Creativity and digital innovation

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This chapter is about how the internet can be an enabler and driver of people's creativity and innovation. Of course, people have been creative, and sought to do things in new ways, throughout history. The digital world does not 'cause' more of that activity to happen, but it does *enable* people to make and – in particular – connect, in efficient and diverse ways which were not previously possible. Being able to be in contact with people from all around the world, who share your interests, and exchange creative material with them in order to inspire and generate new ideas, may have been *sort-of* possible before the late twentieth century, but the process was undeniably slow and difficult. The difference that high-speed internet connections make is not just a boost in convenience of communication, but represents a significant transformation in how those human beings who are online can share, interact and collaborate.

In this chapter I will use Clayton Christensen's model of disruptive innovation (Christensen, 1997; Dyer, Gregersen, & Christensen, 2011), or a version of it, to look at some ways in which the internet – or rather, people's uses of the internet – have disrupted both media industry practices and academic research. Christensen's model has become well-known[1], but perhaps more to business readers and scholars than to media and communications researchers. Put simply, the model describes the situation in any market where existing successful operators are liable to become complacent, and then can be surprisingly destroyed and replaced by fiesty competitors who come in at the bottom end of the market – typically with rougher, cheaper, but more creative offerings. The incumbents have become used to their dominant position, and usually seek to incrementally improve their offerings to retain the loyalty of top-end 'power users', who are typically their most

vocal customers. The young challengers do not look like a threat at first, because what they offer appears to be cheap and insubstantial. Soon, though, the innovative newcomer is able to drive up the quality of their offering and so become attractive to the large middle-ground of consumers, who may well like the simpler, affordable new thing more than the now overcomplicated, more expensive established offering.

The 'market' in this model would not necessarily have to be a commercial market but could refer to, say, the marketplace of ideas, or can be used a little more metaphorically to understand other spheres. For instance, the US administration of President Clinton used the model to interpret the shift in their antagonists from the Soviet empire – grand, established, and well resourced – to terrorist groups which were much more cheap, nimble, and unpredictable (Christensen, 2012: 13). In this chapter I will look at three cases:

- Case #1: In which the everyday creativity of users disrupts the traditional professional media ecosystem;

- Case #2: In which the creative understanding of the potential of the internet disrupts the traditional critical approach of media and communications studies;

- Case #3: In which the everyday creative uses of online tools disrupt the dominant position of professional arts and humanities scholars;

To make it clear who is disrupting what, here:

- In case #1, 'ordinary people' disrupt professional media practices;

- In case #2, academics who think carefully about the implications of the internet, and understand the technologies, disrupt the complacency and nostalgia of those who do not;

- In case #3, 'ordinary people' disrupt professional academic practices.

Of course these are general phenomena in society, rather than more closed 'case studies'. I here offer some evidence of their existence, and reflections on their implications.

Case #1: Everyday creativity

This first case, in which the everyday creativity of users disrupts the traditional professional media ecosystem, is relatively uncontroversial, in that most commentators would accept that this has indeed happened, although there will be disagreement about the extent of this disruption. For instance, my book *Making is Connecting* (Gauntlett, 2011a) discusses this shift in some depth, and argues that it is significant, and indeed fruitful – or *potentially* very fruitful – for individuals, society, culture, and learning. But other scholars (such as Curran, Fenton and Freedman, 2012, discussed below; Miller, 2009) have insisted that the traditional or new-but-big media industries remain sufficiently powerful that we don't need to spend much time thinking about non-professional creators.

The argument here is not that home-made media products by everyday folk have *replaced* the professional material in most people's selection of things to read, watch and listen to on an average day. To date, that has not occurred. But this case is about how media made by non-professional people – produced by enthusiasts, typically, just because they want to – has *disrupted* the media *ecosystem*, which it clearly has.

