

# Social media are highly accessible media

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## ABSTRACT

We argue that social media can best be understood as a media supply chain in which large groups of consumers participate in the role of producers. Such a media supply chain must be highly accessible at each stage of the media supply process. We will analyze the barriers posed by different stages of the media supply chain and use this analysis to discuss how social media services on the Internet have lowered the barriers to participation. We then give non-Internet examples by putting highly accessible media in a historical and social context.

## KEYWORDS

Social Media, Content Production, Media Economics, Web 2.0, Media Supply Chain

## 1. INTRODUCTION

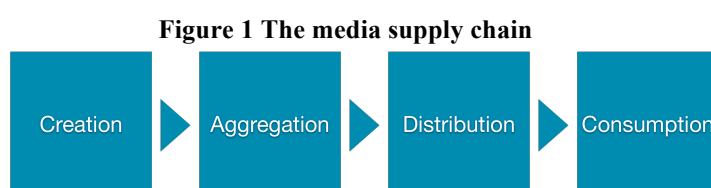
Despite the fact that social media have attracted a lot of attention from both researchers and the popular press, there is still considerable confusion about the notion of social media itself. Various definitions have been given. Most of these definitions are unsatisfactory in that many of the characteristics of social media that need some economic, technical, sociological or psychological explanation are part of the given definition. In this paper we will take a socio-economic point of view and argue that the main characteristic of social media is the position of the “consumers”, often called “users” or “citizens”. They are the participants of the media supply chain that *predominantly* take the consumer role. However unlike other mass media, in social media it is common that “consumers” also take on the role of producer. To make this possible, the media supply chain must be accessible to large groups at each stage. This point of view allows us to explain characteristics attributed to social media as consequences of high accessibility. For example, the web is a technology that is well suited to support a low cost, easily accessible media supply chain by using cheap Internet distribution and a part automated, part easy to use interactive content management process. It is therefore no surprise that most social media are web-based. Indeed, in many definitions social media is bound to the Internet by definition. On the other hand, if we take high accessibility as the main characteristic of social media and we take the position that high accessibility and large participation in the producer role by “consumers” should be considered in its historical and sociological context, we can find examples of “social media” that are not supported by the Internet.

Our analysis will focus on two separate stages within the media supply chain that pose crucial barriers for making media highly inaccessible. In the first place there is the filtering role of the aggregation stage where media is collected, packaged and branded. In the second place there is the distribution stage that imposes restrictions on the aggregation and consumption stage. Technical and social economic factors largely shape these intermediate stages. Depending on distribution channels and media forms, the barriers to access in the aggregation and distribution stages, largely determine what enters and leaves the media supply chain. When barriers in these stages are lowered, for instance by social media services on the Internet, we find excellent examples of highly accessible media.

The organization of this paper is as follows. In section 2 we will consider the media supply chain following (Doyle, 2002). We then discuss barriers for “consumers” to enter in this supply chain as producers and analyze why these barriers make media highly inaccessible. In section 3 the role of computers and the Internet, in lowering these barriers will be discussed that led to poster child examples of social media. We then formulate a definition of social media as a supply chain in section 4. In section 5 we give examples of non-Internet social media. In the related work section 6 we will discuss definitions found in the literature and discuss how common characteristics fit in with our definition. In section 7 we give a discussion of our point of view related to business model for social media. We end with a discussion and a conclusion.

## 2. THE MEDIA SUPPLY CHAIN

The media supply chain (Figure 1) is a model (extending the model from Doyle (2002)) describing the process of creating media content, starting with a creative process in which media content is produced, and , ending with media content being consumed.



The creation stage is traditionally carried out by filmmakers, writers, journalists, radio producers, television production companies, etc. Producers sometimes supply content directly to consumers but, more typically, their output (e.g. television programs) supplies the succeeding aggregation stage. In this second stage content is collected, packaged and branded into a marketable media product or service. This aggregation process is carried out, by newspaper publishers, television broadcasters, magazine publishers, etc. In the third stage there is the distribution process in which the media product is delivered to media consumers. We finally distinguish a separate stage in the media supply chain for consumption.

