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Creative Natives in the Digital Age

How Digital Technology Has Revolutionized Creative Work

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Abstract

Digital technologies have permeated modern life, and their impact on creative work has been revolutionary. This revolution, as widely noted, has disrupted the making, distribution, and consumption of creative output. On the downside, key concerns include Internet-induced piracy and inequality. Yet digital technologies also accelerate opportunities. So, how can these opportunities be reaped to promote creative work for development? Suggestions here include closing the digital gender gap, promoting appropriate intellectual property rights, and providing digital literacy. More needs to be done to understand the benefits and limitations of digital technologies on creative work for human development.

Creative Natives in the Digital Age*
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Introduction

> *What is digital technology?*
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> "The term Digital Technologies is used to describe the use of digital resources to effectively find, [analyze], create, communicate, and use information in a digital context. This encompasses the use of web 2.0 tools, digital media tools, programming tools and software applications."[1]

In recent years, digital technologies have penetrated virtually all facets of modern life, and even creative work has not been spared. Historically, technology has often been associated with mechanization or industrialization. While this advancement improved productivity, some have long feared that technological expansion would cost people their jobs and even diminish artistic output. "When small hand tools first grew into big machines over 150 years ago in England, the workers of that day showed their hatred of the new monsters by fighting them," writes William F. Ogburn. "They threw stones at the factory windows and broke the machines inside."[2]

"That was 150 years ago," he adds, "but the same sort of thing happens nowadays." With respect to creative work, for example, just "a few years ago the talking pictures took away the jobs of 10,000 American musicians. They didn't throw stones at the movie palaces; perhaps that is part of the Progress of the Century. But they did print advertisements in newspapers, protesting against 'canned music' and urging people to demand that theaters keep their orchestras."[3] In today's setting such tension still exists.[4] Nonetheless, while digital technology can disrupt the field of creative work it can also expand it.

The functional changes of technology have generally enhanced people's lives. For this the eighteenth-century moral philosopher Adam Smith predicted. "In reading The Wealth of Nations," as Wassily Leontief observes, "one is struck by concrete descriptions of the ongoing technological change and theoretical emphasis on the role it was bound to play in economic growth and the concomitant rise of private and public welfare."[5] In the creative

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[1] "Digital Technologies," New Zealand Commerce and Economics Teacher's Association Inc., accessed March 17, 2015, http://www.nzceta.co.nz/pages/digital_technologies.htm.

[2] William F. Ogburn, *You and Machines* (Chicago, Ill: University of Chicago Press, 1934), 5, accessed March 17, 2015, http://babel.hathitrust.org/cgi/pt?id=mdp.39015063056744;view=2up;seq=14;size=150.

[3] Ibid.

[4] Ryan Avent, "IT Was Fun While IT Lasted," *Economist*, July 7, 2014, accessed March 17, 2015, http://www.economist.com/blogs/freeexchange/2014/07/productivity.

[5] Wassily Leontief, "The Present State of Economic Science" in *Adam Smith's Legacy: His Place in the Development of Modern Economics,* ed. Michael Fry (London and New York: Routledge, 1992), 141.

world, as we shall see later, creative goods and services are now easier to produce and to disseminate. Little-known artists can market their work without relying on physical stores or middlemen. And (other things equal) more and more courses, including arts education, are happening online without concerns of distance.

Figure 1

$$\text{Technology} + \frac{\text{Human}}{\text{Passion}} \times \left(\frac{\text{False}}{\text{Ideas}} + \frac{\text{Bad}}{\text{Values}}\right) = \frac{\text{Extremism and}}{\text{Global Dysfunction}}$$

$$\text{Technology} + \frac{\text{Human}}{\text{Passion}} \times \left(\frac{\text{True}}{\text{Ideas}} + \frac{\text{Good}}{\text{Values}}\right) = \frac{\text{Global Stability and}}{\text{Sustainable Prosperity}}$$

Source: Dov Seidman, *How: Why HOW We Do Anything Means Everything*[6]

Technology, however, not only fuels positive outcomes; it also enables negative ones. (See figure 1.) This basic observation is worth recalling. In <u>How: Why How We Do Anything Means Everything</u>, Dov Seidman offers "a formula for an interconnected and interdepended world": "This formula," as he shows, "has two variables" (variables that connect everything, including creative work):

> The first variable is that the world is technologically connected. We will never be less connected or less exposed. Privacy, as we've known it, is over. As technology marches on, we will only become more connected and exposed. The second constant is the universal human passion for progress and a better life, and when the forces of technology and human passion combine, as they increasingly do in our interconnected world, their impacts multiply exponentially.
> Now consider two variables: our ideas about the world and our values. If you multiply technology and human passion against false ideas and bad values, you get a total dysfunction and extremism. You will lurch from crisis to crisis with ever-increasing frequency. But if you multiply those same constants against the right variables—true ideas and good values—you get global stability and sustainable prosperity. In short, you get the things we all want.[7]

In any field today, from creative work to politics, and from economics to religion, these variables are omnipresent. In our context, digital resources have powerfully changed the way artistic output is produced and consumed. But, as we shall see later, the advantages are as loaded as the disadvantages. Used well, digital technology is magical, used poorly it can delink human development. Indeed the ambiguities and challenges of the digital age have left many concerned.

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[6] Dov Seidman, *How: Why How We Do Anything Means Everything* (Hoboken, NJ: John Wiley & Sons, Inc., 2007), xvi.

[7] Ibid.

Consider the issue of inequality. "Technology (skill-based technological change)," as Joseph E. Stiglitz writes, "may be central to certain aspects of our current inequality problem, especially to the polarization of the labor market."[8] Even more striking, the gender gap in many countries still persists under the so-called 'Digital Divide.'[9] In this divide, "the difference is not necessarily determined by the access to the Internet, but by access to ICT (Information and Communications Technologies) and to Media that the different segments of society can use."[10] The digital divide moreover extends to the poor, the elderly, and the disabled, including those who are active in creative work. Ultimately, the concern here may not be the Internet functionality per se—although that also deserves scrutiny. The worry is that as more and more things get done online, those who are less connected (or not connected at all) are left behind.

This has development implications. In our context, if women and girls in the developing world have less Internet access, this is likely to diminish their creative agency in the digital space. See Table 1 on selected countries across regions on women's connectivity in <u>Women and the Web</u> — this report is the first of its kind to compile data on "how women in developing countries access and use the Internet."[11]

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[8] Joseph E. Stiglitz, *The Price of Inequality: How Today's Divided Society Endangers Our Future* (New York: W.W. Norton & Company, Inc., 2013), 100. See also Patrick Kabanda, "Music for Development in the Digital age," March 2016, accessed May 9, 2016. http://pubdocs.worldbank.org/pubdocs/publicdoc/2016/3/923101459255847647/WDR16-BP-Music-for-Development-Kabanda.pdf.

