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## **Brand Communities in a World of Knowledge-based Products and Common Property**

Andrew P. Feldstein  
*Fort Hays State University, [apfeldstein@fhsu.edu](mailto:apfeldstein@fhsu.edu)*

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# Brand Communities in a World of Knowledge-based Products and Common Property

Andrew P. Feldstein  
Lubin School of Business  
Pace University  
New York, N.Y. 10038

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## **Brand communities in a world of knowledge-based products and common property**

Brands have become an integral part of our culture. Consumers rely upon brand names as proxy for information about the products they purchase. They consider their own brand usage, not only in terms of product value, but also as a statement about themselves, their values, and their life choices. Studies of postmodern consumer culture have suggested that brands have emerged as a way for consumers to express their individuality and as a means for people to form groups with other like-minded consumers (Fournier 1988; Cooper et al 2005; Ahuvia, Iacobucci, and Thompson 2005; Escalas and Bettman 2005).

These processes are not mutually exclusive. Both “integration and individualism are achieved through the use of symbolic consumption”(Cooper et al 2005). Brands such as Harley Davidson and Apple have been positioned as representing consumers who “think different”. Other brands, such as Star Trek and Golden Girls have garnered unexpected or unintended fan bases. What these brands have in common is the ability to satisfy both consumers’ psychological and sociocultural needs (Fournier 1998).

The resultant communities that have developed around certain of these products have been labeled “brand communities” (Muniz and Oguinn 2001) and have been studied extensively over the past few years. Current consumer behavior research on “brand communities” has shown that these communities have positive effects on consumers’ brand attitude, loyalty and attachment to a brand (McAlexander, Schouten and Koenig 2002; Algesheimer, Dholakia, and Herrmann 2005) .

Muniz and O’Guinn define brand community as “a specialized, non-geographically bound community, based on a structured set of social relationships among admirers of a brand.” (Muniz and O’Guinn 2001) Much of the early work on brand communities has been ethnographic and, more recently, netnographic. These studies have been designed to determine the attributes and characteristics of brand communities and the behavior of community members. Members of brand communities such as those listed above have been interviewed, observed and their online postings and websites have been dissected and analyzed.

Common characteristics that have been observed in a wide selection of different communities are: shared consciousness, communal rituals and traditions, and a sense of moral responsibility. This work has drawn a clearer picture of brand communities and has shed light on the attraction of these communities, not only for consumers, but for marketers of the branded products as well (Muniz and O’Guinn 2001; Schau and Muniz 2002; McAlexander et al 2002; Schau and Jensen 2003; Algesheimer et al 2005; Bagozzi 2006).

According to Muniz and O’Guinn, brand communities provide social structure to the relationship between marketer and consumer. This structure facilitates communication between marketers and consumers as well as creating a form of peer pressure that reinforces customer feelings of loyalty. “We hold that brands are undeniably and fundamentally social entities created as much by consumers as by marketers in a complex and fascinating dance of social construction” (Muniz and O’Guinn 2001).

Brand community research has, to this point, involved ethnographic or netnographic studies of two types of product. There are studies that explore the nature of communities centered around manufactured goods such as cars, trucks, automobiles and computers and then there are studies that look at followers of Star Trek, Star Wars, Xena Warrior Princess and other iconic entertainment-based products.

The primary difference between these two types of communities concerns who actually owns the product in question and who, therefore, has the right to alter that product. Once consumers purchase a Harley Davidson motorcycle they have the ability to trick-out their “hog” with any number of after-market products. Having purchased that motorcycle, and unless they have violated safety regulations, they have purchased the right to do what they please with their possession. Fans of Star Trek, on the other hand, by purchasing movies, books, and other paraphernalia are bound by copyright not to alter these products. If they co-opt the traditional characters and create totally independent storylines that are not sanctioned or approved by the copyright owners they are in violation of the law. (Jenkins 2006)

Products manufactured in large industrial facilities tend to be purchased outright by consumers. The manufacturers are not concerned that the typical consumer will go into the motorcycle manufacturing business. Barriers to entry are prohibitive. Intellectual property such as storylines for Star Trek and songs written and performed by pop artists, on the other hand, can be easily modified and redistributed by enthusiastic fans. Because of this, Universal Studios and others have gone to great lengths to protect the integrity of their property. When a consumer purchases a Star Trek novel they are

purchasing only the right to read and enjoy it. They own only the paper the book is printed on, not the content.

### **Manufactured Products vs. Coded Entities**

The Internet has had a significant impact on the interaction patterns of brand community members as well as on the types of products around which these communities are developed. “One of the technological beauties of the Internet is that the network is an effective multi-purpose distributor of information packets”(Vaden 2006). The impetus for the current research is the proliferation of products that are capable of being transmitted as information packets. This includes written texts, music, video, and software. All of these products once needed to exist in physical form in order to be efficiently transmitted through a commercial distribution channel.

What these products now share in common is their existence as coded entities and the “close-to-zero price of copying in conjunction with the near-to-perfect quality of copies” (Vaden 2006) which has brought their commercial value into question. “The quick development and distribution of digital technology promises to deliver digital information to any place at any time (the great democratic potential of digital technology). However, the structure of production and the corporate logic are based on a market where digital content is considered a scarcity whose distribution can be controlled, so that a continuous revenue stream can be guaranteed.”(Vaden 2006) This sets up a dynamic whereby digital content is increasingly accessible to consumers and, additionally, where consumers have the potential to have more control over the digital content.

