
An Inquiry into the Nature of Service Economics

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Abstract: Modern economics is based on the pioneering work of Smith and Ricardo and subsequently supported to a large degree by Fawcett, Jevons, and Mill. Early work focused on products and commodities, and that emphasis is evident in supporting activities in business and accounting. Service currently constitutes approximately 90% of the GNP of developed nations, so academics have begun to place some emphasis on an up-to-date model of the new commercial environment. Traditionally, economic theory was based on tangible resources, embedded value, and transactions, whereas an economy based on service is based on intangible resources, the co-creation of value, and relationships. All commercial, governmental, and educational endeavors actually involve service, as do most products and social activities. This paper takes the view that the study of service economics subsumes traditional economics, as well as manufacturing, supply chains, transportation, finance, law, medicine, government, education, and practically all other undertakings in the modern commercial ecosystem. This paper builds on the groundbreaking work of Adams, Mill, Jevons, and Fawcett and explores how the knowledge of service principles can serve as the basis for today's complex civilization.

Key words: capital; cooperation; distribution; information; labor; profit; specialization; value; wages; wealth; service; service systems

JEL codes: B12, B20, E60, L21, L80, M21

1. Introduction to Service Economics

In its most general sense, service is regarded as a provider/client co-creation that creates and captures value for both entities, and in so doing, encompasses practically everything we do in everyday life (Katzan, 2008). Whereas traditional economics focuses on the exchange of goods, service economics concentrates on the value obtained by the instantiation of a service process. Services are derived from societal needs, such as medical care, transportation, fire and personal safety, and education. Service may involve the use of a product, such as an automobile, but is not the product per se. Products, on the other hand, are developed from anticipated needs and are created independently of the specific entity that will eventually use them. The framework for service is created beforehand, and the service is established when a given need arises — that is, when that specific service actually takes place. Service of various kinds is widely available, and differing approaches to the subject matter exist. Outsourcing, as a familiar example, may actually involve the manufacture of products or the management of service provisioning. Service, therefore, is the use of knowledge and skills for the benefit of another entity, and service economics is a subject that studies the nature of wealth generated by service (Fawcett, 1870).

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1.1 Service Science

Service is the primary activity of persons and organizations in the 21st century, yet very little is known about the subject. There are no theories of best practice, and no principles of precisely what constitutes good service. From a business viewpoint, service sustainability has not even been considered. People are interested in service, and its academic basis known as service science, because it will eventually change the predominant economic focus in developed countries from products to service. The subject is important to providers and consumers of service, since most service providers, such as individuals, businesses, governments, and other organizations, are also consumers of service (Katzan op cit.).

At the elementary level, service is straightforward, and a conceptual view of the subject matter is easily acquired. It is work performed by one person or group that benefits another person or group. Clearly, the provider and client have differing roles, and they need to exchange information to execute the service event. If one were to consider the interactive component of basic service, it would be considered to be a social activity that is consumed at the point of production. The service provider and the service client co-produce a service. Thus, service is a process, usually referred to as a service event, characterized by customer participation, simultaneity, perishability, and heterogeneity. Customer participation refers to fact that the customer brings an asset to the service event, and it essentially establishes the domain within which the event takes place. Simultaneity refers to the unique instance where the service is produced and consumed at the same time. Perishability denotes that if the opportunity to engage in the service event by the provider or client is not taken, then the service opportunity is lost. Lastly, heterogeneity specifies that each service event is unique.

With service, both participants contribute in the interchange and both benefit, even though the sense of participation is diverse and varies between different forms of service execution. The domain of service providers includes individuals, teams, products, electronic systems, groups, and ad hoc units organized to execute a particular service delivery scenario. Similarly, service clients include persons, groups, social organizations, governments, and commercial entities. In some cases, the object receiving the service is the responsibility of the client, as in cleaning and repair services. In this instance, the entity receiving the service is known as the service object. A service is often complex requiring supplementary and subsidiary services, so that a complex chain of services, called a service system, is necessary to achieve a particular result. Even though most social, commercial, educational, and governmental activities are actually service, most people don't give the subject much thought. Actually, a complete knowledge of the diverse forms of service would require a lifetime of study (Jevons, 1880).

