Building Digital Resiliency, a special CCC Publishers Town Hall

with

- **Tatiana Khayrullina, Outsell, Inc.**
- **Colin Lovrinovic, Gould Finch**
- **Ritu Dhand, Springer Nature**
- **Carl Robinson, Copyright Clearance Center**

For podcast release
Monday, May 11, 2020

KENNEALLY: Welcome, everyone, to our program today, Thinking Beyond the Crisis: Building Digital Resiliency, a special Publishers Town Hall presented by Copyright Clearance Center.

Where are you right now – at the kitchen table, seated by a desk in the spare room? Maybe you're hiding from the family in the garage, or else you found yourself a quiet corner in a damp cellar. It doesn't matter, really. You and me and many more around the world are at work online. With the world in lockdown during the COVID-19 pandemic, the offices and classrooms where only weeks ago we would gather and collaborate are now off limits. The digital office where we meet today occupies no space and any space. In an extraordinarily short time, COVID-19 has impacted every aspect of our lives, while rewriting the rules for business, academia, technology, publishing, and the media.

Publishers globally and in every field have done exceptional work to make the sudden, unexpected shift to an exclusively digital environment. In this first Publishers Town Hall from CCC, our special guests will offer actionable insights and the latest information to help you begin to see beyond the crisis.
I now want to bring on my first guest for the program. Tatiana Khayrullina is director and lead analyst for scientific and technical solutions at Outsell, Inc., which covers the data and information industry. Tatiana joins us from Toronto. Welcome, Tatiana.

KHAYRULLINA: Thank you, Chris.

KENNEALLY: I'm glad to have you here. You know, the point that is, I guess, obvious to everybody in this particular health crisis – the coronavirus has meant a premium

in the medical community on PPEs and N95 masks. But there's also a premium for professionals and the public for high-quality information that's been curated by trusted parties. You've done some research on the response to this emergency need for information that publishers have made, and I wonder if you can share some of that research with us.

KHAYRULLINA: Oh, certainly, with pleasure. Well, as the past three months have demonstrated, really the fight against the pandemic uses information as an essential resource. Drug discovery, infection tracking, matching diagnosis to new symptoms, matching existing medications to unknown symptoms is all case studies in data mining, in data analysis. And that's the type of activities that health care practitioners and researchers in drug discovery engage in on a daily basis. So it's not surprising that I think it's safe to say right now that every single participant in the information, data, and analytics industry has come out with a solution – a resource that they want to offer to help fight the pandemic.

I wanted us to focus in particular on point-of-care solutions today, and I'll explain why. Well, first of all, this is the type of resource – information resources – that are under added scrutiny by the rest of the world. Publishers are making them available while the world is watching, so publishers really want them to work. They're doing everything that they're capable of, everything that's at their disposal to make sure this information works for the practitioners, to make sure this information works for the researchers who are engaged in drug discovery, to make sure it's there when they need it and it's as up to date as possible, which is why the way this information is delivered could point us towards how the industry will develop in the future, could point us towards kind of the travel direction the industry is taking. This is not to say that it's going to stick around – every single best practice that's in place now will stay forever – maybe not immediately. But some of them will. And it will be interesting to see what's working now kind of to take away some early lessons learned.

So on the slide, I have a few examples of resources made available by publishers to pretty much everybody, because the number-one thing that happens to all these resources, they become open – in other words, free. If there was a paywall, the paywall is dropped, and anybody who has an interest can access a resource. And among this multitude of examples that we can find in the publishing industry and information and data analytics industry, I've just picked two that have to do with drug discovery and point of care, and that's two databases provided by Clarivate Analytics, the Cortellis intelligence, generics intelligence, and the drug discovery intelligence. Both serve the purpose of, first of all, keeping hospitals stocked with

existing medications and, of course, aid in drug discovery. So these are two free resources that used to be paywalled.

The second interesting thing that happens to such resources is quite often, a database becomes available, but it's not deemed enough. It has to be connected to an AI-powered engine for deeper, richer, better, more profound insights. That's what happened to the COVID-19 antiviral candidate compounds dataset, which is in itself and impressive database of 50,000 chemical substances with known or potential antiviral activity. Again, before, it was behind a paywall. Now, it's open for free access. But in addition to that, it's also contributed to the Allen Institute open research dataset for further data mining.