## **Coded Entities in Proprietary and Communal Environments**

The growth of coded entities has engendered a change in the balance of product ownership. Computer software, for instance, can either be proprietary, where a corporation such as Microsoft can control the development of and property rights to their Windows operating system, or free and open source. Unlike Microsoft Windows, operating systems based on the Linux kernel utilize an open-source code.

The code is what makes the software function and freely distributing that code means that any computer programmer can understand what makes the operating system, or other software, work. So any programmer who desires can build on it to make fixes and improvements to the operating system. These improvements can be incorporated into the program for the benefit of any and all users. Making the code freely available goes against the business model of companies such as Microsoft who count on being able to charge people for the Windows operating system as well as for any subsequent versions.

## **Real Life vs. Virtual Community**

Many current studies of brand community are taking advantage of the readily accessible supply of information available through online resources (Kozinets 2002; Langer and Beckman 2005). Despite their reliance on virtual communities, most of the research involves tangible, industrially manufactured products such as Apple computers, Ford Broncos, Harley Davidson motorcycles or textual-based products with tangible artifacts such as Star Trek, Xena Warrior Princess, and Tom Petty.

These products all benefit from face-to-face interactions through activities, clubs and conventions. Members of these brand communities form bonds through participation

in mutual activities. Harley members go on organized bike trips, Star Trek fans attend conventions, and Mac users join user groups and attend Mac oriented events. More recently the Internet has provided a forum through which brand community members can have extended contact. Schau and Gilly identify the Computer Mediated Environment as a virtual space where consumers can present themselves digitally.

“Consumers are increasingly seeking the opinions of other consumers beyond their physical social network. They choose products and services, using endorsements and critiques on corporate websites or within personal Web space” (Shau and Gilly 2003). This relatively new behavior is not only changing consumer behaviors, but it is also increasing the realm of possibilities. “Offline, people are limited to interpreting proximal self-presentation, but online there is the potential for a distant observer set. Anyone from anywhere may be watching and listening and feeling the content of a personal website” (Schau and Gilly 2003).

Personal websites were the earliest and most rudimentary form through which individuals could express their individual web presence (Schau and Gilly 2002; Schau and Gilly 2003). As users become more familiar with CMEs and begin to grasp the interactive possibilities, more complex and interactive communities begin to emerge (Benkler 2006).

In differentiating between Real Life and Virtual interactions, Schau and Gilly suggest that “in RL, a consumer can experience use value as well as symbolic value of brand image. In personal Web space, most, if not all, of the truly functional value is absent, save the software and the access technology” (Schau and Gilly 2003). But what if the brand in question *is* the software and the access technology?



## **Consumers Learn to Interact in a Computer Mediated Environment**

The growth of the Internet and the increased accessibility of the computer-mediated environment has made it possible for these groups to extend many of their activities by forming “virtual communities”. This technology has also made possible a growth in coded entities such as computer software around which brand communities are also beginning to develop. These communities are almost exclusively accessible through a virtual, computer-mediated environment and, as such, might be expected to foster a different type of community from those representing more tangible products.

Computer-supported social networks “eliminate the spatial constraint that has acted on the formation of communities throughout most of human history...the ease of computer-supported communication with a large number of people facilitates ties that cut across group boundaries” (Wellman 2005). While the proliferation of computer-supported networks has been extremely influential in the creation of these non-traditional social networks, the concomitant facility with which computer users are now able to negotiate the Computer-mediated environment is of equal importance.

A consumer’s ability to influence a large number of other consumers is greater now than it has ever been. When Amazon pioneered the online customer review system they began a chain reaction that has reverberated throughout the retail milieu (Chevalier and Mayzlin 2006). Consumers who used to rely exclusively on the Oprah Book Club, the New York Times Best Sellers List, and various popular culture book reviews are now able to access a large selection of reviews by consumers who are “just like them”.

## **Heuristics and Oppositional Brand Loyalty**

Nothing brings people together like a common enemy. Oppositional brand loyalty has been identified as one of the key attributes of a brand community (Muniz and O'Guinn 2001). In the world of desktop computing no company can engender divisiveness quite like Microsoft. Microsoft's Windows operating system sits on the desktop of approximately 90 % of PC users. The majority of these PC users did not go out of their way to choose a PC using the Windows operating system. It happens to be the default operating system on almost all PC computers being sold today.

Since the majority of computers come with this operating system installed, many will use this contextual evidence to make normative assumptions and value judgments. For the end-user choosing the 'default' setting, in this case to use the Microsoft Windows operating system, is a form of norm compliance and it can be accomplished through a heuristic process rather than as the result of any conscious deliberation (Bicchieri 2006). This reality will not, however, prevent some from making the assumption that choosing Windows was a deliberate choice.

Users of the Linux operating system and Apple Inc.'s Mac OS have a combined market presence of less than 7 % and are more likely to have followed a deliberate path to their decision of computer operating systems. Following this normative paradigm, users of these 'alternative' operating systems often find themselves subject to subtle taunts, derision and other, seemingly unprovoked, behavior by followers of the Windows norm. The irony is that many of these Mac and Linux users made their decision of operating system without any thought that they would either provoke, or have to defend

themselves from social attacks. By the same token, Windows' users, when confronted by Linux or Mac users, will act to defend deliberate choices they may never have made.

The contentious dynamic created by Microsoft Windows' dominance as a desktop operating system has helped spawn thriving brand communities for both Mac and Linux. This has created a fertile environment from which to examine brand communities under the condition of a proprietary brand (Mac) as well as under the condition of a communal brand (Linux).

