WIPO
MAGAZINE

Digital pioneer, Jaron Lanier, on the dangers of "free" online culture

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World Intellectual Property Day 2016 - Special Issue

Digital Creativity: Culture Reimagined

World Intellectual
Property Day 2016

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**Digital Creativity:
Culture Reimagined**

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The creative economy is seeing radical change to access and business models as digital technologies transform the way culture is created, financed, distributed and consumed. For **World Intellectual Property Day** this year, we look at *Digital Creativity: Culture Reimagined*, and explore what digital creativity means for consumers as well as for the talented individuals who produce the wealth of digital content we have at our fingertips.

This special issue of the WIPO Magazine offers a range of perspectives on the opportunities, the challenges, and the role of intellectual property in the rapidly evolving digital marketplace. It opens with an interview with futurist Jaron Lanier, a keynote speaker at the major **WIPO Conference on the Global Digital Content Market** (April 20 to 22).

For more on World IP Day, join us on Twitter (#worldipday) and Facebook (www.facebook.com/worldipday).

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Digital pioneer, Jaron Lanier, on the dangers of "free" online culture

By **Catherine Jewell**, Communications Division, WIPO

Photo: © Doug Menuez, Stockland Martel

Jaron Lanier, a keynote speaker at the WIPO Conference on the Global Digital Content Market, from April 20 to 22, 2016, is a Silicon Valley insider, a virtual reality pioneer and one of the most celebrated technology writers in the world. But he is increasingly concerned about today's online universe. He explains why and what it will take to turn things around.

Jaron Lanier is a computer scientist, visual artist, composer of classical music and a celebrated technology writer. He would like "to see more systems where ordinary people can get paid when they contribute value to digital networks."

Has the digital revolution been a good thing for culture?

There are good and bad things. It's like asking if cameras are good for culture. Culture has become digitally obsessed. It's just what culture is about today to an incredible degree.

But have digital tools had a positive impact on creativity?

I don't know if anyone really has the perspective to say for sure. In my book *You Are Not a Gadget*, I did an experiment. Whenever I was around

people and there was music playing, I asked them if they could tell me in which decade the music they were listening to was made. I was quite taken aback by how people can't tell this decade from the previous one, whereas all the other decades seemed very distinct to them, including very young people. It is as if some kind of cultural stasis has happened, but it's hard to say whether that is down to the Internet.

Sadly, the online universe has become very segmented and mean-spirited. It also has an increasingly isolationist quality about it. The algorithms used by social media platforms end up feeding us things they think we are already interested in, so we find ourselves in a mirror chamber with a narrower and narrower experience of the world.

I see a lot of really interesting and innovative stuff happening but I am not sure if tech-enabled art has moved me as much as some older art forms. But it's all very subjective.

What are your main concerns about the digital market today?

We have seen an implosion of careers and career opportunities for those who have devoted their lives to cultural expression, but we create a cultural mythology that this hasn't happened. Like gamblers at a casino, many young people believe they may be the one to make it on YouTube, Kickstarter or some other platform. But these opportunities are rare compared to the old-fashioned middle-class jobs that existed in great numbers around things like writing, photography, recorded music and many other creative pursuits.

Economically, the digital revolution has not been such a good thing. Take the case of professional translators. Their career opportunities have been decreasing much like those of recorded musicians, journalists, authors and photographers. The decimation started with the widespread Internet and is continuing apace. But interestingly, for professional translators the decrease is related to the rise of machine translation.

Automated translations are mash-ups of real-life translations. We scrape the translations made by real people millions of times a day to keep example databases up to date with current events and slang. Elements of these phrases are then regurgitated into usable machine translations. There is nothing wrong with that system. It's useful, so why not? But the problem is we are not paying the people whose data we are taking to make these translations possible. Some might call this fraud.

All these systems that throw people out of work create an illusion that a machine is doing the work, but in reality they are actually taking data from people – we call it big data – to make the work possible. If we found a way to start paying people for their actual valuable contributions to these big computer resources, we could avoid the employment crisis that otherwise we will create.

You say free culture is dangerous. Why?

I actually helped make the argument that music should be free and would ultimately benefit culture and musicians, so it's not that I am unwilling to accept this new thing. I helped make it. And it does have some plus points. For one, people like feeling generous and it feels good to share and to be open. That is precious and we should find designs in society that celebrate that. But the way we are doing it means everybody becomes a servant of a tiny handful of large tech companies, and that's really pretty stupid. If an online service is free, you can bet it is feeding a scheme that makes money by subconsciously manipulating people. It is strange that so many are blind to this.

One thing that bugs me is the way context is lost. You start discovering new music or new culture in very particular ways. Algorithms become your guide. If an algorithm calculates that you may like a piece of music, it will recommend it to you. That makes the algorithm the master of context for humanity. It tends to remove culture from its context, and context is everything. The structure of the Net itself has become the context instead of real people or the real world. That's a *really* big deal.

One of the original ideas of mash-up culture is that you find a piece of music, someone else mashes it up, then it turns into a video, somebody else makes a parody of the video and it all turns into this giant flow of creativity. It is genuinely a cool thing that everybody can contribute. I don't want to lose that but today, those who make the mash-up receive no benefit, it just serves Facebook or Google or some other giant corporation and becomes part of the incredible concentration of wealth we are seeing – and it dehumanizes the people involved along the way.

When we were thinking up the Internet, I firmly believed that with a global information system in place, it would be impossible for people to deny things like climate change, but we are seeing the exact opposite. Our information systems allow people to live in little bubbles and to disconnect from reality in a way we didn't foresee. This is very disappointing and is having a negative impact on art, politics, science, the economy, everything really.

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What about the sharing economy?

When Google was just starting, there was a fascination among Silicon Valley intellectuals with the culture of the world's slums and their informal economies. This inspired the idea of the sharing economy where the people at the center of the network – the Facebooks, Googles and Ubers – become ultra-wealthy and ultra-powerful and everyone else gets a sense that they are benefiting by bartering with each other. But the idea that we can get by in a sharing economy where ordinary people are expected to share while a few companies at the center get all the money is just not sustainable.

Participating in a well-functioning formal economy means you can plan for a whole life, you don't have to sing for your supper. If you get sick you have savings. You have some predictability in your life. That's why we want real assets like a house or intellectual property (IP). A true sharing economy that is inclusive is interesting to contemplate, but that is absolutely not what we are talking about here.

So what needs to be done to ensure a sustainable digital economy?

The obvious starting point is to pay people for information that is valuable and that comes from them. I don't claim to have all the answers, but the basics are simple and I am sure it can be done.

"We have designed our information systems to flatter people," says Jaron Lanier. "People take selfies and the immediate illusion is that it's about them. Yet people are losing ground everywhere and we are seeing an incredible concentration of wealth among a tiny elite."

Some sort of imposed socialist system where everybody is the same would be ruinous. We should expect some degree of variation. But right now a handful of people – those inheriting traditional monopolies like oil and the increasingly powerful big computer networks – have a giant chunk of the world's wealth and it's having a destabilizing impact. While an oil monopoly might control the oil, it won't take over everything in your life, but information does, especially with greater automation.

If we expect computers to pilot cars and operate factories, the employment that is left should be the creative stuff, the expression, the IP. But if we undermine that, we are creating an employment crisis of mass proportions.

That's where IP comes in. The general principle that we pay people for their information and contributions is critical if we want people to live with dignity as machines get better.

But IP needs to be made much more sophisticated and granular. It needs to be something that benefits everybody – as commonplace as having pennies in your pocket.

It's the only future that gives people dignity as the machines get better.

How would you like to see the digital landscape evolve?

I would like to see more systems where ordinary people can get paid when they contribute value to digital networks; systems that improve their lives and expand the overall economy.

Economic stability occurs when you have a bell curve, with a few super-rich people and a few poor people but most people somewhere in the middle. At present, we have a winner-takes-all situation where a few do really well and everybody else falls into a sea of wannabees who never quite make it. That's is not sustainable.

You are supporting the Conference on the Global Digital Content Market that WIPO is hosting. Why is that?

IP is a crucial thread in designing a humane future with dignity. Not everybody can be a Zuckerberg or run a tech company, but everybody could – or at least a critically large number of people could – benefit from IP.

IP offers a path to the future that will bring dignity and livelihood to large numbers of people. This is our best shot at it.

"IP is a crucial thread in designing a humane future with dignity."

Who are your heroes and why?

There are many, but they include J.M. Keynes, the first person to think about how to really manage an information system, and E.M. Forster for *The Machine Stops*, written in 1907, which foresees our error with a very critical eye. I also admire Alan Turing, who stayed a kind person even as he was tortured to death and Mary Shelley who was a keen observer of people and how they can confuse themselves with technology. And, of course, my friend Ted Nelson. He invented the digital media link and was perhaps the most formative figure in the development of online culture. He proposed that instead of copying digital media, we should keep one copy of each cultural expression on a digital network and pay the author of that expression an affordable amount whenever it is accessed. In this way, anyone could earn a living from their creative work.

What is your next book about?

Dawn of the New Everything: First Encounters with Reality and Virtual Reality is a memoir and an introduction to virtual reality. It will be out soon.

Mycelia: shaping a new landscape for music

By **Catherine Jewell**,
Communications Division, WIPO

Imogen Heap is a British recording artist. Her passion for music and technology won her a Grammy for engineering in 2010 and led her to develop the ingenious Mi.Mu gloves, which allow her to sculpt her futuristic harmonies from thin air. Her latest endeavor, the Mycelia project, sees Imogen exploring the potential of block chain technology (which underpins the crypto-currency Bitcoin) to help shape the future direction of the music industry and secure a fair deal for artists.

She is also making the music for the upcoming theatre production of *Harry Potter and the Cursed Child* to open in London in June 2016, but took time out to talk to WIPO Magazine.

How did your interest in technology and music come about?

Well you can't go far in music without coming across technology, but perhaps my first real interest was in the player piano at home. Then at the age of 12 you'd find me playing about on an Atari with music software in a neglected cupboard at my boarding school. From the age of 15, I learned about recording real audio in the studio at the BRIT School for the Performing Arts and Technology in London.

