Chapter 3

Beyond the Producer/Consumer Divide:
Key Principles of Produsage and Opportunities for Innovation

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As this book goes to print, the first quarter century in the history of the World Wide Web has yet to come to a conclusion: It was only in 1990 that Tim Berners-Lee published the first hand-crafted HTML pages at the CERN research facility in Switzerland. And only a short decade ago, the hype machine of the technology press invented 'Web 2.0', the cover-all term for what it saw as the next generation of more interactive, responsive, collaborative Web technology—a term which today already seems rather quaint and old-fashioned. Anticipation of the impact of 'Web 2.0' was high; Benkler, for example, writes somewhat breathlessly that such developments

> hint at the emergence of a new information environment, one in which individuals are free to take a more active role than was possible in the industrial information economy of the twentieth century. This new freedom holds great practical promise: as a dimension of individual freedom; as a platform for better democratic participation; as a medium to foster a more critical and self-reflective culture; and, in an increasingly information-dependent global economy, as a mechanism to achieve improvements in human development everywhere. (2006, p. 2)

Clearly, many of these promises of the new technology have not yet been realised, and perhaps never will; technology seldom causes change in and of itself, but may facilitate it where other contextual factors also promote innovation. At the same time, the first of Benkler's predictions rings much truer: a new, digitally enabled, participatory information environment has been emerging for some time, and—though still very unevenly distributed— has had substantial impact already, from *Wikipedia*'s fatal undermining of the *Britannica* knowledge production and publication model to *WikiLeaks*' effect on global politics, and beyond this to the many and diverse uses of social media platforms in everyday social, commercial, political, and professional contexts.

This is an important distinction to make: too often, criticism of the 'Web 2.0' hype appears to dismiss altogether the participatory potential which these interactive Web technologies do hold, simply because the more utopian hopes fed by that potential have not been fully realised —in other words, because not *all* the hopes have been met, what *has* been achieved is seen to be of diminished value. Similarly, such purist views tend to reject outright the engagement of commercial entities with user-generated content, simply because in some cases such engagement has been exploitative; if user communities cannot achieve their aims without external support, such critics seem to argue, their efforts are inherently flawed. Such orthodox critiques are themselves utopian, and ultimately counterproductive, however, and more realistic views of what participatory online communities can and cannot achieve on their own

must prevail. If we accept—even with reservations—the first part of Benkler's observation (that the new information environment offers the potential for greater, more active, and more self-determined participation of individuals in the processes of information creation and exchange), then the question becomes how, under what circumstances, and in cooperation with what other partners and stakeholders, the more desirable aspects of what such increased participation may promise can be more fully realised.

To address this question, several steps are necessary. First, it is important to understand more clearly what drives user participation in collaborative online spaces and practices; this requires us to examine the makeup of successful online communities and identify the key principles of collaborative content creation. Second, it is useful to consider the actual and potential roles of commercial and other institutional entities as they engage with such communities—both as operators of the platforms for content creation and exchange which such communities may utilise, and as partners in the development and exploitation of the content itself. Finally, there is a need to outline what opportunities for more effective, innovative, and mutually beneficial collaboration between communities and their institutional partners may exist in this context, and how such opportunities may be embraced more fully.

Understanding Produsage

First, then, how do users of interactive online platforms collaborate with one another, and under what circumstances are such collaborations most successful? A number of key principles for such collaboration can be outlined: they concern both the structure of the community which is engaged in the activity, and the processes by which such collaborations take place. Most centrally, and most obviously, it seems crucial that there *is* a community in a narrow sense of the term, rather than simply a group, crowd, or audience—here, it is necessary to distinguish simple crowdsourcing (the extraction of actionable intelligence from a crowd of individual respondents, by a third party) from actual collaboration (the productive internal interaction of a community of participants which generates outcomes regardless of whether external partners are involved).