The notion of media as an ecosystem has its roots in Neil Postman (1982, 1985), building on the work of Harold Innis and Marshall McLuhan, and has been helpfully developed by John Naughton (2006, 2012). In a natural ecosystem, each of the elements has a kind of dependency on each of the others, so that a change in one element – such as a decline in the amount of sunlight reaching a plant, or a disease affecting a specific animal – is not simply of consequence to that particular plant or animal but has knock-on effects throughout the system. So in media terms, the arrival of widely-available internet access, for instance, has numerous direct and indirect impacts on all of the other inhabitants of the complex ecosystem, including those that think they haven't got anything to do with the internet. For instance, it offers new ways for people to spend their time, taking away from how they spent it before; it changes how media products can be distributed, by producers themselves, and by fans and by 'pirates'; it brings a more targeted model for advertisers, affecting the economy of traditional publications and broadcasters; it raises expectations about levels of 'interactivity' offered by media products; and so on.

Online creative productions by non-professional people have certainly emerged on a significant scale. For video material, for instance, we can look at YouTube, where roughly half of all videos are 'user generated,' rather than professional material[2]. Launched in 2005, YouTube quickly became very popular, hosting a vast array of videos; by January 2012, YouTube was streaming 4 billion online videos every day, and 60 hours of video were uploaded to YouTube every minute (Oreskovic, 2012).

Statistics for the number of blogs in the world are often exaggerated by quoting how many blog accounts have been *started*, rather than how many are being actively used and updated. Because it is difficult to count numbers of dead versus active blogs, reliable figures are difficult to come by. A solution is to look at the numbers of actual blog *posts* being created. In July 2012, according to WordPress.com, which is just one of several blogging platforms, its users created 31.7 million new posts and 39.7 million new comments per month. If we consider the place of WordPress.com alongside other popular blogging platforms (Google Trends, 2012), and the fact that the Wordpress.com statistic does not include Wordpress-powered sites under other domain names (the popular 'self-hosted' Wordpress solution), it seems reasonable to assume that at least 100 million new blog posts were produced each month in 2012, or more than a billion during the year. That's a conservative estimate. Of course these huge numbers tell us nothing about the quality or content of such blog posts, but you could discount, say, half or even three-quarters of them, for whatever reason you like – some of them will be basically marketing; some of them will be student coursework; or whatever – and you've *still* got massive numbers.

I could go on to detail quantities of 'user generated' audio, images, and so on, but the point is clear: there is a huge amount of home-made, non-professional media material about these days. So let's

move on to consider its implications. The disruptions are both to the 'media world' – which is not really a singular and coherent world, but I mean the fruits of the media industries, and the time that people spend with them – and to the broader social and cultural world.

First, there is the straightforward impact, already mentioned, on how people spend their necessarily limited amounts of media-consumption (or media-engagement) time. Whilst studies in the US (Nielsen, 2012) and UK (Ofcom, 2012) indicate that hours spent watching television have remained quite steady – although increasingly done via online services and devices – they also show that there has been a huge growth in time spent online doing other things. For instance, an Ofcom study published in October 2012 (Ofcom, 2012) found that YouTube had an audience of 19.8 million unique visitors per month in the UK, almost a third of the whole population, and the time per person spent on YouTube increased by 42 per cent between 2011 and 2012. This average amount of time spent on YouTube compared to TV remains low, although it concerns a different kind of content notable for being *short*. We're also at an early stage of these changes. The material accessed online which is non-professional 'user-generated' content will only be a proportion of the whole, of course, but the popularity of social media reflects its rise. The Ofcom 2012 report shows 73 per cent of 16-24 year olds communicating on social networks such as Facebook or Twitter on a daily basis, for example. It found that only 20 per cent of young people aged 12 to 15 said that television was the medium they would miss the most, if they were to be deprived of one technology, whilst almost twice as many (39 per cent) selected their mobile phone – typically the best and most private means for this group to access the internet (two-thirds of them had smartphones, the same study found) – with a further 21 per cent replying 'the internet'. So when young people are asked to choose between online access and television, the internet wins more than two-to-one.