### **Netnography and Discussion Threads**

Online community forums provide an online gathering place for brand community members to get and disseminate news, information, stories, and opinions about their chosen operating system and related issues. Beginners can get advice and support from more experienced users. Members will share solutions to problems they have encountered. Hackers, designers, and other skilled programmers will offer practical and aesthetic tips and solutions. "Show me yours" forums are places for community members to show off their hardware. There are "café" forums where members talk politics and there are testimonial forums where members will share their war stories about problems with Microsoft and how Mac or Linux has made their lives better.

"For tracking the marketing-related behaviors of online communities, netnography is a stand-alone method. It is a way to understand the discourse and interactions of people engaging in computer-mediated communication about market-oriented topics" (Kozinets 2002). Conducting a netnographic study using the discussion threads in these forums has tremendous advantages over more traditional ethnographic interview methods.

Due to the volume of participation, netnographic analysis of these forums can come to resemble an interview. The advantage is that participants are already discussing questions you might want answers to. By examining the list of discussion threads a researcher can choose those most relevant for their inquiry. This creates a less invasive setting; ethnographer as “fly on the wall” if you will, without being intrusive. A potential disadvantage of this type of analysis is the lack of contextual cues other than textual and graphic representations.

### **What We Can Learn From the Posts**

The language used in discussion posts is the most salient indicator we have as to the substance and effect of a given community member’s contributions.

Netnography is based primarily on the observation of textual discourse, an important difference from the balancing of discourse and observed behavior that occurs during in- person ethnography (cf. Arnould and Wallendorf 1994)...netnography seems perfectly suited to Mead’s (1938) approach, in which the ultimate unit of analysis is not the person but the behavior or the act. (Kozinets 2002)

Analyzing the content of the posts in a threaded discussion must occur on multiple levels. Unlike examinations of personal web pages where content is coded in order to determine an individual’s relationship with the community (Shau and Muniz 2002), this analysis is concerned with the network of concepts that are being discussed in the threaded discussions.

Evert Gummesson has recently forwarded a grand theory of marketing, the core variables of which are “networks,” “relationships,” and “interactions.” Gummesson takes the position that “networks are the basis of life, society, and organizations, and consequently also of management and marketing” (Gummesson 2006). “The assumption

that the world can be understood through an increasingly more complete series of fragmented "A causes B" studies, in which an independent variable and a dependent variable are unambiguously defined, is mechanistic and not realistic; it is in conflict with life and nature" (Gummesson 2006). By studying brand communities as part of a market network it is my hope that we can gain insight into a dynamic and non-linear marketplace.

If we are to begin to understand the changes that are taking shape in the market it is necessary to examine the new types of relationships that have come into being through the development of phenomena such as the "virtual brand community" and the "coded entity."

### **Network Textual Analysis**

"NTA theory is based on the assumption that language and knowledge can be modeled as networks of words and relations" (Carley & Diesner 2005). Automap, a tool for network text analysis, will help to extract relevant concepts and linkages. "AutoMap enables the user to extract semantic nets from texts in a computer-assisted manner. Computer-assisted coding means that the software applies a set of coding rules that were defined by a human in order to index the input texts and code them as networks" (Carley 2004).

The map analysis being used here differs significantly from more traditional content analysis methods. "Where content analysis typically focuses exclusively on concepts, map analysis focuses on concepts and the relationships between them and hence on the web of meaning contained within the text" (Carley 1993). Therefore, we do

not need to rely exclusively on the frequency of a concept to infer meaning. The network of concepts that is created through map analysis allows for statistical and graphical representation of the relationship between concepts.

### Meta-Matrix Analysis

A Meta-matrix requires the articulation of an ontology and the identification of relevant entity classes through which we can examine the overall structure presented in the texts. These entity classes comprise the top level in the ontology that has been created to examine the relationships among the various concepts (Diesner and Carley 2005).

Meta-Matrix Entities	Agent	Knowledge	Tasks	Attributes	Organizations/Communities	Resource/Coded Entities	Location/Hardware
Agent	Social Network	Knowledge Network	Capabilities Network	Agent attributes	Membership Network	Preference network	Hardware pref network
Knowledge/Resources		Information/resource Network	resource requirement network	Resource attributes	Community knowledge network	Competence network	Hardware familiarity network
Tasks			Precedence network	Task attributes	Community capability network	Code capability network	Hardware reliability network
Attributes					Organization attributes	Coded entity attributes	Hardware attributes
Organizations/Communities					Inter-organizational network	Code support network	Hardware support network
Coded Entities						Code extensibility network	Hardware compatibility network
Hardware							Hardware extensibility network

*Table 1 illustrates a preliminary formulation of a Meta-matrix model showing “entity” and “relation” classes.*

## Developing an Ontology

The way we think the world is (ontology) influences: what we think can be known about it (epistemology); how we think it can be investigated (methodology and research techniques); the kinds of theories we think can be constructed about it. (Fleetwood 2005)

In this study, the creation of a relevant and properly structured ontology is the key to being able to look at the relationships and interactions that we wish to observe.

“Networks of relations among concepts are used to reveal the structure of the text, meaning, and the views of the authors. Further, these networks are windows into the structure of the groups, organizations and societies discussed in these texts. This structure is implicit in the connections among people, groups, organizations, resources, knowledge tasks, events, and places” (Diesner and Carley 2005).

The people, groups, and organizations represent the entity classes in Carley’s ontology of an organization. For our purposes the ontology needs to be altered so that the entity classes represent a market network that includes products, consumers, and other entities that might not be applicable to a strictly organizational ontology.