How did you come to develop the Mi.Mu gloves?

Before I developed the gloves, you'd see me on stage running from one piece of equipment to another to create and record my layered sounds. I always felt limited when sampling or playing software instruments as they never came close to the expressivity of real instruments. When I came across Elly Jessop's VAMP (vocal augmentation and manipulation prosthesis) gloves at the MIT Media Lab in the USA, I realized those days were over. I wanted to work with Elly, but she was locked into commitments at MIT, so when I

returned to the UK, I asked Tom Mitchell, a lecturer at the University of the West of England, if he would help me develop our own system. That was six years ago and now there are eight of us working on Mi.Mu.

The gloves plumb into my music software and give me much greater freedom on stage to remotely access my computer software. Once they are programmed, playing music with them is intuitive and expressive. I can create different sounds and layer them up wirelessly using different hand postures and movements. For example, with a simple pinch action, I can capture and record a sound and loop it by releasing my grip.

We have been blogging about the gloves throughout their development and hope to make our "Glover" software – it connects our gloves and other gestural interfaces (e.g. Kinect, Leap Motion) to anything that listens to MIDI and OSC – freely available soon. The gloves are currently handmade to order, but we hope to have a solution for manufacture by the end of the year.

Do you agree that we are in a golden age of music?

In some respects yes, because almost any piece of music is at our fingertips at any time.

On the creation side of things, the convergence of different media – technology, music, art and filmmaking – has created a massive melting pot and a huge source of inspiration for musicians to draw on. But artists have very little control over how their music is presented and don't receive much, if any, feedback about a song's journey once it's released. If we can find a way for artists to get feedback about how their music is being used, where and by whom, along with fair remuneration, then we will have truly entered a golden age.

Imogen Heap's ingenious Mi.Mu gloves (above) allow her to sculpt her futuristic harmonies from thin air. Imogen's latest initiative, the Mycelia project, is exploring the potential of block chain technology to help shape the future of the music industry and secure a fair deal for artists.

We all enjoy music, whenever and wherever we want to listen to it. We can listen freely on YouTube or for a small fee via streaming services. People are paying for music, but when an artist is paid the equivalent of one download for a thousand streams, it needs a rethink. Unless you are in the top one percent, it's not possible to earn a living any more from people simply listening to your music.

It is up to the music community, not the user, to find solutions and to work together to build a sustainable ecosystem for musicians to work in, so that creators are fairly compensated for the use of their work. We need to rethink the architecture of how and where data is stored and the rules governing how it is used and shared. Essentially, we need to make it as simple as possible for people to interact with our music and its metadata on every level, and help our songs work for us.

What is the solution?

It's time to put those involved in the creation of work in the driver's seat; a place we've never occupied. We are on the front line and we know what does and does not work for us in this industry. We are the first to invest in music but the last to get paid, sitting at the end of the value chain.

With today's technology, there is no reason why the movement of music, money and information between artists and users of their work cannot be frictionless. When I learned about block chain technology, the foundations of a sustainable music ecosystem came into view. That's what prompted me to start Mycelia, which wants to engage with all parties to move our industry into a positive future for creators. The response has been amazing.

How does it work?

I see Mycelia as a trusted body that brings together all the players – tech companies, labels, collective management organizations, streaming platforms and, most importantly, those at the heart of the industry, its creators – to shape the technical, ethical and commercial standards needed to create a home for artists to flourish in a sustainable music landscape. Imagine a "kitemark" – a quality certification mark – underpinned by a set of standards that all those

involved in making and distributing music agreed on. Many new services would quickly pop up because these standards would clarify the terms under which music could be used. The standards would give tech companies and platforms reliable information about how to develop the systems that we need to do business effectively and the peace of mind that we are getting a fair deal.

Building a database around these standards is a key part of the project. It would be a repository for all the DNA relating to recorded works – what I call a "spore" – that offers artists, online services and fans a trusted, verified online source of information about any given song and its terms of use.

One of the standards would require that all services feed back data to spores. Information about where, when and how our music is interacted with, and by whom, is like gold dust to artists. Put to good use, it allows us to know our audience better and creates opportunities to more effectively promote and monetize our work.

Another standard would involve using smart contracts that outline the legal arrangements surrounding the creation and use of a work in multiple contexts – weddings, publicity campaigns, and so on. With these in place, artists would be notified and the relevant royalties paid directly to all those involved in its creation each time the work was used.

So you want to create a new music platform?

No, Mycelia is not a platform, more a catalyst to spur the development of a new, decentralized ecosystem using new technologies to make the music industry sustainable, fairer, more transparent and more fun for musicians and fans alike.

A new market for music and its metadata could develop in the same way the iPhone triggered the growth of the apps market. The possibilities are endless. Imagine walking through a city like London, using location data scraped from songs on the Mycelia database to find the spots where your favorite songs were written or that famous riff was produced. Such exciting apps could spring from the rich metadata stored in the Mycelia database.

Realizing the vision of Mycelia will open the playing field up to a broad range of different people and help create new opportunities for artists to earn income and for companies to license and clear rights to use a broader diversity of music.

I would like to see one single official, verified home for each creator's data that other online services could draw on. I don't want to have to do individual deals with, and supply music to, multiple services – I want to put my music up in one trusted place and for that to act as a beacon alerting anyone "looking" for new or updated material.

How does block chain technology fit into all that?

The great thing about block chain technology is that it makes data records tamper-proof even across a decentralized network, meaning you can always rely on the integrity of the system. The combination of distributed payments, smart contracts and decentralized networks is a deeply exciting beginning. Block chain has huge potential to streamline existing processes and create alternative options. We now have to find a way to plumb it into a future music industry.

For all these reasons, last year I decided to experiment with the release of my new song, *Tiny Human*. I uploaded it to my imogenheap.com website, including a blog, the song, lyrics, inspiration, stems, the video file, the artwork, details of all the musicians involved, and terms and conditions of use, for all to access. I waited to see what would happen. One of the services that uploaded it was Ujo Music, and through them, *Tiny Human* became the first song ever to distribute payments via a smart contract using block chain technology – in this case, Ethereum.

And who else is working with you on this project?

Mycelia began as one artist's vision of how the music industry could evolve but through sharing the idea, I've found many others who share a similar vision of what needs to be done. Now, an ever-widening circle of people are moving things forward. Key to it, and keeping me on track, is musician Zoe Keating, who first told me about block chain technology when I was sharing the "beacon" idea. After that, author Jamie Bartlett and tech guru Vinay Gupta really helped get things moving. I'm now also working closely with the Featured Artists Coalition, designer Andy Carne and our new project manager, Mark Simpkins.

The time is ripe to have serious conversations about the future of the music industry and musicians' place in it. Creators are the lifeblood of the industry and we need to explore how this and other technologies can grow in our favor. In the end, everyone will benefit if we benefit, because only then is there a guarantee of a sustainable flow of fabulous new music for fans to enjoy.

Are you optimistic about the future of music?

Yes, because I feel like I am doing something about it. We are in a tricky transitional phase at the moment and I want to help move things along so we don't miss out on a generation of great musicians. One day I really hope a Mycelia-like system will exist. It will be huge, beautiful, rich and well-tended. It will store a wealth of information about all music ever recorded, connecting fans and enabling artists to be the best at their job with incredible feedback loops – connecting dots in ways we can barely imagine today.

From pirates to privateers: a musician's take on the digital market

By **Bendik Hofseth**, Musician

The evolution of the digital marketplace is continuing apace. It affects us all on many levels. We all experience the benefits of being connected. It is easier now than ever before to keep in touch with family and friends wherever we or they may be, or to reach out to people on the other side of the world for a business meeting or information gathering. It is easier than ever to find and purchase items to meet our every desire, to make virtual visits to far away regions and experience uncharted terrain. And online distribution means huge cost savings for businesses and significant environmental dividends.

A GLOBAL NETWORK BUILT ON MORE THAN TECHNOLOGY

Static fiber-optic cables are forming a new, global neural network that circulates human impulses made up not only of bits and bytes but also messages sent from heart to heart. Our ability to link together through the Internet makes us feel safer, freer, and more comfortable and open.

While technology underpins this global neural network, technology alone cannot create the social and cultural heartbeats that bring it alive. Softer and more universal devices are needed for us to be and stay attracted to the network. International brands and celebrities help – they have become an integral part of our common narrative. But the creative forms of expression and artworks that humans have developed over millennia to communicate with each other and spark our imaginations are the lifeblood of the network.

Music has the power to surpass the confines of language and to break down cultural barriers by stimulating a shared fascination with rhythms and sounds. A picture can convey meaning in a playful and quirky way that goes directly to the heart of the viewer. A poem or a piece of literature can capture a moment in a way that allows each reader to interpret it in line with their own individual experience. These artistic creations have proven invaluable in establishing bonds, opening minds and hearts and building trust and confidence among different social and cultural groups across time.

ESTABLISHED ARRANGEMENTS ARE UNDER PRESSURE

But as the digital transition progresses established arrangements that for many years have allowed artists and creators to receive payment for their work, are increasingly under attack. The current relationship between the arts, copyright law and platform services illustrates this very clearly.

Platform services typically include search engines, social networks and other types of content aggregators. They are sometimes also called technical intermediaries and include companies such as Facebook, Twitter, SoundCloud, TuneIn and others. At present, these entities either underpay or do not pay those who generate the cultural content that they have made it their role to distribute.

THE VALUE-GENERATION GAP

A simple comparison of the amounts these platforms pay to rights holders and the profits they generate points to a distinct "value-generation gap". How much of what these platform services do – and how much

Photo: Odd Geir Sæther

Bendik Hofseth (above) argues that there is a "value-generation gap" between what online platforms pay artists and the profits they generate.

of the money they make – is actually related to giving access to art and other works that are protected by copyright? Identifying these percentages, for example on the basis of the way these platforms generate income through advertising, would make it possible to get an idea of what a "reasonable" licensing fee might be.