[9] "The Digital Divide, or the digital split, is a social issue referring to the differing amount of information between those who have access to the Internet ([especially] broadband access) and those who do not have access. The term became popular among concerned parties, such as scholars, policy makers, and advocacy groups, in the late 1990s." — "The Digital Divide, ICT and the 50x15 Initiative," Internet World Stats, accessed March 19, 2015, http://www.internetworldstats.com/links10.htm.

[10] Ibid.

[11] Shelly Esque, Foreword in "Women and the Web: Bridging the Internet Gap and Creating New Global Opportunities in Low and Middle-Income Countries," Intel Corporation and Dalberg Global Development Advisors, accessed March 19, 2015, http://www.intel.com/content/www/us/en/technology-in-education/women-in-the-web.html.

Table 1

	East Asia & Pacific	South Asia	Sub-Saharan Africa	Europe & Central Asia	Latin America & the Caribbean	Middle East & North Africa
The Internet gender gap across regions						
Women's and girls' Internet access level	29%	8%	9%	35%	36%	18%
Men's and boys' Internet access level	37%	11%	16%	49%	40%	28%
Gender gap (weighted)	20%	33%	43%	29%	10%	34%
Global gender gap (144 developing countries)	23%					

Source: Intel Corporation and Dalberg Global Development Advisors [12]

We shall extend on the digital gender divide issue later. After all, even in the United States men dominate Silicon Valley, the mecca of the largest high tech corporations and start-ups in the world.[13] It is therefore not a stretch to deduce that women's creativity online may be compromised even in today's seemingly 'democratic' technologies.

Meanwhile, generally speaking, since the concept of "creative destruction" entered the literature, more and more examples of changes (or improvements) in productivity while 'destroying' previous innovations or production models continue to appear. We proceed to consider how this phenomenon has revolutionized creative work.

I. How has digital technology revolutionized creative work – writing books and marketing them, the music and the movie industry, the world of paintings, architecture?

Today the revolution of digital technology on creative work is somewhat akin to how the printing press revolutionized the tradition and practice of writing in the fifteenth century. The excerpt below stresses the point:

> The immediate effect of the printing press was to multiply the output and cut the costs of books. It thus made information available to a much larger segment of the population who were, of course, eager for information of any variety. Libraries could now store greater quantities of information at much lower cost. Printing also facilitated the dissemination and preservation of knowledge in standardized form -- this was most important in the advance of science, technology and scholarship. The printing press certainly initiated an

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[12] Intel Corporation and Dalberg Global Development Advisors, "Women and the Web: Bridging the Internet Gap and Creating New Global Opportunities in Low and Middle-Income Countries," accessed March 19, 2015, http://www.intel.com/content/www/us/en/technology-in-education/women-in-the-web.html.

[13] Josh Harkinson, "Silicon Valley Firms Are Even Whiter and More Male Than You Thought," *Mother Jones*, May 29, 2014, accessed March 19, 2015, http://www.motherjones.com/media/2014/05/google-diversity-labor-gender-race-gap-workers-silicon-valley.

> "information revolution" on par with the Internet today. Printing could and did spread new ideas quickly and with greater impact.[14]

Likewise, digital technology has made the spread of ideas in nanosecond. It has made such creative work as writing, filming and music making easier to market and to distribute worldwide. This agility has also made it easy to collaborate, edit, produce, and even store creative works. Furthermore, this revolution also enables artists to finish the execution of the actual artwork quicker. In turn, this allows them to spend more time developing other ideas or even on leisure.[15] In this sense, technology can help creative workers become more productive. It can enlarge their "choices through enhancing their capabilities and creating opportunities,"[16] concepts embedded in the human development framework.

This, however, is only part of the story. As noted earlier, there are powerful illustrations of how technology has killed jobs, breaking linkages between creative work and economic welfare. We shall consider this concern later. Meanwhile, whatever challenges the Internet brings, it is not abating anytime soon. (See figure 2 showing the upward march of Internet users worldwide from 1993 to 2014.) "Around 40 percent of the world population has an [Internet] connection today," according to Internet Live Stats. "In 1995, it was less than 1 percent."[17]

Figure 2

Source: Internet Live Stats[18]

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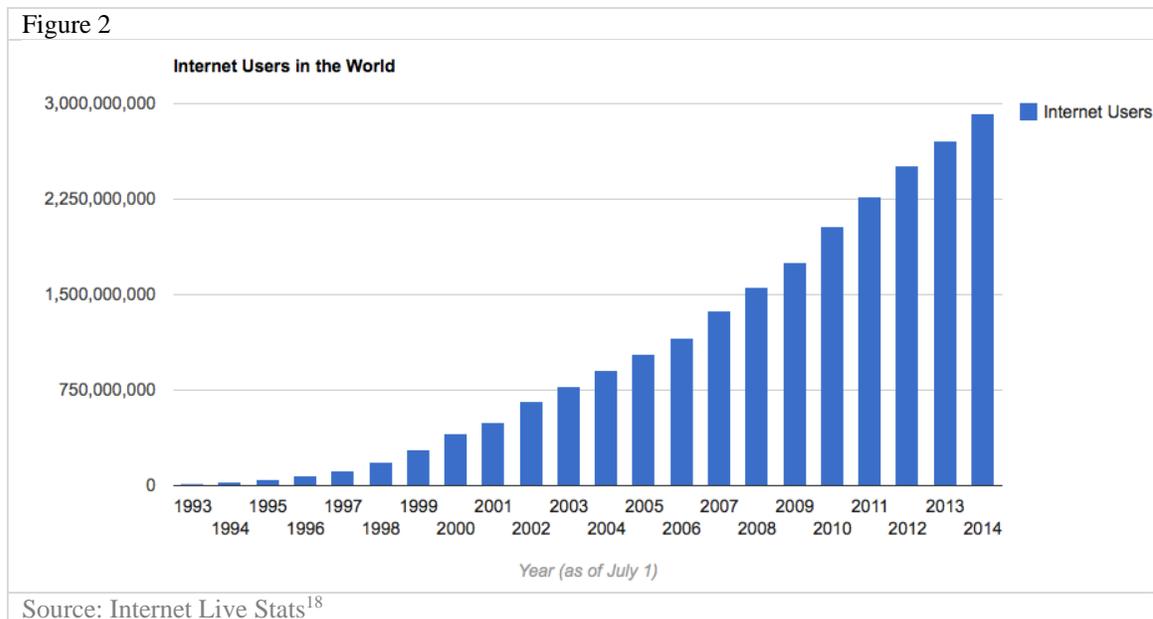
[14] Steven Kreis, "The Printing Press," The History Guide: Lectures on Modern European Intellectual History, accessed March 17, 2015, http://www.historyguide.org/intellect/press.html.