Second, there is a shift in the psychological orientation to media material, once you know that to some extent you can do it yourself. When the sources of information and entertainment which were accessible to the general population were *only*, really, those operated by elites – when 'mass media' were the only media that most people received – then those media occupied a god-like role, far away from the lives of 'ordinary people,' and largely untouchable by them. The dominance of 'mass media' underlined the status of almost every member of society as part of this 'mass' – an undifferentiated, undignified position. The rise of an alternative set of internet-based media which *potentially* enable any of us to *potentially* reach hundreds or thousands of our peers makes a huge difference to these perceptions, lifting the 'masses' out of their passive hole and undermining the superior self-perception of media professionals. This is the nature of the disruption, I think, even when it is the case that not everyone takes advantage of this opportunity to make and share media, and even if their audiences are relatively low. It shifts how all the players see the game, and so changes reality. Everyday users are elevated, and professional media are brought down a few pegs, in a way which is healthy for creativity and self-esteem in the general population.

Third, by changing what's available in the world, the internet brings a huge shift, the significance of which can be difficult to perceive at first. We might think – as do Curran, Fenton & Freedman (2012), discussed below – that adding to the ecosystem a large quantity of digital items which have small

audiences cannot make much difference. It's a classic 'mass media' way to look at it: their audiences are small, so they are not significant. But this is to forget how numerous they are, and accessible to anyone else online. This was one of the most striking lessons contained in Chris Anderson's *The Long Tail* (2006). The long tail refers to the huge number of things which, in the offline world, are not in sufficient demand to be worth having around (taking up space in, say, shops or libraries), but in the digital world are worth having in an database because someone, somewhere, is bound to want them sometime; and that each of those incidents is unusual in isolation, but in aggregate adds up to a demand for items which is just as large, at any moment, as the demand for the most popular chart-topping items. As an Amazon.com employee put it: 'We sold more books today that didn't sell at all yesterday than we sold today of all the books that did sell yesterday'[3]. This is the disruption that almost slips under the radar, because we are used to the situation where there are a small number of things that are notable, because they have large audiences. But millions of things that are only wanted by a small number of people still add up to millions of things that are wanted by *somebody*.

The fourth and final disruption is about connection and collaboration. It could be noted that the previous three points have treated the makers of non-professional media as potential competitors with professional media – like mini broadcasters. But perhaps the biggest shift is that all these new homemade media artefacts – unlike most professional media products – are nodes in networks and communities. Online videos, blogs, images and audio are typically hosted on social network platforms which emphasise comments and/or linkages between elements. YouTube flourished, for instance – as Burgess & Green have shown (2009a, 2009b, 2013) – when it shifted emphasis from being a video 'repository' to being a 'community'; it's not just a site where videos are hosted, it's a place where conversations and connections are developed between the human beings who go there. (At least, that's how it's meant to work. Shirky (2011) has noted the differences between networks for particular communities, such as Ravelry, a network of knitters where almost all comments are supportive and helpful, and more general services such as YouTube, where the lesser sense of common purpose seems to make it more likely that comments may be stupid or abusive. On areas of YouTube where there is more of a shared interest, such as around how-to and educational videos, we find the quality of comments is typically higher).

As I sought to establish in *Making is Connecting* (Gauntlett, 2011a), drawing on a range of arguments and evidence, creativity – whether offline or online – is absolutely crucial for the health and sustainability of a whole culture and society. Without the nutrient of everyday creativity feeding its roots, the tree of society begins to wither and fail. So here the disruption brought by homemade social media is enormously important because it comes to save the human population from the 'sit back and listen' mode which only really became the norm during a few decades of the twentieth century; most human history isn't like that. Looking across the history of any human culture, the situation where people sit watching a box for four hours a day is incredibly unusual. The disruption which puts 'ordinary people' back in the driving seat of storytelling and creativity is therefore a vital and fruitful one.

Case #2: Academic critique

New technologies also open up a fissure between those academics who are able to comprehend the potential of online technologies and those who do not. This is not to say that it is scholars who take a critical view, per se, who do not understand the internet. On the contrary, there are excellent critical scholars, who understand and use the internet, and from this position can view the activities of dominant commercial operations with informed disdain. For instance, Christian Fuchs offers a resolutely Marxist critique of the incorporation of online technology companies in contemporary capitalism (Fuchs, 2008, 2011). At the same time he has harnessed the internet for various activities, including the open-access journal *Triple C: Cognition, Co-operation, Communication*, which demonstrate the potential of open online networks when *not* subsumed under capitalism.