Licensed digital distributors such as Spotify or Netflix typically spend around 70 percent of their turnover on content acquisition. This is as it should be when 100 percent of a company's value and revenue is based on distributed cultural content.

But other platform services such as Facebook do not operate along these lines. In many countries around 60 percent of a Facebook user's scrolled news feed is made up of cultural content and over 50 percent of its native advertising revenue is directly related to cultural content. Yet none of the revenues derived from using this content are returned to the creative community.

A recent report by GESAC, which represents around a million creators and rights holders in Europe, estimates that in 2014 in Europe, 23 percent of the revenue generated by platform services – a staggering EUR5 billion – was directly related to cultural content. And 62 percent of revenues generated by platform services are either directly or indirectly related to cultural content.

Based on these estimates, the report suggests that the search engine Google should have returned around EUR3 billion to the creative community in 2014 in Europe alone. Given Google's 2015 performance – it recently reported 13 percent year-on-year growth and global profits of USD23.42 billion – the sums involved for 2015 would be much higher.

ARTISTS CONTRIBUTE SIGNIFICANT VALUE

Artists like me contribute huge social, moral and cultural value to the operations of technical intermediaries. We deliver the "sex appeal" of social media; our works give these platforms allure; we are the stars of the search engines. The creative effort of the artistic community is the glue that convinces users to stick with the platform services, allowing them to develop successful and predictable business models.

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Bendik Hofseth equates what is happening today
in the rapidly evolving digital economy, where
one sector is being given free rein to grow at the
expense of others, with the free license governments
of the past gave privateers during wartime to
attack foreign vessels and take them as prizes.

Surely Facebook is as much a gigantic repository of artworks and their metadata as a technical service provider? Surely it is not just Google's engineering and wiring that constitutes its EUR23 billion profit? Surely the ethical argument is clear and self-evident? No one should be able to put billions of Euros worth of other people's value creation into their own pockets.

What can I do about this as a composer? Can I prevent my songs and compositions from being circulated? This isn't really an option, especially on a global scale when moral rights are so disputed and national copyright frameworks vary so much from one country to another.

THE TABLES HAVE TURNED

At the moment, if someone records one of my songs from a live show and releases it on YouTube, I have to ask YouTube to take it down. It seems to me that they should be the ones to ask me for permission to upload it in the first place. I am doing all the work – they are taking all the profit. Can I appeal to Facebook and Google to do the decent thing and share a proportion of their revenue with their creative partners? We authors have done so on several occasions, but so far our appeals have met with stony silence. Can I ask my performing rights society to negotiate a license with these services? Yes, we can and we have tried to do so, but the intermediaries simply claim they do not need a license because what they are doing is not illegal.

Some commentators suggest that the creative community should be happy to have access to a distribution platform that allows its works to be disseminated with or without the consent of rights holders.

But this viewpoint devalues the contribution made by artists, and fails to recognize that it is not only the creators who have a problem when there is no longer an economic incentive to create, it is society as a whole.

DO TECHNICAL INTERMEDIARIES HAVE AN UNFAIR ADVANTAGE?

Today, the legal landscape is such that any entity that defines itself as a technical intermediary can include copyrighted material on its platform without having to pay a license fee. Other business, such as start-ups, that do include licensing in their business models, are thus put at a disadvantage and

find it hard to compete. Politicians who allow platform services to grow into monopolistic economic giants are not only sanctioning the looting of artworks and unfair treatment of artists, they are also distorting the market and impeding competition.

WHAT WENT WRONG?

The double standard that exists between legally licensed companies such as Spotify and unlicensed platform services stems in Europe from an ambiguity in the application of the safe harbor provisions on copyright-relevant acts of platform services outlined in the European E-Commerce Directive (2000/31/EC), which introduced notice-and-takedown procedures. Safe harbor provisions were introduced in the US with the implementation of the 1998 Digital Millennium Copyright Act (DCMA). These measures effectively shield intermediaries from liability for unwitting copyright infringement provided they remove infringing content once they receive a complaint from a rights holder. When the DCMA and the Directive were adopted no one could have foreseen the broad uptake in use of platform services or their dominance.

In part, platform services have very astutely capitalized on the failure of policymakers to resolve the issue of intermediary liability: How far should intermediaries be held responsible for the content they distribute? This thorny issue remains the subject of hot debate.

In practice, however, the sheer volume of notice-and-takedown requests received by a rights user as big as Google, means there are delays in removing infringing content. In fact, all too often, infringing material is taken down only to promptly reappear on the same site. So in practice, notice-and-takedown procedures have not fully served the interests of right holders.

REVERSING THE COPYRIGHT PROPOSITION

The size and dominance of large technology companies like Google has, in some instances, also effectively brought about a reversal of the fundamental copyright proposition – whereby the user is required to ask permission of the author prior to using a protected work – and the exclusive rights it encompasses (see box).

We saw this most clearly in the Google Library Project. The project sought to scan and put online as many books as possible, but without first seeking permission from rights holders. Instead, Google offered copyright owners mechanisms to opt out or have their works

About copyright

Copyright encompasses two types of rights, namely:

a) **Economic rights**, which allow the rights owner to derive financial reward from the use of their work by others. The copyright laws of most countries state that the rights owner has the economic right to authorize or prevent certain uses in relation to a work or, in some cases, to receive remuneration for the use of their work (such as through collective management). The person who owns the economic rights in a work can prohibit or authorize:

- its reproduction in various forms, such as printed publication or sound recording;
- its public performance, such as in a play or musical work;
- its recording, for example, in the form of compact discs or DVDs;
- its broadcasting, by radio, cable or satellite;
- its translation into other languages; and
- its adaptation, for example, from a novel into a film screenplay.

b) **Moral rights,** which protect the non-economic interests of the author. Examples of widely recognized moral rights include the right to claim authorship of a work and the right to oppose changes to a work that could harm the creator's reputation.

removed. Although the project fizzled, the obvious utility of such an endeavor suggests that the issues it raises will resurface in the future.

STEPS TO IMPROVE THE LANDSCAPE

In 2015 Google received 554 million takedown notices. That is a lot of effort by creators and their representatives to stop people doing things; effort and cost that should be better spent on authorized distribution and use of creative content. The current landscape could have been so different if:

- Safe harbor had been denied to certain kinds of intermediaries – particularly those monetizing access to information and content.
- The content providers had set up effective registries and look-up facilities for protected works.
- Intermediaries without safe harbor protection had been obligated to check the copyright status of content before facilitating access to it (with unauthorized access to content being dealt with as contributory infringement).

The music industry has a long and checkered history of fighting piracy and has often received an unjustifiably bad press. But what is happening today in the new digital landscape has historical parallels.

INTERNET FREEDOM: A MODERN DAY VEIL OF LEGITIMACY

In the past, privateers superseded pirates. A privateer was a private person or ship authorized and licensed by a government to attack foreign vessels during wartime and take them as prizes. A similar scenario is occurring today within the rapidly evolving digital economy where one sector of the economy is being given free rein to grow at the expense of others.

It is true that the distinction between a privateer and a pirate has always been blurred. At times, pirates sought dubious government sanction to operate under a veil of legitimacy, but both pirates and privateers sailed under false flags to create confusion and mayhem.

The "contract" that currently exists between platform services and the public was originally built on freedom of speech, transparency and openness. In practice, however, other criteria, namely profit and market dominance, have been more compelling prizes. The false flag under which they sail today is one that the creative community originally believed would work in the online space but which we now know to be hollow and meaningless. The flag they now sail under is the most unreliable and deceitful of them all – that of Internet Freedom.

The rise of China's film industry

By **Emma Barraclough**, Freelance writer

Ten years ago, when Jeffrey Yang, a lawyer with Reed Smith, returned to his native Shanghai after almost a decade working in London, he found the streets teeming with hawkers peddling pirated DVDs. "They were on every corner. People could buy the latest blockbusters as soon as they were released. I thought it was inevitable that fake DVDs would devastate the film industry," he says.

Fortunately for movie executives, Yang was overly pessimistic. Instead, the story of the rise of China's film industry is something of a success story. The plot takes in a battle with pirates, a technological revolution and dedicated empire builders, weaving together three story lines that help explain how China's film industry was saved from sellers of pirated DVDs and, along the way, took on a very different shape.

MOVIE TICKET SALES SURGE

The first story line centers on the growing popularity of movie-going among China's young urbanites and its burgeoning middle classes. Last year the Chinese spent more than USD6.5 billion on movie tickets – up almost 50 percent on the year before – according to the State Administration of Press, Publication, Radio, Film and Television, with more than 20 cinema screens opening every day to service the demand. If China's box office revenues grow at their current rate, they will top USD11.9 billion by the end of 2017, overtaking the United States.

Chinese films accounted for just over 60 percent of those box office revenues, with homegrown action adventure movies *Monster Hunt* and *Mojin: The Lost Legend* and the comedy *Lost in Hong Kong* making the list of top five grossing films along with US blockbusters *Furious 7* and *Avengers: Age of Ultron*.

China's film industry makes more than 80 percent of its revenue from the box office, according to Amy Liu of EntGroup, a film industry data consultancy. In contrast, filmmakers in the US make as much money from selling DVDs, broadcast rights and merchandising as they do from ticket sales. But with double-digit growth rates and a population approximately four times that of the US which remains largely untapped, the Chinese film sector still has huge scope for growth, suggests Qiaowei Shen, Professor of Marketing at Wharton, University of Pennsylvania. While Chinese filmmakers, like their counterparts elsewhere, continue to face problems of counterfeiting, DVD piracy and illegal streaming of content, things are looking up, says Liu. "Until recently China wasn't able to build brands around its own films in the same way as Hollywood. Now we are starting to see the development of franchise movies and co-branding deals with local companies." Chinese filmmakers are starting to tap into consumer demand for film-related merchandise. Last year, Beijing-based online movie ticketing company, Mtime, struck a deal with China's biggest cinema chain, Wanda, which will see it install retail stores within theatres to sell licensed merchandise.