[15] Mohamed Zaher, "The Impact of Digital Technology On Art and Artists," *Midan Masr*, accessed March 17, 2015, http://www.midanmasr.com/en/article.aspx?ArticleID=200.

[16] Selim Jahan, *Human Development Report 2015 – Rethinking Work for Human Development: A Concept Note*, United Nations Development Programme, Human Development Reports, accessed March 19, 2015, http://hdr.undp.org/en/rethinking-work-for-human-development.

[17] "Internet Users," Internet Live Stats, accessed March 30, 2015, http://www.internetlivestats.com/internet-users/.

[18] Ibid.

II. What are the positive and negative sides of the effects of digital technology on creative work (e.g., with nooks and kindles, one can read books quite easily, but the feel of pages, the smell of books are gone)?

The list of the positive and negative effects of digital technology on creative work is extensive. This section starts by looking at the positive side in the book world.

The Positive Effects of Digital Technology on Creative Work: Books and Beyond

While the smell and tactile feel of book pages is lost in e-pages, the benefits of e-books like Nooks and Kindles are significant: they are easy to carry; they have a digital shelf; the content is easy to search and share; they offer a highly "customizable reading experience;" and they are readable across devices. For self-published authors, moreover, the cost of production and entry to the market is low, not to mention the affordable marketing and worldwide distribution.[19] And people are getting resourceful with this innovation. Consider Bookarma (book-karma) "a highly social pay-it-forward platform that allows [authors] to break through the boundaries of [their] own social network to reach new readers. Authors discover and share each [other's] books and earn karma every time they share."[20] The benefits go on and on — it could even be argued that e-books are greener than 'p-books.'

In addition to the business side of things, as discussed earlier, digital technology can accelerate the process of creative work itself. In music, for example, software like *Sibelius* and *Finale* facilitate the notation of music; and digital video and audio recordings can aid performances and arts education with dazzling efficiency. In photography, the digital world has unleashed all sorts of creative possibilities. In architecture, "Whether the project is source of reflection," as Rosalba Beliban and Anna Gadola's conclude, "the computer is the place where the reflection finds new phases of feedback and new suggestions to the creative imaginary. There are several different ways to create architecture with the computer."[21] These examples march on and on. Next, is a look at how one website is advancing African poetry in the digital age.

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[19] Chris Robley, "Ebook Vs. Print Book …," *Bookarma* (blog), August 8, 2014, accessed March 30, 2015, http://bookarma.net/blog/ebook-vs-print-book/.

[20] Bookarma, "Connecting Authors with New Audiences," accessed March 30, 2015, http://bookarma.net/.

[21] Rosalba and Anna Gadola Belibani, "On Digital Architecture," Vienna University of Technology, accessed March 30, 2015, http://info.tuwien.ac.at/ecaade/proc/belibani/belibani.htm.

Case Study: The Badilisha Poetry X-Change: African Poetry in the Digital Age

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Now the largest online collective of African poets on the planet, Badilisha has showcased and archived over 350 Pan-African poets from 24 different countries. It reflects the myriad of rhythms and rhymes, voices, perspectives and aspirations from all corners of the globe.[22]

   — Badilisha Poetry X-Change

How Digital Technology is Advancing African Poetry

Here is a startling statistic: of all the books published in the world, those by African authors comprise a measly two percent.[23] The reasons for this are many. They range from the tradition of passing on ideas orally to such structural issues as production and marketing, challenges also common for writers in other parts of the world. The concern here, however, is that many African literary works are at a startling disadvantage. Yet Africa is loaded with rich traditions like storytelling, languages, and poetry.

In an attempt to change this scenario — and at least advance African poetry — the Badilisha Poetry X-Change has capitalized on the power of digital technology. It launched the first-ever online catalog of African poetry that can be accessible from simple, feature phones to smartphones. The aim is to keep the flame of African creative work in poetry alive in the digital age.

History

Badilisha (which means *change* in Swahili) was initiated in 2008. It started as an annual international poetry festival to feature poets within Africa and beyond. And it also provided ventures that ranged from poetry seminars to training programs. In 2012, it "evolved into an audio archive and radio show" with the aim of addressing two key issues: "the absence of any readily accessible archive of Pan-African poets and the need for a new stage in which Pan-African poetry could reach a global audience." Based in Cape Town, South Africa, Badilisha is funded by the South African National Lottery, the National Arts Council of South Africa, and Spier 1692 (— the last is among the oldest farm wines in South Africa). It is a project of the Africa Centre, a body "that was established in 2005 as an international centre for creativity, artistic excellence and intellectual engagement." Among other objectives, the Centre explores how "Pan-African cultural practice can be a catalyst for social change."[24] To expand its reach, Badilisha enhanced its website to be more accessible to cellphone users. The reception of Badilisha's mobile site, a first for Africa and the world, has been unprecedented:

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[22] Badilisha Poetry X-Change, accessed March 21, 2015, http://badilishapoetry.com/.
[23] Ibid.
[24] Ibid.

Table 2

▪ The site has become the largest "archive of audio recordings by African poets in the world. It is a significant step on this "mobile first" continent where, with limited landline infrastructure, most people access the Internet through their phones rather than on computers."[25]
▪ As of December 2014 there were "nearly 400 African poets from 24 countries in 14 languages who can now be heard reading their work via mobile phones."[26]
▪ The site receives about 3,000 visitors a month (2015).
▪ Many poets have built community here; they find the site a useful place to reflect upon their own work as well as see that of other poets.

Source: Badilisha.

The old meets the new

Given the tentacles of modern technology, Badilisha appears to suggest as such: "Africa's ancient tradition of oral poetry sits more comfortably in the 21st-century technology of the podcasts than in mainstream publishing."[27] Linda Kaoma, Badilisha's project manager presents her point:

> A lot of publishers are not publishing poetry, but it does not have to be confined to books. It's alive. [Since Badilisha presents the poetry with audio files, the] voice adds texture, adds a different layer to the poems. A lot of people are enjoying listening to poetry rather than reading it. We need to change the way we present ourselves to audiences and audiences need to be aware of different ways of receiving poetry.[28]

Indeed, even many Western poets would argue that poetry should not just be read on the page; it needs to be heard.

Logistics

The platform can be searched (or browsed) in the following ways: Author's name, Country, Language, Theme, Emotion, Top 10, and Latest Uploads. (In addition to poems in text and audio, the site provides a photo and biography of each poet.) Submissions can be sent in a variety of ways: 1) by uploading the MP3 file and related material on the Badilisha site itself; 2) by sending an MP3 via *Yousendit*; 3) by email; or 4) by mailing a CD copy of the

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[25] Ibid.
[26] David Smith, "Poetry in Motion: Mobile Site Brings New Audience to African Writers," *Guardian*, December 29, 2014, accessed March 21, 2015, http://www.theguardian.com/world/2014/dec/29/africa-poetry-badilisha-mobile-phone-site.
[27] Ibid.
[28] Ibid.

work. The site appears to be operated by three women — project manager, a project administrator, and a podcast presenter (as of March 2015).