The people (agent entity class) in our market ontology are the people being discussed in the text samples. This includes individuals such as Bill Gates and Steve Jobs, as well as types of people including computer users and programmers. The organization entity class includes brand communities, corporate entities such as Apple and Microsoft, and larger representations of community such as “society”.

The most important structural distinction in the ontology involves the incorporation of product entity classes. In keeping with the distinction being made

between manufactured products and coded entities, and the consumers' dawning awareness of the separation between code and the machines that translate the code, this ontology is representing "coded entities" such as computer software and digital media in the "resource" entity class and "hardware" such as computers, servers, and iPods in the "location" entity class. The resource and location labels, while not ideal are categories pre-coded in the meta-matrix software.

The interpretation of "resource" as "coded entity" class will provide the anchor for our ontology. If, as Varden suggests, we need to believe in code, giving it a central position in our organizational structure is a necessary element for our analysis. One advantage of the meta-matrix analysis is that the ontology is extensible. If further analysis reveals the need to add, subtract, or alter an entity class, this can be done without the need to rework the entire data set.

The "knowledge," "task," and "attribute" entity classes provide further information about what the other entity classes know, do, and how they are described. The value of this type of analysis lies in the fact that we are not analyzing isolated word concepts. A lot can be learned by seeing whether a certain brand community sees certain functional attributes as belonging to their computer (location entity class) or their operating system (resource entity class).

## **The Study**

### **Ubuntu Forums**

"Ubuntu is a complete desktop Linux operating system, freely available with both community and professional support. "Ubuntu" is an ancient African word, meaning



"humanity to others". The Ubuntu distribution brings the spirit of Ubuntu to the software world." The Ubuntu community is built on the ideas enshrined in the Ubuntu Manifesto: that software should be available free of charge, that software tools should be usable by people in their local language and despite any disabilities, and that people should have the freedom to customize and alter their software in whatever way they see fit.

For research purposes "online communities should be preferred that have (1) a more focused and research question-relevant segment, topic, or group; (2) higher "traffic" of postings; (3) larger numbers of discrete message posters; (4) more detailed or descriptively rich data; and (5) more between-member interactions of the type required by the research question" (Kozinets 2002).

According to Distrowatch, the website that tracks the popularity of Linux distributions, Ubuntu Linux is currently the most popular and widely distributed Linux distro. Because of this and also because of the Ubuntu's self-proclaimed title as "Linux for human beings" the Ubuntu community forums were the focus of this study. The Ubuntu community is fairly large. As of January 21, 2007 the various Ubuntu support and discussion forums at the "official" ubuntu.com website had 335,207 discussion threads, 2,036,331 posts, and 225,712 members.

Forums range from "Absolute Beginner Talk with 52,671 threads, "Main Support Categories" with 177,788 threads, "Programming Talk" with 1632 threads, and "Community Discussion" with 19,387 threads.

## Data

The discussion thread being analyzed here is from the Ubuntu forum called “Ubuntu Testimonials” and is entitled “Simple Things Windows Users Can’t Do”. The thread consists of over 300 postings and begins on August 26<sup>th</sup> 2006. Although over 200 contributions were made to this discussion in the first month, people kept posting to the thread and the 309<sup>th</sup> post was recorded on January 17, 2007. During the same time period this discussion thread was viewed over 15,000 times. It is common to community forums such as this that there will be many more members reading the posts than actually participating.

“Vinze” who posts a list of 22 “simple things” initiated the “Simple Things Windows Users Can’t Do” thread. He asks other community members to augment the list. The subsequent posts do offer new items for the list but, as the discussion develops, some community members object to the one-sided discussion and come to the defense of the maligned Windows OS users. Contributors come and go, tempers flare, and the tone of the discussion shifts dramatically.

October 5, 2006 was chosen as the cut-off point for our analysis of the STWUCD discussion thread. At that time 84 community members had contributed 276 posts. Subsequent posts were more fragmented, spread out over a much longer time period, and introduced a completely new set of contributors. The thread was further reduced by excluding contributors who had only made a single, isolated comment and didn’t respond to the ongoing discussion. These members were not considered to be participants in the actual discussion.

## **Mac Community Forum**

The Mac Community forum analyzed here is part of the MacWorld website. This forum community has over 60,000 registered users. Threads cover discussions of MacWorld magazine stories (9692 threads, 75995 posts), desktop and portable Macs (17955 threads, 107210 posts), Mac OS X operating system (18700 threads, 105205 posts), and Mac 911 (11399 threads, 47033 posts).

The thread chosen for our analysis was from the article discussion forum. In June of 2005 Steve Jobs announced that Apple would switch from IBM's Power PC microprocessor to a processor manufactured by Intel. This was a shock to many loyal Mac users who had come to identify Intel with Apple's arch rival, Microsoft. The thread entitled "Apple Drops IBM PowerPC for Intel Chips" began at 11:56am on June 5<sup>th</sup> with a post from iron\_chef with the headline "Apple goes to Intel in a handbasket".

This discussion was of a much shorter duration than the STWUCD thread ending on June 10<sup>th</sup> at 2:38pm; just over 5 days. During this period of time there were 187 posts contributed by 100 community members. As with the Ubuntu thread, posts by members that contributed only one post and did not contribute to the overall discussion were eliminated. This left 34 members and 122 posts.