GOVERNMENT POLICY

The second subplot in the story of China's film industry is a stronger commitment to the creative industries on the part of the government. Not only does a vibrant national film industry offer valuable soft power potential, says Andrew White, Associate Professor of Creative Industries and Digital Media with the University of Nottingham in Ningbo, a powerful movie industry can help steer China towards its post-industrial future. "It wants its cities to compete with London, Tokyo and New York and it knows that it needs strong creative industries to do that."

Allied with this is a more robust approach to intellectual property (IP) protection. Draft provisions to strengthen the country's copyright law, China's 2014 ratification of the Beijing Treaty on Audiovisual Performances, and a forthcoming Law on The Promotion of the Film Industry signal the government's commitment to protecting film industry copyright in China. But while lawyers suggest that movie makers can use Chinese law to tackle copyright abuses, damages remain low. "Compensation is not as high as in the US and Europe," says Chen Jihong

Photo: Zhang Zihong

As China's film industry takes off, its movie stars (above) are enjoying a surge in popularity.
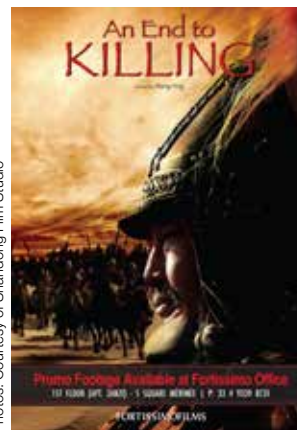
Photos: Courtesy of Shandong Film Studio

Photos: Courtesy of Beijing Forbidden City Film Company Limited

Last year the Chinese spent more than USD6.5 billion on movie tickets – up almost 50 percent on the year before – according to the State Administration of Press, Publication, Radio, Film and Television. Chinese films accounted for just over 60 percent of those box office revenues.

of Zhong Lun law firm. "If the actual loss to the copyright owner and the actual illegal gains cannot be calculated, the existing compensation ceiling is RMB500,000 (USD75,000), making the deterrence very limited for films."

Also central to this part of the story line is the government's decision to put a ceiling on the number of foreign films shown in the country's cinemas. Though unpopular among foreign studio bosses, the quota policy has given China's domestic industry time and space to grow. Regulations deterring foreign companies from making their own films in China has spawned joint venture and co-production deals, giving Chinese filmmakers greater access to foreign know-how, and foreign companies an entry to the Chinese market. With hindsight, the controversial quota system appears to have helped align interests in support of greater IP awareness and a more robust copyright system: Chinese filmmakers and the state-owned companies that distribute foreign films want to crack down on piracy as much as any Hollywood producer.

TECHNOLOGICAL ECOSYSTEMS

The third, and the most important, subplot in the story of China's film industry focuses on a technological and social revolution. At the same time that rising disposable incomes made cinema-going a favorite activity for urban Chinese, Internet technology has boomed. The country now has more people online than any other, and, helped by some favorable government policies, has seen the emergence of an A-list of home-grown tech companies, from smartphone maker Xiaomi to the big-hitting Internet platforms collectively known as BAT: search engine Baidu, ecommerce business Alibaba and social media company Tencent.

The BAT companies are pursuing ambitious strategies to create what are known as online to offline ecosystems, encouraging people to conduct more of their daily activities – from buying cinema tickets to watching movies – on their platforms. To help them build their empires, BAT companies and other platforms are producing audio-visual content themselves, as well as doing deals with partners across the content value chain. In 2013, for example, Baidu bought Internet video provider PPS. A year later it secured a USD300 million investment from Xiaomi for its iQiyi video-streaming platform. That deal came in the same week that Xiaomi bought a stake in Youku Tudou, another video-streaming platform part-owned by Alibaba. Last year Alibaba and Tencent snapped up more shares in Huayi Brothers, China's largest private-sector film company and the maker of *Mojin: The Lost Legend*.

With 650 million Internet users in China, it is easy to see why companies are so excited about the potential of online platforms. But what is important from an IP perspective is that copyright-related deals are now central to their growth. Platforms want to leverage film to drive growth in mobile gaming, merchandising and other derivative forms of entertainment as they build their ecosystems. "IP deals are the new buzzword," says Nic Garnett, a copyright and ecommerce consultant at Tilleke & Gibbins. "It's about spreading IP across platforms, much of which relates to local repertoire. What is interesting is that copyright is no longer a brake on innovation but a spur. The ability to own IP is the cornerstone of this empire building."

The BAT companies, and others like them, are blurring the distinction between types of audio-visual content, allowing users to watch blockbuster films, made-for-TV

movies, user-generated content, TV shows and a growing number of programs made in-house across a variety of devices. They are also experimenting with a range of business models, from advertising-driven to subscription-funded and pay-per-view. Their goal, one shared by many across the global film industry, is to make their respective ecosystems so comprehensive that users will find it more convenient to access content legally – even at a cost – than to seek out pirated content.

Unlike cinema chains and DVD manufacturers, online platforms have also been able to amass plenty of data about their users' preferences: the music they listen to; their Internet purchases; and the film stars they follow on social media. That allows them to cross-reference the data and make films targeted to their cultural tastes. "Making movies in China is quite a scientific, logical process and less of a creative one," jokes EntGroup's Amy Liu. Such a commercial approach might not help Chinese filmmakers win international awards, but it does help secure the industry's financial future.

Lacking the kind of powerful and well-connected legacy copyright industries that exist in many other parts of the world, China's dynamic new online businesses have had more freedom to develop in innovative ways. "The young executives in China have only ever known about exploiting online content," says Garnett. "That makes the country different to Europe and the US where executives always want to know: Will this cannibalize what we already have?"

China's technological leapfrogging doesn't mean that its online shift has been trouble-free for the country's film industry. Movie makers are still plagued by online piracy, although China's courts are getting tougher on Internet platforms that facilitate breaches of copyright and the advertisers that keep illegal sites in business. IP officials are closing down more illicit streaming services, says Han Yufeng, a former judge now with Lung Tin law firm, while Zhang Wenlong, a program officer in the National Copyright Administration of China, warns pirates that they face more targeted action this year, along the lines of the annual "Sword Net" campaign. Even the US Trade Representative in its annual *Special 301* report praised recent efforts by China's authorities to tackle piracy, highlighting a record USD42 million administrative fine imposed in 2014 against QVOD, a video-streaming website, for making available pirated movies and TV shows to its subscribers.

After often beginning life in legal grey areas, many of China's online platforms have developed legitimate business models and are among some of the world's most valuable tech companies. Notice-and-takedown mechanisms to report and remove infringing content are now a common feature of large websites. As a result, licensing revenues for filmmakers are growing sharply.

THE SEQUEL?

The business models being developed by Chinese companies to distribute films and audio-visual content online have turned China into something of a copyright laboratory and they are being watched closely by industry executives and researchers. A group of academics led by Edinburgh University's Shen Xiaobai, for example, is working on a project for CREATe, the Research Councils UK Centre for Copyright and New Business Models in the Creative Economy, focused on new models for digital film, music and e-fiction production and distribution in China.

"Chinese companies that previously felt they were on the receiving end of the IP regime are now considering how they could put these tools to their own purposes," says Shen. "Businesses are putting together their best minds, creatively molding and sharpening these tools and testing them in the Chinese market. They may be less constrained than their counterparts in imaginatively creating new business models."

The story of China's film industry is a multi-layered one that tells us much about new business models in the copyright industries, the increasingly blurred boundaries between film and other audio-visual content, and the changing way in which that content is being consumed. This may just be the first part of a long-running franchise.

Taking video games to a new level: an interview with Sony Interactive Entertainment

By **Jonah Asher**, WIPO Japan Office

THE PLAYROOM VR

Video games have become one of the most popular
forms of mass entertainment in the world.

Companies like Sony Interactive Entertainment invest a great deal of
time and energy in developing new technologies, such as streaming game
services and virtual reality (VR), to give users new gaming experiences.

Video games, where high art meets cutting-edge technology, have become
one of the most popular forms of mass entertainment in the world. Perhaps
best known for PlayStation®, Sony Interactive Entertainment LLC (SIE) (for-
merly Sony Computer Entertainment Incorporated) has been a key player in
shaping the global multi-billion video game market for over 20 years. First
launched in 1994, the Sony PlayStation® is now in its fourth generation,
and with a planned launch of the PlayStation®VR (PS VR) in October 2016,
users are looking forward to an entirely new gaming experience. In this
interview, Ryosuke Senoguchi, Vice President for Intellectual Property, and
Saori Ikeda from Corporate Communications at Sony Interactive Entertain-
ment talk about the rapid growth of the global industry, where video games
are going, and the importance of intellectual property (IP) to the company.

What factors have enabled the growth of video games?

Saori Ikeda: Smartphones have had a major impact on the popularity of
games, creating a whole new community of gamers. Many people start
out with smartphone games and then migrate to gaming consoles for a
richer immersive experience. Video game streaming is also gaining trac-
tion, especially in the US, and has a lot of potential. SIE recently launched
PlayStation™Now, a streaming game service that leverages cloud-based
technology, where players can access a library of PlayStation®3 (PS3™)
games from the cloud either through a subscription or on a per-game
rental basis. This service gives users the possibility to play games from

Sony Interactive Entertainment believes that VR gaming will be the next big evolution in the video game market. The company plans to launch its PlayStation®VR (PS VR) in October 2016.

various interconnected devices, including selected TVs, without having to own a dedicated gaming console; as such it is opening the PlayStation® world to many more consumers.

What factors are driving change in the video game industry?

Ryosuke Senoguchi: The time and energy companies like SIE invest in making and developing new technologies, such as streaming game services and virtual reality (VR), to give different groups of users new gaming experiences, are important change drivers. This, of course, has been made possible by the rapid evolution of computer technology – faster computer processing units and graphics processing units, better infrastructure and, in the case of VR, higher-definition screens and enhanced camera and head-tracking technologies.