This platform is reviving African poetry via digital technology without hiring an army of staff. Moreover, the catalog can always be transcribed into the text with new voice recognition technology. Nonetheless, it could be argued that a level of 'digital literacy' is needed to effectively benefit from Badilisha as a contributor and also as a user. Generally speaking, however, the issue of digital literacy is a broad one; it also affects other fields where the problem of the so-called "digital divide" is prevalent. It would be useful indeed to have printed copies of African poetry. But given the current evolution of the book publishing industry and African literature in particular, Badilisha seems to be filling a gap much needed not only in Africa but also elsewhere. One can only conclude that this example shows how digital technology can be used to promote creative work. Badilisha's effort provides lessons for organizations and policy makers who seek to promote such creative output in the developing world.

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Artsy in the Digital World

In the developed world, meanwhile, Artsy an online art resource whose "mission is to make all the world's art accessible to anyone with an Internet connection" is worth noting. Founded in 2012, Artsy "features the world's leading galleries, museum collections, foundations, artist estates, art fairs, and benefit auctions, all in one place." Its "growing database of 250,000 images of art, architecture, and design by 40,000 artists spans historical, modern, and contemporary works, and includes the largest online database of contemporary art. Artsy is used by art lovers, museum-goers, patrons, collectors, students, and educators to discover, learn about, and collect art."[29]

Based in New York, Artsy is trying to position itself as a middleman in the global art market of more than 65 billion dollars. "The art industry is an old-school, relationship-driven one, and it won't be easily turned on its head by software from outsiders."[30] But this 'soft gallery' is gaining traction. The so-called "Artsy app has been downloaded by collectors 300,000 times. And while the company does not track inquiries which result into actual purchases, the figure behind the requests themselves is impressive: In 2014 "potential buyers inquired on $5.5 billion worth of art using Artsy—four times as much as the year prior."[31]

Artsy in Education

Money aside, Artsy is also invested in promoting arts education — in our context this strategy seems more germane to universal human development. This is because the art world itself seems to be more exclusive than inclusive, catering for those with deep pockets

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[29] Artsy, "The Art World Online," accessed March 28, 2015, https://www.artsy.net/about.

[30] Erin Griffith, "A Bold, New Direction for the Fine Art Industry: Online Sales," *Fortune*, accessed March 28, 2015, http://fortune.com/2015/01/22/artsy-galleries/.

[31] Ibid.

in the 'art market.' (This appears to be the case, even if not all art pieces are, of course, valued in the millions or even thousands of dollars.) In the world of arts in education, Artsy has created "*Teaching Art with Artsy*, a simple PDF, which illustrates how high school teachers can use Artsy's tools for lesson planning and classroom instruction."[32]

In partnership with the New York City Department of Education, *Teaching Art with Artsy* can be used in conjunction with the Department's "*Blueprint for Teaching and Learning in Visual Arts*' 12th Grade Benchmarks."[33] The new *Blueprint* provides "sections that address students with special needs and English Language Learners. It includes a glossary of art terms, classroom supply lists, a discussion on planning and assessment, an annotated bibliography and webography, as well as suggestions for integrating the museum experience into classroom instruction."[34] While *Teaching Art with Artsy* is meant for New York City public schools, it can be a resource for students and teachers across the United States and abroad.[35] Other Artsy's education initiatives include:

- Explore the World's Art: "access to art from galleries, museums, institutions, and art fairs from around the world."

- The Art Genome Project: a "discovery tool for art, architecture and design, powered by a team of in-house art historians."

- Additional Features: "coverage of current art world events and artists biographies, to amazing zoom and view in room features."[36]

The Negative Side

Technology is a useful servant but a dangerous master.

— Christian Lous Lange

While technology is not entirely to blame, it has caused profound challenges in creative work. To start with books, as we have seen, there are several advantages to e-readers. But e-readers and tablets may not be a trigger of celebration. Scientific literature here provides a blurry picture. In "The Reading Brain in the Digital Age: The Science of Paper versus Screens," Ferris Jabr makes a central observation:

> "[E]vidence from laboratory experiments, polls and consumer reports indicates that modern screens and e-readers fail to adequately recreate certain tactile experiences of reading on paper that many people miss and, more importantly, prevent people from

[32] Artsy, "Teaching Art With Artsy," accessed March 28, 2015, https://www.artsy.net/post/artsyed-teaching-art-with-artsy.

[33] Ibid

[34] Joel I. Klein, "Letter from the Chancellor," New York City Department of Education, accessed March 28, 2015, https://www.artsy.net/feature/artsy-education.

[35] Artsy, "Artsy Education," accessed March 28, 2015, https://www.artsy.net/feature/artsy-education.

[36] Ibid.

navigating long texts in an intuitive and satisfying way. In turn, such navigational difficulties may subtly inhibit reading comprehension. Compared with paper, screens may also drain more of our mental resources while we are reading and make it a little harder to remember what we read when we are done. ... An e-reader always weighs the same, regardless of whether you are reading Proust's magnum opus or one of Hemingway's short stories. Some researchers have found that these discrepancies create enough "haptic dissonance" to dissuade some people from using e-readers. People expect books to look, feel and even smell a certain way; when they do not, reading sometimes becomes less enjoyable or even unpleasant. "[37]

Further, with respect to people's perception and bias, while e-books are increasingly becoming popular, the reality is this: Many publishers do not "take e-only titles seriously. Some folks also assume that if a book is only available digitally, it may not have been good enough to warrant a print run."[38] Such thinking has implications on the marketability of writers who are striving to gain traction in the world of writing. The social and income gaps also, as noted below, add to the negative parcel digital tech brings to creative work.

The Acceleration of the Gender Digital Divide

> *Over just two decades, the Internet has worked a thorough revolution. Never before has information been so widely available, business more efficient and transparent, or people better connected to one another. The Internet can be a great equalizer. And yet, access to it is not equally distributed. The Internet gender gap is particularly salient in developing countries, with very real consequences for women and girls, their communities, and their nations.*[39]
>
> — Shelly Esque

Both men and women,* of course, face the same challenges that come with the Internet. But since women are more at a disadvantage (as widely cited) their creative output is likely to face more obstacles. So, if more work is Internet-based, women could lag behind — we delve into the approaches of how to tackle this issue in the policy recommendations; for now, the following discussion is worth echoing.