## **Brand Community and Centrality**

The attributes of brand community identified by Muniz and O'Guinn are very useful for predicting community behavior, but in order to differentiate brand communities it is important to identify structural aspects of these communities. The primary reason for performing this analysis is to identify structural differences between these two brand

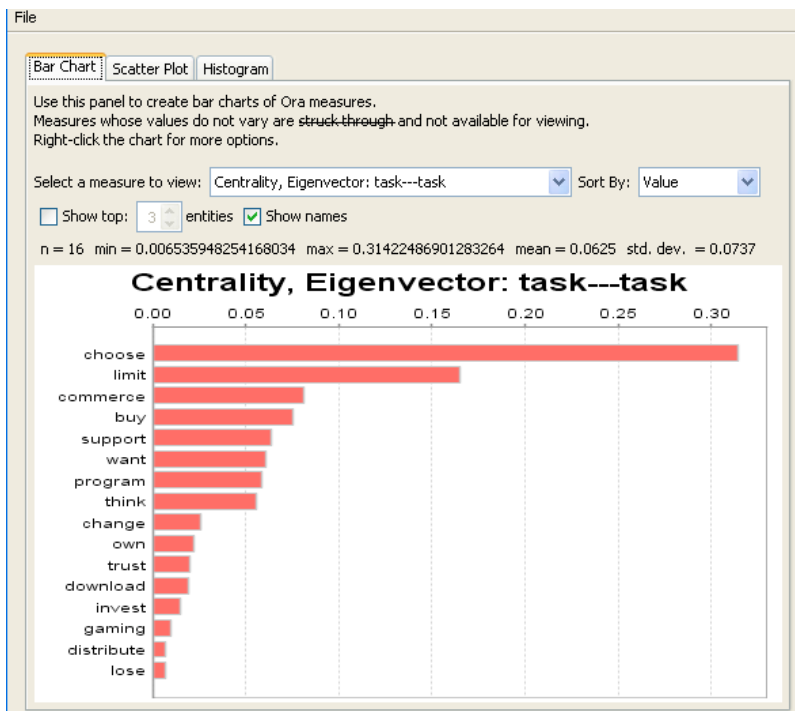
communities. Some similarities are obvious. Both communities are held together by the common usage of either the Mac or Ubuntu computer operating system. Both communities demonstrate oppositional brand loyalty behavior in their mutual disdain for Microsoft and the Windows operating system.

Yet, despite the similarities the prediction was that the open-source Linux operating system and the proprietary Mac OS X consist of properties that would lead to very different types of community. “One of the primary uses of graph theory in social network analysis is the identification of ‘important actors’ in a social network” (Wasserman and Faust 2006). Network theorists apply the term “centrality” to a series of mathematical concepts that are used to visualize and quantify an actor’s centrality.

“Degree” centrality focuses on individual actors and measures how many other actors that person is in direct contact with. Actors with high degree are central to the network. “Closeness” centrality looks at how close an actor is to other actors in the network. Centrally close actors can quickly interact with other actors. “Betweenness” centrality looks at the potential for actors who maintain a position on the path between two nonadjacent actors to influence the interaction between the nonadjacent actors.

Traditional centrality applies to individual actors within a complex network. In the current network text analysis the “actors” being examined are the higher-level concepts that have been extracted from the threaded discussions. “In a map, concepts form the nodes of the network of statements. For each concept, social network analytic measures such as centrality, distance and betweenness can be calculated in order to determine the importance of a concept in a network” (Diesner and Carley 2004).

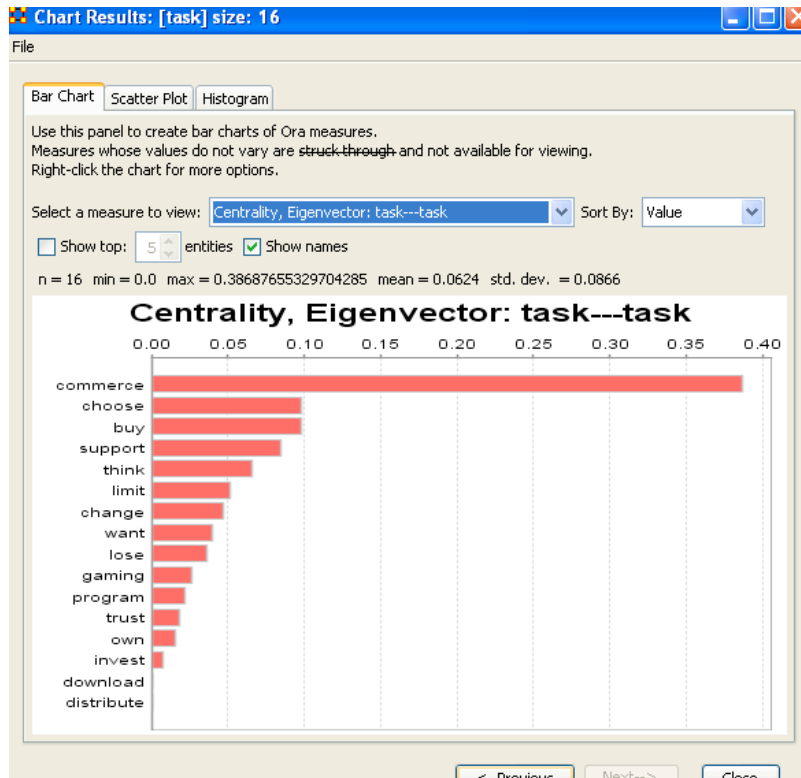
The “individuals actors” under consideration in this study are the higher-level concepts that have been identified through text analysis and grouped in the appropriate entity classes. For instance, the concepts that have been categorized as “tasks” can be examined for centrality within a brand community. If we examine the task concepts of members of the Mac brand community versus the “task” concepts of members of the Ubuntu Linux community we will see that these communities express different priorities.