Prior to the original PlayStation®, most video games were released in cartridge format but PlayStation® used optical discs, one of our most important IP assets. It was really the evolution of the media that allowed for the evolution of the software content. We started with CD-ROMs and then DVDs set a new standard. It took us a while to integrate these technologies into the hardware, but disc media allowed us to be one of the first companies to use polygons and 3D environments in our games. That, I think, was one of the keys to PlayStation®'s success.

Saori Ikeda: Technology is ever-evolving, and continues to transform games and the industry itself. The new features and services that are coming on stream are also driving change. For example, social integration and interaction are central to PlayStation®4 (PS4™). The PS4™ system's game controller features a "SHARE" button that allows users to share their victories at the press of a button. Gamers are no longer simply playing games, they are connecting with others through online communities and social networking services. This is also significantly changing the gaming landscape.

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What will be the next big breakthrough in video game development?

Saori Ikeda: Like many others who are planning to release VR equipment this year, we believe that VR gaming will be the next big evolution in the video game market. We think it is going to be very popular. We are launching PS VR this October and are very excited about that.

Ryosuke Senoguchi: One of the biggest challenges in developing PS VR was to find a solution to "VR sickness". Some people may feel nauseous when they play VR content, and though the level of nausea varies from one person to the next, we have worked to develop the hardware and the software content in a way that minimizes the problem. After all, we don't want to make our customers sick!

Saori Ikeda: Another challenge that we – and our competitors – face with VR, is that you have to try it to fully understand it. Playing a video game on a flat screen is a completely different experience from wearing a headset and playing a VR game. Right now PS VR can only be experienced at large industry or related events, but we hope to eventually bring the system to locations closer to consumers, such as retailers, so customers can experience VR for themselves. At first, it is likely that only hardcore gamers and enthusiasts will adopt the really cutting-edge technologies like VR, but we hope their excitement will filter through to the masses and that VR will become a new gaming experience that everyone can enjoy.

Ryosuke Senoguchi: Initially, the content available on PS VR will be mainly video games, but the system has potential applications in many different fields. This is something we have been keeping in mind when developing the IP strategy for PS VR.

Will there be enough VR content available?

Saori Ikeda: SIE has put a lot of effort into making it easier for developers to create software for our hardware, and over many years we have developed strong relationships with them, so we don't think this will be a problem. Developers can develop games for PS VR fairly easily because the PS4™ system that runs the PS VR content is based on PC architecture. Throughout the R&D process we talk directly with developers to be sure to develop the architecture and features that make it easier for them to create software for our hardware.

Why is IP important to SIE?

Ryosuke Senoguchi: We use IP to reduce the risk of lawsuits and of course to protect our own products from being copied by others. IP really is very important to SIE and plays a key role in enabling us to expand our market share and build new markets. One of the biggest IP challenges facing the industry is in the area of copyright, given the need to protect creative content. We protect all of our own technologies, including PlayStation®, with patents. Doing so increases our success. But we have more trademark applications than anything else, especially for our hardware. Creating and protecting a successful brand is a key challenge.

While we provide both the hardware and the software titles that run on it, we are in the business of offering a complete platform. In general all of our IP activities are focused on delivering "the world of PlayStation®" to our consumers. The PlayStation® brand is extremely important to SIE.

Can you tell us about some of the key challenges facing video game developers?

Ryosuke Senoguchi: Developing video game hardware and titles that everyone appreciates and enjoys is a real challenge. PlayStation® products are now sold in 124 countries. Each country has its own national identity and culture, and each has its own economic situation and income level. When we develop a product, we have to take this into consideration. We can't just assume that because a game is popular in Japan it will be popular in other markets.

Creating software and developing products with lasting appeal, offering technology that people want to buy and use now and a decade down the road, is a real challenge. Unlike other consumer products, the life cycle of PlayStation® hardware can last 10 or more years. That was the case with the original PlayStation®. R&D takes a very long time because we have to think of ways to develop and release technology that will not only be the latest now, but which can also be built upon or combined with other technologies that have not yet even been developed.

From an IP perspective, because of the length of our product life cycle, it is essential that we secure effective IP protection for our products and services. I can't emphasize the importance of that enough.

Our IP strategy is central to the continued success of the PlayStation® business. This is especially so these days when video game hardware is becoming increasingly commoditized. An effective IP strategy enables us to leverage further value from our products.

Have you had significant problems with IP infringement?

Ryosuke Senoguchi: Generally speaking, a few years ago, it was hard to protect creators because the copyright laws of different countries varied so much. But a lot has changed since and there has been greater international harmonization of these laws. There is a much friendlier legal environment for protecting the industry's creative output and at a macro level there has been a lot of progress in combating IP infringement. Of course, malicious online activities are becoming an increasingly common threat, and we are taking steps to mitigate these activities. We are focusing on damage control and have put the best possible technical and legal countermeasures in place to fend off such attacks.

Do you think the IP system needs reforming?

Ryosuke Senoguchi: When it comes to copyright, I think it will continue to evolve in line with technological and market developments. In the area of design rights, we welcome WIPO's continued efforts to simplify the Hague System for the International Registration of Industrial Designs and to make it more cost-effective. But in the area of patent law, the global video game industry in general is facing a challenge in relation to legally protecting network and server innovations in all countries in which it operates.

Do you have a favorite video game?

Ryosuke Senoguchi: I really enjoy the first-person shooter (FPS) genre of video games. *Destiny* for the PS4™ is one game that I got particularly into. I also really enjoyed *STAR WARS*™ *Battlefront*™. My son purchased it last year, but I think I ended up playing it more than him!

Google on what is driving creativity and innovation in the digital economy

By **Fred Von Lohmann**, Copyright Director at Google

Much ink has been spilled explaining how the protection of exclusive rights in intellectual property (IP) has spurred innovation, creativity and culture. In today's digital economy, however, a corollary to this axiom has emerged: Sensible limitations on those exclusive rights are just as crucial for innovation, creativity and culture. For copyright, in particular, limitations on exclusive rights are driving economic growth, opening new opportunities for creators and incubating new technologies. This perspective reveals limitations on and exceptions to copyright not as grudging concessions, but rather as coequal partners with exclusive rights in copyright's mission to create incentives for culture and innovation.

Let's look at four examples from today's digital economy: platforms, private copying, remixing and machine learning. What ties these seemingly disparate subjects together? In all four cases, sensible limitations on copyright play a key role in creating incentives for creators and innovators. These incentives, in turn, spur more creativity and investment, just as sound copyright policy should.

PLATFORMS

Today, more than 400 hours of video are uploaded to YouTube *each minute*. Most of this new creativity would not have occurred but for the existence of online platforms like YouTube that allow amateur and professional creators to reach global audiences. Similar explosive growth in creative output can be seen on many other online platforms such as Facebook, Twitter and Snapchat, where more than 1.8 billion new photos are posted every day. Software developers are writing more software than ever before, thanks to new opportunities made possible by platforms like GitHub, Apple's iTunes App Store and

Google's Play App Store. Writers and journalists are finding their voice on platforms like Blogger, Medium and Tumblr. New musicians are thriving on BandPage, SoundCloud and, of course, YouTube. In short, creativity has enjoyed a sudden and remarkable growth spurt. Why? A big part of the reason is the plethora of new online platforms that enable creators to find audiences at low or no cost.

And when it comes to online platforms, copyright law is at the center of the story. Were it not for sensible copyright "safe harbors", these platforms would not exist today in their present form. The United States, for example, enacted the Digital Millennium Copyright Act (DMCA) in 1998, which limits the copyright liabilities of online service providers in exchange for their implementing measures, such as "notice-and-takedown", to assist rights holders in combating online infringement. Europe adopted similar "safe harbors" in 2000, and more recently this approach has been adopted in a number of multilateral and bilateral trade agreements. The online platforms that are spurring a flood of new creativity depend on copyright accommodations like these.

PRIVATE COPYING

Is there anything more natural in today's digital environment than expecting that you will be able to access all of your personal files from any device, in any location? Rigid application of copyright laws, however, would treat these everyday activities as potential infringements.

Fortunately, most modern economies have copyright exceptions in order to make room for our modern digital reality. Some countries, like France and Germany, have

"In today's digital world, "remix" has become central to the work of many creators who reupurpose and transform existing works in order to comment on, criticize, celebrate and satirize our media-driven culture," says Fred Von Lohmann.

"private copying" exceptions, whereas others, like the United States, rely on more general exceptions like "fair use." But whatever you call it, some accommodation in copyright law is absolutely crucial to bring the fruits of the digital age to modern consumers. Otherwise, the most basic private activities – such as browsing the web, or backing up your computer, or copying music to your phone – could trigger liability. Even the theoretical possibility of such an outcome undermines the acceptability of copyright law in the eyes of the public. But if this clash between mobile computing and copyright becomes more than just theoretical, it could lead to the providers of cloud services pulling out of markets, to the detriment of innovation, competition, and consumer welfare.

This is why, in the influential 2011 Hargreaves Report commissioned by the UK government, the adoption of a modern private copying exception was strongly recommended. The reasons are two-fold: first, to maintain the validity of copyright in the eyes of the public, and second, to foster innovation in mobile and cloud technologies that depend on private copying. While the UK has yet to make good on that specific recommendation of the Hargreaves Report, the report's analysis is instructive for any modern economy that wants a copyright law that aligns with legitimate, everyday consumer expectations. And even in countries that have adopted a private copying exception, we must be vigilant to ensure that exceptions designed for the age of photocopiers keep up with the needs and expectations of today's mobile phone users.

REMIX

The fact that creators often rely on prior works to build their own is nothing new – we all "stand on the shoulders of giants". But in today's digital world, "remix" has become central to the work of many creators who repurpose and transform existing works in order to comment on, criticize, celebrate and satirize our media-driven culture. US comedy programs like *The Daily Show* satirize cable news programming every evening, relying on clips taken from other cable news networks. YouTube creators edit and comment on each other's content as a matter of course. Global pop stars like the Republic of Korea's Psy and US DJ Baauer rocket to stardom as the result of thousands of fans spreading remixes and re-enactments of their famous music videos. Players new to Minecraft learn about it from YouTube videos that incorporate footage from the game. Even the White

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Today, over 400 hours of video are uploaded to YouTube *each minute*. Were it not for sensible copyright "safe harbors" online platforms like YouTube would not exist today in their present form and much of the new creativity they have generated would not have occurred, says Fred Von Lohmann.