Elsewhere, however, media and communications scholars have offered a more knee-jerk rejection of online innovation because of an apparent failure to properly understand how online technologies work, and what they can do; and because of a surprising nostalgic attachment to media models of the past. This approach is worth considering here because it also rejects the argument of the previous case: it suggests that the creative potential of the internet has been over-hyped, and that the ways in which the companies behind major Web 2.0 platforms take the opportunity to profit from user data in general, and freely-provided content in particular, demonstrates that the argument that everyday creativity can disrupt traditional media operations is false.

The argument is, for instance, that people who make videos and share them with others on YouTube are being exploited, because YouTube typically keeps most of the money that it gets from placing adverts beside the content (Andrejevic, 2009; Miller, 2009). The latter observation is true, but of course the argument only makes sense in purely economic terms, if you think that such videos are made as items of economic exchange. But clearly they are not, or their makers would not put them on YouTube, a platform where (in most cases) the video producers are not expecting to make money, but are there for other reasons: they want to share their ideas, knowledge or entertainment with others. (Evidence of people's motivations for making and sharing is discussed in Gauntlett, 2011a).

Similarly, there is no alignment between the observation that Web 2.0 companies seek to profit from hosting material created by users, and arguments about whether these Web 2.0 services can foster creativity, or relationships, or learning. The argument about economics cannot be used to resolve an argument about people's experience, or knowledge, or feelings. You wouldn't, for example, use the economic model of a 'pick your own' strawberry field as proof that strawberries are unhealthy and unpleasant.

A notable instance of this kind of reasoning was published in 2012: the appropriately-titled book, *Misunderstanding the Internet*, by James Curran, Natalie Fenton, and Des Freedman. The book's blurb says that it 'aims to challenge both popular myths and existing academic orthodoxies surrounding the internet', but we will consider it at some length here because it is clearly playing to the conventional, cynical stands of media academics, whose leading lights are lined up in praise of the book on its back cover.

The book is potentially valuable for the way in which it reminds us of various truths: that powerful media organisations are not easily shoved aside, for instance, and that those with money are often able to have the loudest voice. Unfortunately these good points – which remain true anyway – are undermined by poorly used data, a persistent distaste for online media compared even with traditional media, and a patronising approach to the large numbers of everyday people who find some value or meaning in the use of social media services.

There are numerous places where the 'evidence' cited does not speak to the matter under discussion. For instance, Curran et al quote a survey where 38 per cent said they went online for 'fun' while 25 per cent – quite a significant number – were apparently there for news and politics (p. 14). This is used to show that the internet is not a powerful way of exchanging political ideas or information. But the claims don't really line up. For one thing, the 38 per cent statistic reveals an interestingly serious majority, 62 per cent, who do *not* think that the internet is primarily for 'fun'. And second, if 25 per cent of the millions of people online are attracted to the diverse material about politics and current affairs available there, this is a striking new development, and not something to be brushed aside simply because people *also* use the internet for entertainment, which is a true but irrelevant parallel fact. It is like saying that people have no interest in art galleries because they also enjoy cinema.

The authors are keen to reject the idea that online communications can contribute to social and political change. Where citizens appear to have organised against authoritarian regimes using online tools – such as in the most striking 'Arab Spring' cases – Curran et al assert that 'even in these circumstances, the internet did not "cause" resistance but merely strengthened it' (p. 12). But this is a silly point: nobody believes that the internet would 'cause' political resistance – for one thing, the internet is a network of cables and electronics, with no known beliefs or values of its own. If the authors are conceding that networked connections have 'strengthened' real-life political activity and social change, then this would seem to be a surprising new capacity for technology to support social action – which would be the *opposite* of the 'nothing happening here' conclusion that they imply.