A simple example of such a process is where a person writes a letter, puts it in an envelope, and sends it to another person through mail. However, this paper does not consider such one-to-one communication examples where there is no wider audience. Instead we consider mass media i.e. a type of communication using media to distribute sound, text and/or images amongst a large audience (van Dijk, 2006).

A “consumer” attempting to reach a large audience through the media will encounter barriers in each of the production, aggregation, distribution and consumption stages of the media supply chain. We will focus in particular on two crucial intermediate stages: aggregation and distribution. We will start with some examples of traditional media that demonstrate these barriers.

### 2.1 Newspapers

Letters to the editor have always been a feature of newspapers. The subjects of these letters vary widely with topics such as: supporting or opposing an editorial stance, responding to another writer's letter to the editor, or commenting on a current issue are most common.

Assuming a reader of a newspaper agrees or disagrees, with a certain article, he could write a letter (production) and send it to the newspaper to get it published in the ‘letters to the editor’ section. Note that this production stage contains no high barriers in a technological sense since pen and paper or a typewriter are widely available at a low cost. One could argue that barriers do exist in the production stage: the producer has to be literate in order to write a letter. Though this paper acknowledges this barrier it does not find it relevant in a literate society even though many people will be put off writing such a letter. However, this is mainly due to the second stage within the media supply chain.

In the aggregation stage, the staff of The New York Times collects, evaluates and selects letters. Printing and distributing papers is an expensive process. Therefore it makes sense that the aggregation stage is organized to be highly selective and that only high value content is allowed to enter the distribution stage. In addition newspapers have a limited amount of space and have a high reputation to protect. The staff therefore

acts as a gatekeeper, carefully selecting letters that are worthy of publication. For example, The New York Times (2009) bases its selection on: (1) letters to the editor should only be sent to The New York Times; (2) length may not exceed 150 words; (3) must refer to an article that has appeared within the last seven days; (4) writers must be known by the newspaper. We believe that, in addition, editors will select letters based on style, a tone-of-voice and expertise that will probably count as a substantial barrier even in a literate society.

After the aggregation stage the newspaper is put together including the 'letters to the editor' section and is made ready for distribution. Distribution takes place through mail or delivery through newsstands and other retail points throughout the United States.

Consumption requires that consumers are willing to pay newspapers and be literate. Since high quality newspapers tend to be relatively expensive and written in relatively complex language, this alone will present a barrier for some groups which will give a bias to a certain audience in the consumption stage.

## **2.2 Television**

Unlike the newspaper example, video production poses a barrier that is hard to ignore. A video camera is mandatory and, in some cases, so is a device to transfer a movie segment from the camera tape to a VHS tape. In the 70/80's these devices were expensive and not available to the average consumer. In recent years high quality digital video cameras and video editing software has become widely available.

TV as a distribution medium is even more expensive and restricted than the press. Correspondingly, the aggregation stage is set up for selecting content with high public appeal. This severely limits possible contributions of television content to television. Unless one gets invited, choice seems to be limited to TV formats such as "America's Funniest Home Videos", a popular reality television program featuring slapstick physical comedy, or formats featuring homemade pornography.

A television and cable subscription are required to consume the content, but the near universal availability of TV sets and cable subscriptions and popularity of TV make these very low, the very reason for the attractiveness of TV as a medium.

## **3. INTERNET AND WEB 2.0**

As stated in the introduction, the Internet is a disruptive technology that makes it much cheaper and easier to support the aggregation and distribution stages within the media supply chain. The Internet supports a broad array of opportunities to communicate information ranging from: one-to-one a-synchronic; many-to-many a-synchronous; one-to-one or one-to-few synchronous; to one-to-many a-synchronous (van Vliet (2008)).