On the one hand, the former is exemplified by projects such as NASA's Clickworkers platform, which enables visitors to the site to help in marking craters in high-resolution images of the surface of Mars, and has generated results whose cumulative quality matches those produced by trained exogeographers, at higher volume and lower cost (Kanefsky, Barlow, & Gulick, 2001); such projects are valuable in their own right, but simply invite a large number of individual contributions which are processed and aggregated by the platform operator, and do not require any interaction or collaboration between the contributors themselves. The latter, on the other hand, crucially depends on such processes of interaction, and as a result also implies the existence of community (or its formation through shared participation in the collaborative project itself): as contributions are made and interactions take place, participant roles and responsibilities, and a sense of community structures which distinguish leading from less central members, inevitably emerge. Ultimately, it should be noted, such structures may come to help or hinder collaboration: while they enable important, trusted collaborators to assume positions of leadership, distinctions between members may also discourage 'lesser' contributors from putting in an effort if they feel that they are

unappreciated by the inner circle of the community (cf. Bruns, 2009; Bruns & Bahnisch, 2009). We must not only ask whether there is a community in participatory online spaces, then, but also examine *what kind* of community there is.

Benkler (2006) comes close to describing this through his 'commons-based peer production': the term 'peer' implies the mutual recognition of participants as collaborators on a more or less equal footing, while 'commons-based' points to the shared intent of their collaboration. At the same time, significant doubts must be raised about the description of such activities as 'production' in the strict sense of the term: production implies hierarchically organised and directed work towards a stated goal, while communal collaboration in spaces such as *Wikipedia* does not necessarily operate so straightforwardly; what takes place here is a more gradual, sometimes haphazard accretion of layer upon layer of user contributions (to individual entries as much as to *Wikipedia* as a whole) which add to and modify one another and only gradually build up to a more substantial outcome. As a repeatedly overwritten, revised, disrupted, and reconstituted collection of materials, never finished and always in development, *Wikipedia* more closely resembles ancient palimpsests, as living documents, than it does the finished, packaged products of the age of print.

Rather than styling their participants as signed-on content producers, then, the community collaborations which we are seeking to define here invite users to become productively active as and when appropriate, and endeavour to lower the remaining barriers to participation as much as possible: as the slogan goes, 'anyone can edit' *Wikipedia*, for example, and many do—from correcting the occasional spelling error to substantially expanding entries or making entirely new contributions. Participants are cast in a hybrid role which sees them as users first, but invites them to be producers wherever they feel like it: they are positioned as *produsers*. On the basis of these observations, then, it is possible to outline the following four key principles for such produsage-based content creation models (cf. Bruns, 2008):

1. Open Participation, Communal Evaluation

A produsage approach assumes that quality control and improvement are probabilistic rather than linear: the assumption within the produsage community is that the more participants are able to examine, evaluate, and add to the contributions of their predecessors, the more likely an outcome of strong and increasing quality will be (an extension of open source's motto "given enough eyeballs, all bugs are shallow"; cf. Raymond, 2000). Such contributions may be major or minor, substantial or insubstantial, take the form of useful content or of social engagement in or administrative services to the community, but they are nonetheless all valuable to the overall project. Participation in produsage, therefore, must be invited from as wide a range of potential contributors as possible, and produsage environments are generally open to all comers. Produsage, in other words, is based on a principle of inclusivity, not exclusivity.

2. Fluid Heterarchy, Ad Hoc Meritocracy

Produsage necessarily proceeds from a principle of what Michel Bauwens (2005) describes as 'equipotentiality': the assumption that while the skills and abilities of all participants in the produsage project are not equal, they have an equal ability to make a worthy contribution to the project. This approach, which allows project leaders to emerge from the community based

on the quality of their contributions, necessarily departs from traditional, hierarchical organisational models. Further, basing the standing of contributors in the community on the quality of their contributions also implies that such standing can decline again as their contributions diminish (for example, once a specific problem encountered in the produsage process has been solved to general satisfaction); the structure of the produsage community is therefore not only organised along networked, non-hierarchical lines, but also remains in constant flux. Finally, the community's ability to organise its content creation and problem-solving activities along such fluid, flexible lines also relies on its ability to make progress working as individuals or in small teams of produsers, rather than requiring whole-of-community decisions at every step of the process.