House has taken to using "memes" to defend its position on topics like the recent Iran nuclear deal.

In today's "remix culture", it is clear that copyright law cannot treat transformative works as equivalent to piracy. Here, too, sensible limits on exclusive rights can act as an incentive to further creativity and innovation. In countries that recognize "fair use", for example, remixing can be accommodated while still protecting creators from uses that undermine existing markets. Canada, for example, has recently adopted an exception intended to give the green light to certain noncommercial video remix practices. And traditional exceptions in favor of quotation can be modernized to take these new cultural practices into account, making it possible for more creators to stand on the shoulders of more giants.

MACHINE LEARNING

While online platforms, mobile devices and cloud services are compelling in their own right, we must remember that the value of that which has not yet been invented always exceeds the value of everything invented so far. And while it's impossible to predict the future, early signs suggest that machine learning may well be a key component of the next leap forward in innovation and economic growth.

Here, too, sensible limitations on copyright have a role to play. Machine learning technologies frequently depend on having large sets of data and information to analyze. These data sets may in some cases include material protected by copyright. Consider creating an automated text translation system using a corpus of books translated into multiple languages, or a medical diagnostics system using medical texts and journal articles, or an image recognition system using millions of photographs. These kinds of non-expressive and intermediate uses of copyrighted works cause no harm to the market for copyrighted works. This is another example of how well-designed limitations on copyright can and should help spur economic growth, competition and innovation.

For too long, the focus has been on exclusive rights as the principal driver of investment in innovation, culture and creativity. Without question, exclusive rights are a critical part of our global intellectual property system. But we must recognize that limitations on and exceptions to those exclusive rights are every bit as important in shaping the incentives that spur creativity and culture, and drive technological innovation.

UK's Copyright Hub:
a license to create

By **Richard Hooper,**
Chairman, The Copyright Hub Foundation,
London, United Kingdom

Photo: www.copyrighthub.co.uk
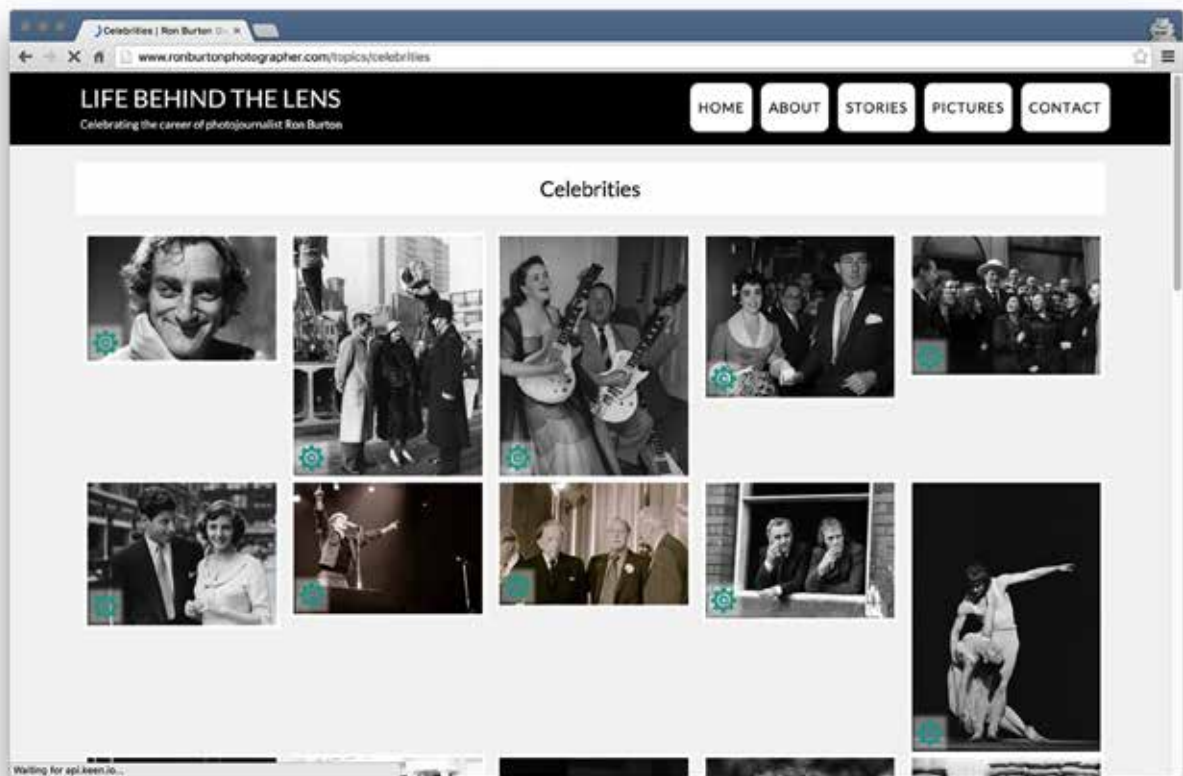
The UK's Copyright Hub is a technology platform designed to make copyright licensing easier. It also acts as a discussion forum to tackle licensing problems and promotes copyright education. – www.copyrighthub.co.uk

We see the same political narrative in many countries: There are problems with copyright in the digital age, so change the copyright law. Period. This leads to a pitched battle between pro- and anti-copyright forces, with politicians caught awkwardly in the middle.

This was the case in the UK, but five years ago I was asked by the British Government to implement a recommendation emerging from Professor Ian Hargreaves' major review of copyright. It concerned the implementation of a digital copyright exchange (DCE), to make copyright licensing easier. The DCE, which is now called the Copyright Hub, is guided and governed by the London-based non-profit Copyright Hub Foundation, of which I am the Chairman. The first

"proof of concept" phase has been implemented, with funding from the creative industries in the UK, Australia and the US and the tech company Google, alongside funding from the British Government.

SECONDARY/PERMISSIONS LICENSING

The Copyright Hub is currently focusing on what is called secondary or permissions licensing, for example when I want to put a certain piece of music on my daughter's wedding video or when I want to use that image on this website. This is not about primary licensing – a writer licensing a publisher to publish her next novel. Nor is it about consumer licensing – the first screen on the DVD which tells consumers what they are not allowed to do

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> "In the analog world users and creators were two different species. In the digital world those species have blended – users are creators and creators are users."

with the DVD, for example charge entrance fees. It is about legal and correct reuse of copyright works to create new copyright works.

THE BACK STORY

In 2012, Dr Ros Lynch – the British civil servant who was assigned to help implement the Hargreaves recommendation – and I produced a diagnostic report. Our aim was to ensure we had a clear understanding of the problems associated with copyright licensing and how these could be addressed by a DCE. While the report identified a wide range of problems in the analog and digital space, two main issues stood out: poor data and poor treatment of licensees.

The data used by the creative industries to track works and their creators or rights owners were poor. This might not pose a problem in an analog world of small numbers of high-value licensing transactions with high transaction costs. But poor data are a problem for the high volume of lower-value transactions that are occurring in the digital world. Why? Because creators are not always getting paid properly. And a third of users, as later research quantified, wishing to reuse copyright content cannot find the rights owner so they either do not reuse the work or they pirate it. Both are deeply negative outcomes which the Copyright Hub is seeking to address.

We also found that licensors of rights in the analog world were not always treating licensees in a customer-friendly way. For example, five years ago English schools had to deal with as many as 12 different copyright licensing agencies. It is unreasonable to expect people trying to run a school to have to do this. When they complain to their local politician about it, pressure builds up to make education an "exception" in copyright law. This would significantly reduce the revenues of those who license the materials and the creative industries as a whole.

In July 2012, Dr Lynch and I published our final independent report, which recommended the creation of a Copyright Hub led by the creative industries (images, audio-visual, music and publishing) to try to address the major problems identified.

Today, the Copyright Hub does three things:

- serves as a technology platform;
- provides a forum for discussion; and
- promotes copyright education.

THE COPYRIGHT HUB AS TECHNOLOGY PLATFORM

Ninety percent of the very limited resources available to the Copyright Hub today are devoted to its open-source technology platform, which makes the online licensing of digital content by third parties much easier, with transaction costs that are close to zero. The market for high-volume, low-value licensing only

The Copyright Hub's open-source technology platform makes the online licensing of digital content by third parties much easier with transaction costs that are close to zero. – www.copyrighthub.co.uk

becomes feasible for the creative industries if the transaction costs are negligible. The Chief Executive of Cambridge University Press told me in 2012 that the administrative burden and transaction cost of finding and getting permission to use a given image in a publication were often far greater than the return from so doing!

HOW IT WORKS

The idea of the Copyright Hub as a technology platform is simple. A copyright work on the Internet, such as an image or a piece of music, is given a unique identifier. Someone wishing to reuse that image or that music can, with a simple right-click, connect to the computer of the rights owner or creator, who also has a unique "party" identifier. This is called "resolving". The rights owner or creator can now offer, machine to machine, standard licenses for reuse requiring payment or proper acknowledgement.

Many creators are happy to enable reuse of their work in return for a simple acknowledgement and the correct spelling of their names. If the re-user accepts the license terms and, where relevant, pays the required fee, the newly created work itself acquires a license identifier which indicates that it has been created legally with the appropriate permissions. The work, the creator and the license each has a unique identifier, which together streamline secondary permissions licensing on the Internet. This significantly reduces the complexity and the transaction costs that have been major obstacles to modernizing copyright licensing in the past.

Great progress has been made in implementing the Copyright Hub's technology platform in the images sector. Today, eight public services are using it, including Oxford University Images and 4Corners Images. The first public service in the audio-visual sector, involving the British Film Institute and TVARK, has also recently started using the technology. Over one hundred "use cases" or Hub applications are in the queue for implementation,

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from all four creative sectors. The next use case to go public will be from the music industry. With this level of uptake, we believe we have proven the concept of the Copyright Hub and have made a major step forward in turning words into deeds.