**Chart 1: Task Centrality for Ubuntu Linux Thread**

Chart 1 shows Eigenvector degree centrality of the “task” entity class for Ubuntu Linux community members as extracted from the STWUCD threaded discussion. The task most central to members of this community is “choose”. This is not surprising as choice is a primary tenet of the Linux community. Chart 2, on the other hand, represents

a map meta-matrix analysis of members of the Mac community through the ADIPIC threaded discussion. Here the group’s conversation is more clearly centered around commerce-based tasks such as purchase decisions and stock prices.



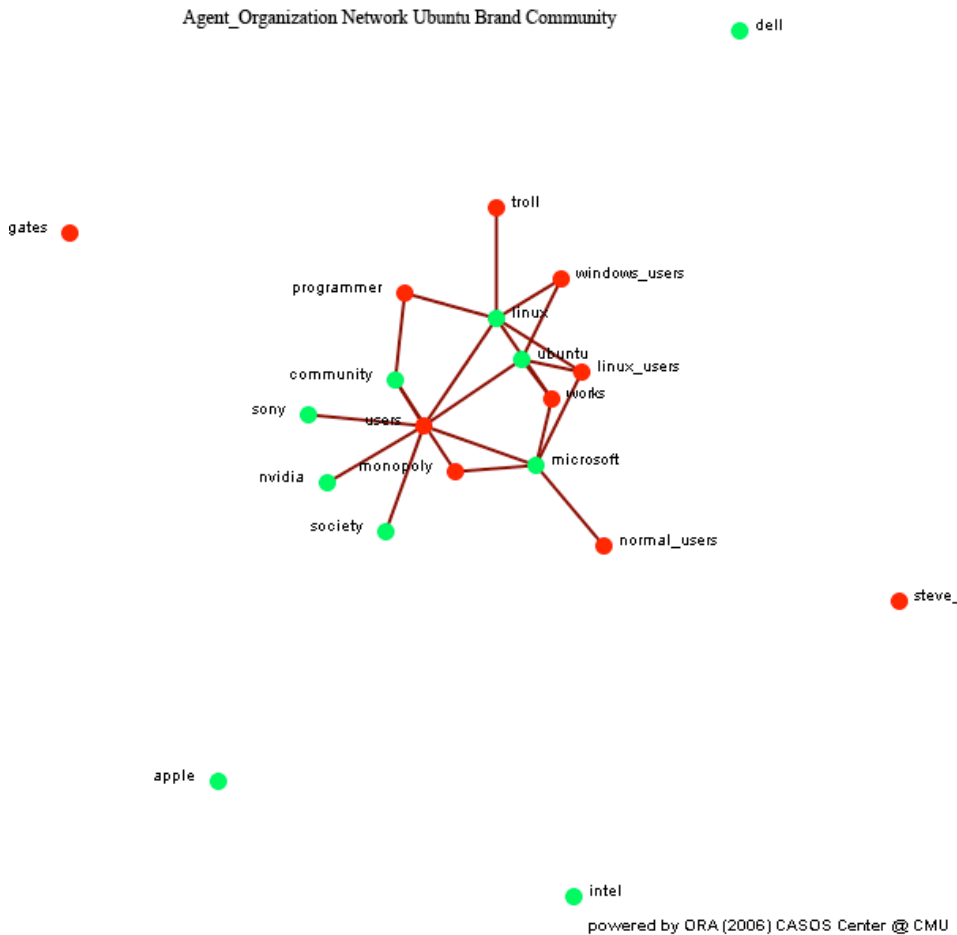
*Chart 2: Task Centrality for Mac User community*

Although “choose” and “commerce” are a part of the discussed concept set for both communities, the Linux community clearly finds choice to be more important.

### **Relationships between Users and Organizations**

Visual representation of centrality can also provide information about the structure of the community. The majority of these two brand communities consider themselves to be “users” of the operating systems. Figure 1 is a visualization of the relationship between “agents” (in red) and “organizations and communities” (in green). Ubuntu users

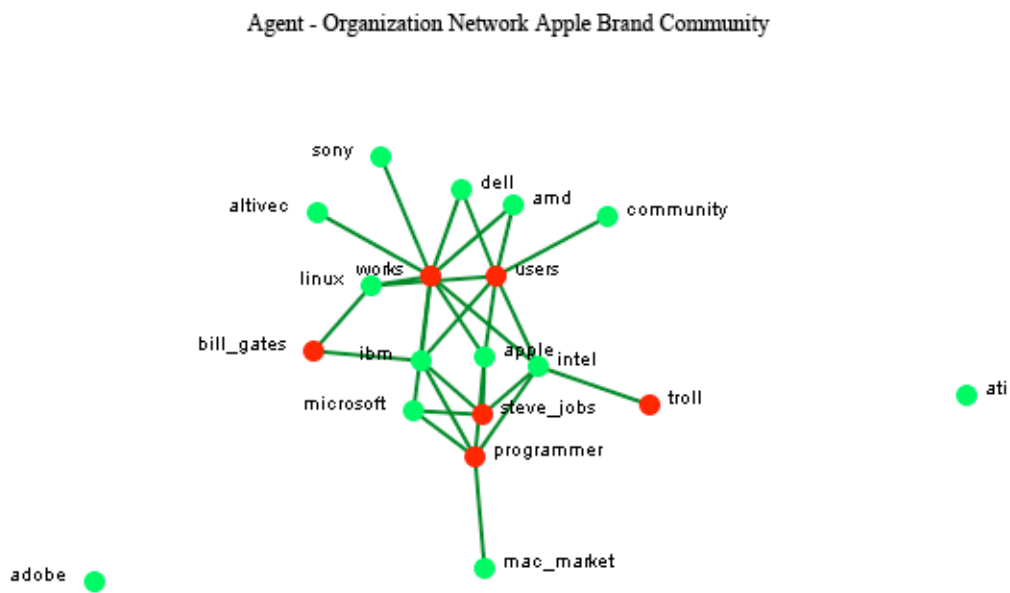
are connected directly to Ubuntu, Linux, community, society, Sony and Nvidia. They are connected to Microsoft through the intermediary concept of “monopoly” and to “programmers” through their community.