3. Unfinished Artefacts, Continuing Process

As content development embraces a probabilistic model, as participant involvement becomes equipotential and fluid, as projects are deconstructed to form granular, modular tasks inviting and harnessing even small contributions from casual members of the produsage community, and as the collaboratively prodused content is shared in an openly accessible information commons, the process of produsage must necessarily remain continually unfinished, and infinitely continuing. Produsage does not work towards the completion of products (for distribution to end users or consumers); instead, it is engaged in an iterative, evolutionary process aimed at the gradual improvement of the community's shared content. A description of produsage outcomes as 'artefacts' rather than products is therefore highly appropriate. Such gradual, probabilistic processes do not ensure against temporary reductions in quality as inappropriate contributions are made by individual produsers, but over time the shared community resource is expected to improve in quality as long as such negative contributions are outweighed by the impact of a larger number of positive contributions.

4. Common Property, Individual Rewards

The communal produsage of content in an information commons necessarily builds on the assumption that content created in this process will continue to be available to all future participants just as it was available to those participants who have already made contributions. Any attempt by individuals within or beyond the community, by community leaders, or by commercial entities outside of the community to capitalise on the content of the information commons beyond what is seen to be legitimate under the rules of the community must therefore be avoided; such rules (as enshrined in a variety of moral and legal documents including the GNU General Public License and Free Documentation License, the Open Source License, and the Creative Commons licence framework) commonly stipulate, for example, that community-held content must remain freely available, that modifications of such content must be made available once again under similar conditions, and that the contributions of individual produsers to the shared project must be recognised and (where appropriate) rewarded. Although content is held communally, therefore, produsers are able to gain personal merit from their individual contributions, and such individual rewards finally are a further strong motivation for participation in produsage communities and projects.

Such principles date back at least to the emergence of open source software development as a credible, successful alternative to the hierarchically organised, closed-group model of software production practiced in commercial development companies (that is, what Eric Raymond [2000] describes as the 'cathedral' model of software development, in contradistinction to open source's 'bazaar'), and they extend forward from here to the latest iteration of journalistic models, beyond citizen journalism itself, as 'ambient journalism' on social network platforms such as Twitter (as outlined by Hermida, 2010, and Burns, 2010): here, too, communities of interested participants come together to collaboratively 'work the story' (Bruns & Highfield, 2012, p. 26) by making small, incremental contributions to the sourcing, sharing, commenting on, and curating of the latest information on specific news events as it comes to hand.

Produsage in Context

It is notable that many such produsage activities have flourished in areas where they have been able to develop on their own terms (as has been the case with *Wikipedia*, for example), or where the providers and operators of the platforms which produsage communities are using to facilitate their collaborations have stepped well out of the way (which has been the case, for the most part, with open source software development or with quasi-journalistic uses of Twitter, for example). Where commercial or other institutional interests have involved themselves more closely in the process, aiming to "harness the hive" (Herz, 2005) for their own purposes, results have often been more mixed; the fundamental problem here appears to be that few efforts are made by either side to understand the other's motivations for engaging or processes of participating. There are valuable opportunities for connecting the community-driven processes of collaborative content creation which takes place in produsage environments with the more conventional, commercial models of content production and dissemination with which community content creation processes are often (and sometimes unnecessarily so) seen to be in conflict—but such opportunities have yet to be fully realised.

