

We Are All Content Creators Now: Measuring Creativity and Innovation in the Digital Economy

DEREK SLATER and PATRICIA WRUICK, Google

In the wake of the recent financial crisis, economic recovery depends on contributions from everyone in society—everyone needs to be an innovator. The good news is that, increasingly, anyone can be an innovator—computers and the Internet are empowering more and more individuals and their communities, creating economic growth and jobs. If the Internet were a sector, it would be larger than agriculture and utilities in many economies today. From 2004 to 2009, the Internet contributed 15% to GDP growth in the United States of America (USA) and on average 21% in mature economies studied by McKinsey Global Institute.¹

But innovation is not just about science and technology—it is about arts and culture as well. Technological development and the arts have always had a symbiotic relationship. For example, the videocassette recorder (VCR) led to new markets for movies and television, and computer animation was viewed as mainly a cute toy for artists until the animation film studio Pixar.

Understanding the Internet-driven arts and entertainment boom

Today, artists and entrepreneurs use the Internet to create fantastic new things. Just look at services such as iTunes and YouTube, which have launched careers and created entirely

new markets that reach a huge audience. The Internet is democratizing innovation, empowering people to create, exchange, and implement new ideas, and to make those ideas available to people all around the world, with minimal barriers to entry.

As a result, more music, video, written works, and other content are published now than ever before.² And through a decade of economic and technological upheaval, the entertainment industry's global revenue grew 50% while consumer spending also increased.³ The global music industry alone was valued at US\$168 billion in 2010—up from US\$132 billion just five years earlier⁴—and, according to data from PricewaterhouseCoopers and IDATE, the value of the global entertainment industry increased from US\$449 billion in 1998 to US\$745 billion in 2010.⁵

That increase is significant not only because of its size but also because of how it was measured. Some of the rise is the result of video-gaming. Traditionally, video-gaming would not have been considered to be part of the arts and entertainment sector, but definitions of 'art' are always evolving. Though this might have seemed bizarre only a short time ago, this year the Smithsonian American Art Museum in Washington, DC hosted an exhibit on 'the art of video games.'⁶ Thus, as video gaming has

evolved, so too have measures of the arts and entertainment.

Such measures need to evolve so that they can better account for the Internet's economic and social contributions to creativity. If we want to measure and harness the full potential of the Internet for innovation, we need to get 21st-century metrics for creativity right.

The Global Innovation Index (GII) has been a leader in this conversation. In its 2011 edition, the GII articulated the need to better measure creativity in the innovation process.⁷ This year the GII goes further, including a number of new data points and establishing a separate sub-pillar to measure digital creativity. In doing so, it contributes to an active debate centring on how to best account for creativity in the digital age.

In this chapter, we ask—and attempt to answer—three questions:

- Why do the arts matter to the 21st-century economy, and how does the Internet empower artists?
- How can we better measure arts and entertainment in the digital economy?
- How can public policy harness the Internet to empower artists and fans?

We do not claim to have all the answers, nor do we claim to have quick fixes. Rather, we see this as a conversation that needs much more

thorough research and analysis, and we hope that, by posing these questions, we can contribute to that discussion.

We do, however, have one central thesis: it is critical to complement traditional measures with new ones that take into account the full range of creative activity that is taking place online. Robust data are the bedrock of public policy, and we cannot measure the information society by using industrial society metrics.

The economic contribution of arts in the digital economy

Beyond their social and cultural value, artists and the creative business ecosystem around them contribute to the economy in many ways, both direct and indirect. It is important to understand both types—and how the Internet has been a strong driver of growth across the board.

Attempts to estimate direct economic impact look mainly at the contribution of creative industries to GDP and employment. Depending on the sectoral definitions used to delineate ‘creative industries’,⁸ their contribution to GDP tends to range between 2% and 6%.⁹ To give but a few recent examples, creative and cultural industries accounted for a share of 2.6% in GDP for Germany (2008) and for 2.89% of gross value-added in the United Kingdom (2009).¹⁰ Their contribution amounts to about 3% of GDP in the European Union¹¹—a higher share than sectors such as food and beverages, textiles, chemicals, or rubber and plastics industries.¹² The creative and cultural industries are also a significant source of employment. Around 6.4 million people in Europe were employed in companies that belong to creative and cultural industries in 2009.¹³ Moreover, the

creative sector often provides high-quality jobs with a high level of fulfilment and personal life satisfaction.