Common Challenges Facing Creative Work in the Digital Age

In the greater world of creative work, the emergence of digital technology has triggered sharp divergences. In <u>Culture Crash: The Killing of the Creative Class,</u> Scott Timberg, concludes that in the United States the creative class — those "who make a living by inventing and curating ideas and culture"[40] — is in crisis. While not entirely the problem, the "Internet has, with a few exceptions, not made things easier. And often a great deal

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[37] Ferris Jabr, "The Reading Brain in the Digital Age: The Science of Paper Versus Screens," *Scientific American*, April 11, 2013, 1, accessed March 31, 2015, http://www.scientificamerican.com/article/reading-paper-screens/.

[38] Chris Robley, "Ebook Vs. Print Book …"

[39] Shelly Esque, Foreword in "Women and the Web."

(* In this case men includes boys and women includes girls.)

[40] Andrew Keen, "'Culture Crash' Examines the Crisis in the Creative Industry," *Los Angeles Times*, January 22, 2015, accessed March 27, 2015, http://www.latimes.com/books/jacketcopy/la-ca-jc-scott-timberg-20150125-story.html.

worse."[41] Although Timberg focuses on America, what he shows reflects the global tension between creative work and digital technology.

In the books business, the decline of physical bookstores was accelerated when it was proved possible to sell books online via platforms like Amazon — this was even before digital readers like nooks and kindles started to emerge. Many newspapers have struggled to keep their print presses in place since people began to read more content online. Digital content is circulated quickly and widely. All the same, this has led to the decline of

Figure 3

Global Music Industry Turnover (1973-2009)
Source: RIAA year-end shipment statistics; Bain analysis

Source: Business Insider (Silicon Alley Chart Insider Chart of the Day)[42]

subscriptions, as people expect to get news online for free. Revenues from digital advertisement have not eased the laying off of many creative workers in the field of journalism.
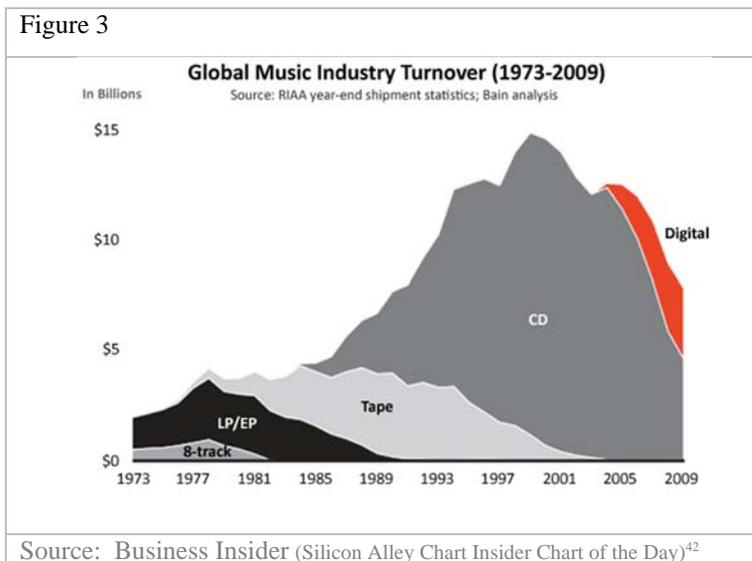
Further, when digital photography emerged, film negatives were gutted, bringing pioneering companies like Kodak (and even their locales) to their knees.[43] In the music industry, the story of how Apple Inc.'s iTunes Music Store revolutionized the music industry is well known: while labels responded to illegal music downloads by suing services that enabled this practice, iTunes made it easier for people to access music legally online while also paying for it.[44] Nevertheless, iTunes' model, some claim, is responsible for the troubles of the music industry altogether. Moreover, people can easily copy downloads on CDs and get 'perfect' digitized copies that are quicker to make than dubbing cassette tapes. The 'creative destruction' in the music industry is perhaps the clearest example of the effects of digital tech on creative work.

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[41] Scott Timberg, *Culture Crash: The Killing of the Creative Class* (New Haven: Yale University Press, 2015), 107.

[42] Jay Yarow, "Chart of the Day: The Death of the Music Industry," Business Insider, February 16, 2011, accessed March 23, 2015, http://www.businessinsider.com/chart-of-the-day-music-industry-sales-2011-2.

[43] Michael Hession, "The Death of Film Is Felt Hardest in the City Built On Kodak's Reign," Reframe, May 28, 2014, accessed March 23, 2015, http://reframe.gizmodo.com/the-death-of-film-is-felt-hardest-in-the-city-built-on-1582659698.

[44] Steve Knopper, "Steve Jobs' Music Vision," *Rolling Stone*, October 7, 2011, 1, accessed March 23, 2015, http://www.rollingstone.com/music/news/steve-jobs-music-vision-20111007.

iTunes and the Troubles of the Music Industry

In his article "A decade of iTunes singles killed the music industry," Adrian Covert has this to say: since iTunes debuted in 2003, "music sales have plummeted in the United States -- from $11.8 billion in 2003 to $7.1 billion" in 2012.[45] (This observation is critical since America has the largest share of the global music market so far.)

If people (at least Americans) "have been buying more music than ever," how is it that the industry has not recovered? "It's because the iTunes Music Store popularized the cheap digital single." (See figures 3 and 4.) Indeed, many music industry experts are keeping their hopes low although the tech age has boosted the music industry: "even though the subscription streaming services of Spotify and other music apps could help bolster the business," as Covet cites, "the thought of bringing the industry back to its former peak seems lofty."[47]

Figure 4
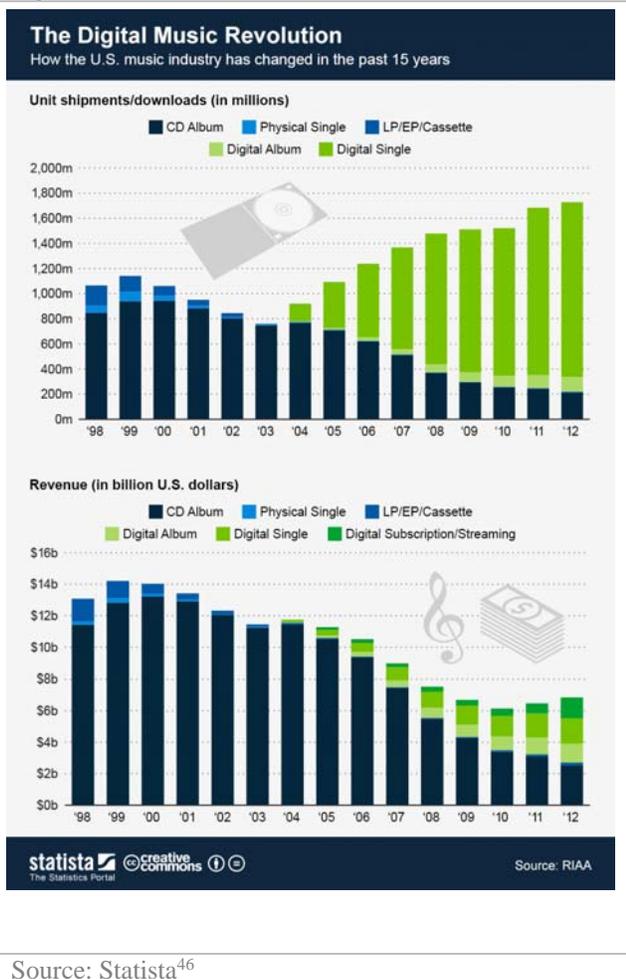
Source: Statista[46]

