Imagining the Post-COVID World of Scholarly Communication
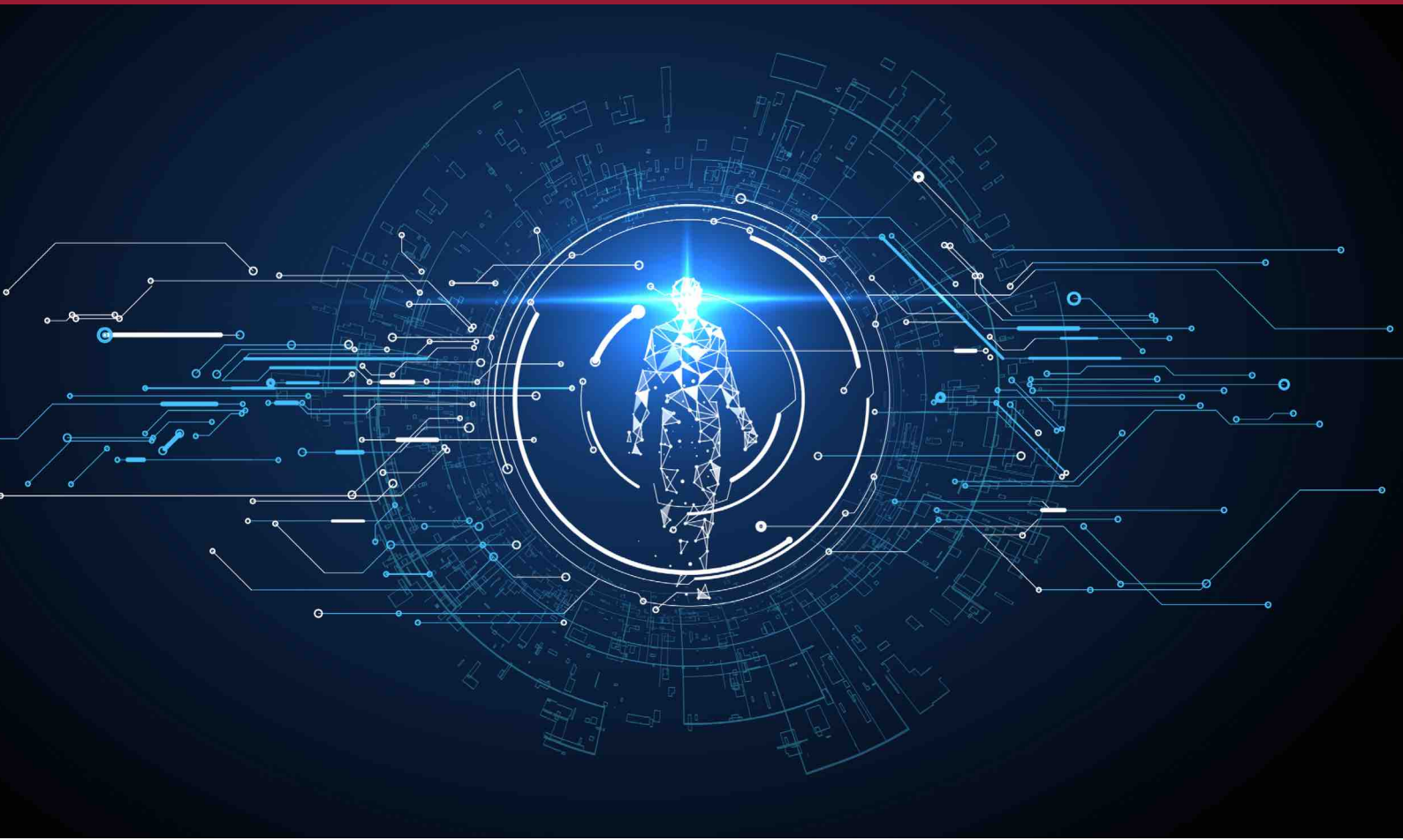
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Executive Summary

COVID-19 arrived on the coattails of digitization, open access, and the open science movement in scholarly publishing. Disruption and transformation, as constructs, have seldom carried as much meaning or urgency. Phrases such as "the new normal" and "low-touch economy" have entered common parlance. What we are seeing is one tectonic shift, or several in conjunction—it is hard to be sure. Given this changing landscape, we ask two questions: What could the future look like? What could it demand from us?

This whitepaper gathers eclectic voices to lay out the future of the publishing landscape along four tracks: transformation of publishing workflows, emergence of new revenue streams, mapping of a "virtual" tomorrow, and evolution of the gig economy. While the rising popularity of preprints, experimentation with newer peer review models, and growing disintermediation are some of the forerunners of transformation in the publication process, a theory gaining ground is that technology is best placed to demonstrate evidence of trust in science. Automation is poised to protect core revenue streams and generate new ones, and algorithms, ironically, are the best bet for publishers to deliver personalization at scale in their efforts to make the researcher their North Star.