In another example of fuzzy logic, Fenton notes that many Twitter users have a smallish number of followers, around 100, whilst some big stars can have several million. This fact is taken to demonstrate that 'Participation ... is still the preserve of a few' (p.127). Again, doesn't make sense. The millions of everyday people on Twitter who are having conversations, and sharing ideas, links, notes, and wry observations, are found to be not 'participating' because Britney Spears has got a few million followers. This doesn't line up, and indeed, the smaller and more close-knit networks are likely to have much greater connection and participation; it is Britney Spears who is denied meaningful 'participation,' because she is one of a minority of users who cannot engage meaningfully with her online community because it is impractically massive.

Similarly, Fenton and colleagues note that it is difficult for individuals to compete with established media providers in the battle for people's attention online. That's true. But curiously they take this to demonstrate that self-made media is, by implication at least, a waste of time (p. 134-5). They offer statistics which show emphatically that established media brands, such as CNN and the BBC,

are much more visited than home-made alternatives. Readers will be unsurprised by this information. More surprising is Fenton's conclusion that this means that people's personal creative work is 'framed by and subsumed under the influence of established powerful media actors' (p.135). Again, this is quirky. If I offer you a delicious cake that I have made, would it make sense for you to observe that Marks and Spencer produce cakes which are consumed much more frequently than mine, and therefore that my cake is 'framed by and subsumed under' the influence of established powerful cake bakers? No. My cake is unique, personal, and independent of this more corporate level of baked goods. The quantitative success of other bakers would have no impact on how we evaluate my own home-made cake.

People use social media services to communicate something for themselves, or about themselves, an urge which has been part of human creative practice for thousands of years. Today this offers a powerful corrective to the more standardised mass media products made by professionals, which – as left-wing critics have rightly argued for decades – do not reflect the diversity of the population. But here, this kind of 'mass self-communication' is dismissed by Fenton as an aspect of 'neoliberalism' (p. 135). However, if neoliberalism refers to the shift of things that used to be done at a social level to the responsibility of individuals, then the term does not fit. Perhaps the idea is that newspapers and traditional media used to helpfully 'represent' people, and now people are required to represent themselves instead. But being able to speak for yourself is much more progressive than the idea of elites speaking 'on behalf of' people, which is not a notion with any record of working successfully.

The purpose of this extended focus on one book, *Misunderstanding the Internet*, has been to illustrate the status quo of media and communications research, happy to show off how 'critical' it can be without concern for precise argumentation, and disregarding the feelings of users of digital communications media, who are regarded as hapless dupes of the system. In terms of the core theme of this chapter, this is the overconfident establishment, which is disrupted by a typically younger and more technologically competent generation of academics. As noted above, this is not a matter of anti-capitalists versus pro-capitalists. On the contrary, many of the disruptive generation share concerns about the role of dominant businesses in the online sphere, but they make more persuasive critical remarks when informed by how technologies work (rather than the nonsensical comparisons and slippage-of-argument noted above), and are able to propose meaningful alternatives – such as the model of the digital public sphere (Stray, 2011) and the need for non-commercial public platforms (Gauntlett, 2011b).

Case #3: Everyday arts and humanities research

Until recently, the work of archiving, collecting, analysing and writing about art, literature, history, philosophy, media and culture was the more-or-less exclusive role of professional academics, museum curators and other experts. Of course, some of this was also done by hobbyists and enthusiasts, but was rarely recorded or shared in a significant way that made the work accessible to others. (Again, this was the distribution and sharing problem which the internet solved, offering for

the first time a straightforward and inexpensive way to make material available to a potential broad audience). But today, the dominance of professional experts is being disrupted by the conspicuous appearance of online enthusiasts who are doing similar work, usually performed and shared for free, and often to a high standard, just because they want to.