The third interesting modality that happens to these open resources is if it's a resource based on updated, curated content, the frequency of updates are now happening pretty much up to the minute. Before, there could have been a lag of, I don't know, days, weeks, even months, allowing for the editorial rigor that has to be applied to keep this resource effective for the researchers. Well, now, the waiting time is usually as short as it can possibly be.

How publishers are achieving this – this is a different story, but it's happening. It's happening now. And we have an example of the Sentri7 tools – the tool set provided by Wolters Kluwer that's accomplishing exactly that. It's a set of tools that is meant to provide real-time alerting and automated notifiable conditions for reporting infection cases to public health authorities. So essentially, it's the kind of activities that we depend on to understand how fast the infection is spreading. That's the curves we're watching on a daily basis – that's the kind of information that's feeding those curves. And this set of tools is now being updated in real time, on a daily basis.

The fourth type of changes that are happening to the way the information is provided is that we see datasets and types of content joined. Sometimes parties that collaborate are the parties that used to compete, in the understanding that it's a joint dataset and it's joint different, disparate content sources that would provide better and richer insights for the practitioners that deliver the information that you're actually looking for in the most efficient way.

The example that I have here is the DynaMed and Micromedex with Watson, provided by EBSCO and IBM. This tool was in development before the pandemic, but the pandemic of course spurred its introduction into the marketplace. It has become free for new subscribers. And in general, I would say it's being battle-tested right now. Of course, the interesting aspect is that it used to be two

competing tools, and they still do exist as two separate competing tools. But now, they also exist as a joint pool of content.

KENNEALLY: Tatiana, I want to ask you – because you mentioned that we're at a particularly striking moment, a moment of crisis, a lot is going on – the question will be what will be around after the crisis, post-crisis? We're looking ahead to when we get out of this situation. So I think I heard you say that we're going to expect to see a good deal more automation. We're going to have a greater reliance on speed. We're really going to need to get accustomed to working as quickly as we are now working today.

But finally, the emphasis is on data, and you mentioned the sources of data. You're seeing publishers working with other publishers, so they're going beyond their own proprietary data and bringing in other sources of data so that they have a greater pool to work with. Is that right?

KHAYRULLINA: That's correct. Yes, thank you for summarizing that. Like I said, when I was thinking about this topic, I thought, well, we should probably concentrate on these four kind of modalities of what's happening to the information being free and open to take the direction of travel from that. And that would be very early lessons learned. Like I said, it doesn't have to happen tomorrow, but I do believe that it kind of provides an impetus to the industry to follow in the months to come.

And you're right, we do expect to see a great deal more of automation – has to do with productivity – and it will be probably most important for the type of content that depends on frequent updates. The challenge there is that you would have to combine editorial rigor with the increased frequency of those updates, so that brings in the question of productivity tools, of automation of the processes.

The second set of insights that could be derived from what's going on in the information industry right now is that, yes, there's a lot of emphasis on artificial intelligence being put to good use. However, it has also become clear that where in the past, we would think that, OK, take a dataset and attach it to an algorithm and it should be good enough, what publishers are essentially teaching the market right now is that using just one dataset, just one source of data, just one source of content, will probably not provide the insights that the researchers are looking for, that the market is looking for. And the market is learning this and learning this quickly. So in the future, it will be really hard to compete, even with a nice and fast and modern artificial intelligence tool which is only using one set of data, one set of content, so we'll see a lot more collaboration between information providers.

We will also notice commoditization of data, where just delivering data and content will not be deemed enough by the market.

I would like to also mention another set of insights that is also coming from this current experience. We have seen many publishers report an increased traffic through their websites because their content is now free and available. I would suggest that publishers can learn a lot from the essentially mountain of data they are now sitting on that they didn't have access to before. That data can provide interesting insights if you ask the right questions. And the type of questions that can be asked is, well, how big is my entire market – my addressable market? Now that my product is free, who's coming to look at it? Who's coming to use it? Are there segments in this audience that I never suspected would be interested? Should I rethink my market segmentation? Am I in the right geography? Do I see a lot of traffic coming from different regions? So on, so forth. It's the user data that publishers are getting in exchange for making their products free that is really useful to mine for insights and to fine-tune the strategy in the months to come.

KENNEALLY: I want to turn to our second guest today, Colin Lovrinovic, who joins us from Hamburg. He's a serial entrepreneur and the founder of Gould Finch, a digital consultancy. Colin Lovrinovic has worked with clients from the the international publishing industry on projects including strategy, innovation, and implementation of new technology, especially in AI. Colin has also worked with such companies as Amazon, Apple, Universal, and Bastei Lübbe, one of Germany's largest trade publishers. He joins us, as I mentioned, from Hamburg, Germany. Welcome to the program, Colin.