**Fig.1**

By examining the structure of these networks the relationships become clearer. It makes perfect sense that Ubuntu users would see “Monopoly” interposed as the additional degree of separation between them and “Microsoft.” Microsoft’s power and influence was often cited as a negative influence in the STWUCD discussion thread.

Similarly, it is interesting to see that “programmers” are connected directly to the “community” and to “Linux,” either of which provides the intermediary step to “users.” An interesting distinction between “users” and “normal\_users” is also evident from this graph. A likely interpretation is that members of the Ubuntu Linux community differentiate themselves from “normal\_users”. As we have just noted, Ubuntu community members see Microsoft’s monopolistic characteristics as a barrier between themselves and Microsoft. “Normal\_users”, on the other hand have no such barrier.



**Fig. 2**

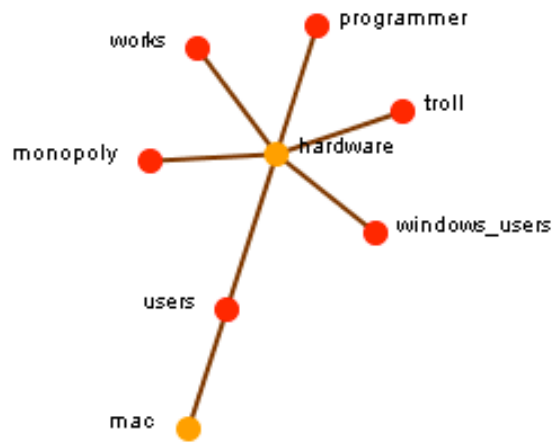
The Mac community structure in Figure 2 shows a more corporate complexion. Mac users are connected directly to IBM, Dell, AMD, Apple, Intel, and community. They are connected to Steve Jobs through Apple and separated from programmers by two degrees, Apple and then Steve Jobs. Their connection to Microsoft is either two degrees



through IBM or three degrees through Apple and then Steve Jobs. Interesting by omission is the lack of a connection with society, a link established by Ubuntu Linux members.

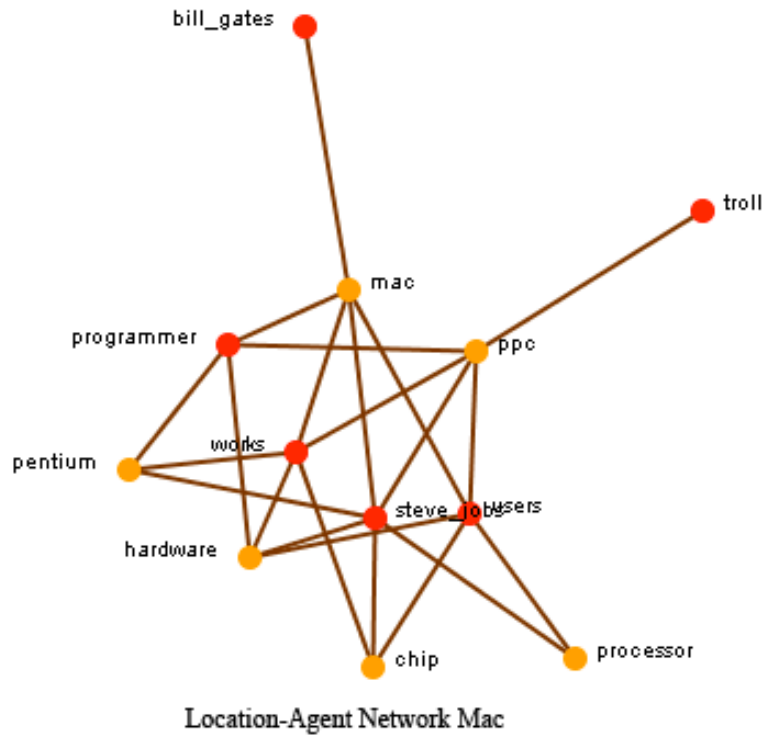
### Relationships Between Man and Machine

A primary impetus for undertaking this study was to gain some insight into the changing relationship between man and machine; specifically, the developing relationship between computer users and their computers. Early predictions were that users of open-source software might have a greater feeling of empowerment than computer users who relied on proprietary software. The following graphs seem to bear this out.



Location-Agent Network Ubuntu Linux

Fig. 3



*Fig. 4*

The graphs indicate that the world of computers is a much simpler, more straightforward place for Ubuntu Linux users than it is for Mac users. The star graph pattern for the Ubuntu group illustrates that the “hardware” is the most central aspect in this relationship. Compare that to the more complex rendering of the user/hardware network described by Mac community members. Here the hardware is not the only central concept.