1.2 Service Process and Organization

At the global level, an organizational entity that provides a service normally goes through a service lifecycle consisting of service commitment, service production, service availability, service delivery, service analysis, and service termination. As such, the service organization can be characterized, as being composed of a layered set of activities that constitute a value chain for services, comprised of people, technology, and organizations. This is essentially a process view of generic services supplied by a governmental or economic entity, such as a governing body, a business, an institution, or an individual acting in a service capacity. Service commitment refers to the formal agreement to provide a class of services to a service audience by a principal or trustee with proper administrative control over the service domain. The agreement, such as a charter, to provide fire service by a municipality and the establishment of a health clinic are common examples. The mayor of a city is a common example of a service principal. Service production pertains to the operational aspects of service provisioning that encompass service design, infrastructure, availability, quality management, and back-office processing. The

producer is the agent of the principal in a prototypical principal-agent scenario. The principal and the agent may be the same economic entity or different entities in a distinct service relationship. The producer is responsible for insuring that the resources are available to execute a service, including those persons charged with performing that service. Service availability denotes the time when a service is available, including initiation and termination dates. Service delivery is a comprehensive class of activities, regarded as the “service”, that is the layer where the service client comes into the picture. The doctor/patient relationship is a good example of this layer. The service provider, who could have a dual role as a producer, is an agent of the producer as the primary source of service revenue and is the primary provider of service. Service delivery normally consists of several inherent services constituting a service value chain. Service analysis refers to the measurement activities and the determination of value propositions needed to sustain service operations. Service termination reflects the inevitable consequence of evolving services where a total service operation has to be retired, because of insufficient activity or realigned opportunities (Katzan, 2009).

1.3 Service Economy and Service Economics

In the traditional world of economics, the efficiency of labor, production processes, marketing, and sales is paramount to a successful and sustainable enterprise. The concepts apply to non-profit organizations as they do to profit-making businesses, and equally well to education and government. Because the interactions in service are more complicated, the initial success of a particular service within a specific application domain engenders an increased demand that leads to additional service provisioning and also a larger client population.

Service economy and economics are related terms concerned with the value proposition of a service and how it is provisioned and consumed. Service economy is the study of the nature of services that underpin the activities of persons, organizational entities, institutions, governments, and nations. It is based on derived value that enables one entity to be more successful as a service provider than another. Service economics is the study of the interactions of service entities that essentially constitute a service experience. Service economy operates at the general level, and service economics operates at the detailed level. A service economy is concerned with how a service is formulated through a life cycle of commitment, production, availability, delivery, analysis, and termination. Most services adhere to this life cycle. The service interaction in service economics incorporates activities, primarily based on the client, that include service acquisition, invocation, execution, and service termination. These topics will be expanded upon in subsequent pages.

1.4 Learning and Applying Service Concepts

It is important to recognize that service is a science, as is chemistry or biology, in the sense that knowledge of the subject matter increases the ability to provide and consume service (Jevons, 1880). There is a body of knowledge supporting the subject of service science together with characteristic problems and a wealth of appropriate solutions. The mistake that people make about the subject matter is that they think they can learn all they need to know about service without studying it, because a good service process or product is often viewed as an end result, rather than a process. It is commonly thought that all that is needed is the desire and the wherewithal to execute the service and somehow the results will be commensurate with the perceived needs. The key point is that people do not become familiar with a subject until the underlying principles have been exposed. The nature of service should be considered when any political, financial, or business question arises. Service systems are socially constructed forms of interaction wherein entities exchange beneficial forms of action through the combination of people and technologies that adapt to the changing level of information in the system. Thus,

service is a social reality constructed through a dynamic process replicated and maintained by social interactions within a service and between services.

Service economics deals with the value derived from services, how that value is derived, and how it can be enhanced by modern technology. Certainly, wealth derived from service provisioning is an important consideration in the availability of service, but there are other non-monetary benefits to be derived from service, such as success, happiness, and opportunity.

2. Structural Dynamics of Service

Most services adopt a common structure that essentially determines how the provider and client interact in order to execute a service process. Ordinarily, the total service process incorporates several well-known steps that constitute what is commonly regarded as the service: service acquisition, service invocation, service execution, and service termination. Clearly, this is a provider view of service. The prevailing opinion is that the client is involved as a secondary participant. However, what would occur if there were no clients. Without clients, a doctor is a person with an MD degree, and a bricklayer is someone that knows how to position bricks or similar objects. Thus, a client provides a service to the provider by engaging in the service process as being a receiver of service. The concept is that there is a certain duality in services, wherein the client depends on the provider and the provider depends on the client. We will refer to this phenomenon as service duality. Thus, the common practice of denoting the client as a secondary participant is not valid in the modern view of service execution. The provider and the client, in the most general sense regarding service, are on an equal footing.