This does not imply that real points of conflict do not exist between the two sides. The history of open source software development alone, as an early form of produsage, contains more than enough examples of failed attempts to combine community and commercial interests (for example, cases in which institutional users have ignored the terms of applicable open source licences, and community members have had to resort to legal means of enforcing them); these failures often stem from a misunderstanding of 'community' as 'crowd', and of 'open' as 'ungoverned'. A clear indicator of such misunderstandings is the resurgence in popularity of Alvin Toffler's 'prosumer' in the business literature: it now appears frequently in attempts to describe something close to 'produsage' or 'commons-based peer production', but ultimately betrays a substantially more exploitative, merely instrumental approach to these practices, by comparison with the more constructive cooperation which the other terms imply.

Toffler's own language is revealing in this context:

> Producer and consumer, divorced by the industrial revolution, are reunited in the cycle of wealth creation, with the customer contributing not just the money but market

and design information vital for the production process. Buyer and supplier share data, information, and knowledge. Someday, customers may also push buttons that activate remote production processes. Consumer and producer fuse into a "prosumer." (Toffler, 1990, p. 239)

Reunited they may be, but what emerges here is a very uneven fusion between the two sides: a transferral of information *and* money from customers to companies rather than a mutually beneficial 'cycle' of wealth creation. This "willing seduction of the consumer into production" (Toffler, 1980, p. 275) ultimately benefits only the commercial interests which are able to make it work, without the seduced 'prosumers' noticing.

But at the same time there is substantial potential for more fruitful exchanges and collaboration between participant communities and commercial interests. This requires both sides to accept the divergent motivations and practices which guide their operations—and the development of such mutual knowledge is likely to depend on both sides not just to regard one another from a distance, but to engage more directly with each other. Here, a crucial role emerges for what Leadbeater and Miller (2004) have described as 'Pro-Ams': nominally 'amateur' participants who nonetheless operate from within the community at professional levels of ability and commitment:

> Pro-Ams are a new social hybrid. Their activities are not adequately captured by the traditional definitions of work and leisure, professional and amateur, consumption and production. We use a variety of terms—many derogatory, none satisfactory—to describe what people do with their serious leisure time: nerds, geeks, anoraks, enthusiasts, hackers, men in their sheds. Our research suggests the best way to cover all the activities covered by these terms is to call the people involved Pro-Ams. (p. 20)

Pro-Ams are already likely to be found at the centre of produsage communities: indeed, they are the archetypical 'lead users' (von Hippel, 2005), the committed enthusiasts who have accumulated a deep knowledge of their subject area, perhaps even in spite of a lack of formal training in the field. Through the application of this knowledge—that is, through their repeated, constructive contributions to the common goals pursued by the community—Pro-Ams are recognised as valuable members of, even as role models for, the community at large, and gradually accumulate the social status to assume positions of leadership; not all Pro-Ams will do so, or will be effective as community leaders, but few members will be able to become community leaders without also showing the commitment and knowledge commensurate with Pro-Am levels of performance.

But Pro-Ams may also be found within institutions: especially in many creative and knowledge professions (one hopes), staff will be doing their jobs not simply to make a living, but also for the love of it. They may have 'gone pro', but still retain the Pro-Am spirit; as a result, they constitute obvious points of connection and collaboration for their counterparts on the community side. As Leadbeater and Miller write, then,

> some professionals will seek to defend their endangered monopoly. The more enlightened will understand that knowledge is widely distributed, not controlled in a

few ivory towers. The most powerful organisations will combine the know-how of professionals and amateurs to solve complex problems. That is true in astronomy, software development and online games. It should be the path that our health, education and welfare systems follow as well. (2004, p. 16)

If community and company, produsage and production are to be able not only to coexist, but also to connect and collaborate, that process is likely to start with a connection between the Pro-Ams on either side of the dividing line. Indeed, as the very term implies, many Pro-Ams are already likely to be boundary riders with one foot in either camp: professional staff may well already be engaged in produsage spaces, while some produsers will have begun to seek at least casual employment in the industries which operate in their domain of expertise.