Mapping creative services into national accounting and occupational statistics is not a straightforward exercise, however. Besides availability, reliability, and comparability of data,¹⁴ organizational and operational peculiarities play a role. Many people work on creative projects on a full-time, part-time, or variable basis and/or are self-employed. These structures are challenging when dealing with national accounting and employment statistics.¹⁵ With the Internet empowering anyone to create content at an unprecedented scale and scope, identifying ways to measure their contributions becomes all the more important.

Different definitions of creative industries coexist (Table 1; see UNCTAD/UNDP 2010 for an overview). Rather than coming up with yet another alternative definition, we focus on increasing our understanding of the *evolution* of creative industries today.

The Internet has been a strong driver of recent growth. Revenues of the recorded music industry are based on digital sales to a greater extent than the film, magazine, and newspaper industries combined.¹⁶ Global digital music revenue grew by estimated 8% to reach US\$5.2 billion in 2011, a faster rate than in 2010;¹⁷ revenue from Web-to-television video content is estimated to grow from US\$2 billion to over US\$17 billion by 2014 for the USA alone;¹⁸ and e-book sales have grown from 3% to 10% of the consumer book market and are forecasted to reach close to US\$10 billion by 2016, up from US\$3.2 billion globally in 2011.¹⁹

It is too often presumed that digital growth is a net negative,

‘cannibalizing’ markets and reducing content creators’ profits. Clearly, some of the revenue growth represents substitution of sales that previously happened offline, and revenues do not equal profits. That said, sales revenues can decrease while both artists’ profit and consumer surplus increase, given changes in technology. This possibility needs to be taken into account when measuring technology’s impact.

Consider recorded music, for instance. Approximately half of the cost to the consumer of a typical compact disc (CD) traditionally went to production and distribution costs.²⁰ Today, thanks to online platforms, the cost of an album is less, but this reduction does not necessarily represent lost *profits* to the producer of the content in all cases. Instead, it may represent cost savings that are being captured by producers and/or consumers.

The rapid decline of costs to producers has another important consequence: individual artists have many more opportunities to find an audience and make money. To be sure, the importance of traditional intermediaries such as the record labels and movie studios has not been eliminated. But artists have more choices than ever before: the Internet has created many new ways for artists to produce, distribute, promote, and finance creativity. Consider the following examples:

- *Falling production and distribution costs:* Before the Internet, if you wanted to speak to a large audience, you needed to own a broadcast tower. Now, online services have reduced costs and barriers for everyone.
- *New funding models:* People have successfully used platforms such as crowd-funding websites to raise money. For instance,

Table 1: Models of creative industries: Classification systems

UK DCMS model	Symbolic texts model	Concentric circles model	WIPO copyright model
Advertising	Core cultural industries	Core creative arts	Core copyright industries
Architecture	Advertising	Literature	Advertising
Art and antiques market	Film	Music	Collecting societies
Crafts	Internet	Performing arts	Film and video
Design	Music	Visual arts	Music
Fashion	Publishing		Performing arts
Film and video	Television and radio	Other core cultural industries	Publishing
Music	Video and computer games	Film	Software
Performing arts		Museums and libraries	Television and radio
Publishing	Peripheral cultural industries		Visual and graphic arts
Software	Creative arts	Wider cultural industries	
Television and radio		Heritage services	Interdependent copyright industries
Video and computer games	Borderline cultural industries	Publishing	Blank recording material
	Consumer electronics	Sound recording	Consumer electronics
	Fashion	Television and radio	Musical instruments
	Software	Video and computer games	Paper
	Sport		Photocopiers, photographic equipment
		Related industries	Partial copyright industries
		Advertising	Architecture
		Architecture	Clothing, footwear
		Design	Design
		Fashion	Fashion
			Household goods
			Toys

Source: Based on UNCTAD/UNDP, 2010.

