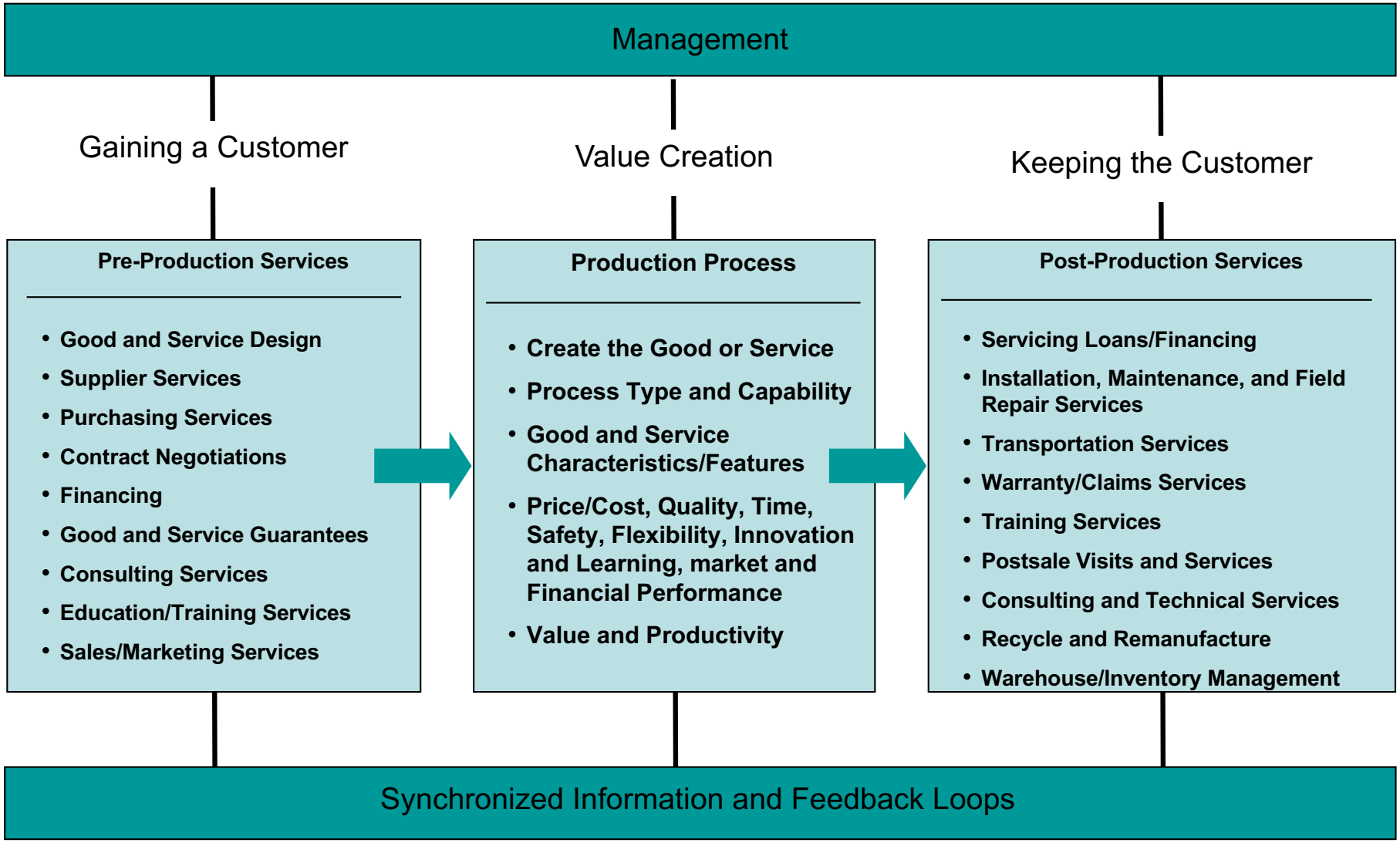
"The customer is viewed as an input that is transformed by the service process into an output with some degree of satisfaction"

Service-Profit Triangle

- A third model of a service system is that of Teboul (2005), which incorporates the concept of co-production of value from Sampson, and defines it through the different roles within the service process, as illustrated in the triangle



How is Value created?



Collier and Evans' (2005) pre- and post-service view of the value chain

Examples of Goods and Services producing Value

Organization	Suppliers	Inputs	Transformation Process	Outputs	Customers and Market Segments
Hospital	Pharmaceutical companies Equipment suppliers Food suppliers Organ donors Medical supplies	Patients Beds Staff Drugs Diagnostic equipment Knowledge	Admissions Lab testing Doctor diagnosis Food service Surgery schedules Drug administration Rehabilitation	Healthy people Lab results Accurate bills Community health education	Heart clinics Pediatrics Emergency and trauma services Ambulatory services Medical specialties and hospital wards
Pizza restaurant	Food wholesaler Equipment suppliers High school students	Food raw materials Orders Energy Labor Equipment	Order taking Home delivery In-store service Bill payment Food production	Good pizza Happy customers Quick service	Premium pizza Home delivery In-store seating Discount market Catering and group sales
State government	Highway and building contractors Employment agencies Food suppliers Equipment suppliers Other governments	Labor Energy Information Trash Crimes Disputes Sick people Low-income people	Health care benefits Food stamps Legal services Prisons Trash removal Park services License services Police services Tax services	Good use of taxpayers monies Safety net Security Reallocate taxes Clean, safe, and fun parks	Disabled people Low-income people Criminals and prisons Corporate taxes Boat licenses Building inspections Weekend vacationers Child custody services Legal court services