2.1 Service Collective

In many instances, the provider and client are not singular, but are groups. A group of service providers, known as a provider set, is a collection of service systems designed to support a particular endeavor in its respective domain, such as a university, medical group, or even a newspaper. Each element in the set provides a specific service to a client. Associated with the provider set is a client set composed of elements that function in a complementary manner with provider set elements to instantiate a service event. A service is thereby an interaction between an element from the provider set and an element from the client set, represented as a mapping between the sets. Accordingly, the collection of mappings is a service set. It follows that a service collective is a 3-tuple consisting of a provider set, a client set, and a service set, all of which can interact through an eclectic platform designed to sustain a unified service system. A unified service system is created when a client set is combined with the provider and service sets, and the inherent process is called unification.

Examples of service collectives are commonplace. A university, for example, provides services to students. The provider set would consist of administrative, student, and academic services. The students comprise the client set. Similarly, a newspaper consists of sections, such as sports news, national news, international news, financial news, and so forth. Readers are the clients. In both instances, not all clients use all of the services, and a section of providers do not supply all services.

A service value chain is a progression of activities adopted to materialize a service. Not all service resources perform functions that are specifically evident in a provider/client interaction. In fact, there are three major stages in a service value chain: service commitment, service production, and service delivery. The three stages are collectively referred to as service provisioning. When practitioners refer to service, they normally intend the service delivery stage.

In many cases, the provider set operates as a connected service system that interacts through shared information to provide a service. Two forms are clearly distinguished: flow and interactive. In a flow system, information is passed between service providers on a sequential basis. Operationally adjacent providers are coupled to provide service delivery. Essentially, one provider performs the initial step in a service procedure; a second provider performs a second step; and so forth. In an interactive system, members of a collection of providers interact on a needs basis to execute a service. Thus, the provider set can be viewed as a partitioned set in which sections demonstrate coupling or cohesion.

2.2 Duality

In the classic view of service, the roles of the provider and client are not symmetrical. In the most general sense, and even though the provider supplies a service to the client, and the client provides a service to the provider by being a client, the roles each entity plays are markedly different. In actuality, a team of providers may supply the service, and the client may be a singleton. For example, a team of doctors may service a single patient. The converse is also true, in the sense that a mayor provides leadership to an entire town. As mentioned earlier, the client provides a reciprocal service to the provider. This is an example of service duality. Clearly, the question is “Does the mayor provide service to the town or does the town provide service to the mayor?” It is conceivable that service duality is a form of exchangeable value in service.

2.3 Collaboration

In some instances, a set of service providers collaborates to execute a service. A primary service is the core service for which the provider and the client interact to produce demonstrable value. Accordingly, the key person, in a human instance, is the primary service provider, and in all but exceedingly simple cases, that person has helpers that provide secondary services. A secondary service is a service that ordinarily does not exist separately as a primary service and plays a supportive role to a core service. A doctor that supports a surgeon is functioning as a secondary service provider. It is important to note at this point that the name “secondary service provider” does not imply capability, but what is actually performed during the execution of a service process. The notion of a secondary service traditionally encompasses separate functions involved in the performance of the core service process, existing in close physical and temporal proximity. A core service is dependent upon a secondary service, and the reverse is also true. The cohesion between core and secondary service processes is high. When this phenomenon occurs, the core and secondary service providers are regarded as collaborating in the service process. Examples of secondary services are numerous and have a substantial variation. Three instances are the weigh in and blood pressure checks associated with a doctor’s visit, the acceptance and delivery of garments at a dry cleaning establishment, and the routine support functions performed in support of an automobile mechanic. When two service providers are cooperating to perform a task, or set of tasks, but working independently as with a couple of masons building a structure, the concept of core and secondary service processes does not necessarily apply, since the cohesion of the two participants is low.

3. Fundamentals of Service Economics

Service economics is a subject that studies the nature of wealth generated by service (Fawcett, 1870). It is an important subject because the modern view of the service economy must be considered when any political, financial, or business question arises. People do not generally become familiar with a topic until its underlying principles have been identified. Service is largely a utilitarian discipline (Mill, 1861), wherein a coherent set of

underlying principles are not yet available, so that in everyday affairs, it is not prudent to defer analyzing the subject until those principles have been verified or confirmed. Every social question involves service, so that service economics would necessarily involve the following endeavors: production, exchange, distribution, and commerce. Another consideration is that the focus of economics has changed from land, labor, and capital to participants, knowledge, and capital. Capital is an important component, but not a defining characteristic, and necessarily encompasses wages and infrastructure.