The Intellectual Property Challenge

As noted earlier, the digital revolution has contributed immensely to the sharing of knowledge and information, the efficiency of commerce, and so on, ad infinitum. In legal literature, however, there is well-documented evidence that this revolution has made intellectual infringement much harder to fight. And though the "concept of property is well understood in Western society,"[48] this is not the case in other cultures. This concept is often seen differently in places where communal ownership of land and other assets prevails. Even more, unlike physical property, "Ideas, by definition, are less tangible. They exist in

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[45] Covert Adrian, "A Decade of iTunes Singles Killed the Music Industry," CNNMoney, April 25, 2013, accessed March 23, 2015, http://money.cnn.com/2013/04/25/technology/itunes-music-decline/.

[46] Felix Richter, "The Digital Music Revolution," Statista, April 30, 2013, accessed March 23, 2015, http://www.statista.com/chart/1075/the-digital-music-revolution/.

[47] Ibid.

[48] Robert P. Merges, Peter S. Menell and Mark A. Lemley, *Intellectual Property in the New Technological Age*, 6th ed. (New York: Wolters Kluwer Law & Business, 2012), 1.

the mind and work of humans." Unlike tangible property, moreover, the protection of intellectual work evolved much later in human society.[49]

This delicate dance is further complicated by complex philosophical underpinnings (surrounding the protection of ideas). Ideas after all are generally an ultimate 'public good;' (they are non-rival and non-excludable). In Intellectual Property in the New Technological Age, Robert P. Merges et al. table these questions: "Should the first person to discover a way of performing an important task—for example, a procedure for closing a wound—be entitled to prevent others from using this procedure? Should the first person to pen a phrase or hum a melody be entitled to prevent others from copying such words or singing the song? Should such "intellectual property rights" be more limited than traditional property rights (i.e. the fee simple[50])?"[51]

In the modern economy, however, copyright and other related intellectual measures (surrounding creative work) affect the income of artists and even the larger cultural economy. So, measures have been taken to protect artistic work and other intellectual pursuits. But again, the digital revolution has made this battle costly and difficult to track.

Since the age of the player piano, and Long Play (LP) and the CD, the music industry, as one example, has gone through 'major and minor revolutions.' But no change perhaps revolutionized the industry as the Internet. This revolution exploded when Napster, an online music sharing business, set up as a peer-to-peer network enabled copyright infringement in a way never seen before:[52]

> The amount of content available over the Internet took a quantum leap in late 1999 with the introduction of Napster's peer-to-peer network technology. This technology vastly expanded the effective storage and exchange capacity of the Internet by enabling computer users running Napster's software to search the hard drives of thousands of other users for files encoded in the MP3 compression format commonly used for music files. Napster's server contained the labels of MP3 files, typically some combination of band song titles, which could be searched by Napster users. Searches produced a list of Internet addresses of computers containing the search term. The Napster software would then form a connection through the Internet to the particular computer containing the file, establish a link, and quickly transfer the file to the searcher's hard drive. In essence, the Napster platform converted every computer running software and connected Napster into a "servent"—enabling it to function as both a server and a client. It became the fastest adopted software application in the history of computer technology, attaining 70 million users within its relatively brief period of operation.[53]

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[49] Ibid.,1

[50] A *fee simple* is an "interest in land. Land owned in *fee simple* is owned completely, without any limitations or conditions. This type of unlimited estate is called underline. A fee simple is generally created when a deed gives the land with no conditions, usually using the words like "to John Doe" or "to John Doe and his heirs." "— "Legal Information Institute," Cornell University Law School, accessed March 18, 2015, https://www.law.cornell.edu/wex/fee_simple.

[51] Robert P. Merges et al., *Intellectual Property in the New Technological Age*, 1.

[52] Patrick Kabanda, "'Where Culture Leads, Trade Follows': A Framework for Developing Uganda's Music as International Trade in Services" (master's thesis, The Fletcher School of Law and Diplomacy, Tufts University, 2013), 60.

[53] Robert P. Merges et al., *Intellectual Property in the New Technological Age*, 713.

The issue of creative piracy is so pervasive that some artists now fear putting their work online. And in places like China, the battle to curb piracy — from products like iPods to ideas like architecture — is almost futile. On the latter, "Zaha Hadid, widely regarded as one of the leading lights in the constellation of avant-garde architecture, has likewise become a superstar in China." In this place "her latest designs radiate out through architecture schools and studios across the country." But her appeal, "especially since the "unveiling of her glowing, crystalline Guangzhou Opera House" has unleashed dilemmas for her creative rights: "a contingent of pirate architects and construction teams in southern China is now building a carbon copy of one of Hadid's Beijing projects." Even more arresting, "citizens of the Austrian hillside hamlet of Hallstatt were shocked when they inadvertently discovered Chinese architects had surreptitiously and extensively photographed their homes and were building a doppelgänger version of the UNESCO World Heritage site in southern China."[54]

Nonetheless, such commotion cannot be blamed on technology alone. Technological innovations have made remarkable contributions to human civilization. In the arts, technology has certainly fueled creative work to advance human development. What begs clarity is to match training, legal and other structural, institutional, and cultural arrangements to evolve with technological changes. As Amartya Sen said, if an engineer designs a bridge, and the bridge breaks down, blaming the science does not help; it is the bad engineer who should be blamed.[55] Likewise, while digital platforms efficiently enable such abuses as piracy and unfair payment options, technology is not solely at fault.

Legal systems and cultural behaviors that induce piracy may also be part of the problem. For example, "Although China has, on paper at least, a series of laws to protect intellectual property, enforcement of these rules is wildly sporadic."[56] In today's 'winner-take-all' or trickle-down economics, the efficient exploitation of capitalism (and markets) may also bear part of the blame.

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[54] Kevin Holden, "Zaha Hadid Vs. the Pirates: Copycat Architects in China Take Aim at the Stars," *Spiegel*, December 28, 2012, 1, accessed March 31, 2015, http://www.spiegel.de/international/zeitgeist/pirated-copy-of-design-by-star-architect-hadid-being-built-in-china-a-874390.html.