Up until about 1996 the Web 1.0 was dominated by capable users that had access to their own servers. Around that period commercial providers of Internet access gave access to the Web to many more people. However, many in this new group had neither access to their own servers nor the skills to create their own websites. This meant that for most users, the Web was mostly read-only. It also meant that this group was increasingly becoming an attractive target for advertisements and the source of large revenue streams. Around 2006 it became attractive to provide a platform for services to a large group of consumers that required a high degree of interaction with Web-based servers. Two technological developments made these technologies possible: increasingly affordable bandwidth; and increasingly affordable and faster computer equipment. This led to "a revolution where the Internet became a viable platform for the computer industry" (O'Reilly, 2006). The technologies allowing such interaction are collectively known as Web 2.0 technologies.

There seems to be a lot of criticism around the term Web 2.0 since within the computer industry a 2.0 versioning suggests that there has been a major upgrade. Web 1.0 did not suddenly upgrade to Web 2.0, it merely describes a clever use and maturing of Web 1.0 technologies together with a change in set up for providing that technology. This trend was directly related to the different demographics on the Internet, and therefore of the viable business models. However, it provided the platform for (and co-evolved with) online services that enabled large groups of users to: create and share thoughts and stories (Blogger and Twitter); share information and links (Delicious, Digg and Twine); share multimedia (YouTube and Flickr); create and share knowledge (Wikipedia, Yahoo! Answers and SlideShare) and; create and share relations (Facebook, MySpace and LinkedIn). These services are collectively known as social media. Since Web 2.0 technologies

were instrumental in providing these services, the term Web 2.0 is also often used to describe social media services (which adds to the terminological confusion!).

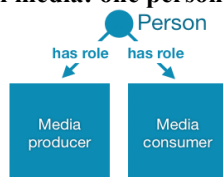
Before the existence of social media services it was required to have access to a server and to have some technical skills such as knowledge of HTML (Hypertext Markup Language) and scripting languages. With social media services, no technical knowledge or skills other than knowing how to operate a computer and a web-browser are required for using them. They therefore provided a convenient platform to publish and to aggregate content using the Internet as a distribution medium and therefore dramatically lowered the barriers of the aggregation and distribution stages.

At the turn of the 20th century, digital media production has become much more accessible by the introduction of cheap digital (video) camera's, smart phones with Internet capacity, intergraded (video) cameras, and easier to use editing software installed locally on computers. This meant that (in affluent societies) very large groups obtained the means to create text, audio, images and video to put on the internet.

#### 4. SOCIAL MEDIA AS A SUPPLY CHAIN

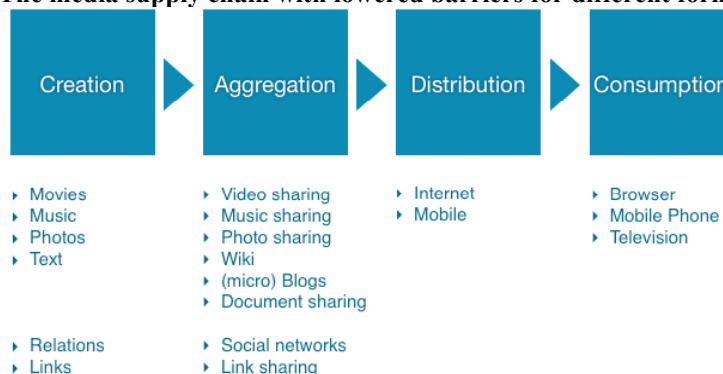
When looking at the previously given definitions of social media services we see that they were driven by giving “consumers”, i.e. people that predominantly played the role of consumer, the opportunity to play the additional role of producer. This was made possible by lowering the barriers for accessibility in the media supply chain. We now want to propose to *define* social media as a supply chain for a type of media with a large participation in the production role of “consumers”, i.e. people that usually have the consumption role in the supply chain. (Figure 2)

**Figure 2 Social media: one person in two roles**



We pose as a working hypothesis that if they can cater for a large group of “consumers”, such social media are realized by media supply chains with low, or at least comparatively low, barriers for accessibility. Different underlying media give rise to slightly different social media all based on this principle (Figure 3).

