**ONTOCOMMONS BRIDGE-CONCEPT**

**SERVICE (COMMERCIAL)**

**[Commercial Product CLUSTER]**

**General Concept Info:**

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| **IRI:** | *Suggested entity new IRI.* |
| **OWL Type:** | *Class* |
| **Concept Elucidation:** | A Service is something which is -or has been- explicitly offered on the market for purchase or barter, and whose ownership is not transferred to the purchase as a condition for the completion of the transaction. It should be noted that the relevant transaction can involve the transference of legal rights, as long as the latter are not constitutive of the Service.  Services consist in the access to some benefits. The benefit has to be made directly, or indirectly, available by the organization or individual offering the Service on the market.  The access to the relevant benefit can be temporary (be the duration predetermined or not) or permanent; access to the benefit can be given, and revoked, at any point during the transaction. Services are generally considered to be intangible and conceptualised as reified activities, though said characteristics do not pertain to the domain of economics, and are at most derivative.  Domain: Economics - Business – Marketing |
| **Labels:** | *Labels used to address the concept, ordered as:*  *skos:prefLabel:* Service (Commercial)  *skos:altLabel: Service; Service (Economic); Benefit*  *skos:hiddenLabel: Product; Good; Article; Purchasable; Transactable Entity; Merchandise; Commodity; Ware; Intangible Product* |

**Knowledge Domain Resources:**

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| **Related Domain Resources:** | *-Wikipedia:* “a service is a set of one-time consumable and perishable benefits that are:  delivered from the accountable service provider; mostly in close co-action with his internal and external service suppliers; effectuated by distinct functions of technical systems and by distinct activities of individuals, respectively; commissioned according to the needs of his/her service consumers by the service customer from the accountable service provider; rendered individually to a consumer at his/her dedicated trigger; consumed and utilized by the triggering service consumer for executing his/her upcoming business activity or private activity”; “a service is an (intangible) act or use for which a consumer, firm, or government is willing to pay”.  *-WordNet 3.1:* “work done by one person or group that benefits another”.  -*WikiData:* “activity that directly satisfies wants without producing a lasting asset” (Q7406919).  -*ISO 9000:* [product] “output of an organization that can be produced without any transaction taking place between the organization and the customer”; “production of a product is achieved without any transaction necessarily taking place between provider and customer, but can often involve this service element upon its delivery to the customer”; “the dominant element of a product is that it is generally tangible”; “Hardware is tangible and its amount is a countable characteristic (e.g. tyres). Processed materials are tangible and their amount is a continuous characteristic (e.g. fuel and soft drinks). Hardware and processed materials are often referred to as goods”; “software consists of information regardless of delivery medium (e.g. computer programme, mobile phone app, instruction manual, dictionary content, musical composition copyright, driver's license)”.  -ISO 14040: [product] “any goods or service”; “the product can be categorized as follows: — services (e.g. transport); — software (e.g. computer program, dictionary); — hardware (e.g. engine mechanical part); — processed materials (e.g. lubricant)”; “services have tangible and intangible elements. Provision of a service can involve, for example, the following: — an activity performed on a customer-supplied tangible product (e.g. automobile to be repaired); — an activity performed on a customer-supplied intangible product (e.g. the income statement needed to prepare a tax return); — the delivery of an intangible product (e.g. the delivery of information in the context of knowledge transmission); — the creation of ambience for the customer (e.g. in hotels and restaurants). Software consists of information and is generally intangible and can be in the form of approaches, transactions or procedures. Hardware is generally tangible and its amount is a countable characteristic. Processed materials are generally tangible and their amount is a continuous characteristic”; “adapted from ISO 14021:1999 and ISO 9000:2005”.  -ISO 900: “output of an organization with at least one activity necessarily performed between the organization and the customer”.  -ISO 17028: “output of a service provider with at least one activity necessarily performed between the service provider and the customer”.  -ISO 21245: “result of activities between a supplier and a customer, and the internal activities carried out by the supplier to meet the requirements of the customer”. |
| **Comments:** | *This engineered OntoCommons bridge-concept aims to provide an up-to-date and ambiguity-free characterisation of one of the most employed notions in economics and marketing. The useful notion is focused on few defining traits and retains generality in its scope of application while at the same time helping in organising the landscape of products. This bridge-concept was developed in accordance with both explicit requests from MLOs’ stakeholders given OntoCommons’ survey and pragmatic alignment needs.*  *The definitory trait of Commercial Products (i.e. their being actually, and explicitly offered for purchase or barter on the market) will not be discussed here; the discussion can be found in the relevant template.*  *The defining trait of the OntoCommons bridge-concept, Service (Commercial), was chosen in a way that would ensure a domain-specific common-sense & golden-standards friendly subdivision of the logical space: ownership transference. In fact, while both ISO 9000 and ISO 14040 revolve around tangibility, focusing on the latter leads to a problematic partition of the logical space when it comes to e.g. patents, trade secrets, and softwares. An alternative revolving round the necessity of interaction, by means of an activity (not related to the transaction itself), between provider and customer, was considered and consequently discarded as the definitory trait, though the latter figures in a number of golden standards, such as ISO 900, ISO 17028, ISO 21245. The reason underlying this choice is the following: some services, such as insurances, needn’t involve actual provider-costumer activities, but only potential ones. A definition circumventing these cases necessarily loses some cogency, and opens up to ambiguity. It should also be noticed that a transaction not involving a transference of ownership is bound to require other forms of compensation, which are -arguably- extensionally equivalent to those characterising services. The connection is further reinforced by the ancillary condition concerning the relation between seller and provider. The clarifications concerning the possibility of transference of legal rights in the transaction serves to avoid possible pitfalls in categorisation, and reinforces the distinction of services from other products.*  *In general the partition of the logical space based on ownership transference has all the expected derivative consequences, and properly captures the core economic aspects of the investigated phenomena, thus being prima facie a trait capable of grounding the distinction between services and articles, as they are commonly understood.*  *The OntoCommons bridge-concept, Service (Commercial) revolves around a well-defined economic trait, capable of partitioning rigorously the logical space. As such, it avoids ISO 14040’s vagueness caused by the focus on prototypical, non-necessary, characteristic, ensuring ease of classification and the rigidity of the taxonomy. Nevertheless, it was decided to mention tangibility (in this case, intangibility) given the characteristic’s importance in the relevant literature. However -to the end of avoiding ambiguities and improving conceptual clarity- the related considerations were explicitly stated to be grounded on non-neutral background assumptions, to be alien with respect to the domain of economics, and the trait was specifically stated to be at most contingently derivative. Arguably, there is a high risk of introducing biases by listing paradigmatic (yet not strictly necessary) characteristics and examples, so they were kept to a minimum, and counterweighted by making values/value gaps explicit.* |