Given the varying levels of preparedness across commercial publishers, academic societies, university presses, and preprint servers, this report attempts to draw out the contours of a post-COVID world for academic publishing, presenting multiple perspectives of change, and offers direction on how to address an evolving reality.

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1 How Can Preprints Drive Trust In Science?

By Satyajit Rout & Christopher Leonard

A scholarly publisher's responsibilities can be split among the broad functions of registration, validation, dissemination, and archiving, with the validation of scientific work through peer review perhaps being the most central of all. For preprints, the responsibilities are similar with the exception perhaps of validation. Validation has historically been left to journals, while preprints have focused on rapid and early dissemination. Social media, COVID-19, and wider attention to science have boosted the disseminating power of preprints. Yet, dissemination makes validation imperative; without the latter, there is the risk of unvetted research getting into the public domain and, much worse, that of preprints being seen as weak or pseudo-science.

The preponderant view is that science builds on and corrects itself over time. However, that may come with a level of risk we are uncomfortable with. To build trust in science and in the role of preprints to disseminate trustworthy science, there is need for some form of quality control in the preprint workflow.

Did someone say badges?

It is an unsaid truth that journal peer review works best when it is needed the least. Journal peer review is not set up to handle all the responsibility of vetting science. However, in conjunction with checks further upstream, peer reviewers could be freed up to focus on the crux of scholarly research. Quality checking on preprint servers is largely manual and involves resource-intensive processes. On preprint servers today, it is not atypical for manuscripts to go through a two-step process involving a basic check for completeness and additional checks specific to the domain. Pre-screening is the single biggest cost head for any preprint with consistent volumes, mostly consisting of staff time (i.e., reviewing, checking, and approving submissions). This cost will only go up as the need for faster and broader quality control deepens. Advanced text intelligence offers us certain benefits. A system of automated badges built on natural language processing and machine learning could provide a granular validation of research that is not binary but would publicly indicate research merit/rigor along a sliding scale.

> **BADGES COULD PROVIDE A GRANULAR VALIDATION OF RESEARCH THAT IS NOT BINARY BUT PUBLICLY INDICATES RESEARCH MERIT/RIGOR ALONG A SLIDING SCALE.**

What purpose will badges serve?

By tagging preprints with various indicators, badges may represent quality, rigor, and scope. In doing so, they will ensure better forward linking of early research for various stakeholders. At industry scale, badges on preprints have the potential to signal scientific merit along a range, not based on a one-size-fits-all metric like the Journal Impact Factor (JIF). Their benefit could trickle downstream to traditional publishing workflows too. If preprint badges could be ported to journal peer review, they may ease up the peer review burden and even facilitate the process of transferring reviews.

Satyajit Rout

Satyajit has been working in academic publishing since 2006. In his previous avatars, he has developed publication support services for authors and helped build Impact Science, the science communication arm at CACTUS. Currently, he is VP, Strategy and Corporate Development, at CACTUS and spends most of his time taking digital products to market.

Christopher Leonard

Chris is Director of Products & Strategy at CACTUS and has over 20 years' experience in managing publishing workflows in editorial and product roles alike. He has developed preprint servers, overseen manuscript submission, and launched manuscript assessment services, besides being an ex-member of the COPE council.

WHAT PURPOSE WILL BADGES SERVE?

Instant validation
Near synchronous validation

Decision support
filtering of content

Signaling
"These preprints are vetted."

Industry
Standardization

Readers
Quality assurance
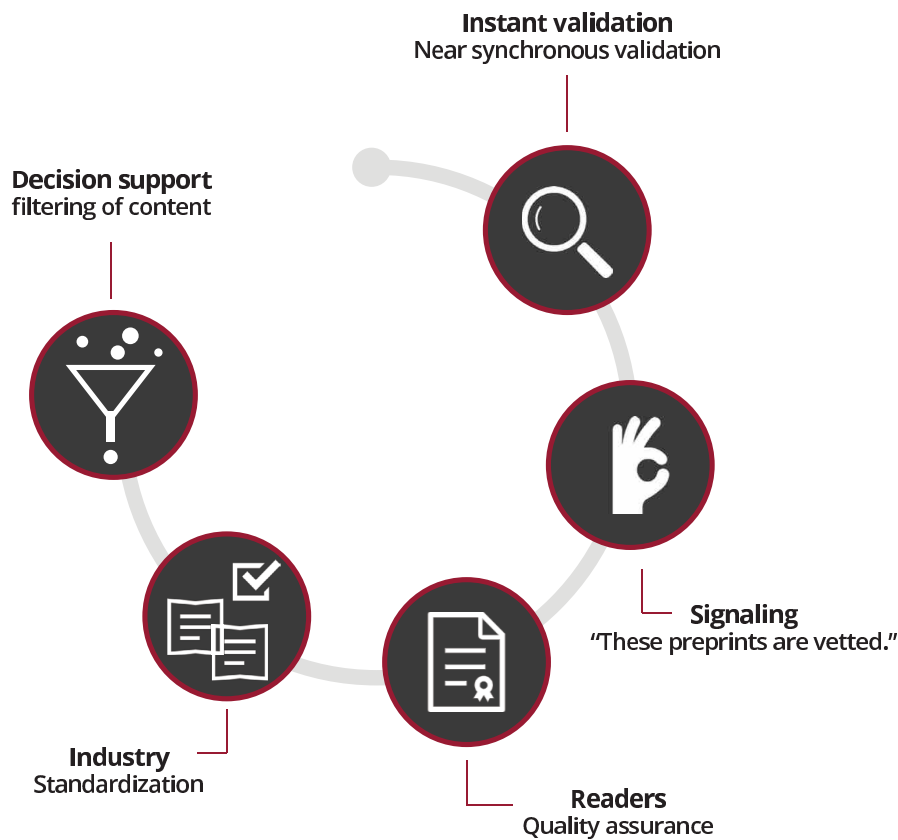
Preprints: From today to tomorrow