This, certainly, has been the experience in the software development industry, and there are no insurmountable impediments to similar processes being repeated in other fields. Commercial developers and other institutions requiring specific software solutions now frequently allow and encourage their IT staff to participate in open source communities in order to contribute their expertise to software projects which benefit all, including the institutions; amateur and freelance open source developers are offering professional, commercial services as consultants and developers. Arguably, in the software industry, what links 'Pro' and 'Am' is now stronger than what divides them, and the benefits of that linkage to both sides are well understood.

To what extent such linkages can be repeated in other areas of the knowledge economy remains to be seen, and is likely to depend on local contexts. It should be noted that the software industry is a relatively young and rapidly evolving field, where professional roles and qualifications remain far from settled; official status as an accredited 'professional' in this industry may be of comparatively limited value, therefore, and boundaries can be transcended more easily. The situation is markedly different in a range of other knowledge industries, from journalism to education; here, to be a (literally) card-carrying professional clearly sets the practitioner apart from self-appointed participants at the amateur level, not least also in important legal aspects: usually, for example, only professional journalists have the right to protect their sources, while only professional educators are entitled to confer academic degrees. In these fields, whose professional practitioners often look back on a long history of fighting for such legal rights and protections, it is no surprise that they have reacted defensively (and often dismissively) to the rise of new amateur competitors.

Opportunities for Pro-Am Innovation

Although understandable, however, such reluctance to engage with amateurs and their communities, many of which are now pooling their efforts in the form of produsage projects, also serves to stifle the very real opportunities, now emerging, to productively engage with them. For now, the obvious response to Benkler's assessment that "new patterns of production—nonmarket and radically decentralized—will emerge, if permitted, at the core, rather than the periphery of the most advanced economies" (2006, p. 3) is that all too often, industry-imposed barriers to participation by new players have meant that such permission has not been forthcoming, and that the periphery is the only space open to produsage-driven

innovation; in many cases, however, such peripheral innovation is neither the most appropriate nor the most effective way to proceed.

The collaborative 'pro + am' coverage of major breaking news from natural disasters to popular uprisings through social media platforms, for example, has clearly shown the valuable contributions which both amateur citizen journalists (as first-hand reporters, commentators, and respondents) and professional industrial journalists (as expert compilers, filters, and curators) can make, and the benefits which arise from their working together rather than operating independently from each another (see, e.g., *The Guardian*'s excellent analysis of the use of Twitter during the 2011 UK riots: Ball & Lewis, 2011; Richards & Lewis, 2011); some journalistic organisations—both public service media and commercial operators—have now begun to realise this fact and are beginning to embrace social media more fully, as more than just a channel through which to promote and disseminate their stories.

Similarly, the education industry ignores the changing circumstances of the emerging knowledge economy only at its own risk. The unmitigated success of *Wikipedia* as a produsage project has already demonstrated the substantial potential of collaborative produsage models in the compilation of valuable knowledge resources whose quality rivals that of commercially developed products; increasingly, the educational applications of such resources are also being explored, and defensive responses will serve only to delay what are ultimately inevitable developments. The old, professional, hierarchical models "can only partially mobilize and coordinate the intelligence, experience, skills, wisdom, and imagination of humanity", Lévy suggests. "For this reason the development of new ways of thinking and negotiating engendered by the growth of genuine forms of *collective intelligence* becomes particularly urgent" (1997, p. xxiv).

A more proactive, aggressive approach would deliberately seek to explore these potentials, then, not least also through policy initiatives. As Quiggin notes, "If governments want to encourage the maximum amount of innovation in social production, they need to de-emphasize competition and emphasize creativity and cooperation" (2006, p. 494). Such initiatives are already under way in several countries where they are most urgently needed, and where a lack of other options has left governments and social entrepreneurs with few choices other than to pursue unorthodox solutions: for example, "many of the most imaginative social innovations in the developing world employ Pro-Am forms of organisation" (Leadbeater & Miller, 2004, p. 11). Such projects include self-organising microfinance, education, and governance schemes, for example, and they bring together community, government, and commercial stakeholders.