The most obvious and well-known example is Wikipedia. In 2001 it seemed unremarkable and obvious to almost everyone that the job of compiling and editing an encyclopedia was a huge, difficult, and responsible task which would rightly be done by established experts who have the appropriate training, and skills, and know what they are talking about. But this assumption about encyclopedia creation was, famously, massively disrupted by the Wikipedia platform, which encouraged anyone and everyone to join in. Wikipedia grew incredibly quickly, and by its 10th anniversary in 2011 was home to 19 million articles across 282 different language editions, widely regarded as *usually* reliable and generally of good quality. This is not what would have been predicted in 2001. Also unexpected were the emergence of dedicated communities around particular articles, and groups of articles, who debate and learn from each other in their ongoing project to make a high quality set of articles (Lih, 2009; Dalby, 2009).

This model of collective learning and expertise-sharing is not limited to the (ubiquitous) Wikipedia example, however – although its unique level of success, as a non-profit venture, reminds us of the public appetite for a non-commercial 'commons' of knowledge. Nevertheless, there are a range of platforms being used for different purposes by amateur experts, who are eager to connect and collaborate in a way which often puts their more isolated and less communicative academic counterparts to shame.

On Pinterest, for instance, users curate collections displayed on 'pinboards' – a kind of online exhibition – of images or videos relating to themes of art, design, history, or anything else which can be represented visually. The service is home to collections of old postcards, historical images, space telescope images, artworks with interesting connections, and so on, the kinds of collections which previously would have been painstakingly assembled and annotated by professional curators and archivists. Now similar collections can be produced by non-professional enthusiasts, online, who can collaborate and assist each other with precise dating or labelling.

This kind of mutual support and collaborative informal learning is even stronger in the online DIY communities, where people who like to make and do things in the offline world share ideas and inspiration. A study by Stacey Kuznetsov and Eric Paulos (2010) surveyed 2,600 people who participated in a range of such sites – Instructables, Dorkbot, Craftster, Ravelry, Etsy, and Adafruit – to explore their motivations and practices[4]. The values of the participants in these communities were found to strongly reflect an ethos of 'open sharing, learning, and creativity' rather than profit or self-promotion. The researchers found that over 90 per cent of their respondents participated in DIY communities by posting questions, comments and answers. They did this frequently and diligently: almost half of the participants responded to others' questions, and posted comments or questions, on a daily or weekly basis. There was also quite a significant follow-through to face-to-

face meetings. One third of the respondents attended in-person meetings, and over a quarter presented their work in person at least several times a year[5].

Another example is Minecraft, a popular online game where users can collaboratively construct environments using Lego-like blocks. The tool is very 'open' and non-prescriptive, and so users have been able to use it for a range of purposes: for instance, they have recreated historical environments such as 1940s New York, a Roman city, Cunard ocean liners from the early 20th century, and numerous others, as well as creating environments from literature, such as Hogwarts School from the Harry Potter books, and the entirety of Tolkein's Middle-earth[6]. These projects represent a huge amount of 'work' by players who are spending their time in this way for fun, but the activity also happens to be the kind of thing previously done by professionals in museums and galleries, and in university departments of archaelogy, history and literature. Minecraft has also been used by school teachers to engage students with the worlds of literature by means of collaboratively building them (Reilly & Cohen, 2012).

Greg Lastowka (2011) provides an insightful analysis of Minecraft as a system which cultivates user creativity and collaboration. He notes that the game itself offers little instruction to users, leading them to seek support in other online spaces:

> 'By making Minecraft players rely on each other, [game developer] Mojang effectively introduces the new players to other amateur creators and enthusiasts. By regularly updating and revising Minecraft (and giving fairly laconic details about the content of these updates) Mojang ensures that players return to their online communities to share information. By making community participation intrinsic to the game, Mojang builds social networks around the game. All this, plus its indie origins and its nature as a "sandbox" game, would seem to make Minecraft a paradigm for the marriage of amateur creativity and digital games.' (Lastowka, 2011: 161)

The kind of activity outlined above may not look quite like a potential 'replacement' for professional academic research. Perhaps direct replacement is not what we are looking at. But as a set of highly active new agents in the ecosystem, these kinds of initiatives represent a significant challenge to the established order.