Several of the existing preprint services lack a scalable business model. They are often run by volunteer academic groups dependent on endowments from foundations and contributions from libraries. Offering value-added services courtesy of badges could be a way to find preprints a reliable and systematic revenue source. Badges could be the quality standard unifying the different islands of scholarly publishing workflows. To this end, there is plausible reason to believe that publishers and funders could work actively with preprint servers to improve scholarly communication.

1   Is an AI revolution brewing in peer review?

By Christopher Leonard & Mads Rydahl

The roots of peer review were as much in political demands for public accountability as they were in finding ways to validate the novel work being presented, and only really began, in the form we know it, at the beginning of the 20th century. Albert Einstein was horrified to learn that one of his manuscripts had been sent out to a peer reviewer in 1936, but, by the 1960s, it was an accepted part of the scholarly publishing process.

Peer review, as we know it today, has traveled a long and winding path to its current incarnation. In this journey, it has witnessed change in scholarly communication practices and web technologies. Yet, given that the tools available for peer review have fundamentally remained the same, there are several sticky issues that perhaps need better acknowledgment if one were to look at ways to rethink peer review.

SHORTCOMINGS OF CURRENT PEER REVIEW

01 **Bias**
Overt or unconscious bias toward countries, genders, authors

02 **Scope**
Limited coverage of reproducibility, image manipulation, data fraud

03 **Speed**
Time-consuming peer review process that could run into weeks and months

04 **Availability**
Growing submission volumes with limited trained reviewers

Peer review experiments

Thankfully, many journals and institutions have recognized these problems and are addressing them in new and interesting ways (Reimagine Review lists 48 experimental services as of July 2020). The common aspect in all these models is the desire to build a faster horse, that is, to reduce inefficiencies from the traditional process. This is where AI can help augment the human decision-making process by automating the reviewer search process and simplifying the review process by offering reviewers technical check reports covering the most common omissions.

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DIGITAL TRANSFORMATION OF THE REVIEW PROCESS ALSO OPENS UP OPPORTUNITIES TO COMBAT REVIEWER FATIGUE.

Christopher Leonard

Chris is Director of Products & Strategy at CACTUS and has over 20 years' experience in managing publishing workflows in editorial and product roles alike. He has developed preprint servers, overseen manuscript submission, and launched manuscript assessment services, besides being an ex-member of the COPE council.

Mads Rydahl

Mads is VP, Products, for Cactus Labs, the innovation and R&D Cell at CACTUS. Formerly Head of Product Design at Siri.com, a DARPA-funded startup sold to Apple, Mads is the first-named inventor on several foundational patents on search technology and recommender systems. In 2012, he co-founded UNSILO, an AI-based text intelligence startup, that was acquired by CACTUS in 2020.

Automating reviewer search

The UNSILO Reviewer Finder analyzes incoming manuscripts to isolate key concepts, methods, drugs, or diseases mentioned, and then identifies authors that have published similar research in the recent past. For each of the identified candidates, the UNSILO Reviewer Finder dynamically builds a reviewer profile that includes the features that editors look for when they decide whom to invite, including years of active experience, how often the candidates were first authors on similar research, their association with specific research groups, their H-index, and a list of their published articles.

Digital transformation of the review process also presents opportunities to combat reviewer fatigue. We can increase task acceptance, incentivize good reviewer behavior, and retain the best reviewers by designing tools that understand candidate interests, and explain to a candidate why a particular manuscript might be interesting for them to read. We can design tools that help reviewers spot references to retracted papers, statements that need attribution to a credible source, or claims that have been disputed in published literature.

Simplifying the review process

Imagine if a pre-screening report is sent to the reviewers, so they can be satisfied that all elements of technical and ethical reporting in the paper are in order. They can then concentrate on the science. This is a classic example of AI supporting human intelligence and making it better.