3.1 Wealth and Service Value

Wealth is an important part of the end result of any commercial activity. Like service, wealth is a term with many different meanings. In business, wealth refers to money and things that have exchangeable value. In government, wealth refers to the capability of having commercial and political power using money as a facilitator. In education, wealth is usually reflected in facilities and instruction. A wealthy country would have more exports than imports resulting in an importation of money, using the precise form of money available at the time. Mill (Mill, 1885) wrote that the wealth of a country is dependent on the skill with which its labor is employed, and Smith (Smith, 1776) remarked that labor is the basis of all production. This leads, of course, to the modern reflection that an increase of wealth is not only an increase in money, but it is the potential for providing service. Early political economists considered wealth as anything with exchange value (Fawcett, 1870). However, many things with useful purpose, such as the air and sunlight, are not wealth unless modified by human intervention. Money, as a public instrument, is solely a measure of value and a medium of exchange. A wealthy person or organization has a large collection of desirable or necessary items, or the means of obtaining them, provided that they are not a direct product of nature without the requirement of involving some form of labor. Another consideration is that wealth is increased by producing where and by whom it is produced most expeditiously (Ricardo, 1817).

Although service can and does involve products, it is not a material product of nature, so that service wealth, in its most basic form, is useful activity that produces value through human involvement. Service wealth lies in the potential for providing service, so that service-provisioning agents are the basis of all service. Clearly, humans, products, and informational resources can provide service. Thus, value is established by an exchange of service through a provider-client relationship. Service is usually associated with business, where value is produced through the manipulation of goods, capital, people, and events. Thus, service is a refinement of the business process.

A vertical is used to establish the value of service, consisting of value, price, and cost. The difference between cost and price yields the margin, and the difference between price and willingness to pay is the service value.

There is no explicit exchangeable value in service, *per se*, because you can't purchase someone else's service. A service is established at the point of instantiation and ends when the service is complete. The particular service under consideration is then finished. It no longer exists — only a record (or memory) of that service persists, along with tangible or intangible results, as determined by the specific incident. Separate from the actual service process, the facility of obtaining service, in the general view of society, can be scheduled, rescheduled, unscheduled, transferred, and purchased. The access to service is transferable, but the actual performance of a service is not. Moreover, it is possible to purchase the ability to obtain a service, and it is possible to pay for actually receiving a service by the client or a client's advocate.

A clarification is in order. One might view the purchase of an airline seat or of an automobile, as something

of exchangeable value. However, the purchase of a seat or an automobile provides only an entity capable of providing or sustaining a service; it is only a *service facilitator*, but it is not a service per se. A service is the execution, or more properly the instantiation, of a process that provides the service, as in the airline and automobile forms of transportation.

On the other hand, there must be some explicit value in service, since it serves as the basis of the modern economic system. Thus, the wealth inherent in service results from the co-creation of value. The execution of a service yields two or more distinct values: the act of performing or receiving the service and the result of having the service process performed. Accordingly, a service value can have two related components: commercial value and personal value. The result may be tangible or intangible, as covered previously. During the act of performing a service, it is useful to recognize two things: the provisioning dimension and the “receiving” dimension, to which we can add the service object dimension that may coincide with the receiving dimension.

When a service provider executes a service, including auxiliary and supplementary services, it is done for its economic value — salary, a fee, or another form of compensation. When a service client receives a service, it is often the case that a personal value is obtained — a state that is inconvenient to obtain or impossible to achieve independently.

The reasons are clearly evident, since most services result from one or more of the following circumstances: (1) Something you can't do; (2) Something you don't want to do; and (3) The opportunity cost of the client performing the service. There are, of course, two points of view: that of the element of the provider set and the element of the client set. From the provider's perspective, the service value lies in the performance of the service process, and from the client's perspective, the service value results from the end state after the service is performed.

3.2 The Domain of Service

It is clearly obvious that the work of a professional entity is a service. Retailing is a service in that it changes the ownership property of an item within its domain. Employees of an organization provide a service, as does the mayor of a city or governor of a state. Federal, state, and local governments provide a service to their constituents. Police and fire departments provide a service. The religious clergy provides a service. Educators and parents provide a service. Products provide tangible and intangible services. Most forms of commercial and social activity involve service of some sort. Yet, we, as a society, actually know very little about service; we can elicit no principles of good service behavior, and very little evidence of best practices — in spite of the fact that at least 80% of persons are engaged in service — through commercial or social activity.