LOVRINOVIC: Thanks for having me.

KENNEALLY: Well, we are very happy you can be here, because you're an evangelist for AI and AI and publishing together. And right now, you're at work on a number of projects for publishers who, as you told me earlier, want to come out on top after this crisis. I wonder if you can sort of set the stage for us and explain this important point regarding artificial intelligence, AI.

LOVRINOVIC: Sure, my pleasure. I'm just going to start with a few general remarks. There's a lot of misconceptions and different ideas out there what AI actually is. I'll try to set it straight a little bit and bring some concrete examples rather than just work with buzzwords.

Just to get started, I'm not going to read out all these examples that you can read here, but AI in general has a massive potential, of course, and not just for

publishing. It can perform certain tasks faster, cheaper, better, more reliable, and more relentless than human beings can, provided that you use it in the right cases. So you can't apply it to every problem, and you have to make sure that you get the data right, as Tatiana said. You have to make sure that the setting is correct.

We actually prepared a global study – a big report together with Frankfurt Book Fair, and we can look into some of the details now – what publishers around the world actually said how they use AI and where it's being used. What you can see here is the results from the survey. We talked to more than 300 publishers around the world on how they are using it or where they think they can implement it. And as you can see, the areas where the largest benefit is seen for the use of AI is marketing, distribution, but also the editorial department. When it comes to the editorial department, then we are more looking at different supportive functions rather than actually writing content. We also see some potential in other departments, like administration, production, and press.

Before we stay on this high level and talk about theory, let's look at a couple of examples. And let's dive into the first example that we have right here. Some of you are familiar with this example, I assume. It's by *The Washington Post* – one example for super-local news creation. This is something that's been done a lot when it comes to data-based events.

The example we see here on the left-hand side is a scoring summary from a local high school football match that on a nationwide scale, nobody would really write large text or a large review about this. But since you already have the data, because there's people at the match making notes who's scoring a touchdown, etc., you can easily turn this into text. On the right-hand side, you see what this data and a bit more actually got turned into. This is happening with thousands of articles per year.

They're obviously not the only newspaper publisher using this technology. It's been done all over the world. Some of the bigger publishers are doing this to report on local sports events, on elections, etc. So anything that's very data-based can be automatically turned into text that makes a lot of sense. So we are not anywhere close to having AI write great fiction, but when it comes to facts, it's actually a decent basis.

Another example that we have – this is more for trade publishers – one example that the European ebook and audiobook distributor Bookwire is doing – they're working a lot with dynamic ads within ebooks. So you all know when you buy a book, in the end, there is an ad for one, two, three similar titles that you might

enjoy reading and buying. In the case of the digital world and e-pubs, in this case, the sale is just one or two taps away. So what they're doing is they're using an algorithm to determine which book you're most likely to buy after you've read a certain title. And this is being optimized automatically, so the data is actually being tracked on how many people buy the book and then click on the link. And if the conversion rate isn't that great, they automatically change the title to something that is more likely to be bought. Obviously, this is by the same publisher, so that the publisher who released this book actually benefits from this.

And this is, yeah, super-dynamic. It can be changed on a daily basis. It can vary from different retailer to retailer. And this has led to up to 20% more backlist sales for publishers who participate in this. So really, it's reaching your audience where they are right now and just providing the right content suggestion – right recommendations to them. So that's an example of how you can use it in marketing and sales.

Now I have another example here that's from my own work. Like Chris said initially, we work with a number of publishers and different tools, so this is something that we developed with and for various publishers. And don't worry, you don't have to understand this data. That's just a screenshot from behind the scenes, more or less. What we're doing is we are analyzing various backlist titles. We're analyzing potential new authors that could be signed. We're also analyzing competitor catalogs for different publishers. A lot of this is happening in the trade book sector, but it could also be applied to different areas. And what we're doing is we're using data to predict popularity and the success rate of certain titles and how likely it is how certain authors and books will perform. So we're not looking at the content, but we're looking at all the data around it.