**Concept’s Cluster:**

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| **Cluster:** | *Commercial Product* |
| **Cluster Relations:** | *The Engineered OntoCommons bridge-concept Commercial Product is the core of the Cluster: Commercial Product.*  *Article (Commercial) and Service (Commercial) are engineered in a way such that they jointly exhaust Commercial Product’s logical space; as a result of that, Article (Commercial) and Service (Commercial) are rdf:subClassOf Commercial Product, and Commercial Product is rdf:equivalentTo the union of Article (Commercial) and Service (Commercial). Likewise, Good (Commercial) and Intellectual Article (Commercial) are engineered in a way such that they jointly exhaust Article (Commercial)’s logical space; as a result of that, Good (Commercial) and Intellectual Article (Commercial) are rdf:subClassOf Article (Commercial), and Article (Commercial) is rdf:equivalentTo the union of Intellectual Article (Commercial) and Good (Commercial).*  *The bridge-concepts belonging to the cluster are organized hierarchically focusing on core traits and traits-values, to the end of engineering strong semantic links capable of supporting mediated alignments. The traits are chosen in a way which maximizes coherence with existing standards and ease of alignment with ontologies, given commonly employed ontological theoretical choices/background assumptions.*  *Specifically, the first partition of Commercial Product’s logical space -by means of the bridge-concepts Article (Commercial) and Service (Commercial)- attempts to capture the common-sense-friendly distinction between services and other things that can be purchased, often identified by means of labels such as ‘goods’ and ‘merchandise’. The trait chosen to distinguish the two pertains to economics, in line with the concepts’ domain: ownership transference upon purchase. An Article’s ownership is transferred to the purchaser upon completion of a transaction, while Services needn’t involve ownership transferences not pertaining to legal rights. As a result of that, Articles can e.g., be fully returned to the seller, and can be separated from the latter, while that does not hold for Services. Yet these further traits/trait-values are to be considered derivative and indicative: not such as to characterise the distinction. It is often common to further distinguish between Services and Products which are not Services by means of another trait: tangibility. Services are said to be intangible, while Products which are not Services are said to be tangible. While, as a rule of thumb, this might appear prima facie correct, the characterisation is problematic when it comes to certain Articles, and the trait is not overall neutral given different possible ontological background assumptions. As such, tangibility has not been deemed a trait capable of providing a rigorous and neutral partition.*  *The second partition of the logical space (of Article) -by means of the bridge-concepts Good (Commercial) and Intellectual Article (Commercial)- attempts to capture the common-sense-friendly distinction between intellectual and material assets (“properties”, in the economic sense). The trait chosen to distinguish the two partitions is quite complex, in order to avoid counter-examples while preserving neutrality: association with a specific material entity which doesn’t merely act as a legal placeholder or as a contingent concretisation to the end of completing a transaction. Goods are associated, and often appear entirely reducible, to material entities which do not merely act as legal placeholders or as contingent concretisations to the end of completing transactions, while Intellectual Articles aren’t. as a result of that, the OntoCommons bridge-concept, Intellectual Article (Commercial) arguably covers all the so-called intellectual properties (which are explicitly offered on the market for purchase and whose ownership is transferred to the purchaser upon completion of a transaction).*  *The resulting engineered cluster of bridge-concepts, hinged on the OntoCommons bridge-concept Commercial Product -covering and organising the logical space of core concepts in business practice- is arguably de facto aligned with golden standards (as explicitly argued for in the comments to the knowledge domain resources for each of the particular bridge-concepts), while at the same time being respectful of possible discrepancies in the background assumptions which do not strictly pertain to the economic domain the concept cluster belongs to. The partitions should be conductive to conceptual clarity while at the same time facilitating alignments which would have otherwise been hardly possible, at least in some cases, as argued for in (some of) the mapping elucidations for the bridge-concepts belonging to the concept cluster, and Commercial Product & Article (Commercial) in particular: in fact, the bridge-concept Commercial Product, much like many broad concepts belonging to the business/legal areas, is trans-categorical given partitions of the logical space commonly employed by most Top Level Ontologies, and some of the ontologies belonging to the OntoCommons EcoSystem for what concerns us here (BFO and DOLCE). The conceptual cluster has thus the further benefit of ensuring more precise and informative mappings, automatically connecting single ontologies to a well-defined conceptual architecture.* |