AIRA (by Frontiers) and Evaluate (by UNSILO) are examples of tools attempting to automate the roster of technical checks so that while the final informed decision is taken by a human being, it is augmented by the speed and consistency of an AI assistant.

Polls during a webinar held in May 2020 on "Preprints, AI, and editorial workflows: A combination to revolutionize journal publishing" held by Cactus Communications revealed that only a minority had an appetite for a full-blown AI-powered peer review. Most respondents were keen on retaining the human element of peer review, as long as the rest of the process was improved upon and the reviewer could focus on aspects considered out of bounds for automated evaluation.

To borrow a phrase on democracy, "Peer review may be the worst form of research validation, except for all those other forms that have been tried from time to time." In sum, peer review is here to stay, but smart reviewer-finding tools and automated technical checkers could help drive efficiencies into the process of scientific gatekeeping. Here's to a future of humans and AI making peer review better for research worldwide.

1   How can authors and publishers come together to use technology for the benefit of publishing?

By Satyajit Rout

A [2018 global survey of authors](#) presented insights about author-side challenges in scholarly publishing: 44% of authors globally find preparing a manuscript for peer review "very or extremely difficult." It is common for authors to wait between "100 and 200 days" to be published in selective journals. STM publishers face growing pressure to perform quality control on journal submissions swiftly, accurately, and economically. Traditionally, such editorial vetting has come at high operational costs and expense of time, as is evident from findings of the aforementioned surveys. The situation has exacerbated thanks to COVID-19. In the last six months, massive and unprecedented volumes of coronavirus related research have been published across disciplines. Journal editorial offices are scrambling to ensure critical
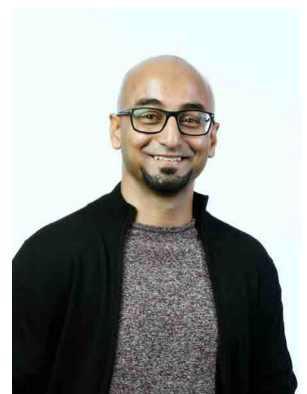
Satyajit Rout

Satyajit has been working in academic publishing since 2006. In his previous avatars, he has developed publication support services for authors and helped build Impact Science, the science communication arm at CACTUS. Currently, he is VP, Strategy and Corporate Development, at CACTUS and spends most of his time taking digital products to market.

research is published in record turnaround times. Having encountered such speed, researchers, funders, and the community at large will demand the same all the time. Yet, it is not a stretch to say that this may not be sustainable. Over time, publishing workflows will struggle to keep pace, resulting in suboptimal quality control and peer reviewer burnout.

FINDINGS OF A 2019 PUBLISHER SURVEY HIGHLIGHTED THE FOLLOWING:

87%

of editorial offices perform mostly manual technical checks during desk review

1.8 million

manuscripts annually (33% of all submitted) are returned to authors because of technical reporting issues

1 million

hours annually are spent on technical checks (average of 9 minutes/paper), adding up to $30-40 million per year

What can give publishing processes a boost?

Machine learning and text intelligence technologies make available automated solutions that offer extra hands on deck that reduce time spent on manuscript preparation and screening efforts for authors, editorial teams, and publishers. This is where tools like Paperpal Preflight enter the frame, supplementing human decision-making by pinpointing in real-time areas in manuscripts demanding attention. Think plug-and-play AI solutions, real-time support, and zero fatigue-driven errors. Automation helps authors too as they ready their manuscripts for submission, by highlighting a missing data or disclosure statement and inconsistencies between citations and references, and/or also cleaning up text that would otherwise be difficult to comprehend. Done right, the benefits of machine learning and natural language processing would manifest downstream: a drop in the time to first decision, a reduction in the number of iterations between author and editorial office, and lower copyediting efforts.

Are we talking about a workflow solution?

For such technology to work best, two preconditions must be met: the intervention should happen early on in the publication cycle so that its value can be amplified downstream and the responsibility for making this happen should be shared between authors and journals. Necessary identification of omissions in manuscript preparation prior to journal submission may save time spent at the desk and peer review stages. It would also mean that editorial efforts are reserved for judging the validity and novelty of science, and the task of verifying the adherence of manuscripts to author guidelines is supported by technology that has proven itself to be fast, accurate, and affordable. It is not enough for journals to be willing to lean on scholarly publishing technology to see the fullness of the results of machine learning. Once a manuscript is in the publishing workflow, a certain cost has been incurred, in time, effort, or both. When is the right time to build in automation thus becomes a pivotal question. This is where authors come in. By permitting technology to perform the kind of housekeeping that could shave off their time to publication meaningfully, authors can support their demand for improved scholarly publishing workflows. As an increasing number of scholarly publishers make researchers the focal point of their efforts, technology could help build a pact between the two.

