Value Ascription Ontology: short presentation and unaddressed issues

Abstract. The notion of value and of value creation has raised interest over the last 30 years for both researchers and practitioners. In this paper we present a model of the Value Ascription Ontology and we shortly discuss the open issues.

Key words: value, ontology, enterprise modeling

1 Introduction

For a few years now there has been an interest in value modeling for understanding agents in trade and some techniques have been developed to support this [2, 4, 5]. This way of modeling has been shown to be useful when modeling so called value networks where several agents exchange e.g. goods or services for the benefit of themselves and other participants in the network. A common pattern in value modeling is that trading agents are standing in a reciprocity relationship to each other. The idea is that for some agent to give up something valuable she should be compensated for this. This view is ancient and is codified in double entry book keeping where information about each transfer of a resource is entered twice in a ledger, usually as a number. What is not obviously clear from the value modeling literature is the grounds for the numbers entered and to what they can be ascribed.

The goal of our work is to design an ontology for value ascription in an exchange context. The prototypical case of a value ascription is when a person considers a car being reasonable good taking all relevant pros and cons into account.

One problem with this is that valuations rarely stays the same for a longer period of time. Furthermore, in a value network setting what is valued is typically more than a good (a car, say) or a service (a transportation), at least in an economic sense. In particular it involves an offering that may eventually result in a commitment, a promise, that in a future some action will be carried out. We also note that there is a logical ordering between an offering and a commitment, and in fact an offering can be seen as the initiation of an interaction process that eventually results in an exchange.

We see that in order to be able to ascribe value in a value network we need at least to understand the complexity of what is valued (the value object) and the interaction process of the communicating agents. To be able to reason about the motives of a valuation we should also understand the needs and wants of the agents involved. The assumption behind this is that it is the fit between wants and a set of qualities of a value object that is the basis for a valuation. In this analysis we take a phenomenological stance.

The view on the value object in this paper is differs from our previous work on Value Ascription Ontology (VAO) [3] but shows similarities to that proposed by Gailly et al [1]. In the VAO, the value object is typically a good and the valuating agent is considering the use value of this object for her in different contexts. X using a computer at the university has one value, X using a computer at home has another. The final value of the computer for X is a calculation where all values are summarized. Gailly on the other hand proposes that what is really of interest are situations. A situation is an object that consists of a value object together with its context (they do not use this terminology but this is the idea). A situation can be assessed with respect to a goal situation.

In this paper, we first introduce a version of VAO and then move on to discussing a number of issues with the ontology, addressing in particular the value exchange life cycle and the objects of valuations.

2 The Ontology

3 Issues

3.1 What is being valued?

In the ontology, we do not take a stance on what objects can be valued. But a first idea would be to allow for valuing goods, information, services, relationships, and possibly more kinds of objects. It can be argued that this is too broad. For example, what would it mean to say ?Peter likes his house?? Does it mean that Peter likes to live in his house, to own it, to rent it, to show it to acquaintances, to maintain it, or some other relationship Peter can have to the house? It is possible that Peter likes to live in his house but really dislikes to own it (because that means a lot of responsibilities) and to maintain it. So, the statement ?Peter likes his house? is ambiguous. In order to make it unambiguous, we need to specify the relationship between Peter and the house. Generalizing this way of reasoning, we would arrive at the conclusion that agents do not value goods; instead, they value relationships between themselves and goods. Also, how does a person perform an evaluation that does not concern their future use of that value object? For instance, Andreas thinks that a specific house is valuable (it has good architectural characteristics) but he does not like it, so he is not likely to buy it in the future and the value for himself is very low, but the value that he assigns to the house thinking about other people living there is high. Another example is parents evaluating a medicine for their child, or a haircut, or alcohol.

