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Produsage: Towards a Broader Framework for User-Led Content Creation

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ABSTRACT
This paper outlines the concept of *produsage* as a model of describing today's emerging user-led content creation environments. Produsage overcomes some of the systemic problems associated with translating industrial-age ideas of content production into an informational-age, social software, Web 2.0 environment. Instead, it offers new ways of understanding the collaborative content creation and development practices found in contemporary informational environments.

Keywords
Produsage, produser, content, user-led, information age, Web 2.0, social software, creativity, collaboration

INTRODUCTION
A significant paradigm shift is now underway. The rise of what is now described as social software or Web 2.0 environments stands to have a profound impact on social practices, the media, economic and legal frameworks, and democratic society itself; however, it is as yet poorly understood and insufficiently theorized. In particular, studies of user-led online phenomena continue to operate by applying, sometimes without much critical reflection, analytical frameworks established during the industrial age which by now are increasingly outdated. In the context of online user-led content creation environments ranging from open source through to massively multiplayer online roleplaying games (MMPORGs), the very idea of content *production* may need to be challenged: the description of a new hybrid form of simultaneous production and usage, or *produsage*, may provide a more workable model.

LEAVE BLANK THE LAST 2.5 cm (1") OF THE LEFT COLUMN ON THE FIRST PAGE FOR THE COPYRIGHT NOTICE.

User-led content creation today takes place in a wide variety of online environments. These range from widely distributed, loose and *ad hoc* networks of participants (such as the blogosphere) to more centralized sites of collaborative work (such as the *Wikipedia*); while some such environments exist as virtually ungoverned spaces (like *Indymedia*), some have developed hierarchical or at least heterarchical structures (as have many open source software development projects), and others both exhibit emergent self-organising tendencies as well as operate under some degree of corporate governance (as is the case for example in multiplayer online games). A number of key domains are currently driving the development of user-led online environments.

Social Networking
Past years have seen the rapid rise of a variety of social networking tools; these include sites such as *Facebook*, *Myspace*, *LinkedIn*, *Orkut*, and *Cyworld*, and variously address specific cultural and societal groups. Social networking environments are further augmented by functionally more specific tools – these include social bookmarking systems such as *del.icio.us*, geo-mapping tools such as *Google Maps* and *Frappr*, and personal publishing systems in the form of blogs.

Knowledge Management
Collaborative knowledge management is now emerging as a key challenge to the traditional guardian authorities of knowledge; the *Wikipedia* has become a major threat to publications such as the *Encyclopaedia Britannica*, and studies suggest that in some areas its content quality may be on par with that of its corporate competitors [6]. Similarly, the user-annotated maps and satellite images of *Google Earth* challenge the position of traditional map and atlas publishers, while a wide variety of more specific knowledge management projects (often utilizing wiki technology) are playing similar roles in particular discipline domains.

Creative Practice

Sites such as *Flickr* for images, *YouTube*, *Jumpcut*, and *Revver* for video, and *ccMixter* for audio, as well as a plethora of blogs and collaborative publishing environments for text, now provide a rich and diverse range of user-submitted creative content. Further, legal frameworks such as the Creative Commons suite of licenses allow for the re-use and remixing of existing content into new artworks which are then able to be further reworked by subsequent generations of users. This opens up new avenues for creative work and publication beyond the traditional media industries, as well as undermining romantic notions of the artist as individual genius.

Multi-User Online Gaming

As computer gaming moves into connected online spaces, games producers are increasingly reliant on the participation of gamers as content creators. The computer games paradigm has shifted from producing strict narrative structures which are played out by gamers, to providing a rich narrative and social environment in which multiple gamers cooperate in creating their own narrative paths, building on cues placed in the game by its developers or by other users. Additionally, gamers are also increasingly involved in the development of additional content for the games themselves – as Herz reports, for example, some 90% of content in *The Sims* is now created by its users rather than the game publisher Maxis [8].