1 Will technology-driven disintermediation be the biggest disruptor?

By Sourav Dutta & Satyajit Rout

Every week in the shadow of COVID, we read stories from across industries on how hand in glove technology is with disintermediation. It is at once the catalyst and the driver for disintermediation. In discussing technology powering disintermediation in the scholarly publishing industry, it is not a leap to hypothesize that tech solutions will enable publishers to get closer to end users to provide them with a personalized experience. However, this statement is assumption driven. By assuming that it is publishers who are inextricable from the value chain, we run the risk of taking a narrow view of things. This piece therefore gazes into the crystal ball with wide lenses. Subscription agents aggregate curated content, pack it in specialized databases, and sell subscriptions to libraries. Independent sales agents act as the bridge between (smaller) publishers and libraries. But with fewer libraries able to afford a "just in-case" acquisition model, COVID and accompanying library spending   budget

cuts expected, and the growing funder and community push to open access, it is difficult to see sales intermediaries adding value doing the exact same things they do today.

Yet, when one link begins to dissolve in the chain, another solidifies. Growing cancelations of Big Deals have been a shot in the arm for commercial document delivery services like RightFind and Reprints Desk. Shrinking toll-access collections and an increasing shift to open access have also meant that libraries have turned to paywall-jumping browser plugins like Unpaywall and OA Button for content access.

> **SHRINKING TOLL-ACCESS COLLECTIONS AND AN INCREASING SHIFT TO OPEN ACCESS HAVE ALSO MEANT THAT LIBRARIES HAVE TURNED TO PAYWALL-JUMPING BROWSER PLUGINS LIKE UNPAYWALL AND OA BUTTON FOR CONTENT ACCESS.**

Sourav Dutta

Sourav heads the Strategy & Corporate Development function at CACTUS. Previously, he has led global strategy and M&A assignments at Tata Global Beverages and has served as a management consultant at PwC across several different sectors, including consumer and industrial goods, ecommerce, and technology.

Satyajit Rout

Satyajit has been working in academic publishing since 2006. In his previous avatars, he has developed publication support services for authors and helped build Impact Science, the science communication arm at CACTUS. Currently, he is VP, Strategy and Corporate Development, at CACTUS and spends most of his time taking digital products to market.

Faced with challenges aplenty, publishers are adapting. They are developing new strategies that lean on digitization for the distribution and marketing of their content. They are leaning on AI tools to build content collections, from SDG-related policy to universal health coverage, on the fly from their existing corpus. Publishers are also looking more closely at researchers. Through an array of platforms and tools across the research workflow, they are striving to control researcher identity. Personalized researcher experience is moving up the chart of promises made by publishers. The fastest growing of them, mostly open access publishers, are building their own manuscript submission systems that aim to circumvent and disintermediate legacy systems. While all of this is happening, leading funders are challenging the publishing status quo. Unable to find vehicles among traditional publishers for their vision for global research, they are looking at the challenge of open science simply as a series of technological challenges. Furthermore, COVID-19 has upped the role of preprints in effecting scholarly communication. Rapidly reported science is worth much more than it has ever been. The word on the community street is that traditional journal-driven quality control cannot be taken for granted as the optimal solution because its costs can no longer be ignored. Concomitantly, advancements in text intelligence has meant that more content is machine readable. Can technology be the agent that reduces our collective dependence on human peer review?

Wherever there is disintermediation, there will be an almost immediate reimagining of the way value is added, leading to re-evaluation of the value chain and reintermediation in new ways. What is clear is that any such realignment of the value chain in the future will be driven by technology. Recent evidence suggests that could happen sooner than later. The devil, though, is in the details.

2 How are recommendation engines helping content owners and consumers?

By Thomas Laursen, Siddharth Varshney, & Michael Upshall

Over the last two decades, scientific discovery has been transformed by the ubiquitous availability of search engines. For several years, discovery was dominated by Google, with PubMed search being a distant second. But the paradigm is changing, and we are seeing a wave of content discovery portals and apps. In addition, newer dynamics in content dissemination, social networks, open access movement, and content licensing partnerships are helping research discovery take a giant leap.

Academic recommender systems have traditionally been driven by behavioral data such as download statistics or more detailed behavioral patterns, but some of these systems have privacy issues because they rely on tracking user sessions. In addition, they all fall short in one specific aspect: they have a "cold start" problem. They require a certain amount of

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Thomas Laursen is co-founder and formerly CEO of UN-SILO—an AI startup focused on advanced text analysis. In 2020, UNSILO was acquired by Cactus Communications, where Thomas now serves as VP, Partnerships. Thomas is an entrepreneur at heart with a special interest in commercialising emerging technologies.

data about each piece of content before they can map out a recommendation path for it. This can be a crucial issue when your most important asset is newly published research.