Again, I want to build up on what Tatiana said initially – multiple datasets are necessary and super-important for that. You have to get as many different sources as you can. So we're looking at sales ranking. We're also looking at performance on different social channels. We're looking at Google search results and a number of other different data sources to find out how hot or popular certain authors could be. This is being used for backlist marketing, with some cases where an author did OK a couple years ago, and now the publisher finds out that there's actually a big interest in this author, so it can be used to rerelease the book or approach the author to publish a new book with them. This is also being used for signing decisions – which new authors should you take on if you only have limited slots in your program – or even to figure out how large the size of your first print run should be. What do you expect? How many items do you expect to sell right in the beginning?

And because we've always liked building things ourselves, we also actually turned this into a product for ourselves rather than just selling it as a service to publishers. We've teamed up with a couple of people to look at titles that we think actually work well as audiobooks. So we're using this technology to figure out which books will most likely sell the most as audiobooks and actually started entering production ourselves with several partners from the publishing industry. That's a great way to figure out which content you should create and publish next.

Maybe just to sum up some of these things and put this into context – what's going to happen now, what's the future like? Like I said initially, AI is not going to solve all of our problems. And the examples I just showed – they can't help you with every single use case. I just want to highlight that there is different opportunities, there's different ways where you can use AI, be it open source solutions, be it different providers, or creating something yourself or with a partner.

There's a lot of potential out there. It can help you save money, make money, or at least make better decisions that can lead to a better business. And like I said, the machine's not going to be writing our books anytime soon – definitely not fiction books. But it can be used – or they can be used to actually sell more books by providing the right content in the right format at the right time to the right people and also at the right price.

And I think now, more than ever, it's a time to be creative, to try out new ways, because now resources are scarce. We have to make sure we do the right thing – we publish the right books, talk to the audience in the right way to really get to them, to be even more efficient than we ever were and go down new routes – for example, using technology plus using new channels. We're seeing a lot of potential working with audio subscription services, for example, really to not just secure the business but also grow it. And I think there are some opportunities out there in this crisis, but also definitely beyond the crisis.

KENNEALLY: Right. Colin, we have a question from the audience regarding the relationship with print, because even though we are still in our digital bubble at the moment, that will burst at some point, and we will go back to bookstores and other kinds of channels that bring us the print product. So the question here is regarding strategies for holding onto the print-based revenue in a world that for the moment, at least, has shifted to ebooks. Do you have some suggestions on that and how AI can help?

LOVRINOVIC: Sure. Yeah, I think there's a couple of issues or examples how AI can help. I actually know one very large example – a large publisher from the Netherlands – they use AI to really predict the size of their print run, so they want to make sure that they don't print too many books or not too less, so they don't have too much in stock or too little.

It's also been used by different bookstore chains when it comes to demand prediction, so being sure that you have the right amount at hand that if people get to your bookstore, if you can open, that you have the right titles there – you don't have titles on stock that nobody wants or short on those that actually could be sold. So anything that's related to demand and logistics, really, there's big potential there. And I think the examples we've talked about in marketing, they can also be applied to print books when it comes to digital marketing for physical products.

KENNEALLY: All right. Well, Colin Lovrinovic in Hamburg with the digital consultancy Gould Finch, thank you so much for your presentation on AI and publishing.

I want to turn right now – go to London and invite onto the program Ritu Dhand. Ritu Dhand is vice president, editorial, for Nature Journals at Springer Nature. Before joining Nature in 1999, she spent over 10 years in cancer research, completing her PhD at University College London. Ritu Dhand, welcome.

DHAND: Thank you, Chris. It's a pleasure to be here.

KENNEALLY: Well, we're very happy you can join us, because you bring us the perspective of a publisher and a researcher at this very critical moment in the coronavirus crisis. And I guess the way to start is as a researcher and a publisher, have you ever seen a time when academic research has received more public and professional attention?

DHAND: No, I haven't. I want to say it's crazy. I want to say it's mad. But it's also so good the way that the scientific community have come together, are working together, are collaborating at a level that we could never, ever have dreamt of. You know, we always think science should be very collegiate, very supportive. But in the real world, with grants, with competition, with the need to do better amongst individuals and in scientific sort of laboratories, the collaboration doesn't manifest in the way that it has with COVID-19 research.

I was looking at a number of papers that are in bioRxiv and medRxiv, which are preprint servers for biomedical papers, and there's just shy of 3,000 papers

submitted on this type of research. There's around 2,750. And I was looking at the submissions that Nature Journals have received starting in February, and we have received over 2,000 submissions at our journals. So you can see sort of the strength behind this exercise – the number of people that are writing papers, submitting papers. You know, everybody wants to try *Nature* and one of the other big journals in the first instance, and I'm sure there's a lot of to and fro.