[55] Amartya Sen, "What's the Use of Economics?" (lecture, Penthouse, Harvard Student Organization Center at Hilles, Harvard University, Cambridge, MA, December 1, 2012).

[56] Kevin Holden, "Zaha Hadid Vs. the Pirates."

Policy Recommendations

- *Expanding Women's Access to the Internet*

Figure 5

Forecasted Internet access for women and men in developing countries
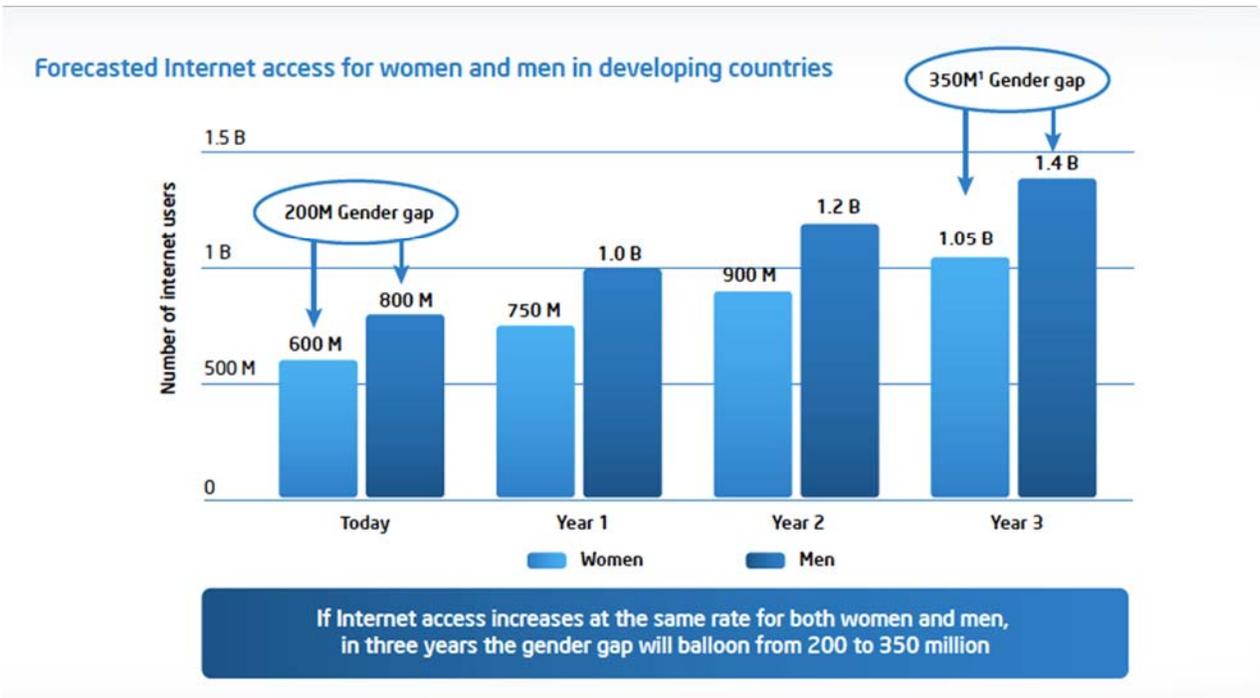
[1.] "Assumes 18.4 percent annual Internet penetration growth, based on 3-year historical growth from 2008-2011, 1.25 percent annual population growth based on five-year historical growth in 144 developing countries."
Source: ITU, UN Population database.[57]

Notwithstanding the progress made over the past five decades, empirical research shows that the gender gap still persists across the world — women not only have less political and economic power;[58] they also have less freedom to engage in matters ranging from using the Internet to what hours to return home. This situation of what Amartya Sen calls "unfreedom" hampers their ability to live the kind of lives they have reason to value and to contribute to their societies fully.[59] In many countries, indeed, continuing gender discrimination "not only hampers economic development, but has serious consequences for the lives of women and girls."[60]

As discussed earlier, men and women face the same Internet connectivity problems in the developing world: "lack of broadband infrastructure, lack of wireless penetration, and correspondingly high prices." But women "tend to be less aware of the Internet than men, have less facility online, and are often restricted by cultural norms from using the Internet

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[57] Intel Corporation and Dalberg Global Development Advisors, "Women and the Web."
[58] Ibid.
[59] Amartya Sen, *Development as Freedom* (New York: Anchor Books, 2000), 15.
[60] Intel Corporation and Dalberg Global Development Advisors, "Women and the Web."

at all."[61] The upshot has been the widening Internet gap between men and women as Figure 5 shows. With respect to what can be done the following recommendations (adapted from <u>Women and the Web</u>) provide a starting point. They could be expanded to promote women in creative work as shown in Table 2.

Strategic Interventions to Close the Digital Gender Gap in Creative Work

Table 2

Possible Interventions to Close the 'Digital Gender Gap'		
Barrier*	Recommendation*	**Action for Creative Work**
Lack of Awareness	Provide training not only in official languages, but also in local languages about the benefits of the Internet.	Target women in creative work via cooperative or rural community arts councils and offer workshops on the benefits of using the Internet to market their work, join a community artist groups, form mentorship groups, and so forth.
	In addition to donors and government agencies, form training partnerships with schools, Parent Teachers Associations, Girls Scouts, elders, religious leaders, and so forth.	Showcase role models: local or even international women in the field of creative work who use the Internet and digital technologies to overcome barriers and advance their creative output.
	Use local mediums such as radio to reach women in rural areas (to inform them about the benefits and even the limitations of Internet connectivity).	
Lack of Affordability & Facility	Partner with local service providers to provide women-specific content at a lower cost; the same providers could offer training and workshops on how women can increase their engagement with the Internet and digital technologies – imagine 'Apple store' services for women in the developing world.	Engage with such partners as the Ministries of Culture, local service providers, and others to assist women in the creative field with grants, subsidies, (tax incentives) and with such aspects as training on how they can advance their creative work in today's technological revolution.
		Use mobile trucks with Internet connectivity and training services to reach 'creative women' in rural areas.
Cultural Norms	Emphasize the advantages of the Internet in today's global economy while also teaching about the problems of sexual exploitation, pornography, and so forth that can be accelerated by the Internet — these tend to be among the concerns that drive family members, spouses, and even friends to deny women equal Internet rights.	Commission women in creative work to showcase artwork that seeks to change people's perceptions about women in creative fields (on the Internet). Such works could be taken to schools, places of worship, and other venues (where they could reach more people and help change people's mindsets about women's access to the Internet). Mediums like Music, Plays, Sculpture, Poetry, Short Stories and Photos, could be engaged here.
	In addition to women (and women groups), work with men, family members, elders, and others to underscore the benefits of women's access to the Internet and to tackle stereotypes and suspicions around this issue.	
* Source: Adapted from "Women and the Web"		

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[61] Ibid.