Enter AI-powered recommender systems that can mimic an expert or a lab mate "who knows the researcher well" and recommends reading material, while also providing a seamless experience. The new generation of recommender systems use semantic similarity as the key element, and services such as UNSILO Recommend have been shown to significantly outperform behavioral algorithms, simply by showing a list of similar articles on the article page on the journal website. Semantic recommendation engines can suggest the latest research at all locations where the most interested readers are, even before they have expressed their interest. This is a tremendous improvement over traditional recommender systems. One of the ways in which semantic discovery services such as Meta and Semantic Scholar are challenging the duopoly of Web of Science and Scopus is by pioneering new search functionality that supports a wider range of use cases than were previously considered possible. CACTUS has brought semantic discovery to the COVID-19 community through COVID.researcher.life with advanced tools that power leading portals such as nano.nature.com.

> **A SEMANTIC RECOMMENDATION ENGINE CAN SUGGEST THE LATEST RESEARCH TO READERS EVEN BEFORE THEY HAVE EXPRESSED THEIR INTERESTS TO THE ENGINE.**

Historically, abstracting and indexing services have corralled content on a subject or group of subjects and made it available as a subscription database. That may no longer be enough. Take the pandemic as an example. It was initially (and till date) referred to by several different terms such as "COVID-19," "coronavirus," "SARS-CoV-2," and "2019nCoV." These terms did not talk to any one predefined and narrow subject domain, which meant that publishers who were flooded with new content on the coronavirus had no ready way to package and place it on the shelf. Those who were agile and able to see beyond their modus operandi for packaging content could respond better. The same AI technologies used for the researcher, as the content consumer, to power semantic discovery were used by journals, as the content publisher,


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Michael Upshall

Michael is Head of Sales at UNSILO, a startup that provides AI tools and solutions for publishers. A former publisher, he co-founded Helicon Publishing, and later worked on digital transformation with publishers including The IET, CABI, and Cambridge University Press. He authored Content Licensing, Elsevier, 2009.

to perform realtime targeting of specifically defined content across traditional subject domains.
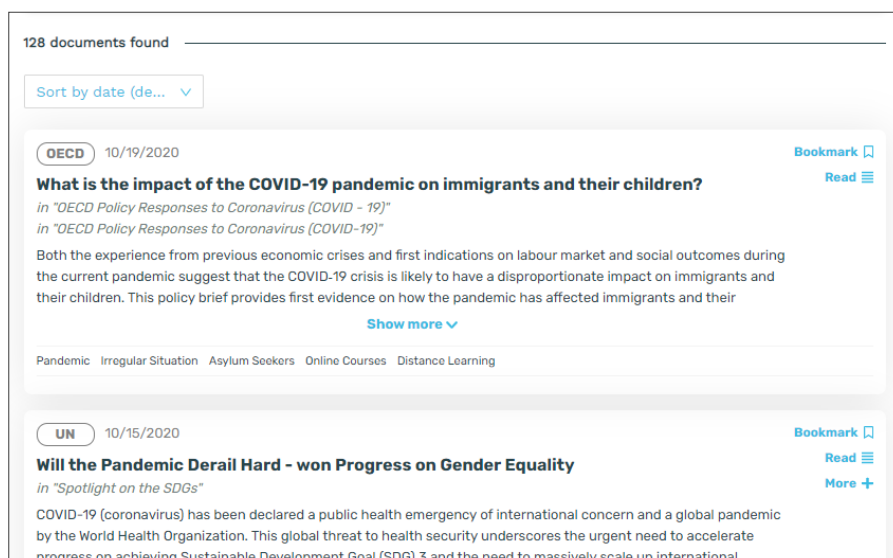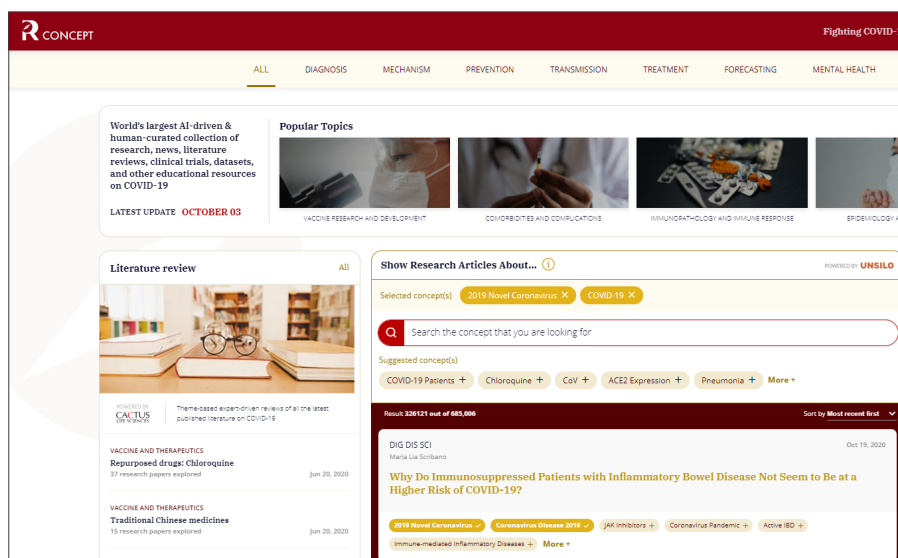
Content curation technologies make it possible to quickly create many specific feeds for a variety of use cases. The BMJ Topics portal where the best new research is tagged to the most relevant medical fields; the Taylor & Francis portal for UN Sustainable Development Goals (SDGs) that showcases the most relevant research for each SDG; and the SDG Pathfinder (which recently won the University Press Redux Sustainability Award) published by the OECD that allows users to navigate all the UN reports and publications by SDG are examples of such customized feeds. All these projects were implemented using UNSILO Classify, an AI-powered