But the emergence of such "intelligent communities, capable of negotiating the stormy seas of change" (Lévy 1997, p. xxv) is as necessary in the developed world as it is in developing nations, especially in current socioeconomic contexts. Here, too, a collaborative, multi-party approach—rather than sole reliance on governments, the market, or community solutions alone—is necessary to address complex problems. As Murray, Caulier-Grice, and Mulgan (2010) put it, "Most social change is neither purely top-down nor bottom-up. It involves alliances between the top and the bottom, or between what we call the 'bees' (the creative individuals with ideas and energy) and the 'trees' (the big institutions with the power and money to make things happen to scale)" (p. 8). It requires, in other words, the

interweaving of communities and institutions, of produsage and production, in pursuit of greater benefits than either are able to achieve alone. As go-betweens between the two sides, Pro-Ams have a crucial role to play in this process.

Ultimately, what such interwoven networks of stakeholders aim at is the development of what von Hippel describes as "information communities" in their specific knowledge domains: "communities or networks of individuals and/or organizations that rendezvous around an information commons, a collection of information that is open to all on equal terms" (2005, p. 165). Contributing to the commons, while already natural for inherently commons-based produsage communities, involves a substantial leap of faith for conventional institutions in the knowledge economy:

> Suppose that many elect to contribute the intellectual property they individually develop to a commons in a particular field. If the commons then grows to contain reasonable substitutes for much of the proprietary intellectual property relevant to the field, the relative advantage accruing to large holders of this information will diminish and perhaps even disappear. At the same time and for the same reason, the barriers that privately held stocks of intellectual property currently may raise to further intellectual advance will also diminish. (von Hippel, 2005, p. 115)

While such information commons reduce and undermine the value of proprietary intellectual property, then, the trade-off for participating institutions is that they are able to utilise a larger and more valuable stock of commonly held material which they may not have an exclusive right to exploit, but which nonetheless generates substantial benefits to the organisation.

Whether such commons involve only one specific company and community, or multiple corporate and community stakeholders each with their own aims, ambitions, and attitudes, the question of managing their mutual engagement as well as their internal processes, and of managing the various forms of content, information, and knowledge which they contribute through the course of their participation, emerges as highly significant, of course. This is ultimately a question of curation—and here, much as for the overall governance and operation of the commons-based collaboration, communal solutions involving all stakeholders must be found. If engagement between professional producers and amateur produsers, facilitated by Pro-Ams connecting the two, is to be successful, it must build on a set of rules which recognise and accommodate the driving principles of produsage as well as the underlying interests of participating institutions. These rules must provide the space for both sides to operate according to their own needs and preferences as far as possible, as well as ensuring that for one side to do so does not negatively affect the other—they must balance all participants' rights and responsibilities, in other words. Building on the principles of produsage which we have outlined above, then, and balancing these with standard practice in conventional knowledge production, the following emerges as a basic set of rules for such collaboration:

1. Shared Responsibility and Control
Neither side of the collaborative project can be allowed to own the project outright—systems must be in place to share responsibility for its continued existence, and control of its further

development trajectory. This extends to the corporate sphere the observation that in produsage, "it is the 'object of cooperation' itself which creates the temporary unity" amongst the community of participants (Bauwens, 2005, p. 1), yet also constitutes an acknowledgement by that community that the corporate side has rights and responsibilities as well.

2. Mobility between Community and Corporation

As noted above, a strict and inflexible distinction between producers and produsers, between market and nonmarket, provides a counterproductive hurdle to the effective collaboration between production staff and produsage communities; it also makes it substantially more difficult for Pro-Am participants to be effective mediators between the two sides. They, in particular, must be able to move between the two worlds with ease; in addition, however, other users in the wider produsage community may similarly be motivated to participate more frequently if a move into the professional realm remains a possibility for them, while direct engagement with user communities may also increase the enthusiasm of corporate staff for their work.