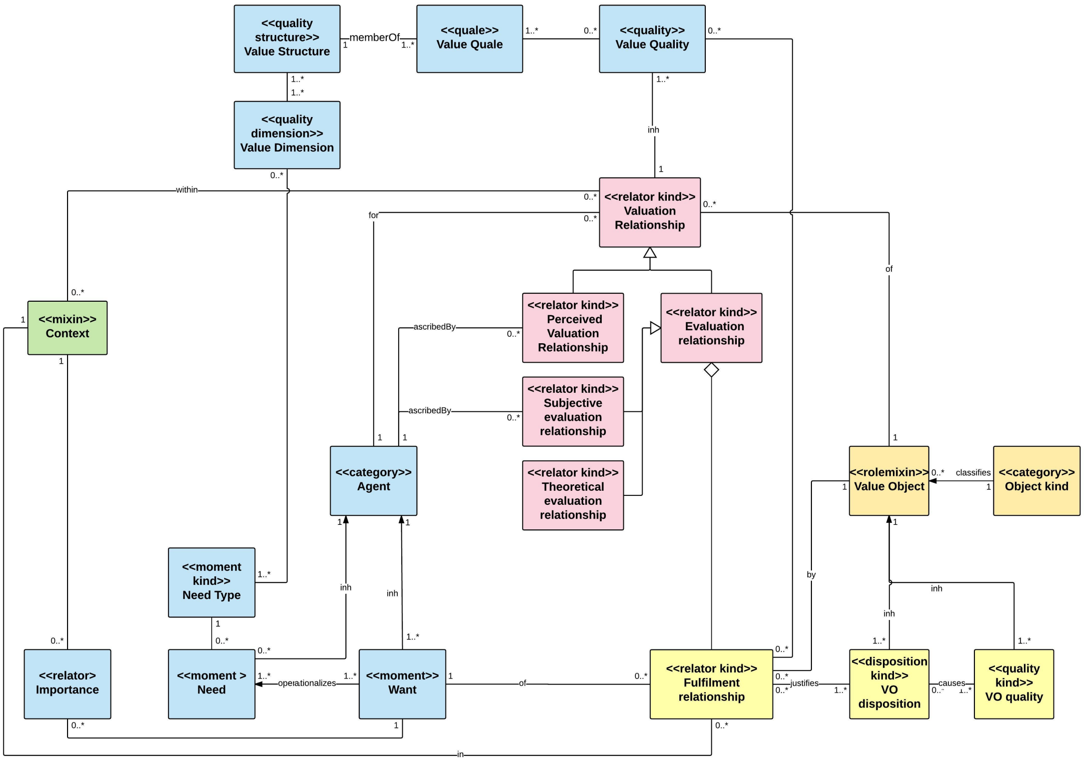

Fig. 1. The Value Ascription Ontology

3.2 What are the value objects in each phase of a value exchange lifecycle?

Let us consider a lifecycle composed by the following phases:

– Offering phase, in which a provider offers an economic offering to a target customer community
– Discovery phase, in which a customer discovers relevant economic offerings from a target provider community
– Negotiation phase, in which a provider and customer negotiate in order to arrive at an economic agreement
– Delivery phase, in which a provider delivers a product or service to a customer
– Use phase, in which a customer uses a value object obtained in the delivery phase
– Maintenance phase, in which a customer maintains a value object
– Disposal phase, in which a customer disposes of a value object

How does the value object change depending on the phase? Is it possible that the lifecycle has two roles? The first role would be to classify different value objects such as core offering, delivery offering and so on. The second role would be to ?move? with the agent that evaluates, which means that the agent would re-evaluate the same value objects in all the phases, based on the new added experience.

3.3 How does context influence valuations?

According to the reasoning above, what is valued is a relationship between an agent and a value object. But the valuation is also dependent on a context. For example, Peter may like to live in his house, but he may like this more in the summer than in the winter. So, what is valued is not simply a relationship, but a relationship in a context. And a relationship in a context, e.g., ?Peter liking to live in his house in summer time?, is similar to a state of affairs. This means that what an agent values is a state of affairs, not simply a value object or even a relationships involving a value object. Should we rather say that value objects and relationships are components of states of affairs that are valued by agents?

3.4 What are the reasons for re-evaluations?

An agent can re-evaluate a relationship involving a value object for several reasons. One reason is that he has changed his mind and makes a different valuation at a later point in time. Another reason is that the value object has changed. Would it make sense to say that the relationship between the agent and the value object also can change?

3.5 What value objects and relationships appear in value exchanges?

One answer is that anything can be a value object, including goods, information, and services. Then there are a number of relationships on top of these that appear in different phases of the value exchange life cycle. There are social relationships, including ownerships and renting relationships. There are access relationships through which agents can get (physical) access to value objects. And according to the discussion above, these relationships are what agents actually value. Furthermore, there are value offerings, negotiations, contracts, etc. Are these to be viewed as value objects or as relationships?

3.6 How can a brainchild be evaluated?

When an entrepreneur starts a new business she evaluates a brainchild, a prototype that has not yet come to existence and the same is done by the people financing the business. If we think about initiatives such as Kickstarter, it is obvious how these things constitute indeed value objects, even though they do not exist in reality. So, what is valued is the “promise” of what they will bring in the future. E.g., Paul pays 30 euros to kickstarter for the promise of receiving the product if and when it is actually developed. Let?s say that after one year this brainchild is actually produced: Paul paid for a promise and receives a product. Does that product keep the same identity as that of the brainchild? Is it re-evaluated?

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