software solution that helps build and update packages by automatically forwarding the most relevant content to subscribers and allowing to decide on lesser matches. AI-powered concept extraction provides a flexible and comprehensive way of identifying content and building subject collections for researchers, policy makers, and commentators. It offers the added convenience of demanding just a single set-up and making continuous updates to the content corpus thereafter. Therefore, while the introduction of UN SGDs and, more recently, the spread of the coronavirus pandemic initially presented a challenge to academic publishers and institutions, in the long run, they have opened up possibilities for smarter search, discovery, and content curation.

3   What will academic conferences look like in the post-pandemic paradigm?

By Donald Samulack, PhD

In academic circles, social and physical interaction have always been crucial to information sharing among peers. Journal publication is often prefaced by poster and podium presentations at symposiums and conferences, where researchers seek early feedback and peers share comments on the research. Academic societies heavily depend upon their annual conferences both for sustaining revenues and to forge the sense of "community," "mission," and "purpose" that defines them. Similarly, for the publishing and pharmaceutical industries, facetime at conferences and symposia has been viewed as intrinsic to relationship building and business development.

In 2020, dozens of academic conferences, a number of them calendar events in the scholarly world, have been cancelled for the first time in decades. This has not only

Donald Samulack

As Head, Global Stakeholder Engagement at Cactus Communications, Donald is actively involved in supporting the publication needs of the academic and publishing communities and shaping perceptions surrounding author support and research communication services worldwide.

dealt an instant blow to organizers of scientific meetings but also injected a measure of uncertainty and financial pressure that may have ramifications for their future.

This last decade at least, we have been living in a digital age that allows us ways to collaborate and exchange ideas that do not involve flying down to a physical venue. Yet, while the options have been there, they have been at best cast as a distant second. The sense of a digital community in academic and pharmaceutical circles somehow has lacked sufficient allure.

Something changed with COVID-19. Many organizations immediately attempted to increase their outreach through social media, e-newsletters, podcasts, webinars, and other targeted communication strategies, but there was an obvious and immediate need for a switch to virtual conferences. This latter approach was the most critical, and yet was the least familiar territory for academic societies, and only a few were able to capitalize on the opportunity presented.

WE HAVE BEEN LIVING IN A DIGITAL AGE THAT ALLOWS US WAYS TO COLLABORATE AND EXCHANGE IDEAS THAT DO NOT INVOLVE FLYING DOWN TO A PHYSICAL VENUE.

In the wake of the pandemic, virtual conferences have emerged as the obvious and smart choice. But are they the future? Can virtual events holistically serve the academic community needs in the long term and will they replace physical conferences entirely? Which needs do they not meet, and how will efforts evolve to meet these unmet needs?

Academics and conference organizers alike are conflicted about this. While virtual conference attendance allows some elements of participation, one's potential to contribute reduces as the meeting becomes larger, and someone who would typically be the life of the party at a physical conference may feel like a passive observer in a virtual setting.

The single most valuable draw of a conference is the opportunity to interact with and learn from colleagues and complete strangers through serendipitous meetups in meeting rooms, hallways, social events, or even at the bar in the conference hotel. In many cases, these encounters

lead to new opportunities, collaborations, insights, and even life-long friendships. While a physical conference can be simulated in a virtual setting, whether it will carry the same "feel" remains to be seen even as virtual conferencing technology evolves to become more immersive, for example, with the integration of augmented reality.

BENEFITS OF VIRTUAL CONFERENCES

01
Cost-effective and environment- friendly solution

02
Larger & more diverse global participation

03
Live distribution, capture, & rebroadcast to expand reach across geographies

04
Networking and presentations via live chatrooms

3

Considering the benefits and limitations of virtual and physical conferences, the conference of the near future is likely to be a hybrid that offers the best of both worlds. Physical conferences will offer the culture and chemistry that scholars have grown to appreciate, but at the same time virtual conference tools may be increasingly integrated into conference offerings, allowing for a more holistic experience. Remote attendance will become a standard option. More conference sessions will be broadcast, recorded, and made available on demand. This will allow conference content to become not only accessible, discoverable, and perpetually archived, but also visible through derivative works created after the conference. In fact, the conference itself may become expanded in time, by having virtual components before and after the physical component. Options for streaming, downloads, subscription models interlaced with open content, and subsequent discoverable derivative materials such as transcripts and proceedings will all become the norm, as part of a conference legacy.