3. Redesign of Products as Evolving Artefacts

It is in the very nature of produsage projects that their outcomes must remain forever unfinished: they may well be of a standard that enables them to be used in the place of commercially generated products, but a project which has achieved a level of accomplishment that leaves no further room for improvement has also managed to negate any need for its produsage community's continued existence. Commercial products, by contrast, are usually commodities marketed as 'finished', and any further development begins what constitutes a new product line (Windows 7 replaced Windows Vista replaced Windows XP replaced Windows 2000), rather than incremental improvement. Such disruptions to the continuous development process should be avoided, as they risk the dissipation of the produsage community.

4. Acceptance of Non-exclusive Corporate Use of Content

Corporate use of the content jointly developed by the project is permissible, but such use must also respect the co-ownership of the produsage community. As Pesce puts it, the question of *cui bono* must be considered throughout: corporate partners "must enter into a negotiated agreement with the members of the community which sets all ground rules for the use of community-generated content" (2006). In this, corporations cannot expect to be awarded exclusive rights to make commercial use of the content created by the project; such participation capture would turn the project's collaboration commons into a proprietary space. At any rate, the main benefits for corporate partners in the project stem not from a direct commercial exploitation of the content it may be able to create, but from the immediate and long-term relationship which it enables them to form with the produsage community.

In putting such general rules into actual practice, it appears sensible to organise corporate/community collaboration processes clearly around what contributions each side of the equation is best positioned to make, given the specific resources, skills, and knowledges

at their disposal. As von Hippel suggests, echoing similar observations especially from Raymond (2000) and Shirky (1999) about the dynamics of open source software development projects, "Need-intensive tasks within product-development projects will tend to be done by users, while solution-intensive ones will tend to be done by manufacturers" (2005, p. 72). According to this logic, large and diverse communities of heterarchically organised participants are better placed to explore the full breadth of potential solution spaces to specific problems, and to identify additional potential needs which a specific project may be able to (or may need to) address; dedicated, cohesive teams of hierarchically organised workers, conversely, are more effective at undertaking focussed tasks aimed at addressing specific, narrowly defined problems. This does not mean, however, that open-ended ideas-generation is not also possible under the right circumstances in corporate environments, or that community teams are unable to engage in focussed work on specific labour-intensive tasks—in each case, however, such work requires a certain departure from established conventions: companies must set aside a certain amount of employee time for 'personal projects' (as Google is known to do, for example; see e.g. Dickerson, 2004), while community members must commit themselves to dedicated, orchestrated teamwork (as is common in many open source projects).

None of this, it should be noted, is centrally a question of technology; as Jenkins points out, "If we focus on the technology, the battle will be lost before we even begin to fight. We need to confront the social, cultural, and political protocols that surround the technology and define how it will get used" (2006, p. 212). If appropriate protocols can be developed, then perhaps some of the promises of 'Web 2.0' technologies and of the produsage processes which they facilitate, outlined at the start of this chapter, may at long last be realised, leading to more innovation through networked participation in the knowledge economy. If it does materialise, such innovation is likely to proceed in the short term through "a combination of the widely diffuse population of individuals around the globe and the firms or other toolmakers and platform providers who supply these newly capable individuals with the context for participating in the networked information economy" (Benkler, 2006, p. 380), and in the longer term through a more comprehensive embedding of produsage elements within the wider knowledge economy. As Lévy puts it, "If we are committed to the process of collective intelligence, we will gradually create the technologies, sign systems, forms of social organization and regulation that enable us to think as a group, concentrate our intellectual and spiritual forces, and negotiate practical real-time solutions to the complex problems we must inevitably confront" (1997, p. xxvii).

This process will not lead to a purist utopia, free of corporate involvement and unaffected by market forces—but neither need it be subject to inevitable commercial exploitation, with participants relegated to a role as providers of cheap labour, as the more dystopian critics of produsage would have it. Instead, it is time to chart a more realistic course at equal distance from the Scylla of commerce and the Charybdis of community: a course which balances the two influences and uses their respective energies to propel further innovation in participatory online culture.

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