3.3 Service Structuralism

The thesis of service structuralism concerns the concept that what really matters about service is not the concrete elements of provider, client, and object, but rather the manner in which the constituent elements relate to each other. Thus, a service system is a collection of abstract objects with relations on how the objects may interact with each other, such that the structure is an abstract form of a system. Only when concrete objects are abstracted from the service system can principles of behavior be developed.

A property is an attribute or characteristic of a service element. There are two forms of study: conceptualism and realism. In the former case, properties exist but are dependent upon the mind. In the latter case, properties exist independently of the mind. We are concerned with realism for the development of principles that govern service. Again, there are two forms. Within rebus realism, a property exists only if it has instances. With ante rem realism, a property can exist if it has no instances. This paper takes the ante rem view of service economics. To

sum up, what we are concerned with in service economics is not the characteristics of the provider, client, and service event, but the relationship between the various constituent elements.

3.4 Service Requisites

Service economy is a discipline that investigates the operational conventions that govern the production, exchange, and distribution of value resulting from the execution of a service process, a service event, or the use of a service artifact. Value is a demonstrable result of the application of the operational conventions.

The value of a service essentially incorporates three entities: the service provider, the service customer, and the service object. The important element, as least at this point, is the junction where the three entities interact. Recall that the customer is typically more concerned with the result than the service process. The service provider is more concerned with the service process, because if the service is performed correctly, then the result will be satisfactory. The service object is independent of the service process, unless it coincides with the customer.

The basis of classical economics stems from the writings of Smith (op cit.) and Mill (op cit.) and is recorded in the publication of Fawcett (op cit.), and is synthesized from the coordination of land, labor, and capital, serving as the input to production. Within a background of classical economics, the tenets of service provisioning are specialization, division of labor, and comparative advantage. A client arranges for service with a specific provider to obtain the knowledge and experience in a particular domain. The service process is designed to utilize the notion of service itself — the division of labor — to enhance efficiency and achieve quality of the service experience. Comparative advantage results from the practice of employing a service provider with the most prudent infrastructure to achieve the highest quality results from the service process.

The basic tenets of service model those of classical production that have stood the test of time. Specialization allows the service producer to take advantage of existing abilities (Fawcett op cit.). Division of labor allows specialization to be applied where it is most applicable, and comparative advantage permits outsourcing to be employed to provide service efficacy. The three basic tenets expedite large-scale provisioning, yielding a better quality of service and efficient operations.

3.5 Focus of Service Economics

The view of service economics was described earlier as being focused on the participants, knowledge, and capital. The participants in a generic view of service are the provider and the client sets that result in the notions of collaboration and duality. Technological, organizational, and human elements are traditionally combined to create service.

Knowledge, as in the case of professional endeavors, and capability, as in the case of manual procedures, are paramount to service. Knowledge and capability supersede specialization, provide the basis for division of labor, and often constitute the requirement for outsourcing.

Capital takes on its traditional value, as the part of wealth that is advanced to establish infrastructure, stock, and supplies and to cover wages until service renders a return on investment. Owners of capital will ordinarily appropriate funds unless they are rewarded with a share of the value generated by service — referred to as the profits of capital. It has three components: interest on the money expended, compensation for risk, and the variability of the service domain. If the profits of the capital investment are not greater than the interest on the funds, for example, then clearly the investment would not be made — unless special considerations apply.

Participants, knowledge, and capital are the forerunners of further work on the development of service economics.

4. Summary

It is generally recognized that service is a provider/client collaboration that creates and captures value for both participants. Both entities contribute in the interchange and both benefit, even though the sense of participation is diverse and varies between different forms of service execution. An example is the relationship between a doctor and patient that relies on the participation of both persons, since both entities are required in order for the service to be instantiated. Moreover, a doctor's service varies between patients and yields different results, depending on the situation. This characteristic is typical of most service. The entity supplying the service is known as the service provider, and the entity receiving the service is known as the service client. The domain of service providers includes individuals, teams, products, electronic systems, groups, and ad hoc units organized to execute a particular service delivery scenario. Similarly, service clients include persons, groups, social organizations, governments, and commercial entities. In some cases, the object receiving the service is the responsibility of the client, as in cleaning and repair services. In this instance, the entity receiving the service is known as the service object.

Most commercial and social activity involves service, yet very little is known about the subject. This paper covers the structure and operation of services, as well as a lifecycle of service processes. The relationship between service and traditional economics is explored as a basis for the study of service economics.

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