Kickstarter has been used for over 20,000 projects, the vast majority coming from content-creating categories: music, film and video, art, theatre, and writing and publishing. About 10% of the films presented at the Sundance Film Festival of independent films received funding this way; by March 2012, successfully funded projects have raised approximately US\$175 million.²¹

- *New ways to market:* The arrival of the Internet has allowed innovative approaches to market content to consumers. For example, Topspin is a small tech company that offers artists tools and platforms for online marketing, and they have found that fans pay more and artists earn up to US\$20 more revenue per transaction when artists use Topspin's platforms to

gather data for better-informed decisions about where to invest for the biggest gain.

- *Social media as promotion:* It used to be that creators would need to invest a lot of money in marketing and promotion. Today, fans are increasingly becoming tastemakers via social media. Research by *GartnerG2* predicted that in 2010 at least 25% of sales would be attributable to features such as fan-to-fan recommendations.²²

Even if the measurement of the arts and entertainment sector fully takes into account these changes to the choices now available to artists and those in the broader industry, these measures would be incomplete. Metrics that capture the direct output—the total production of art online, including sales revenues or profits—only partially explain why

a thriving artistic culture matters to innovation.

Art can act as an *input* for future creativity as well. For example, some of Disney's best-known works (such as *Snow White* and *Pinocchio*) are based on earlier, well-known stories, long out of copyright, that have generated many derivative works. Today professionals and amateurs alike build on one another's work on a massive scale. A modern example is that of the JK Wedding Dance video,²³ which incorporated a popular song by artist Chris Brown, driving sales of the song as well as leading to a parody of the video itself on the television show *The Office*. Many artists choose to make their works available for others to build upon freely. Creative Commons (CC)—a 'nonprofit organization that enables the sharing and use of creativity and knowledge through

free legal tools²⁴—began providing licenses for the open sharing of content only a decade ago, and now more than 400 million CC-licensed works, ranging from music and photos to research findings and entire college courses, are available on the Internet.

Art can also produce positive externalities. For example, Pixar made a fortune from the film *Toy Story*—and they also inspired entire new generations of artists with their innovation. Pixar did not capture all the economic value of this inspiration. It owned the work *Toy Story*, but the company contributed to the pool of human creativity with an idea—the idea that computer graphics could push the boundaries of what movies can be.

Moreover, there is good evidence that both the location and magnitude of economic growth during the second half of the 20th century corresponded to a dramatic rise in what Richard Florida calls the ‘creative class’—a category comprising not only scientists and engineers, but also artists.²⁵ The creative class did more than simply find ways to generate revenue; in an idea-driven economy, the presence of these creative minds in towns and cities helped shape a more innovative populace.

Measuring the arts in the 21st-century economy

Innovation is not a zero sum game—it grows the economic pie and gives more people a seat at the table. To measure that growth, it is important to update and adapt metrics to innovation. Make no mistake: existing measures of traditional creative industry players remain relevant because they continue to play a critical role in the ecosystem. But today artistic creation is far

more decentralized, and that means new, complementary measures are needed.

First, creativity metrics must focus more on measuring whether there are sufficient infrastructure and incentives to generate and sustain creative activity. This type of holistic analysis can help advance our understanding of creativity as a process undertaken by individual creators, rather than using an approach that simply measures outputs. The infrastructure for creativity in the digital age can include, for example, the availability of tools that allow artists both to create artistic content and to have access to education about how to use those tools. Relevant incentives may be financial, but there are also non-economic reasons people create. Incentive structures can include legal instruments such as copyright protection as well as other ways of rewarding creativity.