▪ *Expanding Intellectual Property*

As noted earlier, the Internet facilitates the abuse of intellectual property efficiently as it also spreads knowledge. Therefore, the need to do more to promote intellectual rights is crucial. But it must be noted that this challenge is a broad one, and it involves many other aspects, not to mention cost:

> The minimum costs of implementing [the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)] in poor countries are about $1.5-2 million to build a rudimentary structure to enforce TRIPs-related rules, plus recurring operating costs. In contrast, the U.S. [Patent and Trademark Office] has a $1billion annual budget and 3,000 professionals. In addition, 600 judges preside over [Intellectual Property Rights (IPR)] litigations in the U.S.[62]

As many studies suggest, the Intellectual Property debate is complex, wide-ranging, and inconclusive.[63] Nonetheless, with respect to creative work the following strategies, while hardly new, could be considered:

▪ Hold digital training workshops for artists and others in the domain of intellectual rights to understand the benefits and limitations of posting their work online.

▪ Enforce intellectual measures where possible, especially holding accountable public and private parties that abuse intellectual rights.

In Asia, the leading region with Internet users to date (see figure 6) — China leads here with over 600 million users[64] — the piracy problem is no secret. And China's effort to curb piracy seems intractable. Though China has a long way to go, it took a step worth noting:

▪ China launched a "nationwide "Program for Special Campaign on Combating IPR Infringement and Manufacture and Sales of Counterfeiting and Shoddy Commodities" ("Special Campaign"). The program ran for 9 months (from October 2010 to June 2011), and it was "aimed to crack down on IP infringement and counterfeiting, raise awareness of IP rights and create a positive environment for intellectual property protection, and urge businesses to increase awareness of infringement and avoid infringing practices."[65]

Such an approach is perhaps difficult to sustain. But it provides a mixture of hard and soft approaches developing countries could adopt. Moreover, by the time the "Special Campaign" ended, it had "solved 15,868 cases, bringing in 13.12 billion yuan ($2.08 billion

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[62] Minxin Pei, *Intellectual Property Rights: A Survey of the Major Issues* (Hong Kong: Asia Business Council, September 2005), accessed March 31, 2015, http://www.asiabusinesscouncil.org/docs/IntellectualPropertyRights.pdf.

[63] Ibid.

[64] As of June 2014. See: "Internet Usage in Asia," Internet World Stats, accessed March 30, 2015, http://www.internetworldstats.com/stats3.htm#asia.

[65]Vincent Brodbeck, "Streaming Media and Curbing Digital Piracy in China," *Boston University Journal of Science and Technology Law*, no. 19.1 (Winter 2013), accessed March 31, 2015, http://www.bu.edu/jostl/files/2015/02/Brodbeck_Note.pdf.

USD)." And it remains to be seen if the "two popular sites for obtaining infringing music downloads, Quishi.com and 5474.com"[66] will be active again.

Figure 6

Internet Users in the World by Geographical Regions – 2014 Q2	World Internet Penetration Rates by Geographical Regions - 2014 Q2
Source: Internet World Stats[67] "3,035, 749, 340 Internet Users estimated for June 30, 2014 Copyright © 2014, Miniwatts Working Group"	"Penetration Rates are based on World Population of 7, 182, 406, 562 and 3,035, 749, 340 estimated Internet on June 30, 2014 Copyright © 2014, Miniwatts Working Group"

Concluding Remark: *Digital Literacy**

One of the greatest challenges of the Internet is the division it has caused in gender, income, and other aspects. As figure 6 suggests, while Asia leads the global list of Internet users, developed countries enjoy higher global Internet penetration than their developing counterparts. Internet penetration is indeed a development issue. But it must be noted that via the lens of Amartya Sen's capability approach, it is not enough to simply focus on Internet penetration or access. People need to have the ability and capacity to use the Internet effectively. [68]

In what we may call 'digital capabilities,' development policy must focus on giving people tools of digital literacy (and maybe even 'digital values'). While this issue touches on broader education and development policy, here we focus on "creative natives" — folks involved in the field of creative work. The strategies outlined below could be implemented

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[66] Ibid.

[67] "Usage and Population Stats," Internet World Stats, accessed March 30, 2015, http://www.internetworldstats.com/stats.htm.

* NB: "The literature is inconsistent in its use of the term "digital literacy"; some restrict the concept to the technical aspects of operating in digital environments, while others apply it in the context of cognitive and socio-emotional aspects of work in a computer environment." — Yoram Eshet-Alkala, "Digital Literacy: A Conceptual Framework for Survival Skills in the Digital Era," *Educational Multimedia and Hypermedia* 13, no. 1 (2004): 93-106, accessed March 31, 2015, http://www.openu.ac.il/Personal_sites/download/Digital-literacy2004-JEMH.pdf.

[68] See also Patrick Kabanda, "Music for Development in the Digital age."

by local artists organizations, government agencies — such as Ministries of Education, Information Technology, and Culture — and even private parties and development organizations:

- Provide technological training in local languages in addition official languages. This may entail starting with explaining what the Internet is to what a gigabit is, and providing content tailored for different age groups — since young people tend to have a higher ability to adopt digital skills faster than older folks.

- Explain to artists the advantages of digital marketing compared to disadvantages such as piracy.

- Digital technologies provide unlimited possibilities to produce derivative works. But artists should be trained to know the boundaries to avoid the trappings of infringing on other people's work.

- Since online experiences can be abusive, fake, and even manipulative, artists should be trained to understand and to deal with emotional and physiological implications of negative digital experiences — this is the so-called digital "social-emotional literacy."[69]

- Discuss the digital toll on personal health. For example, "prolonged reading on glossy self-illuminated screens can cause eyestrain, headaches and blurred vision. Such symptoms are so common among people who read on screens—affecting around 70 percent of people who work long hours in front of computers—that [at least in the United States] the American Optometric Association officially recognizes computer vision syndrome."[70]

Digital technology has changed creative work in profound ways. While it has killed some jobs, it has also created others; and while it has shifted the 'work-life' balance, it has also made remarkable contributions, contributions that facilitate creativity. There is more to be done, particularly in bridging the gender and other digital divides. And more needs to be done to facilitate the harvest of intellectual rights for artists, especially in the developing world. Such actions cannot be achieved overnight. But the creative world needs sound policies that will encourage more fair and inclusive creative work in the digital age. This is likely to help expand the role of creative output in expanding human development in our increasingly digitized world.

<p style="text-align:center">∗∗∗</p>

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[69] Yoram Eshet-Alkala, "Digital Literacy."
[70] Ferris Jabr, "The Reading Brain in the Digital Age."

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