I have heard from a lot of other publishers, and we have seen ourselves, that the standard isn't as high as we are used to. But these papers are being written up, created in a space of two months or so – a month, two months. That's literally unheard of. And I think while the rigor may not always be the highest, what is so important at this time is that we share everything, because we just don't know what will be important. We're looking at patients – 15, 20, maybe 100 in a hospital – what may seem as a small observation amongst a small group of patients. What we're realizing is that every hospital's seeing that small observation, and suddenly, that small observation is no longer irrelevant. It's quite significant. And we can see the impact it's making. So everything is important at that level.

And you see on social media, it's absolutely incredible. People are pulling out preprints, discussing preprints. You're seeing scientists making the actual science more accessible, explaining to the masses what is so important about this paper that a group of scientists is discussing. You can see scientists sharing information at a data level before they've even got to the paper stage. And it's all open. It's not private groups anymore, because we just don't know who might have something of relevance. So everyone is sharing everything.

Nature Journals have signed up to encouraging every paper that we have submitted – certainly, if it goes out for review, there is a preprint deposited. We have committed to sending the paper to the WHO at the same time. We are committing to data deposition as it happens. For instance, if there is a genome, we're not waiting for the paper to be published. We are encouraging – strongly suggesting that scientists deposit now, while the paper is still under review, to ensure it's being widely shared. And everything that we are publishing on COVID-19 is being published CC BY, open research.

KENNEALLY: Well, Ritu Dhand, this kind of openness, this dynamic environment that we are seeing, is changing research. It's changing publishing. Tell us a bit about how it's changing Nature. I mean, those doubling of submissions is a workflow challenge that you must be having. And there's also something that's critical that I believe Tatiana was telling us about earlier, which is your audience is changing. Why is that important?

DHAND: OK, there's a few questions in there, Chris, so I'll go back to how we're dealing with this number of manuscripts. You know, Nature has full-time professional editors, so that first screen happens within the journal. We can't call on the community to help us do that first screen, because we don't have an external board or external scientists that support us at that level. So everyone is working, I don't know, something like 18 hours a day. All the editors that can help look at COVID papers are doing that.

The good thing about COVID-19 is that because it's a systemic disease, we're getting papers in lots of different areas, so there's immunology, there's virology, there's modeling, there is vascular biology, there's heart research. So we can actually call on quite a large pool of editors to help us look at these papers, so that is good.

I said before that the level of rigor isn't always the highest. That means that we do reject a very high percentage off the bat, so they don't go to reviewers. We don't want to waste reviewer time with papers that we just know aren't rigorous enough, so we're doing that sort of early rejection ourselves.

The other thing that we have done is every single paper is published fast-track. So our normal turnaround time for accept to publication is about five to six weeks. These are being published in one to two weeks. That just means that they go to the top of the pile for everyone – but not only going to the top of the pile, they are a high priority, so everyone in the chain has to deal with them immediately. There's no sitting around for 24 hours.

The peer review procedure – you know, some journals are publishing these papers in 35 to 40 days. That doesn't mean the peer review process is any less rigorous. But because everyone's so interested in this research, it's easier to find referees, because everyone wants to see the paper. The referees are committing to reviewing these papers in hours, whereas we normally give one or two weeks.

The editors are absolutely aware that it's very difficult to ask for revisions – certainly not extensive revisions. We can ask for things to be tidied up, but there's not a lot more that we know can be done. So you're actually making a will it make it in one round or not type of decision, whereas under Nature Journals, we usually – I think 95% of our papers go through a pretty extensive revision. But the bar for publication isn't as high. So at the moment, we're publishing 1-2% of what's submitted, because there's no opportunity for revision. It comes in, if it's good

enough to go out, we'll put it out. But if it isn't, we're not going to hold it back – which is a very, very different way of working.

Is it fair? I think in the normal world, researchers wouldn't think that's fair, because they want an opportunity to be able to make things better or write or reflect on referees' comments. But where we are with this crisis, the most important thing is that the most rigorous research comes out as quickly as possible, so it's an in-or-out decision.

How has it changed our audience? What we're finding is that we're receiving a lot more submissions from the clinical sector, the public health sector, which isn't a sector that we have traditionally received a lot of submissions in. We have a Nature journal, *Nature Medicine,* which does receive more submissions in this space, but *Nature* hasn't received as many in the past. But because this is a biomedical disease, because the data is coming out of hospitals and from clinical labs, we are engaging with this audience a lot more. And that's great. That isn't something that I would want to see change. I hope we can build on that moving forward.