This is a very challenging measurement problem, but there is some low-hanging fruit for researchers to start with. Today, online services provide the infrastructure for creativity, and there is growing evidence that complexity and uncertainty around service providers’ responsibility for user-generated content can have a chilling effect on innovation and, thus, creativity.²⁶ Furthermore, just as it is important to measure how easy it is to start a new business, it is important to measure the transaction costs and time-to-launch for starting a new content service such as the digital music services iTunes or Spotify.²⁷

Second, given that outputs will continue to remain relevant proxies, it is important to look beyond traditional GDP-based measures to assess the value generated by artists and creative workers. GDP is the sum of market-based costs, not a measure

of welfare. It does not value creative work that occurs for free, and has difficulty in properly accounting for the true value to consumers of content creation financed through advertising, particularly online.²⁸ In addition, the creative economy generates value through spillovers to other industries, and these can be hard to account for with traditional approaches based on industry’s GDP contribution. For example, firms may find it easier to attract skilled people to a place where the arts thrive and vibrant creative businesses can contribute to drive creativity and innovation across the economy.²⁹

Furthermore, output metrics need to more rigorously account for the sheer quantity of art being produced. Today, 72 hours of video are uploaded to YouTube every minute,³⁰ 250 million photos are uploaded to Facebook every day,³¹ and there are 440 blogs for every one autobiography available on Amazon.³² Yet, if one is measuring only traditional, professional distribution channels, this creativity would not be part of the picture.

It is all too common for people to dismiss the abundance of artistic endeavours as merely ‘amateur’ content with no meaningful economic impact. That is a mistake, and it is worth debunking some common misperceptions.

- *The growth in available content is not limited to non-commercial content; instead, it includes a substantial portion of commercial activity.* There is more music *commercially* released today than ever before. For example, the online distribution service TuneCore—which helps independent artists distribute their works through iTunes, Amazon, and other outlets—releases more music in one day

than any single major recording label in a year.³³

- *Even though much of this content is enjoyed by very few people, the aggregate impact is substantial.* For example, a given song sold on TuneCore may be purchased only a couple of times. But, aggregated over all the tracks distributed through that service, the songs that are sold add up to significant value.³⁴
- *Much of this content may, on average, be of lower quality than content produced by traditional professionals, but today it is easier than ever to find art with qualities customized to one's own unique tastes.* Quality is hard to measure, but one attempt to do so in the context of music suggests that it is as high as ever.³⁵ Moreover, quality is in the eye of the beholder. You may never listen to the ukulele songs of Julia Nunes—or any ukulele songs for that matter—but the economy and society are clearly better off in a world where she can go online, find her fans, and launch a successful career. Ukulele fans cannot find music like Julia's at the average record store, but on YouTube some of her videos have received millions of viewings.

Last, but certainly not least, we need to take into account the benefit of art to fans. Art for art's sake is not a bad thing, but if we are trying to analyse economic value, we cannot simply look at how producers have fared in the digital age—particularly when the changing cost structure has meant resulted in a windfall of savings. Metrics based on consumer surplus—that is, the difference between willingness (and ability) to pay and the actual price of a good—allow for a better understanding of the value of cultural production to individual consumers and

to society at large. Recent analysis shows that consumers particularly value new ways to consume media content. For example, recent research that looks at media consumption in Australia suggests that yearly consumer surplus for online content portals amounts to A\$9.2 billion, or A\$1,500 per connected household.³⁶ Obviously, the ability to choose and personalize generates value.

The role of public policy

This chapter has drawn attention to several points that warrant more research to better measure creativity itself and its relation to innovation in the digital age. The GII has made important progress in this direction this year by including measures such as the number of uploads to YouTube or Wikipedia edits.

What role can public policy play to both better measure creativity and determine whether current legal conditions are appropriate? Two possible indicators could be considered for the next GII:

- *Legal conditions and transaction costs to re-use content for inclusion in new art.* Because art is often an input into further creativity, it is important to understand the extent to which it is possible to build on existing material while respecting the rights of the artists of the original work. To do so, one could take a representative sample of works, attempt to license the works for re-use, and measure the transaction costs. It would also be important to take into account the size of the public domain and the availability of materials where transaction costs are near zero—such as works licensed under Creative Commons.

- *Legal conditions necessary and transition costs to launch new content platforms.* As discussed above, one could measure the transaction costs and time-to-launch for starting a new content service like iTunes or Spotify.³⁷ Furthermore, it is worth considering evidence of how legal complexity and uncertainty impacts platforms for user-generated content.³⁸

There is no one-size-fits-all solution to reach better measuring methods, and people are likely to disagree on the best approach. But everyone can agree that we need to measure the 21st-century creative economy by 21st-century metrics so that today's policies do not stand in the way of tomorrow's innovation and growth.