**Figure 3 The media supply chain with lowered barriers for different forms of media**



#### 5. NON-INTERNET SOCIAL MEDIA

As we have just seen, many examples of social media exist with the Internet as distribution channel. In this section, non-Internet examples for different media will be given to substantiate the claim that according to our definition social media have a long history and are not solely bound to the Internet.

Before the invention of the printing press, reproduction of books (production and aggregation) was a very labor intensive and expensive task, since reproduction had to be done by handwriting. The church had near complete control of the supply chain of texts, both in producing them and collecting texts in libraries. This greatly contributed to its hold on the intellectual life in medieval Europe. When the spread of the printing press lifted this barrier allowing to rapidly produce or reproduce texts, it helped spreading literacy and greatly increased the access to knowledge since texts became available to a larger audience (Heim, 1993). Scholars, artists, dissident monks and commoners printed bibles, translations of Greek philosophers, subversive pamphlets and secular literature. This broke the near monopoly of the church on the supply of texts and ultimately its control on medieval thinking. The possibility to spread alternative ideas by and for an audience outside of the church had a large influence on society and was partly responsible for the turmoil of the 15th and 16th century and the changing role of the church (Eisenstein, 1979).

A second “print” example is the ubiquitous use of the stencil machine by activists in the 1960th. For example during the May 1968 uprising, students and high school students in Paris would use the stencil machine to produce pamphlets that were handed out by thousands of activists. Unlike radio and television, the stencil machine and activists provided an alternative media supply chain that students had access to. A high school student pamphlet (Lycee Turot, 1968) has been preserved containing texts such as: “we reject the RADIO and TELEVISION which, directed by the GOVERNMENT, fool PUBLIC OPINION by spreading FALSE and MISLEADING news” (emphasis theirs, translation ours) echoing the kind of sentiments that can be found on many blogs.

A final “print” example is the Samizdat in Soviet Russia. The word "samizdat" is made out of sam (Russian: "self, by oneself") and izdat (Russian: shortened for "publishing house"), thus, self-published. It was a key form of dissident activity across the Soviet-bloc. Individuals would reproduce forbidden literature and periodicals using techniques to reproduce the forbidden literature and periodicals that varied from making several copies of the content using carbon paper (either by hand or on a typewriter), to printing on mainframe printers during night shifts, to printing the books on semi-professional printing presses in larger quantities. Documents were passed from reader to reader through a network of friends and family that would republish these censored publications, thus building a foundation for the successful resistance of the 1980s. (Shekhtman, 2009). The term samizdat is sometimes still used for the rather less risky activity of producing readers for students, or other forms of in-house publishing.

In Manila, mobile phones became popular and were used to organize public pressure against the Philippine president Joseph Estrada, eventually forcing him out of office in January 2001. Throughout 2000, anti-Estrada text messages such as hostile slogans and satirical jokes were aggressively propagated over the system. Anti-Estrada leaders, organized phone trees to quickly organize massive demonstrations, and warn every time the riot police would act against the riots.”(Katz & Aakhus, 2002) A large audience could be reached by using the mobile phone as a tool to produce and aggregate media, in the form of text messages, organizing phone trees, and using the mobile phone network to distribute the message.

A mundane, non political and small scale non-Internet example of social media is the bulletin boards in supermarkets where customers offer or search for goods and services. They only reach a small local audience but they are very cheap and simple. They therefore still exist parallel to Internet substitutes like eBay.

## **6. RELATED WORK**

Many definitions of social media can be found within the literature and on the Internet. Kangas, Toivonen, & Bäck (2007) consider social media to be “built of content, communities and Web 2.0 technologies. Social media refers to applications that are either completely based on user generated content or in which user generated content and the actions of users play a substantial role in increasing the value of the application or service”. This definition has elements of our definition in that it emphasizes the dual role of “consumers” but describes social media in terms of a technology.

Smith, et al (2008) suggest a sociological change initiated by technological change: “users are shifting from just consuming information published by professional editors to contributing blog posts and twitter messages, updating their profiles on Facebook and MySpace, asking and answering questions on Yahoo! Answers [...] From a sociological perspective, social media can be described as ‘collective goods produced through a computer mediated collective action’”.

Mayfield (2007) defines social media “to be a group of new kinds of online media, which share most or all of the following characteristics: participation, openness, conversation, community, connectedness. [...] A good way to think about Social Media is that all of this is actually just about being human beings sharing ideas, cooperating and collaborating to create, art, thinking and commerce, vigorous debate and discourse, finding people who might be good friends, allies and lovers”. Like ours, this definition emphasizes participation, but it takes the Internet and the somewhat ambiguous phenomena openness, conversation, community and connectedness as further characteristics distinguishing social media services.

Danah Boyd (2008) formulates a definition as “[Social media] is an umbrella term that refers to the set of tools, services, and applications that allow people to interact with others using network technologies. Social media encompasses groupware, online communities, peer-to-peer and media-sharing technologies, and networked gaming. Instant messaging, blogging, microblogging, forums, email, virtual worlds, texting, and social network sites are all genres of social media. Social media is sometimes referred to as “social software” or “social computing” or “computer-mediated communication. [...] Social media includes systems that support one-to-one, one-to-many, and many-to-many interactions.” This definition is quite different from ours in that it defines social media as communication tools. Moreover, whereas in our definition communication is part of any use of media we specifically emphasize the one-to-many aspect of media.

## 6.1 Social media characteristics

We have already seen why social media has a (non exclusive) bias for the Internet and Web 2.0 technologies mentioned by all definitions. We briefly discuss some other characteristics found in the definitions above.

Kangas, et al. Mayfield and Smith, et al all use participation and or “user generated content” as characterization of social media. In our definition this is the defining characteristic of social media as a media supply chain.

The term openness used by Mayfield has several connotations including technical ones such as open standards and the possibility to change platforms by using open source software. Using open standards is certainly a way to lower technical barriers in particular for consumption and production. However it seems that wide availability is a better predictor for success. For example, YouTube is based on flash movies rather than some open standard, and the service (rather than its content) is under tight control from Google. If we take social openness as a criterion, it seems reasonable to interpret this as the public nature of social media as a mass medium. Creators in social media, especially the more successful (and therefore easier to find) ones, seem to be keenly aware of their public exposure. Despite this public character, much content at social media such as blogs seems to be directed at a limited peer group. Finally if openness is interpreted economically, we note that successful social media are all free of charge for the participants. Thus high accessibility as a prerequisite for participation seems to be a more accurate description of the openness of social media.

Social media as a communication medium and the existence of conversations is emphasized by Smith et al, Mayfield and Boyd (also emphasized for blogs in Efimova, (2009)). From our point of view, using media is simply a form of one-to-many communication. However, for social media it requires little effort by the audience to use the same medium. It is therefore natural that people use it to react on each other. In fact many Internet based social media services elicit reactions through comments and notification mechanism such as trackback and RSS feeds. For some social media such as Twitter this goes so far as blurring the distinction between communication to a peer group and producing media.

Community, collective or people gathering is mentioned by all authors as an important characteristic of social media. From our point of view, social media is simply well suited for communication with and within a loosely defined peer group. Since a desire to be part of a group is a fundamental characteristic of human beings, and communication tends to strengthen the adherence to a group, the use of social media for creating and nourishing a community is common. In addition, the more vocal proponents of social media tend to be actively engaged in such community, which ensures that this aspect gets a lot of attention.

The creation of large amounts of valuable “user generated content” is mentioned by Kangas et al. We make no assumptions on amount and value of content. However the group of “consumers”, (people that are predominantly in the consumer role), tends to be large. Therefore, even a small fraction is a large group compared to the relatively small group of professionals in media supply chains where production is carefully restricted. A large enough group can produce a lot of content. Whether this content is valuable is in the eyes

of the beholder. Only a small fraction of this content seems to be truly popular (Hancock, 2009) and only a small fraction seems to be created for commercial purposes. We note here that the primary value for supporters of a social media seems to lie in selling advertisements and the user profiles information that can be used for marketing.

## **7. THE SOCIAL MEDIA SUPPLY CHAIN BUSINESS MODELS**

While a definition of a phenomenon is useful to avoid confusion, its true use is creating a frame of reference that sheds light on a phenomenon. In this section we consider the business model of social media in view of the supply chain point of view.

One reason for the interest in social media is that people expect to make money on it. Some investors paid serious money for popular social media sites. However sites like Twitter or MySpace are now having difficulty finding funding respectively have been down valued from their original buying prices.

The problem of valuing social media sites is at least in part due to failing to recognize the difference between a several million people audience social media site and a mass medium. Treating social media as a mass medium with a similar audience gives social media a large value equal to the number of participants times the amount of online advertising per online person (see Arrington 2008, 2009). However our point of view makes it clear that unlike a mass medium, controlling the aggregation stage of the supply chain by creating a social media platform does not imply a direct control over the message that is going to be supplied by the medium. In particular selling advertisement opportunities to this mass audience is more difficult than for a mass medium because advertisements may drive away the people who produce content, and therefore diminish the attraction of the platform. Thus owners of the social media platforms have been seeking other sources of revenue, for example, ways to bank on the knowledge about their user for targeted more unobtrusive marketing. This however is an entirely different market than the market for mass advertisements with a different valuation.

## **8. DISCUSSION**

In the above examples not even the 15th century pamphleteer could claim it used the superior and most prestigious medium of its time. Rather in each case people used what was available and what provided an accessible, affordable, media supply chain in the given circumstance. In a similar fashion Iranians demonstrating in the aftermath of the 2009 elections in Iran used what was available in 2009 to get their message across to a large audience in and outside Iran: Twitter, Facebook and YouTube, the archetypical social media services. That the non-Internet examples seem to be mostly political is a consequence of perspective: people are prepared to spend a considerable effort making political or religious views heard, and conversely, made unheard. Therefore even high barriers in alternative media supply chains can be low enough. However, the mundane supermarket bulletin board example shows that politics is not a requirement

Where barriers are lowered by autonomous processes such as technical innovation, the corresponding media chain and the required effort to participate simply become the new benchmark with which other media supply chains are compared. The printing press is an obvious example. Likewise, a distribution channel can slowly lose its barriers. For example, mobile networks are rapidly becoming widely and cheaply available as an alternative transport of the Internet. On the other hand distribution channels and aggregation services can also reacquire barriers for example because service providers want to make profits by charging for distribution and supporting the service or because copyrights are asserted. This can lead to people searching for alternative platforms. Finally while people have easy access to social media, they can set loftier goals than mere participation and therefore have to overcome higher barriers. While examples of people being discovered on YouTube are popular and fuel the idea that everybody can become rich and famous by sidestepping the “traditional media”, reaching star status through YouTube and getting thousands of views is an altogether different thing than merely posting a video.

## 9. CONCLUSION

This paper considers social media to be a media supply chain where people which are predominantly consumers of a medium are participating in the producer role. This definition offers a basis to analyze social media and its characteristics. We pose as a working hypothesis that such a media chain must be a highly accessible to attract a sufficient number of people in the creator role. The Internet, in combination with Web 2.0 services provide excellent examples of lifted barriers. However, from our point of view we can find historical examples that we can naturally be considered social media, thus putting social media in a historical context. Our point of view “explains” similarities between social media services supporting different media, allows for a clear distinction between content, community, platform and supporting technology, and sheds light on the problem of valuating social media platforms.

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