COPYRIGHT HUB AS A FORUM

The Copyright Hub also has working groups, which work in collaboration with the four sectors involved to resolve particular licensing problems, especially those arising in the analog space. For example, the Educational Licensing Working Group has brilliantly helped to resolve the problem encountered by English schools referred to above by getting the licensing agencies to work together, saving both them and the schools time and money.

COPYRIGHT EDUCATION

The Copyright Hub is also promoting copyright education through its website, *www.copyrighthub.org*. But increasingly, we are convinced that the Copyright Hub technology platform may itself prove the best form of copyright education in that it enables learning by doing. Let us imagine a teacher who encourages her students to write poems. She goes online to show them how they can obtain a unique identifier for themselves as well as for each of the poems they have written and how to establish standard licenses for reuse. Suddenly the whole purpose of copyright comes alive. The students learn first hand that when you create something you should be in charge of what happens to it, and that the Copyright Hub makes this possible. In the analog world users and creators were two different species. In the digital world those species have blended – users are creators and creators are users.

NEXT STEPS

Having proven the concept, and attracted great interest both in the creative industries and among policymakers in London, Brussels, Geneva, Sydney and Washington DC, the next step is to drive critical mass. Our aim, in the words of Amazon's Jeff Bezos, is to "grow big fast". But if we are to succeed in this, we will need strong private and public sector funding to ensure we can turn more and more use cases into public services, both in the UK and internationally. The digital content market is global and the Internet is global, so we also need to raise awareness globally about the advantages of the

Copyright Hub's approach. This whole idea fails if it remains confined to the UK.

We also need, as the Copyright Hub Foundation, to ensure that the marketplace that the technology is fostering is properly governed. What happens, for example, when the ownership of a work is disputed?

The marketplace that could emerge from the broad uptake of the Copyright Hub will only work if there is sufficient trust in it and if users are confident that you are the person you say you are, and that you are the legitimate owner of the rights in any particular creative work. The Copyright Hub Foundation has to build and maintain that trust.

THE POLITICAL NARRATIVE: CHANGE IS IN THE AIR

Five years on, there is a sense that by collaborating with the creative industries, tech companies and governments, the Copyright Hub is beginning to change the political narrative for the better. Yes, there are problems with copyright in the digital age. And creative companies and tech companies need to identify what those problems are and do something about them. But it turns out that many of the problems do not require changes to copyright law. They require new and improved licensing mechanisms and organizations. Modernize the licensing landscape and more and better services are available to consumers, more revenue is generated for creators, and there is less copyright infringement. So, while the anti- and pro-copyright camps continue to disagree – this is unlikely ever to change – the ferocity of the battle subsides and everyone is a winner.

Building an African digital content industry

By **George Twumasi**,
CEO, ABN Holdings Limited,
London, United Kingdom

Kenya's Spielworks Media is on a mission to "express and celebrate" Africa's storytelling tradition in the digital age. Screenshot from the company's series *Jane and Abel*, an intriguing tale of manipulation, deceit and revenge between two rival business families caught in a power struggle.

African cultural heritage weaves a complex, rich and colorful fabric of deep knowledge and wisdom. Yet for generations our compelling folktales and the insights they convey have been undervalued and uncelebrated. History tells us, however, that the greatest civilizations on Earth flourished because of an unshakeable confidence in the creative power of their belief systems and their myths.

Recognizing the huge creative potential of Africa's cultural resources, the power of the media and the need to renew confidence among Africans in our creative potential, the African Public Broadcasting Foundation (APBF) is supporting efforts to establish a viable African public broadcasting landscape that harnesses digital technologies and encourages the production of high-quality, compelling content *made by Africans for Africans*.

The APBF, which was established by ABN Holdings Ltd in collaboration with Professor Emmanuel Akyeampong of Harvard University and key African broadcasting organizations, is a pan-African electronic media organization that brings together broadcasters and academic researchers. Its vision is to support Africa's economic transformation by establishing a creative workshop in which a succession of authentic and inspiring development-oriented story arcs are developed, produced and distributed across African television channels, targeting millions within Africa and beyond.

Drawing on Africa's deep cultural wealth, the APBF is recreating Africa's inspiring storytelling tradition for television with content *made by Africans for Africans*. The goal is to take advantage of the immediacy and audiovisual power of television to celebrate the continent's lush history of folk tales to entertain and enlighten viewers.

For centuries, Africa's uplifting storytelling tradition went uncelebrated. This has generally dampened

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Screenshots from Spielworks Media's *Sumu La Penzi* (above) which traces the lives of four sassy women living the high life in Nairobi, and *Sema Nami* (right), Starswahili's brand new hit talk show.

Africa's broadcasters are sitting on a vast commercial opportunity to entertain and inform millions of low-cost television subscribers with compelling African content, says George Twumasi.

interest among Africans in the rich cultural wisdom of our narratives, effectively curbed any appetite to exploit its creative potential, and obscured a vision of a future of infinite possibilities in which noteworthy achievements are the norm.

AN ARCHIVE OF AFRICAN CULTURE EMERGES AND INSPIRES

Over the last 65 years, however, researchers have been amassing an expanding archive of African knowledge ranging from its archaeological and historical roots to its literary and folkloric traditions. Initiatives such as the African Writers Series sponsored by Heinemann Educational Publishers since the 1950s – which enabled writers like Amos Tutuola and Chinua Achebe to get started – also now represent a considerable literary archive. Similarly, the six-volume *Dictionary of African Biography*, published in 2012 by Harvard University Professors Emmanuel Akyeampong and Henry Louis Gates, which traces the events shaping the continent's history over the past 5,000 years, provides another rich source of information about Africa's heroes and heroines.

These works reveal the depth, wealth, and complexity of Africa's history, and document the tangible cultural and artistic contributions made by African societies of the past. These include Egyptian hieroglyphics, Meroitic script and the Ethiopian Ge'ez script and language. They also provide an invaluable source of inspiration for young African creators today to create content that is *made by Africans for Africans*.

"The digital revolution will grant Africa's creative entrepreneurs a unique opportunity to translate Africa's folklore traditions into engaging, creatively packaged digital content."

AN OPPORTUNITY TO REVIVE INTEREST IN AFRICAN CULTURE

Traditional media and content industries across the globe are being irreversibly altered by the shift to new digital media technologies. These technologies are transforming the way we produce, store, distribute, and consume creative content. In Africa also, traditional business models within the media sector are giving way to new digital platforms which have become the central drivers of rapidly evolving operating models, consumer relationships, and revenue growth.

The digital revolution will grant Africa's creative entrepreneurs a unique opportunity to translate Africa's folklore traditions into engaging, creatively packaged digital content which can be shared with millions of consumers around the world at the click of a button.

Making the most of these opportunities, however, will require the transformation of Africa's broadcasting landscape. Creating an environment in which a sound public service-focused digital publishing industry emerges is a key priority for the APBF. To achieve this, we are focusing on three main goals.

First, we are concentrating on developing culturally iconic, subscription-based television brands that are oriented toward the mass market. Africa needs to establish a broadcasting ecosystem that is efficient, affordable, platform agnostic and supportive of the monetization of content. It needs an ecosystem that attracts the participation of all Africa's public and private broadcasting corporations within which they can operate profitably.

As a whole, Africa's broadcasters are sitting on a vast commercial opportunity to entertain, educate, and inform tens of millions of low-cost television subscribers. Turning this opportunity into concrete economic benefit, however, requires a commitment to protecting and securing all intellectual property rights associated with the generation and distribution of new African content across multiple platforms. That is why the APBF is seeking to work with WIPO and progressive African governments to enhance awareness of the importance of IP and to strengthen the IP capacity of the continent as a whole.

Second, we need to restore the integrity and virtues of Africa's cultural emancipation. The goal is to support the digital transformation of African societies while retaining interconnectivity and diversity, and to rekindle Africa's spirit of cultural creativity by establishing a robust digital television content-publishing brand driven by inspiring and compelling African content that resonates with African viewers.

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To ensure a continuous flow of content that is *made by Africans for Africans*, the Foundation is supporting efforts to establish an African Digital Media Fund to assist Africa's burgeoning media entrepreneurs.

Third, we need to enlighten African viewers by using commercially viable public service television networks to entertain them.

The immediacy of television and the way in which it can so convincingly convey stories can be tapped to restore the aspirational virtues and integrity of Africa's past civilizations. Success in motivating Africa's restless youth will depend on our ability to validate the continent's worthy historical past and its notable accomplishments, while, at the same time, projecting a compelling vision of a renewed African personality that is capable of pursuing productive and transformative change.

INVESTMENT IS CRUCIAL TO MEET RISING DEMAND

The African television market is already experiencing insatiable demand for original, culturally edifying African content. Nonetheless, Africa's cash-rich television companies, mostly pay-TV operators, continue to cater to the preferences of their affluent subscriber base and its strong appetite for international programming.

Driven by market forces, pay-TV operators have little or no interest or incentive to produce culturally engaging content with which Africans can readily identify. Out of an estimated 100 million homes with a television in Sub-Saharan Africa, less than 17 percent (approximately 15 million households) can afford access to digital terrestrial television or direct-to-home television.

Africa is actively preparing to switch to digital television, but many broadcasters lack the financial means to create an adequately resourced digital distribution infrastructure. That is why the international partnerships and investment that the APBF is seeking to secure are essential.

Aligning the services of the different players within Africa's broadcasting ecosystem will go a long way toward establishing a viable public broadcasting service that is affordable to low-income households and rich in African content.

The APBF recognizes the aspirational value of content *made by Africans for Africans*. Our aim is to create an African broadcasting landscape that is made up of regional content hubs capable of continually producing and distributing cutting-edge content to tens of millions of low-income pay-television households and mobile television subscribers. Our goal is to secure access to at least 50 million pay-as-you-go television subscribers across Africa by 2023.