Notes

- 1 The sample of mature economies consists of Canada, France, Germany, Italy, Japan, the Republic of Korea, Sweden, the United Kingdom, and the USA. Pélissier du Rausas et al., 2011.
- 2 This seems obvious to anyone who spends time online, yet some remain skeptical, so we include a few points of validation here. Looking at video, on YouTube alone, more video is uploaded to YouTube in a month than all three major US networks broadcast in the last 60 years: see http://www.youtube.com/t/press_statistics. For music, the fragmented nature of the industry makes it difficult to do a census of music releases. Nevertheless, by nearly any metric, it is plain that there is more music being released than ever before. For example, consider that TuneCore—a service that helps independent artists make their works available through iTunes and other stores—issued 90,000 new releases in 2009. That is nearly as much music as that released by labels, as measured by Nielson. See <http://blog.tunecore.com/2010/01/neilsen-says-tunecore-is-responsible-for-100-of-the-music-releases-in-2009-and-oh-yeah-we-are-a-majo.html>. For written works, there are more books being published; see the Bowker Industry Report (2009) <http://www.bowkerinfo.com/bowker/IndustryStats2010.pdf>—and that is before we even start counting blogs and other forms of online writing. See also Masnick and Ho, 2012.
- 3 Masnick and Ho, 2012.

- 4 Masnick and Ho, 2012. Note, however, that the IFPI also made some adjustments to their methodology and categorization during the respective period. See Masnick and Ho, p. 25.
- 5 Masnick and Ho, 2012.
- 6 See <http://americanart.si.edu/exhibitions/archive/2012/games/>.
- 7 Wunsch-Vincent, 2011.
- 8 There are different approaches to define and hence measure the economic contribution for creative industries. For an introduction, see for example KEA European Affairs, 2006; UNCTAD/UNDP, 2008, 2010.
- 9 UNCTAD/UNDP, 2008, p. 29, displays estimates based on several studies that have analysed the contribution of the cultural and creative industries to GDP, gross value-added, and employment.
- 10 Soendermann, 2010 for Germany and dcms, 2011 for the United Kingdom.
- 11 For cultural industries including the audiovisual sector, see EC, 2011.
- 12 KEA European Affairs, 2006.
- 13 Estimate based on 30 European countries; see Power, 2011.
- 14 Png, 2010; Towse, 2010.
- 15 KEA European Affairs, 2006; Towse, 2010.
- 16 UNCTAD/UNDP, 2010.
- 17 IFPI, 2012.
- 18 In-Stat, 2010.
- 19 See Wauters, 2011; Juniper Research, 2011.
- 20 Fisher, 2004; OECD, 2005.
- 21 Locke, 2012.
- 22 McGuire and Slater, 2005.
- 23 See <http://www.youtube.com/watch?v=4-94JhLEiN0>.
- 24 See <http://creativecommons.org/about>.
- 25 Florida, 2002.
- 26 In a recent survey among angel investors in the USA, Le Merle et al. find that increasing liability for digital content providers would have a stronger negative impact on early stage investment than an economic recession; see Le Merle et al. 2011.
- 27 See Ghafele and Benjamin, 2011.
- 28 An analysis by McKinsey (2010) suggests that advertising revenues earned through web services underscore the value consumers derive from them.
- 29 For instance, Bakhshi et al. 2008 and Experian 2007 find evidence that firms with a higher share of inputs from creative industries indeed tend to do better on product innovation.
- 30 See <http://www.onehourpersecond.com/>.

- 31 See <http://blog.facebook.com/blog.php?post=10150262684247131>.
- 32 Estimated figures based on Blog Pulse data and Amazon.com. See also <https://www.google.com/takeaction/you-are-the-web/>.
- 33 TuneCore is a service that helps independent artists make their works available through iTunes and other stores. In 2009, according to an analysis by Nielsen, it issued 90,000 new releases. That is nearly as much music as that released by labels and does not even account for myriad musicians who are reaching the market directly through MySpace, YouTube, and many other platforms—see Price, 2010.
- 34 Anderson, 2006.
- 35 Waldfogel, 2011.
- 36 Belza et al., 2012. Figures refer to Australian dollars.
- 37 See Ghafele and Benjamin, 2011.
- 38 Le Merle et al. 2011.