In some cases, this might drive up and filter for quality. For instance, there may remain a role for a small number of very talented film critics who can write beautifully, probably located in prestigious universities, but any of the academics producing mediocre film criticism have been effectively redundant for several years because there is already a huge amount of mediocre film criticism – alongside some very good film criticism – produced by enthusiasts and available free online. But other kinds of specialist expertise are less readily replicated; in history, philosophy, and social theory, for example, there is room for a number of authoritative and insightful thinkers whose contributions to knowledge are unlikely to be reproduced by random people in their spare time. There is even space for professors of film who have something insightful to say about, say, broader cultural and industrial trends. But it's easy to be complacent. We can be sure that there will be

interesting shifts as tasks which were previously part of the 'work' of arts and humanities professionals become taken over by people online doing things just because they are interested.

We might ask how professional academics can connect with this world of non-professional activity without spoiling it, or appearing to want to dominate or exploit it. I have suggested (Gauntlett, 2012) that it must be about *participating* in these networks – rather than hoping they will go away; *making* things happen – online and offline events that bring people together and inspire action; coupled with a kind of leadership which works *with* all these other people participating in the online space.

Conclusion

The three types of disruption discussed in this chapter show ways in which creative material and ideas, when shared, discussed and networked via the internet, can challenge the status quo – not necessarily by *replacing* the old with the new, but by introducing novel elements into the ecosystem, necessitating change and renewal throughout the environment. Christensen's model of disruptive innovation has not yet played out fully in each of these spheres – the established incumbents have not been toppled per se – but the ecosystems in each case have taken substantial knocks. This is all as we would expect: as John Naughton notes, the internet is a 'global machine for springing surprises', and disruption 'is a *feature* of the system, not a bug' (2012: 4–5). In the examples I have discussed here, particularly in the first and third cases, it is a newly empowered grassroots of everyday people with creative ideas and aspirations, who are shifting our expectations about where valuable ideas, entertainment and learning can come from. The message that people can make culture and education for themselves, rather than merely selecting from the material made by professional elites, is a powerful and healthy one for our society.

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NOTES

[1] For instance, the *Thinkers 50* ranked Christensen at #1 in its 2011 global ranking of management thinkers (http://www.thinkers50.com).

[2] Establishing a precise and up-to-date figure for the proportion of user-generated material on YouTube is difficult. In 2007, Burgess & Green conducted a content analysis of 4,320 popular videos, and found that only 42 per cent of these came from mainstream, broadcast, or established media, whilst just over 50 per cent were original user-created videos; eight per cent were from sources of 'uncertain' status (Burgess & Green, 2009a). In Michael Strangelove's 2010 book *Watching YouTube* the author asserts that 'a whopping 79 per cent of YouTube videos are estimated to be user-generated content' (p.10), although the source for this is a PhD thesis completed in 2009. As more and more professional media producers are putting content on YouTube – but also the number of amateur contributors continues to rise – it seems sensible to stick with the conservative formulation that non-professional material makes up 'roughly half' of the YouTube archive.

[3] This was a former Amazon employee, Josh Petersen, responding in January 2005 when Chris Anderson was crowdsourcing different definitions of the long tail on his blog. See: http://longtail.typepad.com/the_long_tail/2005/01/definitions_fin.html#comment-3415583

[4] The passage about this study draws on material that I contributed to Gauntlett, David; Ackermann, Edith; Whitebread, David; Wolbers, Thomas; Weckstrom, Cecilia, & Thomsen, Bo Stjerne (2012), *The Future of Learning*, Billund: LEGO Learning Institute.

[5] It might be noted that the kind of people who are willing to respond to an online survey about this kind of activity are precisely those people who would engage in this kind of activity, leading to the high percentages in the results. Conversely, the fact that the researchers were able to find 2,600 people willing to respond in this way at all is remarkable in itself.

[6] See for example: New York: http://youtu.be/_tAU8gYiLuY, Roman city: http://youtu.be/4HZphUEa-WU, Cunard liners: http://youtu.be/lxzMZOs7sxw, Hogwarts: http://youtu.be/_qmVC5qO014, Middle-earth: http://youtu.be/0HdKXlN_gB0.