While there is a direct connection from “hardware” to users, Steve Jobs, programmers, and the concept of functionality (works), there is also a direct connection from “Mac” (representing the Macintosh Computer) to users, Bill Gates, Steve Jobs, programmers, and the concept of functionality. However, in this graph, the most central

node isn't the hardware, isn't the Mac, isn't the user, it's Steve Jobs who is directly connected to hardware, Mac, chips, processors, Pentium, and IBM PowerPC. Marketers might interpret this as good news for Steve Jobs and a testament to his influence in the Mac community. The Ubuntu graph, on the other hand, might trouble marketers of proprietary products since the "hardware" central to the Ubuntu network is not brand based.

### Computer Users Relate to Software

Another prediction I had made prior to this study was that computer users were becoming more aware of their software and media products as coded entities, separate from the delivery devices such as iPods and computers. The differences identified in the agent-resource networks were not particularly clear cut even after accounting for directionality.

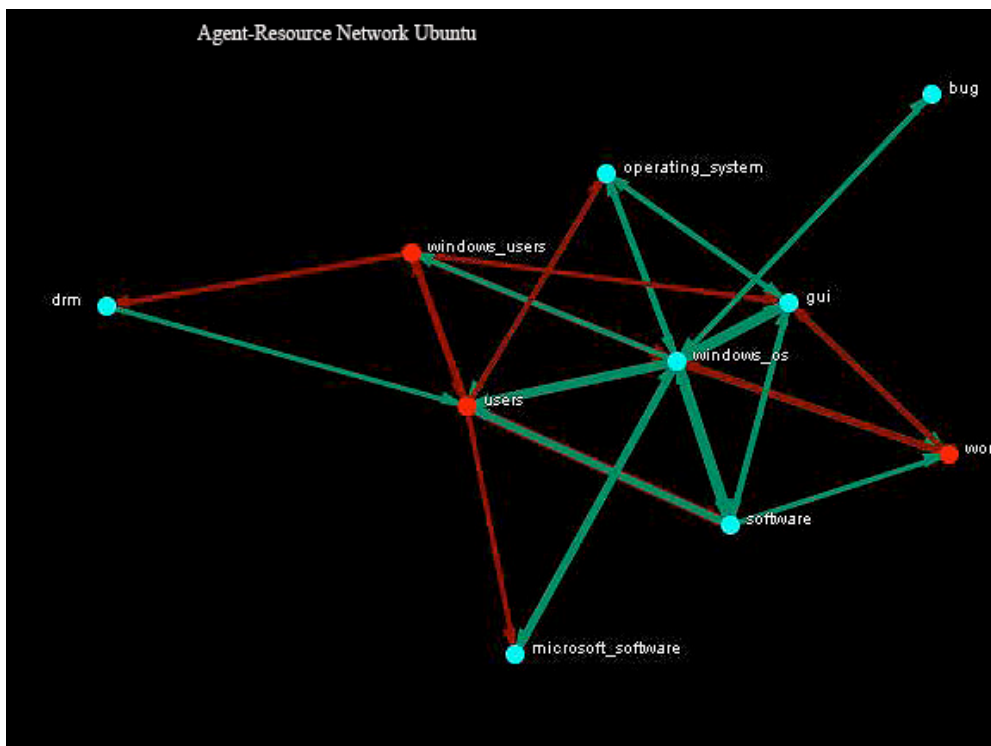
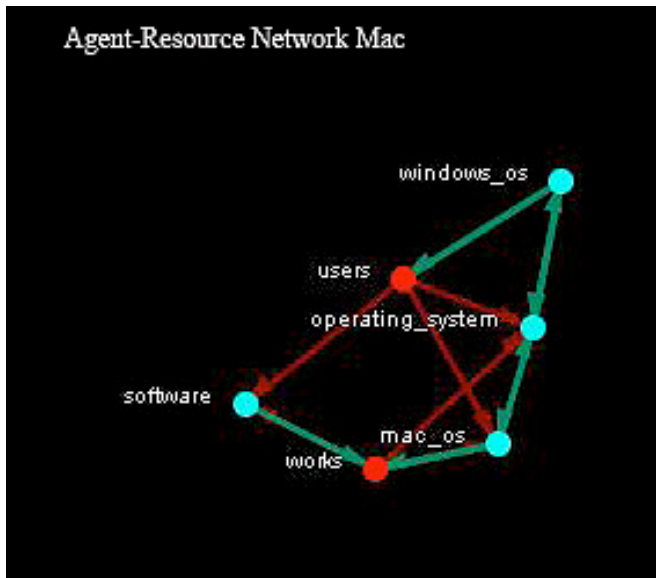


Fig. 5



*Fig. 6*

Computer users in both networks felt the presence of the Windows operating system and there were other similar links in these networks. The major, discernible difference between these two networks is that Ubuntu users seem to have a more complex relationship with the coded resources. Ubuntu users were aware of the presence of DRM (Digital Rights Management) restrictions and, not just the Windows OS, but Windows users as well. They also expressed more specific concerns about Windows including programming bugs, the graphical user interface (gui), and the functionality of Windows. While not dramatic, even a difference of this sort can help to clarify which criteria are important to each community.

## **Conclusion**

When paired with social network analysis methodology, netnographies of brand communities can lead to insights into a brand community's relationships and behavior. For the marketer this type of information can have great potential predictive and prescriptive value. For future research more quantitative network results will help to

further elucidate the value of network ties and a more closely defined structuring of the meta-analysis ontology will enhance the validity of the results.

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