Collier and Evans' (2005) pre- and post-service view of the value chain

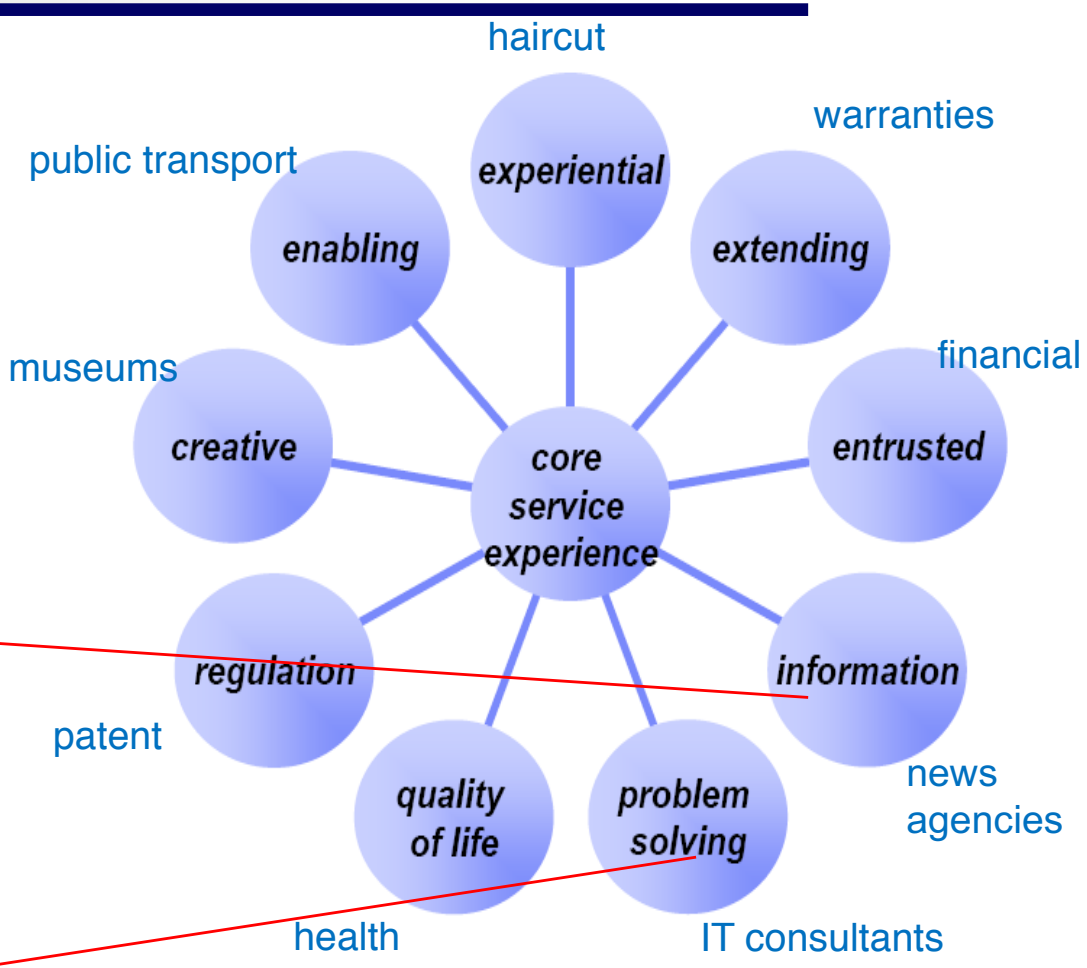
Characteristics of emerging Services

	Service Systems Engineering Characteristics			
Example Emerging Services	**Information-Driven**	**Customer-Centric**	**E-Oriented**	**Productivity-Focused**
Wholesale & Retail: Mass Customization	X	X	X	X
Business & Professional: "Early Warning" System	X			X
Education: Internet-Based Distance Learning	X	X	X	X
Government: Crime "Hot Spots"	X			X
Health Care: Medical Triaging	X	X	X	X
Finance, Insurance & Real Estate: Internet-Based Auctions	X	X	X	X
Transportation: Airline Passenger Screening	X	X		X
Communications: Real-Time Routing	X	X		X

Tien & Berg 2003 Service Systems Engineering: Characteristics of Example Services

Typology of Service Values

- The figure illustrates a range of possible values produced by different types of services, according to the theory of Bryson, Daniels, and Warf (2004)
- For example, the **Information** value is produced by services such as news agencies, search engines, data mining services, broadcasting; the value **Problem solving**, from professional consulting services etc.



Summary

- A service system is considered to be an **open-system** in which the client provides input into the service process
- The client as a provider of direct input into the system creates a co-productive relationship with the service provider
- Disruptions to the service system can result from rigidity or imbalances in the system
- However, if the service system retains an acceptable degree of balance, value in the form of **quality of life, security,** or **prosperity** is achieved for both the client and provider