Citizen Journalism

Ranging from individually published news and politics blogs to collaboratively written and edited sites such as *Indymedia*, the technology news site *Slashdot*, or the Korean opinion leader *OhmyNews*, citizen journalism fundamentally disrupts the industrial journalism model by employing its users as journalists and commentators (see [2]). Citizen journalism is discursive and deliberative, and better resembles a conversation than a lecture, as blogger-journalist Dan Gillmor has put it [7]. It has already shown an impact on political processes in the United States, Europe, Korea, and many other countries around the world.

Collaborative Filtering

Citizen journalism, which often builds on, debates, and critiques the published reports of mainstream journalistic organizations, can also be seen as a form of collaborative filtering – sifting through the vast amount of information now available in online environments in order to discover the most relevant, important, or useful information for specific purposes or communities. More or less overtly, this model is also at the heart of major commercial operations today: Amazon's recommendations, for example, are based on the evaluation of its large user-base's search, listing, and purchase patterns, while Google's PageRank system is predicated on an evaluation of the Web population's content filtering patterns as expressed through page interlinkages.

Open Source Software Development

Perhaps the earliest mainstream form of online user-led content creation, open source arises from the acutely felt need for software with functionality beyond what is offered by currently available proprietary packages. Built on the principle of the free and open availability of all source code, open source enables users to participate in flexible roles ranging from developer to coordinator to software tester, and relies on what Eric Raymond has described as the power of 'eyeballs' [11] – that is, the principle that the quality of software is directly related to the number of participants able to engage in the development process.

TOWARDS A UNIFIED MODEL OF USER-LED CONTENT CREATION

Beyond such individual domains, however, and propelled by their contributions, there is today a wider trend towards the establishment of tools and processes for user-led content creation. For example, the principles of open source software development can now be seen applied to citizen journalism, turning journalistic content into open news (see [2]); Raymond's 'power of eyeballs' argument is also at play in the massively distributed factchecking implied in the *Wikipedia*'s slogan 'anyone can edit'; and the outcomes of collaborative creative practice are beginning to enter traditional media forms through conduits such as the *Current.tv* Website and cable TV channel.

Such examples point to the fact that a wider trend away from the practices of the industrial age, and towards new user-led information-age paradigms, can be seen to develop here. This paradigm shift is by no means complete at this point, however, and its implications are still emerging; it is all the more important, then, to begin the process of outlining its fundamental characteristics.

At the same time, it is also necessary to consider existing models for describing the increased involvement of users in content creation. In the 1970s, futurist Alvin Toffler coined the term 'prosumer' [13] to highlight the emergence of a more informed, more involved consumer of goods who would need to be addressed by allowing for a greater customisability and individualisability of products; this indicated the shift from mass industrial production of goods to a model of on-demand, just-in-time production of custom-made items. Advancing beyond this, Charles Leadbeater has introduced the notion of 'pro-am' cooperation [10] – alluding to a joint effort of producers and consumers in developing new and improved commercial goods. Similarly, the industry observers behind *Trendwatching.com* speak of a trend towards 'customer-made' products [14], while J.C. Herz has described the same process as 'harnessing the hive' [8]: commercial producers' adoption of promising and useful ideas which were generated by expert consumers.

However, such models maintain a traditional industrial value production chain: they retain a producer → distributor → consumer trichotomy. But especially where

what is produced is of an intangible, informational nature, a further shift away from such industrial, and towards post-industrial or informational economic models can be observed. In such models, the production of ideas takes place in a collaborative, participatory environment which breaks down the boundaries between producers and consumers and instead enables all participants to be users as well as producers of information and knowledge – frequently in an inherently and inextricably hybrid role where usage is necessarily also productive: participants are *produsers* (also see [3]).

These produsers engage not in a traditional form of content production, but are instead involved in produsage – the collaborative and continuous building and extending of existing content in pursuit of further improvement. Produsage can be described through four key characteristics:

- a shift from dedicated individuals and teams as producers to a broader-based, distributed generation of content by a wide community of participants;
- fluid movement of produsers between roles as leaders, participants, and users of content – such produsers may have backgrounds ranging from professional to amateur;
- artefacts generated are no longer products in a traditional sense: they are always unfinished, and continually under development – such development is evolutionary, iterative, and palimpsestic;
- produsage is based on permissive regimes of engagement which are based on merit more than ownership: they frequently employ copyright systems which acknowledge authorship and prohibit unauthorised commercial use, yet enable continuing collaboration on further content improvement.