With the hybrid conference will also come increased stakeholder communication and marketing opportunities for academic societies. This extended global reach will likely drive revenue models beyond simple membership and conference fees. Organizations can be innovative with how they capture, package, and track the knowledge disseminated through a conference. This will accelerate science, increase brand awareness and value, and secure new revenue streams, which can be leveraged to meet the information needs of the future.

Scholarly communication is poised to become much more immersive, dynamic, discoverable, and multi-modal in the years to come. A new learning paradigm will evolve, and with that will come greater opportunity for academic stakeholders worldwide to engage in more meaningful and more convenient dialog.

3 Can we imagine a digital era of sales and business development in publishing?

By Pablo Palmeiro, Nikesh Gosalia, & Minhaj Rais

An Imperial College report on the pandemic and its medium- and long-term effects estimates that until there is a vaccine or herd immunity, the base case scenario will be a continuous wave of disruptions in how we work and live for the next two years, resulting in new habits long after.

As a business function, sales and customer engagement have traditionally been characterized by face-to-face relationship building over meetings and dinners. Social distancing and curbs on travel have meant that these critical functions have moved to virtual grounds. This is a paradigm shift that emphasizes the increasing importance of a digital sales tool kit to help the modern sales and business development professional.

Prima facie, the move to a virtual playground necessitates that scholarly publishers and solutions providers

Pablo Palmeiro

As VP, Publisher and Society Partnerships Pablo serves as a valuable and trusted advisor to publishers and societies who partner with Editage. Pablo joined the CACTUS family after 10 successful years at Elsevier, five of which were spent on product management and author services.

compensate for the missing human touch and warmth by offering a more personalized digital approach. Yet, such a shift to virtual means more things. The fact that selling will no longer rely on physical presence can blur geographical boundaries to begin with. The focus, too, of sales may settle on driving a strong narrative and persuading through a clearer value proposition and move away from being present at the client's headquarters around the world. Sales strategies will need to factor in customization to client preferences, be it by way of language, time, or format.

Any suggestions on how the traditional sales approach could be rethought requires a deeper exploration, because change in sales will trace itself back to a change in product development, marketing, and even thought leadership. Below is a matrix summarizing the new playbook to engage with publisher, society, and university clients. Any meaningful change in sales and business development may not come simply with a switch to new digital channels; it will call for a deeper change in the interaction cycles with customers. It may also be cost-effective for business development teams to consider marketing and business impact services such as Impact Science that can help with enhanced digital assets for conversions. The pandemic has set the context for a disruption in global sales and business development paradigms, and only highly adaptive and innovative organizations might be able to weather the storm gracefully.

> **THE PANDEMIC HAS SET THE CONTEXT FOR A DISRUPTION IN GLOBAL SALES AND BUSINESS DEVELOPMENT PARADIGMS, AND ONLY HIGHLY ADAPTIVE AND INNOVATIVE ORGANIZATIONS MIGHT BE ABLE TO WEATHER THE STORM.**

Nikesh Gosalia

As SVP, Global Academic & Publisher Relations, Nikesh Gosalia heads the strategic alliances division for Europe and the UK at CACTUS. With a cumulative experience spanning 18+ years in the scholarly publishing and financial services industries, Nikesh specializes in building and nurturing strategic partnerships, marketing, and client solutioning initiatives.

Minhaj Rais

As Senior Manager, Strategy & Corporate Development, Minhaj collates industry insights and works closely with the sales team to help shape global strategy. In his previous roles, Minhaj has worked in various functions related to scholarly communications, freelance hiring, marketplace operations, and social media management.

CLIENT ENGAGEMENT IN THE NEW NORMAL

BUSINESS FUNCTION	EXISTING CLIENT ENGAGEMENT CHANNELS	NEW CLIENT ENGAGEMENT CHANNELS
Product	• Face-to-face demos at client locations • Conference presentations • Local office visits for rollouts and product training	• Client calls for product demos • Product showcase at digital conferences/panels • Product demos or launches at digital townhalls • Demo videos
Marketing	• 60:40 spilt between online and offline activities • 90:10 split between English and local language activities	• 90:10 split between online and offline activities • Upsurge in local language marketing for China and other target countries • Increased focus on social media marketing
Sales Enablement	• PowerPoint Decks and value stories supported by sales presence at client location	• Landing pages • Product demo videos • Interactive decks • Digital value stories
Sales	• Client visits • Conference booths	• Client calls supported by digital value stories & product demos
Thought Leadership	• Client visits • Conferences • Local office visits	• Intranet and online engagement strategies • