

Value Modeling for the Pragmatic Web – the Case of Social Advertising

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Abstract: Social network sites have rapidly become very popular, but the business models behind them are still in their infancy. In this paper, a new combination of value modeling techniques is proposed to explore business models for the new web. In this approach, the business models are built up as overlays on social gratification models. The approach has been applied successfully to the case of social advertising in Facebook.

Keywords: e-business, value modeling, semantic web, social networks, uses and gratifications

Categories: H.1

1 Introduction

The Pragmatic Web [Schoop et al 2006] is the Internet as a platform of communication and coordination. How does the Internet effectively support social interaction? To answer this question we need to go beyond a data exchange view of communication. What do people try to achieve when they send messages or write notes? In order to model and, in the end, support these interactions effectively, we need modeling methods that consider both the goals and the means of communication and how the two are related. We can distinguish two levels of use for these modeling methods: first, they can be used off-line in thinking about the design of certain interactions, e.g. the interactions as part of a new business model. Secondly, these models, if sufficiently formalized, could be used by automated tools to support humans in their interactions, similar to the way workflow management tools support business processes within an organization. This paper is restricted to the first level and investigates the use of *value modeling*, a technique that does abstract from process details and focuses on the (economic) value that is exchanged. The technique was developed in the pre-Web 2.0 era. It does not explicitly deal with social aspects. In addition, its ontology reflects a Good-Dominant rather than a Service-Dominant logic [Vargo et al 2006], that is, it highlights value exchange rather than value co-creation [Weigand 2009]. So although it is one of the best rated value modeling methods known to date [Andersson et al 2006], it is not immediately clear whether it can be used for the Pragmatic Web and what extensions might be needed.

The objective of this paper is to develop a value modeling method for the Pragmatic Web by investigating how e3value, or an adapted version of it, can be used effectively in a Pragmatic Web context. This is done by means of an extensive case study of social advertisements in Facebook. Section 2 and 3 contain an introduction into the

value of social networks and value modeling, respectively. In section 4, the case study is introduced and more in particular, the notion of social advertising in Facebook. Section 5 is the e3-value analysis of the case. Section 6 contains the conclusions.

2 The value of the social web

The web is increasingly becoming a social place. To understand the value of virtual communities and social network sites, [Dholakia et al 2004] draw upon the well-established *uses and gratifications paradigm*, originally developed and employed by communications researchers to understand people's motivations for using different media [e.g., Flanagin and Metzger 2001; McQuail 1987; Bumgarner 2007]. This research assumes that individuals seek out media in a goal-directed fashion to fulfill a core set of motivations.

Entertainment, which may be of various kinds, is one motivation. Of special relevance from a marketing perspective, *informational value* is one that the participant derives from getting and sharing information in the group, and from knowing what others think. *Instrumental value* is derived from accomplishing specific tasks, such as solving a problem, generating an idea, influencing others regarding a pet issue or product, validating a decision already reached or buying a product, through online social interactions [McKenna and Barg 1999]. These objectives are all instrumental in the sense that they are usually defined prior to participation and facilitate achievement of specific end-state goals.

The next type of value, *self-discovery*, involves understanding and deepening salient aspects of one's self through social interactions. One aspect of self-discovery is to interact with others so as to obtain access to social resources and facilitate the attainment of one's future goals [McKenna and Bargh 1999]. Another aspect of self-discovery is that such interactions may help one to form, clearly define and elaborate on one's own preferences, tastes, and values. *Maintaining interpersonal connectivity* refers to the social benefits derived from establishing and maintaining contact with other people such as social support, friendship, and intimacy. *Social enhancement* is the value that a participant derives from gaining acceptance and approval of other members, and the enhancement of one's social status within the community on account of one's contributions to it.

Although traditionally, uses and gratifications is the dominant paradigm for explaining media exposure in communication science, the results of empirical validation have been rather disappointing. The problem is not with the motivations as such, but with the assumption that people actively seek out media in a goal-directed way [Palmgreen et al 1985]. For that reason, the original theory has been reformulated to take into account, not only the gratifications sought but also the gratifications obtained. According to [LaRose et al 2001], this redefined notion of uses and gratifications is moreless subsumed by the concept of *enactive learning* in social-cognitive theory [Bandura 1986]. Central to the social-cognitive theory is the focus on *outcome expectations* as providing the incentives as well as disincentives for enacting behavior. This broadens the scope of analysis beyond motivations. Factors such as self-efficacy – belief in one's capability to organize and execute a particular course of action – are considered relevant as well.

When applying uses and gratifications theory to medium choice, the usual assumption is that different media compete. However, according to [Dimmick et al 2000], a global comparison between the gratifications of each medium is not useful, as they often co-exist. It is important to identify the particular niche of a certain medium. Comparing personal e-mail and telephone, they found that a wider spectrum of needs is being served by the telephone, whereas e-mail provides greater gratification opportunities in its own niche.

3 Value Modeling

The e3value methodology models a network of enterprises and consumers creating, distributing, and consuming things of economic value [Gordijn and Akkermans 2003]. The main modeling constructs are:

- **Actor.** An actor is perceived by his or her environment as an economically independent entity.
- **Value object.** Actors exchange value objects. A value object is a service, good, money, or experience, which is of economic value to at least one actor.
- **Value port.** An actor uses a value port to provide or request value objects to or from other actors.
- **Value interface.** Actors have one or more value interfaces, grouping value ports and showing economic reciprocity. Actors will only offer objects to someone else if they receive adequate compensation in return
- **Value exchange.** A value exchange connects two value ports. It represents one or more potential trades of value objects.
- **Value activity.** An actor performs one or more value activities, which are assumed to yield a profit.
- **Dependency path.** Designers use a dependency path to reason about the number of value exchanges in an e3value model. A path consists of consumer needs, connections, dependency elements, and dependency boundaries. You satisfy a consumer need by exchanging value objects (via one or more interfaces). A *connection* relates a consumer need to an interface or relates an actor's various interfaces. A path can take complex forms, using AND/OR dependency elements taken from use case map scenarios [Buhr 1998]. A dependency boundary denotes the end of value exchanges on the path [Gordijn and Yu 2006].

A simple example illustrating the business model of Facebook from the advertisers' perspective is shown in [Fig. 1]. In this model, Facebook offers advertisement services against payment, very much like Google and other web companies. At the other side, Facebook offers users a social platform. Users don't pay, but their (massive) presence at Facebook is in itself of commercial value. One could add that the personal data they provide has a value in targeting the advertisements as well. Although illustrative, the model is ways too simplified as a real business model. "I don't think social networks can be monetized in the same way that search did", CEO Mark Zuckerberg recently said [Zuckerberg 2008].

E3-value has proven to be a useful instrument for developing business models; in addition it supports profitability analysis for each actor on the basis of net present value. However, e3-value originates from before the social web era. It does not explicitly consider actors (including consumers) as part of their social network. However, in the social web era the value proposition offered is not some resource that is consumed by customers to fulfill some “need”. Rather consumers are viewed as social actors that create value in their interactions, and the value proposition of a company is that it brings in certain resources that help these actors to create more value. Therefore we propose to extend e3-value with the following methodological guideline in order to make it an instrument of value modeling for the Pragmatic Web:

1. First, build a value model of the customer as part of his social network
2. Second, build a value model of the new service as an overlay of the first model

In order to assess the usefulness of this guideline, we apply it in this paper to a business model of social advertising in Facebook.

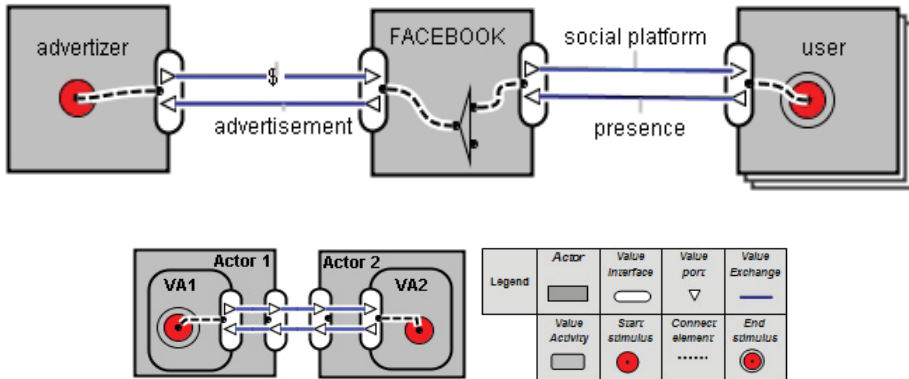


Fig. 1: Facebook from the perspective of the advertiser, and e3value legend

4 Advertisements in Facebook

Facebook started as a social network for college students for Harvard University students in February 2004. In hardly 4 years it has grown to one of world largest social network sites with more than 70 million users in 2008. As all social networks Facebook is searching for ways to monetize these users.

4.1 Social advertisement in Facebook

In finding ways to monetize this tremendous user database Facebook developed a so-called social advertisement platform. Social advertisement uses the nature of the relations and the motivation of people to use social network for selling products. We

explain three different advertisements used by the advertisement platform of Facebook:

Social ads

Facebook describes social ads as:

“Instead of creating an advertisement and hoping that it reaches the right customers, you can create a Facebook Social Ad and target it precisely to the audience you choose. The ads can also be shown to users whose friends have recently engaged with your Facebook Page or engaged with your website through Facebook Beacon. Social Ads are more likely to influence users when they appear next to a story about a friend's interaction with your business.”

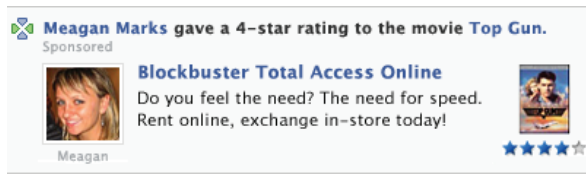


Fig. 2: Example social ad in Facebook

A typical example of a social ad is given in [Fig. 2]. Facebook is combining different peaces of information in this social ad: the picture of Meagan; the review of Meagan; the advertisement text of Blockbuster

Pages

Facebook explains Pages as:

“When your fans interact with your Facebook Page, the actions they take are automatically generated into social stories. These stories are published to News Feed, which friends may see the next time they log into Facebook (...) You can increase the viral distribution of your Facebook Page with Facebook Social Ads. Create an ad creative and attach it to stories in News Feed or in the left-hand Ad Space.”

Facebook uses these Pages as input for their social ads. Besides that they automatically update the friend feed of your friend when you post a message or engage in another way with the brand.

Beacon

Beacon is one of the latest and most controversial additions to the platform. Facebook describes Beacon as:

“Simply determine which user actions you would like publish to Facebook and add a few lines of code to your web page. Facebook Beacon actions include purchasing a product, signing up for a service, adding an item to a wish list, and more... Stories of a user's engagement with your site may be displayed in his or her profile and in News Feed. These stories will act as a word-of-mouth promotion for your business and may be seen by friends who are also likely to be interested in your product.”

The three advertisement forms explained above have two interesting properties. The advertisement is build with *combined* information of different sources and the platform uses the *Social Graph* to display the advertisement to potential target groups.

4.2 Social and semantic advertisement

In the traditional meaning, social advertising is about applying marketing and advertising principles to promote health and social issues and bringing about positive behavior change. However, to cater for the Facebook' use of social ads, we need another definition. We propose the following general one:

"Social advertisement is a form of advertisement that addresses people as part of a social network"

It should be noted that the traditional meaning of social advertising and the social ad idea of Facebook are quite different at first sight, but perhaps not too remote after all. That is why we have suggested a broad definition. For example, to reach social network users, the sportswear company Converse included a social networking component to its "Open Gym" campaign. It organized real-world basketball competitions for inner-city youth and used Facebook as an online "meeting place" for participants.

Social advertising is to be distinguished from semantic advertising whose meaning is still evolving (most of the discussion is found in blogs on the web). Semantic advertising is a development in the evolution of contextual advertising, which simply means that advertisements are linked to pages based on a keyword match. In a certain sense, contextual advertising already occurred in traditional media like newspapers and TV as well, but not performed automatically. We define semantic advertising as follows:

"Semantic advertisement actively combines information from different sources to enrich the context in which the advertisement is displayed. The information of the advertisement creates an added value for the content and is therefore part of it"

Semantic advertising can make use of Semantic Web technology which gives many more opportunities than keyword matching. The matching can be improved in quality and also be made more dynamic. In the business field a few companies are pioneering the field of semantic advertisement. One of those companies is Radar Company that developed a product called Twine. Twine is social collaboration platform based on semantic technologies. Its business model is a combination of premium services and advertisement.

In this paper, we are not focusing on semantic advertising as such, but on a combination of social and semantic advertising, which has a very strong potential.

5 Analyzing Facebook

In order to analyze the business model behind Facebook's advertising, we should know which values are offered by whom to whom. We first model the social network, then the basic support Facebook offers and then the social advertising model.

5.1 Modeling the social network

Our modeling guidelines prescribe that in order to understand the value of a certain business model for the Web, one should start with a model of the social network of the customer. In this paper, we build up this model by means of the uses and gratifications paradigm. The result is pictured in [Fig. 3].

The model highlights self-discovery and social enhancement as the main value activities. Self-discovery motivates and is fed by personal disclosure and receiving interest from others. Also the social examples provided by others play a role. In addition, social relationships are maintained by gifts. We have linked this to the social enhancement. Note that subject and others are roles, representing the active and the passive side of the social relationship and taken up by the participants in a reciprocal way.

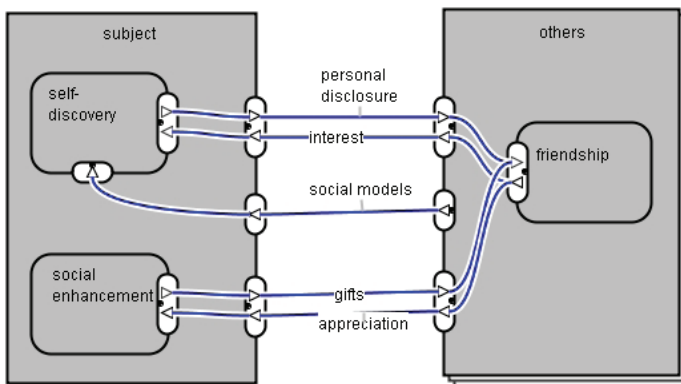


Fig. 3: e3-value model of the social network

5.2 The value of Facebook

Facebook is popular because it supports the motivations (like self-discovery, social enhancement and interpersonal connectivity) for people to join a social network. On the platform you can find new friends, send messages to them, give virtual gifts, share photos and music and show friends where in the world you have been. The value of Facebook with respect to the social network activities of people is shown in [Fig. 4]. In this figure, we make use of an extension of e3-value in the form of *value encounters*. A value encounter stands for the collaboration between multiple stakeholders where each party brings in certain resources [Weigand 2009]. Rather than viewing the collaboration as an exchange of value objects, it views it as a platform for co-creation of value. The advantage of the use of value encounters – pictured as dotted colored rectangles – is that it makes it possible to see where (and not only to whom) the actors contribute. They abstract from the way financial benefits are distributed. Value encounters can be related to each other by means of a positive or negative influence link. In [Fig. 4], the online communication value encounter and the friendship gifts value encounter exhibit a positive feedback loop.

The model in [Fig. 4] is not intended to be complete with respect to the Facebook business model. However, it makes very clear how Facebook by providing digital space and feedback functions (that can be related to its components, such as Wall, Status and Photos) enhances social network activities. Not included in the model is the space it offers for users to develop new software services for the community (Facebook Platform). This capitalizes on the social enhancement activity that aims at recognition and status on the basis of public contributions. Another component of Facebook called Gifts is targeting directly the value encounter of friendship gifts.

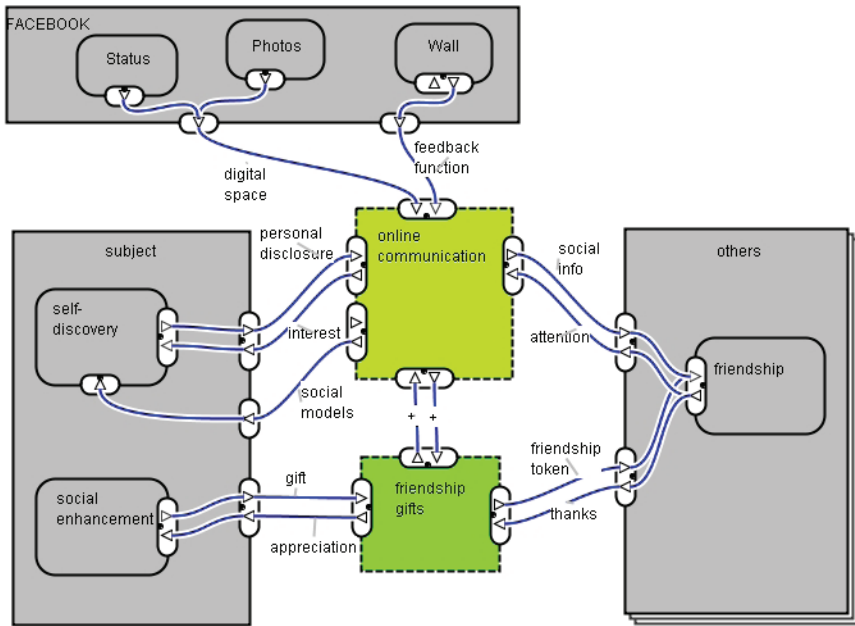


Fig. 4: Facebook value model overlaying the social network value model

5.3 Social advertisements in Facebook

Facebook earns money by selling advertisements to companies. They are able to provide a target audience and receive money instead. The goal of the advertisement is to great brand awareness at the user and increase selling of the products. Because Facebook is a private company no exact numbers about revenue and profit are known. The estimated revenue for 2007 is about \$150 million, which is a little bit more than \$2 per user. Most of their income is from advertisers who want to reach some of the 70 million users.

In the year 2008 this is a very common business model for a profitable web-service. However, the results were rather poor. The revenue of advertisements is measured with cost-per-million (CPM) or cost-per-click (CPC). The first measurement, CPM, means that the advertiser pays an amount for every time an advertisement is shown (viewed) to a visitor in units of a million. The second measurement means that the advertiser pays for every click on the advertisement.

Facebook generated a massive amount of impressions but a very low click thought rate: a typical click-through rate is between 0,1% and 0,2%. As already argued by Iskold in a blog [Iskold 2007], people are not coming to Facebook to click ads, they are coming to Facebook to see what there friends are up to. This situation is fundamentally different from a search engine like Google where users get to a web page based on a search that expresses at least a certain interest in an item or subject, often with an underlying intent to acquire something.

With the introduction of Social ads, Facebook made advertisement part of the content of the website to align it with the social interests. [Fig. 5] shows the contribution advertisers offer to the online communication, in return for publicity. This contribution enables subjects to extract model-based buying suggestions (“Meagan bought X and so may I”) and personalized buying suggestions (“Meagan celebrates her birthday and likes X”). These suggestions support self-discovery and buying behavior. That the advertiser is also a seller of the friendship gifts is not included but not unimportant of course. The contribution of Facebook is that it matches data and enriches the messages.

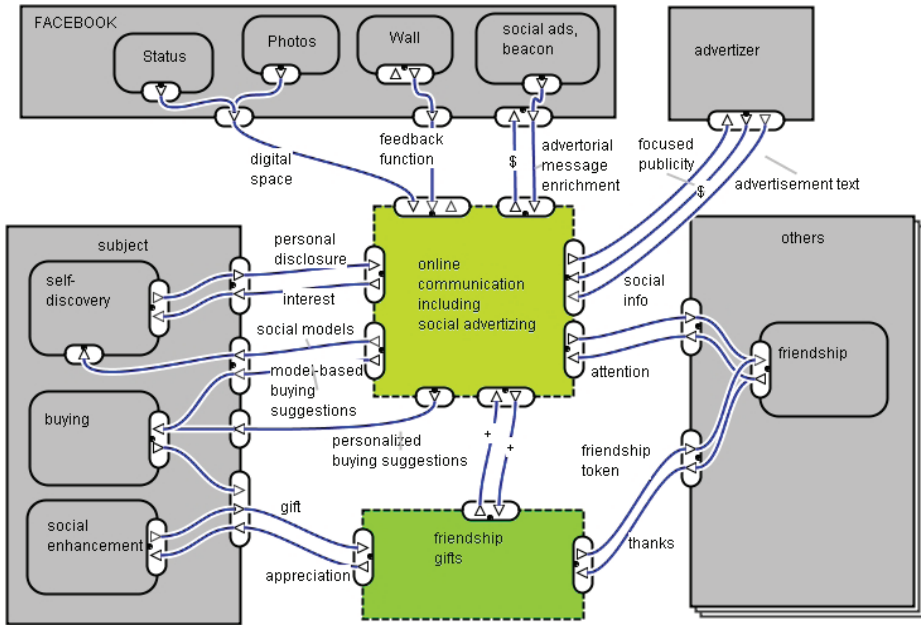


Fig. 5: Facebook advertisement model overlaying the Facebook value model

6 Conclusions

Social network sites stand in the tradition of online communities, but they also indicate a shift [Boyd and Ellison 2007]. While websites dedicated to communities of interest still exist and prosper, social network sites are primarily organized around people, not topics or interests. For online communities, a typical business model used

to be the affiliate or advertisement program, based on a match between the interests of the community and the products that the advertiser wants to promote. In order to find business models for social network sites, it is necessary to first identify the values that users derive from their presence. The more a business model is aligned with these values, the more successful it will be.

We have shown that the Facebook business model capitalizes on the social network, both in its basic form and when social advertisements are included. This demonstrates the value of the modeling guidelines given in section 3. A question is how this result can be generalized, as Facebook is clearly a special case. This is not only an issue of external validity. It may be the case the Facebook represents a trend, and the question is not just whether social models do underlie business models or not, but whether this is the way all business models should move, including traditional good-dominant models for consumer products like cars and food or tourist services.

In this paper, we have made basic usage of the uses and gratifications paradigm. As hinted at in section 2, social-cognitive theory may be a more comprehensive paradigm to base our social models on. One of the reasons is that this theory also considers disincentives. In the case of Facebook, a disincentive that has played a role is the privacy concern. When Beacon was launched in November 2007 it received a lot of criticism from MoveOn, a US privacy group. They accused Facebook of violation of user's privacy. Every site using Beacon send information to the Facebook servers of each user engagement and placed a cookie on the computer, independent if the user had an account on Facebook. When the user logged on to Facebook the user engagement of the website was added to the friend feed without prior notice of the user. This was on an opt-out base, which means that every user was automatically joining unless they opt-out. After the critique Facebook made it opt-in and notified the user that information about their activities was shared with other services.

Admittedly, the social model of Facebook [Fig. 3] developed in this paper is a rather crude one. We have introduced it here to illustrate the proposed value modeling approach. As a subject of future research, we suggest to extend and validate it on the basis of social-cognitive theory and empirical usage studies.

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