While their emphases may vary, each of the domains of user-led content creation outlined above, and many other user-led phenomena, can be described using the framework of these characteristics.

Beyond Production

While other existing models, from Toffler's 'prosumer' to Benkler's 'commons-based peer production' [1], have been usefully applied to describe some of the phenomena of user-led content creation, it is important to recognize the fundamental problems inherent in the term 'production' itself, which is perhaps inextricably linked with an industrial paradigm; 'produsage', on the other hand, provides a way to move beyond such hurdles.

A traditional (and for our present purposes, necessarily simplified) model of production would see the producer as an individual or organization which transforms raw materials into a finished product according to an existing blueprint, recipe, or other model. The assembled product is complete and finished and ideally represents the best outcome possible given the producer's current knowledge and skills, and the intended price point.

Further, in a traditional production process the product is then shipped from producer to distributor, who will add packaging and/or other ancillary materials, and might bundle the product with others for distribution and sale. Customers purchase the product and are entitled to certain consumer rights, but usually remain at a significant distance from the original producer, providing (if at all) only general and individual feedback on product quality or possible improvements, and must purchase an entirely new product when the next version or edition of the product is released by the producer and made available through the distributor.

This model of an industrial production value chain has operated throughout the industrial age, and applies to physical goods (e.g. cars) as much as to informational goods in physical formats (e.g. music CDs), and also still to many informational goods in intangible formats (e.g. commercial software available for online purchase). While well-established in contemporary consciousness, overall it could be seen as an aberration rather than the dominant model for the creation of goods and ideas, however – in the absence of a steady stream of mass-produced commodities, pre-industrial production models may have been built more on the continuous maintenance and improvement of usable goods than on the replacement of existing goods with new products, for example.

Similarly, at least in the context of informational goods this traditional value chain may no longer provide an accurate and appropriate model. The most important change in this context concerns the status of the product itself. Traditional production models conceptualize products as existing in discrete versions, which are released at a time chosen by the producer. Further, the distribution of products is controlled by producers and distributors, not by consumers – consumers, on the other hand, are seen as mainly passive and isolated 'end users' who literally *consume*, or use up, products until they are depleted and need to be replaced with new and updated versions. As a result of this conceptualization of the product, the core business of producers is seen in the production of these goods.

However, it is immediately evident that this model no longer applies in produsage environments. Here, the outcomes of the produsage process are no longer discrete product versions, but rather rapidly evolving revisions of existing content, released for public view and further update immediately upon revision. The *Wikipedia*, for example, will always display the most recently edited revision of its content, and not a specific daily, monthly, or annual issue (as has been the case with traditional encyclopedias, for operational as much as for practical

reasons). Other domains are also frequently seen to struggle to accommodate a revisions- rather than versions-based model of content production – journalism's industrial production practices are better suited to a traditional model providing for news updates at regularly scheduled times than for a 24-hour production cycle, for example, while the commercial software industry has yet to effectively reconcile a need to provide rapid revisions as bugs are fixed and new functionality added with a desire to market distinct versions of their products on an annual basis to maximize profits.

If, as we argue here, the very term 'product' implies an existence in a discreet, apparently finished version, then it is very clear that the outcomes of produsage can no longer be described as products; instead, the momentarily current revision of any one page in the *Wikipedia*, any one software package produsedby the open source community, or any one creative work developed by a distributed group of co-creators within a creative commons licensing framework, should be seen as nothing more than a temporary artifact of an ongoing process of produsage. Further, any description of such processes in the traditional terms of 'production' and 'products' which we have inherited from traditional theory must be rethought and revised to address these insights.

