

Categorizing Social Networks in Respect of their Application, Usage and Services

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Abstract: In recent years, communicating through social networks has become considerably popular. There are many websites that allow users to meet their friends in the cyberspace, create profiles and share the information in their profiles with their friends and many other strangers, or experience a virtual life in the shape of a digitally human representation with other users. Currently, social networking is an extended topic that has been widely studied in the literature. Nevertheless, we noted that a proper categorization based on the application of social network is not yet available. Hence, in this paper, we have identified and categorized social networks from an applied view.

Keywords: Social networks, virtual world, categorization, game space.

1. Introduction

Many websites have been developed so as to allow users to meet their friends in the virtual world of Internet, create profiles, and share the information in their profiles with friends and many other strangers [1]. These websites that are generally known as social networks, are a type of social media and their goal is creating an online society of users who can interact with others by sharing opinions,

insights, information, interests, and experiences [2].

Social media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user generated content [3]. According to the definition presented by Boyd and Ellison [4], social network sites are web-based services

that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system. The nature and nomenclature of these connections may vary from site to site.

Many various websites present social networking features and there are different categorizations and classifications. In this paper, along with studying of the previous researches and opinions, services that have been offered as social network in cyber space will be identified and a comprehensive categorization will be offered.

The remainder of this paper is organized as follows: a review of previous researches and some statistics are stated in section 2. The proposed model of categorization for social networks and their identified types are described in section 3 precisely, and finally some conclusions are given in section 4.

2. Literature Review

2.1. Previous Researches

Messinger et al. [5] suggested a typology adapted from Porter's [6] typology of virtual communities that has five elements:

- Purpose (content of interaction): such as an age focus, or a content focus, etc.
- Place (location of interaction): whether the notion of place is completely, or only partially virtual; and players are collocated or geographically dispersed.
- Platform (design of interaction): various gaming platforms, and synchronous or asynchronous communication.
- Population (participants in the interaction): the size of the group.
- Profit model (return on interaction): a single purchase price or registration fee, fee per use, subscription based, advertising-based, pay-as-you-go extras, and sale of ancillary products.

Thus, various types of online games, social networks and virtual worlds, can be distinguished by considering their difference in these five items.

Lassala [7] put the social networking sites into two broad categories: 1. profile-based; 2. virtual-life. R. Oskouei [8] classified social networks as follow:

- Blog: a type of website, maintained by an individual or group with changeable entries of information, description of events, such as graphics or video.

- Advanced: designed mainly for social communication purposes.
- Special: All websites that having facility for sharing knowledge or data. These websites have divided into three branches: sharing, community, and special encyclopedia.

Privacy Rights Clearinghouse stated the types of social networks as [9]: personal networks, status update, location networks, content-sharing, and shared-interest networks. GoMo News website [10] divided mobile social networks into group texter, location-aware, social gaming, dating services, social networker, and media sharer. White [11] classified the existing types of social networks in seven major categories: social

connections, multimedia sharing, professional, informational and educational, hobbies, and academic.

Spence [12] separated virtual world from other related projects and defined a continuum from game space to virtual world and illustrated the place of related projects within this continuum. Kaplan and Haenlein [3] introduced virtual worlds as two types: 1. virtual game world, 2. virtual social world. They also believed that there are six types of social media. Social networking sites, virtual game world, and virtual social world are three types of them. In addition, they pointed out that many features of social media can be combined in social networks. In Table 1, a brief review of previous researches and opinions is presented.

Table 1: A Review of Previous Researches

Author	Subject	Categories
Porter (2004)	typology of virtual communities	purpose, place, platform, population interaction structure, profit model
Lassala (2007)	categorizing social networks based on their style or modus operandi	profile-based and virtual-life
Messinger et al. (2008)	typology of online games, social networks and virtual worlds	purpose (content of interaction), place (location of interaction), platform, population, and profit model
Spence (2008)	distinguishing virtual worlds and from other related projects	virtual world, chat-virtual world hybrid, social network service-virtual world hybrid, non-persistent virtual world space, game-virtual world hybrid, game space
Kaplan and Haenlein (2010)	classification of social media	collaborative projects, blogs, content communities, social networking sites, virtual game worlds, and virtual social worlds

Oskouei (2010)	classification of websites	classified social networks into blog, advanced, and special (including: sharing, community, and special encyclopedia)
Privacy Rights Clearinghouse (2010, revised 2014)	types of social networks	personal networks, status update networks, location networks, content-sharing networks, shared-interest networks
White (2014)	types of social networks	social connections, multimedia sharing, professional, informational, educational, hobbies, academic
GoMo News (2014)	types of mobile social network	group texter, location-aware, social gaming, dating services, social networker, and media sharer

2.2. A Glance at Statistics

- According to the statistics published in May 2012, Facebook social network has 845 million active users per month [13].
- Facebook is the principle mean of communication between students in United States [14].
- According to Spence [12], there are 69 projects that are live or in the open beta stage, and there are 32 additional projects currently in the development phase or closed beta. A large majority of the projects are located in the United States, with Europe a distant second, and the rest of the world even farther back.
- The sum of the total number of registered users of virtual worlds and related projects that integrate virtual

worlds technology is 330.5 million; and the major concentration of virtual worlds users is under the age of 20 [12].

- The majority of functioning virtual worlds and other related projects are focused on socialization and chat, with the exception of game-virtual world hybrids [12].

3. Different Types of Social Networks and Their Categorization

To achieve a comprehensive categorization, we consider the categorizations that are offered up to now. Basically, in social networks that simulate real life in a virtual form, assigning an "avatar" (a digital character) to each user is a common attribute. Hence, we divide all social networks based on their application, usage, and offering services into "profile-based" and "avatar-based" groups (see figure 1).

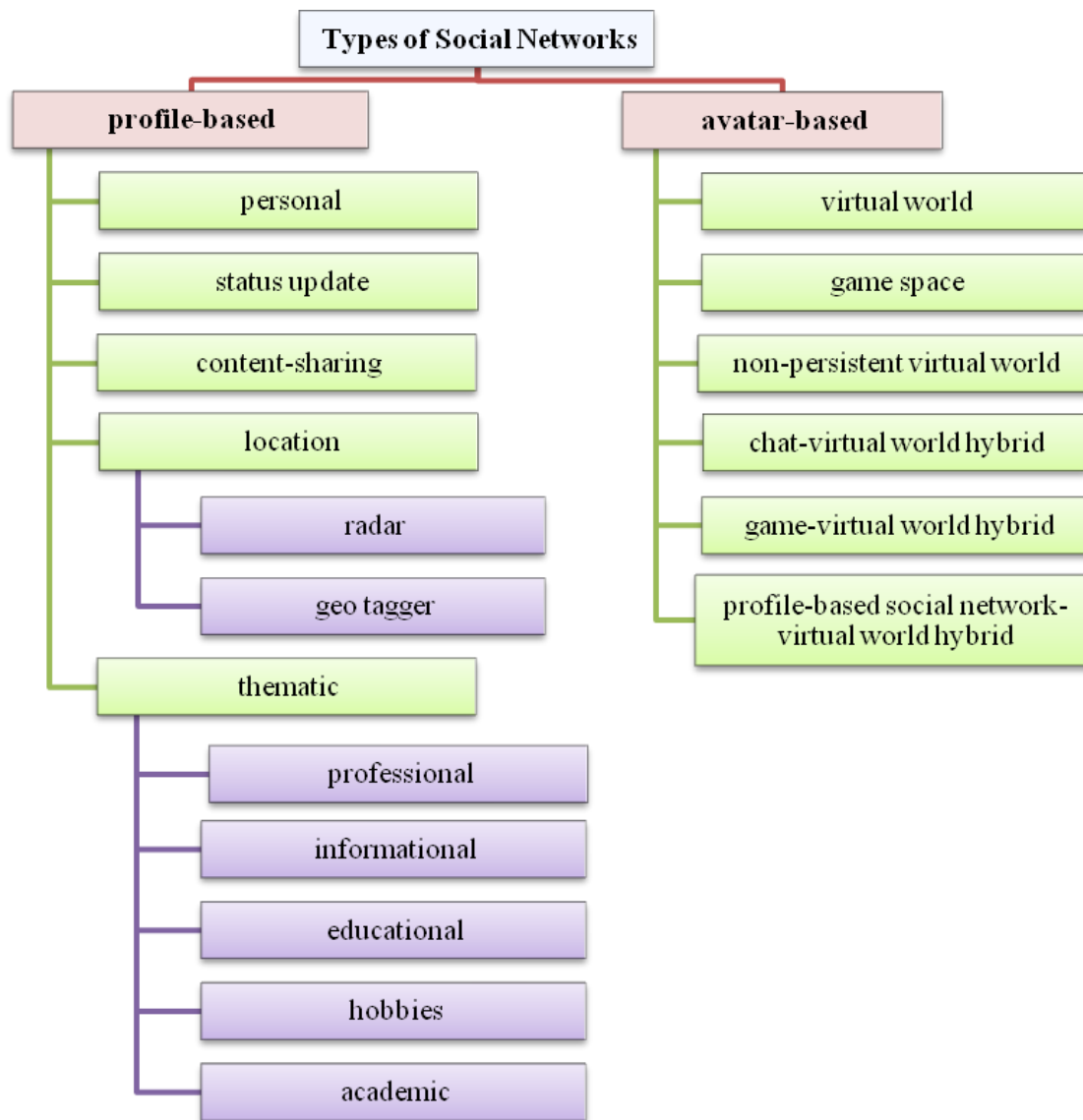


Figure 1: Types of Social Networks and Their Categorization

3.1. Profile-Based Social Networks

Generally, in Profile-based social networks, each user creates a profile and posts personal information, likes and dislikes, list of friends, opinions, favourite songs, books or movies, etc. on this profile. Furthermore, he/she can write comments in other users` profiles, chat

with them online, and send them messages [7]. While Profile-based social networks are in different types, the majority of such social networks provide services that combine these types. In addition, their focus may vary along time. With consideration to various typologies presented previously and using their

definitions [7, 8, 9, 11, and 12], we enumerate types of profile-based social networks as below:

3.1.1. Personal Networks: These networks enable users to create online profiles and communicate other users, with an emphasis on social relationships such as friendship. Users can fill forms in their profiles with detailed information about themselves and their interests. For example in some websites such as Facebook, Google+, and MySpace, users share information such as age, gender, interests, occupation and educational status, and also files and links to music, photos, and videos with confirmed users in their contacts or even with unconfirmed application programs.

3.1.2. Status Update Networks: In order to build a quick communication with other users, networks in this type, allow users to write and update their status and conditions in brief with few sentences. Twitter and Notion (notion.ir, an Iranian website) are two examples of this type that are designed for rapid and public propagation. However, privacy settings may be considered to limit access of others to these updates.

3.1.3. Content-Sharing Networks: These Networks are designed as a place for sharing

contents such as music, photos, and videos. In addition, they provide features to create personal profiles, establish contacts and interact with other users through comments. Examples are Youtube for sharing videos and Flickr for sharing photos. In some of mobile forms of these networks, users can save and store their favorite contents online instead of storing in their cell-phone memory.

3.1.4. Location Networks: With the advent of GPS-enabled cell-phones, development of location networks begins. Generally, these networks provide the ability of realizing one's real-time location and incorporate this with other services such as alerting near friends or finding specific places. Many of these networks are designed in order to interact with other social networks, so that updates in location networks are sent to other social networks. We can enumerate two types of location networks:

- **Radar:** Allow users to find people or specific places around them or near a specific point. Some of these networks alert users when a member of their contact list, places in a particular distance from them. Examples are: Rabble and Foursquare.
- **Geo Tagger:** Allow users to tag various places with photos, comments, etc. and

these tags may be available for other users.

Examples are: Twitxr and Here.

3.1.5. Thematic Networks:

These networks have some features of other social networks but they have been developed around a specific interest (such as a topic or course) or for a certain group of people. For example people who like special hobbies, have similar educational or ethical backgrounds, or their religious tenets or political orientation are alike. We can divide this type of social networks into several branches:

- **Professional Networks:** They are designed with the goal of providing opportunities for occupational growth and they mostly focus on a certain profession or interest. Examples are: LinkedIn (that became the largest professional network in November 2011, with more than 135 million members), Nurse Connect, and Monster.
- **Informational Networks:** Informational societies are composed of people who are in search of their daily questions. Examples are: HGTV Discussion Forums (about home design) and Do-It-Yourself Community.
- **Educational Networks:** For students' participation in course projects and their communication with teachers and

instructors. Examples are: The Math Forum and e-Learners.

- **Hobby Networks:** These societies are composed of people who like specific hobbies. Examples are: Sport Shouting and Oh My Bloom (about husbandry).
- **Academic Networks:** These networks are composed of academic researchers who want to share their researches and review results achieved by colleagues. Examples are: Academia.edu.

3.2. Avatar-Based Social Networks

In avatar-based social networks, a digital character is assigned to each user that is called "avatar". The most important type of these networks is "virtual world" that simulates a real life and its main focus is on socialization. In other branches of avatar-based social networks, some features of virtual world are combined with other capabilities. We can categorize avatar-based social networks as below. Note that some of the researchers such as Bell [15] considered all of the next branches as virtual world, while some of other researchers disagreed. For example, Spence [12] by paying attention to the existing definitions of virtual world, stated that we cannot enumerate all of these types as virtual world, then he entitled these types as virtual world and related projects. In addition he did not enumerate game space as a social environment.

3.2.1. Virtual Worlds:

These networks depict a real life. Users create a new personality, instead of creating profiles representing their real personality. These new personalities that are shown by avatars can have rooms, homes, or islands and can arrange their places as they like. Users also can have pet, furniture and various clothes. Communicating with other users is possible through several ways, such as: chatting, participating in parties, drinking, playing games, watching films, and etc. exactly similar to usual life in real world [7]. Examples of virtual worlds are: SecondLife, HiPiHi, There, vSide, and Kidscom.

Although, developing of virtual worlds is derived from game industry, nowadays these worlds are applied for purposes over playing games and they will accept as environments for researching, educating, and political and occupational affairs very soon [16]. Now, many universities, corporation agencies, banks, and even governments accede to SecondLife. In the few next paragraphs, some of the definitions about virtual worlds are reviewed.

According to Castronova [17], a virtual world is an environment that is Internet-based, permanent, and simulated via computer and a network of users interact with each other and three-dimensional environment.

Bell [15] surveyed several existing definitions about virtual worlds, explained the deficiencies

of each definition, and ultimately offered a definition of virtual worlds. According to this definition, the key elements of virtual worlds are:

- **Simultaneity:** Interactions require simultaneity or real-time communication.
- **Permanency:** Virtual worlds could not be paused or closed when a user signs out.
- **Avatar:** A digital representation (graphical or textual) of a user with a label or a simple name that is enabled to do things and controlled by a human in real world.
- **Network of people:** There are many people in virtual world that have interactions with each other and with the environment.
- **Networked computers:** Data and interactions go over via networked computers.

From the viewpoint of Spence [12], virtual worlds are persistent, synthetic, three dimensional, non-game (without a specific goal) centric space. The main difference between non-games and traditional video games is the apparent lack of goals, objectives and challenges. This allows the player a greater degree of self-expression through freeform play, since he can set up his own goals to achieve [18]. Therefore, virtual worlds are primarily social spaces that allow for other uses depending on the theme of the particular virtual world. This definition

characterizes virtual worlds as a distinct phenomenon, separate from MUDs, Massively Multiplayer Online Role Playing Games (MMORPGs) –such as World of Warcraft, EverQuest, and Eve Online– or other three-dimensional online game spaces. Game spaces are virtual environments defined by their purpose of pursuing the objectives of a game, while virtual worlds are not defined by the rules and goals of a particular game but they are frequently focused around socialization and content creation, instead. This is not meant to imply that MMORPGs do not have non-game activities taking place, such as socialization and commerce, but in a gaming world the primary function of the virtual environment is to facilitate the achievement of the objectives of the game. Similarly, game playing often takes place within a virtual world, but virtual worlds have many other activities taking place simultaneously which are generally as important as or more important than any game playing, activities such as education, collaboration, and content creation, among numerous other uses.

3.2.2. Game Spaces:

By tracing the flow of multiplayer games development, from the late 1970 up to now –that the games with complex environments are appeared– we will find out that these increasingly complex gaming worlds provided the foundation for the development of virtual

worlds. Nowadays these games proceed to socializing aspects. So, because of existing interactions between a large numbers of online players in these games, some of the researchers such as Bell [15] and Soukup [19] considered three-dimensional, persistent, and complex online game spaces as virtual worlds. However, this opinion is not accepted by all researchers in this concept. Therefore, we mentioned game spaces as a separate branch in this categorization. As it explained in the previous section, game spaces are virtual environments defined by their purpose of pursuing the objectives of a game.

3.2.3. Non-Persistent Virtual Worlds:

Qwaq is an instance of these social networks that provides a virtual world space appropriate for business meetings or group collaborations. When the encounter is over, it shuts down but the settings and accrued content are saved, and can be retrieved for next meetings in future (figure 2).

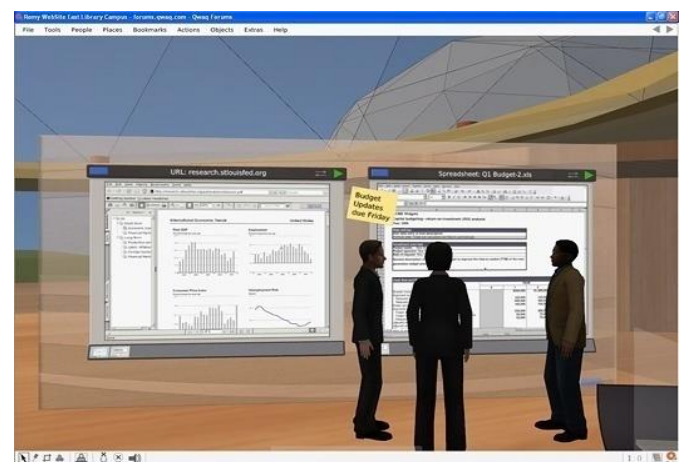


Figure 2: A Screenshot of Qwaq

3.2.4. Chat-Virtual World Hybrids: As a good instance, IMVU is a three-dimensional chatting environment that also has some of the features of virtual worlds (figure 3). Other examples are Weblin and sMeet.



Figure 3: A Screenshot of IMVU

3.2.5. Game-Virtual World Hybrids: This branch has a combination of the attributes of games and virtual worlds. Examples are: Neopets, Webkinz, Jumpstart, and Poptropica.

3.2.6. Profile-Based Social Network-Virtual World Hybrids:

This branch uses some of the features of profile-based social networks along with virtual worlds. Examples are: WeeWorld, Metaplace, and Onverse.

4. Conclusion and Future Researches

In this research, along with offering a comprehensive categorization of social networks in respect of their application, usage and services, the various types of social networks are introduced. Conclusions achieved from this research are: first, opinions about the types of social networks are very different; also virtual world, as a structure, has not described and defined clearly yet. Second, the most users of social networks are less than 20 years old that they will be the adults of societies in a few next years. Therefore it is not fair if we focus only on the social networks that their users are mostly adults. Finally, the world of social networks is a great world and has a lot of users, so attending to its various aspects in the future researches, such as ethical and educational affairs, and its effect on real life, will be noticeable and useful.

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