References

- Anderson, C. 2006. *The Long Tail: Why the Future of Business Is Selling Less of More*. New York: Hyperion.
- Bakhshi, H., E. McVittie, and J. Simmie. 2008. *Creating Innovation: Do the Creative Industries Support Innovation in the Wider Economy?* NESTA research report. Available at <http://www.nesta.org.uk/library/documents/Report%20-%20Creative%20Innovation%20v5.pdf>
- Belza, J., P. Forth, J. Purnell, and P. Zwillenberg. 2012. 'Culture Boom: How Digital Media Are Invigorating Australia'. Report. Boston: Boston Consulting Group.
- DCSM (UK Department for Culture, Media and Sport). 2011. Creative Industries Economic Estimates: Full Statistical Release. Available at <http://www.culture.gov.uk/images/research/Creative-Industries-Economic-Estimates-Report-2011-update.pdf>
- EC (European Commission). 2011. 'Commission Consults on How Best to Seize the Opportunities for TV and Film in the Online Age'. Press Release 13 July 2011. Available at <http://europa.eu/rapid/pressReleasesAction.do?reference=IP/11/868&format=HTML&agend=0&language=EN&guiLanguage=en>.
- Experian. 2007. 'How Linked Are the UK's Creative Industries to the Wider Economy? An Input-Output Analysis'. Working Paper prepared for NESTA. Available at http://www.nesta.org.uk/library/documents/Creating_innovation_experian.pdf.
- Fisher, W. 2004. *Promises to Keep: Technology, Law, and the Future of Entertainment*. Stanford, CA: Stanford University Press.
- Florida, R. 2002. *The Rise of the Creative Class*. New York: Basic Books.
- Ghafele, R., and G. Benjamin. 2011. 'Counting the Costs of Collective Rights Management of Music Copyright in Europe.' MPRA Paper 34646, University Library of Munich, Germany. Available at <http://mpra.ub.uni-muenchen.de/34646/>.
- IFPI. 2012. *Digital Music Report 2012*. IFPI. Available at <http://www.ifpi.org/content/library/DMR2012.pdf>.
- In-Stat. 2010. *Web to TV Gaining Momentum in the US*. Available at <http://www.in-stat.com/catalog/mmcatalogue.asp?id=212#N1004655CM>.
- Juniper Research. 2011. *Mobile Publishing: eBooks, eMagazines & eNewspapers for Smart Devices 2011-2016*. Available at http://www.juniperresearch.com/reports/Mobile_Publishing.
- KEA European Affairs. 2006. *The Economy of Culture in Europe*. Study prepared for the European Commission (Directorate-General for Education and Culture).
- Le Merle, M., R. Sarma, T. Ahmed, and C. Pencavel. 2011. *The Impact of U.S. Internet Copyright Regulation on Early-Stage Investment: A Quantitative Study*. Booz & Company. Available at <http://www.booz.com/media/uploads/BoozCo-Impact-US-Internet-Copyright-Regulations-Early-Stage-Investment.pdf>.
- Lerner, J. 2011. 'The Impact of Copyright Policy Changes on Venture Capital Investment in Cloud Computing Companies'. Computers and Communication Industry Association (CCIA). Available at [http://www.cciainet.org/CCIA/files/cclibraryFilesFilename/00000000559/Cablevision%20white%20paper%20\(11.01.11\).pdf](http://www.cciainet.org/CCIA/files/cclibraryFilesFilename/00000000559/Cablevision%20white%20paper%20(11.01.11).pdf).
- Locke, L. 2012. 'Kickstarter Crowdsourced Cash Empowers US innovators'. *BBC News Technology*. Available at <http://www.bbc.com/news/technology-17531736>.
- Masnick, M. and M. Ho. 2012. 'The Sky Is Rising: A Detailed Look at the Entertainment Industry'. *techdirt: Floor64*. Available at <http://www.techdirt.com/skyisrising/>.
- McGuire, M. and D. Slater. 2005. 'Consumer Taste Sharing Is Driving the Online Music Business and Democratizing Culture'. Gartner No. G00131260. The Berkman Center for Internet & Society at Harvard Law School. Available at <http://cyber.law.harvard.edu/sites/cyber.law.harvard.edu/files/11-ConsumerTasteSharing.pdf>.
- McKinsey. 2010. 'Consumers Driving the Digital Uptake: The Economic Value of Online Advertising-Based Services for Consumers'. White paper. Available at http://www.iab.net/insights_research/industry_data_and_landscape/consumers_driving_digital_uptake.
- OECD (Organisation for Economic Co-operation and Development). 2005. *Digital Music: Opportunities and Challenges*. Paris: OECD. Available at <http://www.oecd.org/dataoecd/13/2/34995041.pdf>.