In such informational contexts, the traditional models of production are further complicated by the fact that users are no longer passive consumers, but frequently express a desire to participate actively in guiding the development process for new and existing products. Whether encouraged by commercial entities or not, they are seen to join together in enthusiast and interest groups which effectively lobby developers for desired outcomes; corporations are ill-advised to ignore such groups. What is necessary instead is a direct engagement with users wishing to collaborate as co-produsers: an opening of production processes and a refashioning as produsage.

This creates problems for intellectual property tracking, however – and in this context it is again necessary to rethink the traditional conceptualization of production and products. Indeed, where industrial production is built on the commercial exploitation of the products themselves, open source points to a significantly different business model: here, the core business lies not in the sale of copyrighted products, but in the provision of services around a freely available, collaborative developed (or produsedd) artifact. Again, this serves to demonstrate that the traditional idea of the product no longer applies in this case – and if static products become dynamic artifacts, rapidly updated and revised, then commercial models built around this instable, ongoing process must be (and in some domains, have been) developed.

What remains to be seen is the extent to which the concepts and processes of produsage are able to impact on areas of non-informational production. One core driver for the universal adoption of production models during the industrial age has been the need to achieve a mass distribution of physical products; such models have only been altered, but not fundamentally challenged by trends towards individualization and customization in the late industrial age. At most, these changes have led to the closing of a feedback loop in the industrial production value chain – enabling producers to gather feedback and ideas from their customers, which further influence the development of new products that are again produced and distributed using standard models.

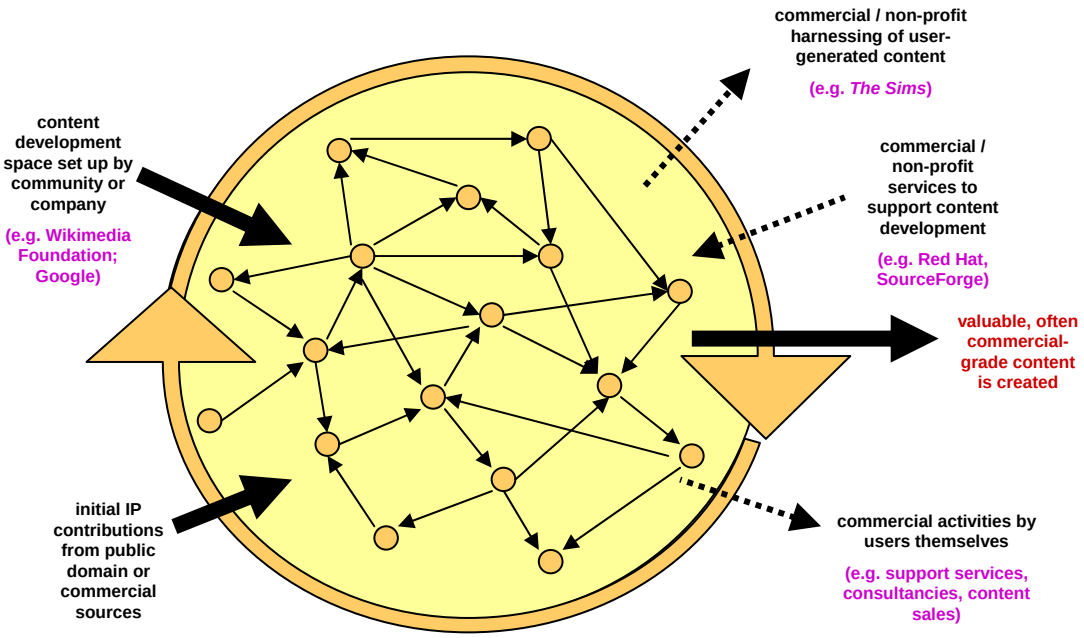


Fig. 1: collaborative, iterative, evolutionary, palimpsestic user-led content development

Commercial Approaches

The produsage model (as outlined in Fig. 1) takes a significantly different shape, however: here, artifacts are created by users themselves, acting as produsers, within produsage environments. This does not imply that traditional producers or products have no role to play here – often, for example, produsage builds in initial inputs produced along traditional lines, but then applies the distributed knowledge and creativity of the produser community to further revise this work. Similarly, some traditional production organizations have refashioned themselves to participate in the produsage process: they have shifted from a focus of their commercial activity on production to new models which work with the artifacts emerging from the produsage community and provide ancillary commercial services surrounding them, or which provide services into the community of produsers itself.

Such approaches can be broadly divided into these models:

- Harnessing the hive: adapted from Herz [8], this model describes the non-commercial or commercial utilization of produsage artifacts by organizations inside and outside the produsage community, while respecting applicable content licences and cooperating with the community. It describes for example the aggregation services in the blogosphere, which identify and collect the most-cited blog posts or tags and make them easily accessible to all participants.
- Harvesting the hive: this model describes the provision of value-added services using artefacts developed by the produsage community, aimed mainly at non-participants – for example, the development of ready-to-install open source distribution packages by companies like Red Hat. Such practices are mostly benign unless applicable content licenses are ignored by the harvester.
- Harbouring the hive: this model points to the provision of value-added services *into* the produsage community – for example community hosting as it is offered by SourceForge for open source projects, by Wikia for wiki-based knowledge management communities, or by Flickr for photo enthusiasts. Again, such practices are mostly benign unless a community lock-in to the harbouring service is exploited by the service provider (and such threats may exist in the context of the increasing reliance of users on Flickr for photosharing, for example).
- Hijacking the hive: combining the worst aspects of harvesting and harbouring, this practice deliberately aims to achieve lock-in of produsage communities for financial gain. Recent debates for example over the heavy-handed enforcement of end-user license agreements (EULAs) in massively multi-user online games like *EverQuest*, where game operator Sony attempted to bar its users from selling their hard-earned game characters and artifacts on eBay, can be seen as instances of this practice (see for example [12]).

Approaches such as harnessing and harvesting the hive have also been utilized by the developers of traditional-style products, in fact: here, companies utilize online communities for the collaborative produsage of ideas which can be converted into physical or informational products. A variety of examples for such processes are described in *Trendwatching.com*'s 'Customer-Made' newsletter [14], including for example Apple's harvesting of ideas for new versions of the iPod, or BMW's gathering of driver feedback for the development of new model lines. Such practices have also been described as 'crowdsourcing' (playing on the corporate term 'outsourcing'): the employment – usually in a figurative rather than monetary sense – of users as produsers of ideas. Given that in most such scenarios, users are rarely acknowledged or rewarded for their intellectual labor, the morality of the crowdsourcing approach is highly disputable.

Nonetheless, outside of these mainly exploitative approaches to operationalizing the produsage phenomenon for commercial gain, sustainable as well as ethical business models built on produsage are possible. Mostly, however, they will differ significantly from traditional production-based business models in that they focus on the delivery of services *around* produsage artifacts, rather than on the development and marketing of products themselves. Such services include consultancy on the effective utilization of produsage artifacts (such as consultancy provided by expert open source developers to organizations wishing to switch from proprietary to open source solutions for their systems, for example), aggregation and packaging services for produsage artifacts (including Red Hat and other open source packaging services, as well as printing and publishing services for artists in collaborative creative produsage communities), filtering and quality control services (producing 'best of *Wikipedia*' or 'best of *Flickr*' selections in printed or CD-ROM format), and hosting services for produsage communities and projects. Additionally, there is also a growing market in providing expert input into produsage environments and communities – for example, some players in multi-user online games will pay significant sums for already developed characters or in-game goods, while some knowledge management or open source software development communities may be prepared to pay for the contribution of recognized experts in their field into the overall project.

FURTHER IMPLICATIONS OF PRODUSAGE

At present there is a growing trend towards the mainstreaming of what has been described in this paper as produsage approaches – demonstrated for example in the recent acquisitions of *MySpace* by Rupert Murdoch's News

Corporation, of *Flickr* by Yahoo!, or of *YouTube* by Google, as well as in the increasing academic interest in the study of social software in a variety of disciplinary contexts. While frequently guilty of boosterism, *Trendwatching.com* describes the participants in such phenomena as a new 'Generation C', whose creative engagement in content development will lead to a "casual collapse": "the ongoing demise of many beliefs, rituals, formal requirements and laws modern societies have held dear" [15] – including, we might add, a good part of the traditional content production industries. This is already evident in the crises experienced by industries as diverse as software, journalism, music, and broadcast, each of which have struggled to hold on to existing markets while finding it difficult to attract new consumers especially in younger age groups.

Further, not only is these industries' underlying model of perpetually exploiting their ownership of intellectual property (and lobbying for ever-longer extensions of existing copyright terms) at risk from produsage efforts, but the very idea of copyright itself may also need to be rethought. In the context of *Wikipedia* and other massively distributed collaborative efforts there may be the need for a legal concept of copyright which allows for truly *communally* held intellectual property, replacing the current model which operates through a difficult meshing of individually held copyright in individual contributions using complex contracts, or through the artifice of creating 'legal persons' (companies, organisations) who hold copyrights on behalf of groups of creative practitioners.

Beyond the obvious question of how these industries may have to reinvent themselves in order to maintain profitability, more fundamental issues will also need to be addressed, however. Should produsage become a dominant paradigm for Generation C, then this raises the specter of a new digital divide between those who do and those who do not belong to this Generation (and as Generations X and Y, Generation C is of course an aptitude- and attitude- rather than simply age-based concept). In other words, it is necessary (especially for educational institutions) to ensure that a wide cross-section of society is capable of participating effectively in produsage environments. The core capacities in this context can be summarized as 'C4C': critical, collaborative, creative, and communicative capacities which must be able to be exercised especially in information and communication technology (ICT) environments (see [4]). It is self-evident that a strongly divergent distribution of such capacities across society would today already have markedly negative consequences, as it would mean *inter alia* that opinion and debate in citizen journalism and the wider blogosphere, knowledge in the *Wikipedia*, software available as open source, and creative work in collaborative artistic environments, would reflect the knowledge, interests, needs, values, and beliefs of only a narrow sub-section of overall society.

Effectively addressed through educational and other programs, and widely practiced by broad sections of the community, on the other hand, the commons-based approaches of produsage point to the opportunity for citizen participation in fields from artistic practice to political debate and deliberation, as well as opening the way towards new models for economic activity which are at least as much based on broad community participation as they are on the pursuit of corporate profits.

Ultimately, indeed, such shifts may come to have a direct impact on citizenship processes themselves: it is possible to argue that current practices of political participation by citizens have been similarly influenced by the dominant paradigms of the industrial age, and that a shift to produsage might unsettle them. Where at present many developed democratic nations still operate on a late-industrial political model, dividing participants into politicians and pundits as producers of democracy, journalists, media minders and spin doctors as distributors of democracy, and 'average' citizens as consumers of or audiences for democracy, scarcely interested to use their 'remote control' by voting in national elections every few years, a shift towards produsage may revive democratic processes by leveling the roles and turning citizens into active produsers of democracy once again.

The beginnings of this shift may already be visible in the increasing role of blogs and citizen journalism in recent elections in the U.S. and elsewhere (notably including also the influential Korean citizen journalism site *OhmyNews*; see e.g. [9]). The change from production to produsage in this context is by no means complete, of course – the demise of America's first mainstream blogger-candidate, Howard Dean, clearly indicates that success in produsage-driven environments can still be effectively undermined by failure in production-based media forms. Similarly, it is certainly possible, at least in the short term, to deliberately derail produsage processes by seeding them with mis- and disinformation (recent examples of Congressional staff members editing 'their' members' *Wikipedia* entries in a favorable sense must be noted here [5]).

Just as much as it is questionable whether such disruptive approaches are sustainable in the longer term, however, it is also important to note that the debates and corrective actions engendered by such interference are themselves indicative of a growing bottom-up produsage-based resistance against production-based top-down information (or indeed propaganda) campaigns, and that this resistance is increasingly effective. This once again demonstrates the growing ability of produsage to hold its own against its more traditional rivals. If such trends continue, and if the produsage model proceeds to establish itself in a yet wider variety of contexts, then it deserves to be regarded as a fundamental paradigm shift with profound and far-reaching implications.

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