KENNEALLY: Well, Ritu Dhand, vice president, editorial, for Nature Journals at Springer Nature in London, thank you very much indeed for a glimpse at the changes underway at Nature.

Finally, on our program is Carl Robinson, senior director of publisher solutions for Copyright Clearance Center. Carl, welcome to the program.

ROBINSON: Thank you, Chris. Good to be here.

KENNEALLY: Well, we appreciate your joining us for this virtual town hall. And you are virtually joining us – even though you're in Oxford at home, you're joining us, as the image shows us of the – you could see our CCC offices in St. Katharine's Docks on a nice day in the center of London.

Carl, you've been hearing what everyone's been talking about. You meet with publishers all the time. And this is a moment for reflection. The coronavirus crisis is one that has caused us all to think about things we had sort of put off thinking about and reexamining our lives. You've been thinking about this notion of resiliency and what it means for publishers.

ROBINSON: Yes, I have. And I think it's always an advantage to be the last, in some ways, to hear what my colleagues have said before me. I think what's been

interesting or what's come out strongly is this whole movement towards the changing nature of things and how data can support that.

One of the things that stood out – I think it was Colin who mentioned AI, and that graph where he mentioned editorial and marketing so on, they were high on that graph of benefits of AI. And that strikes me – that's resonating with what I see there – just approaching the market differently, needing to understand our markets differently, so that we know how to pivot in a crisis, so that we know what's going to need to change, and we can use that insight, if you like, to help direct where we need to go.

But I do think that while data is part of the answer – and I think everybody was saying this in their own way, but nobody actually landed on the same word that I would, which is there's a partner to that, which is agility. And I'll define what I mean by agility in a moment. But I think what I'm thinking of there is data and agility hand in hand help you become much more resilient and much more able to pivot in a crisis such as the one we've got now.

And we are seeing examples of publishers who can pivot. My own background is more in educational publishing, so I've been watching quite a lot of what's been going on there recently, and that's quite interesting. I'll touch on that in a moment, too.

But another thing I wanted to pick up on from what Tatiana said – and I thought it was a great phrase. I'm just going to make sure I quote it correctly. Tatiana, you said anything digital is powered by data, and you used that in the context of digital transformation. This is one of these things that I've started to say with colleagues at work and also with publishers, is I've never come across a publisher who's suddenly transformed. It's never about sudden transformation. It's more about one day realizing that we're not the same company we used to be, one day realizing I'm transformed. So that leads me to this whole idea of there being evolution in the process, a journey towards transformation. When you think about that with data and agility, I kind of choose to think that with the sort of idea of evolution, you're favoring what you're good at and you're favoring the successful strategies. That's what evolution is all about, and I think that's what leads to transformation.

So data – and again, I echo, I think it was Tatiana – I was echoing what you're saying is, you know, big data, huge amounts of data on the screen right now. We're showing the kinds of data that are available to publishers – descriptive data about the book, administrative data is kind of where are we holding it, all of that kind of stuff – reference data, statistical data, structural data. What is this journal

made up of? What is this book made up of? How many parts? Where was that piece used before?

And my kind of favorite new one, which I came across in a – I think, actually, in an Outsell briefing I was with or meeting once – somebody used the term exhaust data. I loved that idea of exhaust data. This is data that you get by accident, so data that teaches you something but that you didn't intend to gather that data – you just got it because, for example, somebody didn't find something they were searching for on your site, and that tells you what they were looking for, and you can infer insights from that.

So all these kinds of data are available to us, but that is all about – you know, the danger of that is just having far too much data. So then, I think Colin said something about AIs and other things can help us tune that data. And I choose the term curate it – so curating this noise to get to data that is meaningful and allows you to get some kind of insight. So I think better data in publishing is curated data that is well utilized.

That brings me on to kind of the agility factor, really, which is better data makes for better choices, better choices for data-driven value, and the better the data, the better the insight. But how do you actually kind of lean into that data?

KENNEALLY: We've had access to some wonderful insights and the latest information from our panel. I want to thank everybody who's been on the line for joining us. Ritu Dhand in London with Springer Nature, Tatiana Khayrullina in Toronto with Outsell, Colin Lovrinovic in Hamburg with Gould Finch, and my colleague in London at Copyright Clearance Center's offices there, Carl Robinson, thank you all very much for participating today.

END OF FILE