We are also working to ensure that affordable content delivery devices (set-top boxes, digital TVs, smartphones, tablets, dongles, etc.) are available on a country-by-country basis. Progress in these areas will further deepen and enrich the range of content *made by Africans for Africans*.

The APBF's overriding aim is to leverage digital technologies to stimulate the rebirth of Africa's originality and creativity. This can only emanate from stories that are *made by Africans for Africans*. We believe that by stimulating the curiosity of all Africans in their cultural heritage, it will be possible to foster the development of a thriving billion-dollar digital content industry that will support the continent's social, cultural, and economic development goals.

Collaboration is the key to access: A scientific publisher's view

By **Carlo Scollo Lavizzari**, Attorney, Lenz Caemmerer, Basel, Switzerland, Legal Counsel to STM: The International Association of Scientific, Technical and Medical Publishers
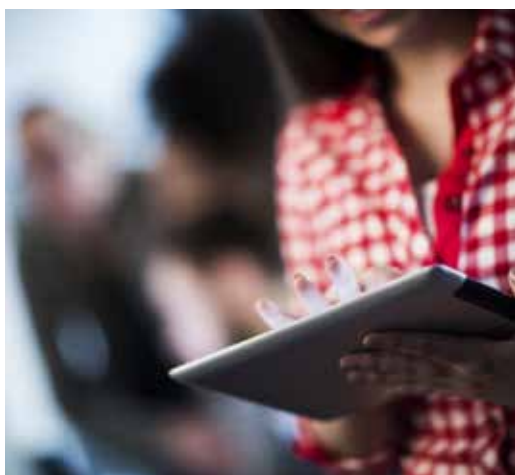
The problem currently facing the publishing industry and its users is not availability as such, but the need to improve accessibility and discoverability.

Scientific, technical and medical (STM) publishers operate in one of the most dynamic and innovative fields, one which combines scholarly communication and information technology. They use licensing to make content available both to individual readers and to those affiliated with libraries, research and educational institutions, or corporations.

Publishers are able to license the use of the content they publish on open access terms (i.e. free of charge, unrestricted access and unrestricted reuse) to targeted readers and the wider public. Licensing partners include consortia of institutional libraries, and sometimes an entire region or country may establish a national or regional license to ensure readers have ready access to content within a geographically defined area.

Scientific and scholarly literature is widely available around the world, either through commercial offerings or open access initiatives. While those advocating for international discussions on exceptions and limitations to copyright law at WIPO may not agree, this is nevertheless a reality.

The problem currently facing the publishing industry and its users is not availability as such, but the need to improve accessibility and discoverability. The rapid growth in the number and range of access initiatives and commercial licensing models to make content available demonstrates the rising demand for these services.

It is misleading to interpret decreases in document delivery through a single established delivery channel, such as libraries, as a gap in access (see "Time for a single global copyright framework for libraries and archives", *WIPO Magazine*, Issue 6/2015). The use of libraries may be decreasing for a variety of reasons, not least because other access mechanisms are already providing services that meet the needs of users. Such mechanisms include subscription models, open access, rental models and sharing through

the social networks used by scientists and researchers. The success or discontinuation of one particular access channel should not, in my view, be held up as an issue requiring the attention of international policymakers.

DIGITAL INITIATIVES THAT HELP BRIDGE ACCESS GAPS

There are an expanding range of initiatives to help readers access materials, especially those for whom reading materials were previously in short supply. For example, STM publishers are actively engaged in several key initiatives to improve access for institutions in least developed countries and developing countries (as designated by the United Nations) at reduced cost or, in some cases, no cost. These include Research4Life, INASP and EIFL.

INASP serves 1,900 developing-country institutions. Its library partners have access to up to 50,000 online journals and 20,000 ebooks through access and availability programs. The scope of Research4Life is even broader, providing content from 68,000 resources to 8,000 institutions. EIFL adds further availability and also works with countries in transition by bundling funding from countries and United Nations agencies and negotiating low-cost consortia access agreements.

PATIENT INFORMATION

In the area of healthcare, patients and their families benefit from services such as patientINFORM, which provides access to research articles and information prepared for the non-scientist reader. The platform patientACCESS also enables patients and caregivers to directly access, print and share research articles with the trusted healthcare professional of the patient or caregiver through a simple process via RightsLink, a service offered by the Copyright Clearance Center.

Many STM members also design standards and format definitions as well as software tools to ensure that blind and visually impaired people enjoy access to the same resources, at the same time, and at the same price as their sighted counterparts. To this end, STM publishers actively license BookShare for worldwide delivery of

accessible-format copies and also participate in the WIPO-sponsored Accessible Books Consortium.

COMMERCIAL LICENSING MECHANISMS

As part of their commitment to open access, STM publishers license collections of content in a variety of ways, including by subscription, tokens, pay-per-view and rentals. More recently, they have worked with various science-focused collaborative social networks to facilitate sustainable sharing between network users.

LICENSING BUNDLES OF CONTENT

Consortia of institutional libraries centralize services to meet researchers' demand for seamless access to content by negotiating licenses whereby each member retains the freedom to participate in the collection and to add content. This allows each library to access content that would not otherwise be available.

Estimates of the number of library consortia worldwide range from 300 to 400, and their size and nature vary considerably. An example is Couperin (the Academic Consortium of Digital Publications) in France, which has over 200 members and is well placed to negotiate licensing deals that bundle the types of content they need.

Some entities have opted to use national licenses. For example, in 2004 the German Research Foundation (DFG) decided to purchase and license digital content in the framework of a German National License. The licensed content comprises bibliographic databases, e-journals, reference works and full-text databases from a large number of vendors. National licenses make it possible to accommodate specific country needs and offer broad country-wide access to research literature by eligible research and tertiary institutions and their patrons including walk-in users, through remote access or via academic and, in some cases, public libraries.

EBOOK COLLECTIONS, EBOOKS, CHAPTERS OF BOOKS

A variety of STM ebooks such as reference works, book series, handbooks and monographs are made available

Research4Life is one of a growing number of initiatives to improve access to reading materials for institutions in developing and least developed countries at reduced or, in some cases, no cost.

through various licensing and purchasing models. Science ebooks are offered in packages or collections, sometimes with the possibility for library patrons to produce their own personal print copy.

Ebook collections of certain scientific disciplines may be purchased per year of publication as a "frontlist" collection (i.e. those placed on sale within the last 12 months) and complemented by digitized "backlists". Collections may be licensed or purchased outright.

Individual ebooks are available with a one-time payment option representing a license to use the work for an unlimited time. Publishers and intermediary platforms also offer options to purchase or rent single ebook chapters with search options.

OPEN ACCESS LICENSING

Many STM publishers enter into agreements with authors and funding bodies to allow authors publishing in STM member journals to comply with the manuscript archiving requirements of funding bodies. In such cases, open access is funded as a component of the research grants underwritten by those funding bodies. In many cases the agreements provide for the payment of a "gold" open access fee either for publication in a fully open access journal or through a hybrid access mechanism that forms part of a more traditional subscription-based journal. The articles and contributions that present and interpret the results of an author's funded research are then

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made available on an open access basis (free-of-charge to the reader) through the publisher's online platform or an institutional repository.

ARTICLE RENTALS

Rental access, through which anyone may rent an article from participating journals, is offered by DeepDyve. Its services include a 24-hour article rental option for a read-only PDF and a monthly subscription rental service where users can access over 12 million articles from more than 10,000 peer-reviewed journals. Similarly, Digital Science's ReadCube technology, although aimed at managing research, offers access to content instantly and affordably through its ReadCube Checkout offering.

ARTICLE POSTING AGREEMENTS

Many authors and institutions seek to enhance their web presence by highlighting their research output and its impact. This often involves the development of an institutional repository to allow academics and students to post and facilitate access to their articles, book chapters, conference presentations, dissertations and theses. Using agreements developed for this specific purpose, STM publishers are working with authors and institutions to enable them to include such works in their institutional repositories.

CORE PRINCIPLES ON ARTICLE SHARING DEVELOPED

In 2015, the International Association of Scientific Technical and Medical Publishers spearheaded an open consultation on article sharing with a view to establishing core principles that clarify how, where and what content should be shared using these networks and sites. This made it possible for the Association to release the *Voluntary principles for article sharing on scholarly collaboration networks*. Such inclusive dialogue across the scholarly community has created a springboard for further collaboration to make sharing easier, promising rich benefits for researchers, institutions, and society as a whole.

DOCUMENT DELIVERY SERVICES

Several document delivery services that target the needs of researchers and academics are operated by institutional libraries and not-for-profit entities. Examples include Subito, a consortium of over 30 German,

Swiss and Austrian institutional libraries, which runs an international document delivery platform that provides for online ordering, and FIZ Karlsruhe, which runs a fully licensed document delivery service with rental options.

Get-It-Now, a fast global full-text article delivery service complements libraries' own interlibrary loan services by adding unsubscribed journals with the possibility of full integration with a library's workflow or OpenURL link resolver.

A range of commercial document delivery services are also offered by publishers, intermediaries and companies such as Infotrieve and Ingenta Connect. These include direct access to individual articles as well as individual purchase and pay-per-view services. However, such services are fast becoming outdated since the content they deliver is not always instantly accessible and some users find them expensive. Some services are more efficient than others, prompting users to change service providers and forcing various corporate acquisitions in the field. But globally, the volume and rate of document delivery is decreasing. The underlying reason for this is not related to copyright, but to a switch by users to the new, more efficient access channels such as those outlined above.

The expanding range of services, networks and offerings available within the scientific, technical and medical publishing sphere are made possible by licensing. Licensing is the "lifeblood" of publishing today. It offers a flexible and extremely versatile mechanism for publishers to meet diverse market demands by tailoring their content offerings to the specific needs of users. Copyright is the lynchpin of these licensing agreements and as such is a great enabler – rather than a barrier, as some claim – when it comes to making content widely available to users.

The challenge today in relation to publishing is related less to the availability of content but more to its discoverability and delivery, both of which can be achieved through training and technology.

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