- Pélessié du Rausas, M., J. Manyika, E. Hazan, J. Bughin, M. Chui, and R. Said. 2011. *Internet Matters. The Net's Sweeping Impact on Growth, Jobs, and Prosperity*. McKinsey Global Institute. Available at http://www.mckinsey.com/Insights/MGI/Research/Technology_and_Innovation/Internet_matters.
- Png, I. P. L. 2010. 'On the Reliability of Software Piracy Statistics'. *Electronic Commerce Research and Applications* 9 (5) (September-October 2010).
- Power, D. 2011. The European Cluster Observatory. Priority Sector Report: Creative and Cultural Industries. Europe INNOVA papers, No. 16. Luxembourg: European Commission. Available at http://www.europe-innova.eu/c/document_library/get_file?folderId=18090&name=DLFE-12822.pdf.
- Price, J. 2010. The State of the Music Industry & the Delegitimization of Artists. Part 1: Music Purchases and Net Revenue for Artists Are Up, Gross Revenue for Labels Is Down'. *Tunecore blog*. Available at <http://blog.tunecore.com/2010/10/music-purchases-and-net-revenue-for-artists-are-up-gross-revenue-for-labels-is-down.html>.
- Soendermann, M. 2010. 'Culture and Creative Industries in Germany 2009: Monitoring of Selected Economic Key Data on Culture and Creative Industries'. Research Report No. 589, published by the German Federal Ministry of Economics and Technology (BMWi). Available at <http://www.bmwi.de/Dateien/KuK/PDF/culture-and-creative-industries-in-germany-2009-monitoring,property=pdf,bereich=bmwi,sprache=en,rwb=true.pdf>.
- Towse, R. 2010. 'Creativity, Copyright and the Creative Industries Paradigm'. *Kyklos* 63(3): 461–78.
- UNCTAD/UNDP (United Nations Conference on Trade and Development/United Nations Development Programme). 2008. *Creative Economy: Report 2008*. New York: UN. Available at http://www.unctad.org/en/docs/ditc20082cer_en.pdf.
- . 2010. *Creative Economy: Report 2010*. New York: UN. Available at http://www.unctad.org/en/docs/ditctab20103_en.pdf.
- Waldfoegel, J. 2011. 'Is the Sky Falling? The Quality of New Recorded Music Since Napster'. VoxEU, November 14. Available at <http://www.voxeu.org/index.php?q=node/7274>.
- Wauters, R. 2011. 'Total Mobile eBook Sales Forecast to Reach \$10B by 2016; Now Close To 1 Million Books In Kindle Store'. *techcrunch.com*. Available at <http://techcrunch.com/2011/12/01/total-mobile-ebook-sales-forecast-to-reach-10b-by-2016-now-close-to-1-million-books-in-kindle-store/>.
- Wunsch-Vincent, S. 2011. 'Accounting for Creativity in Innovation: Measuring Ambitions and Related Challenges'. In *The Global Innovation Index 2011*, 107–13. Fontainebleau, France: INSEAD.
- Wunsch-Vincent, S. and G. Vickery. 2007. *Participative Web: User-Created Content*. Paris: OECD, Working Party on the Information Economy. Available at <http://www.oecd.org/dataoecd/57/14/38393115.pdf>.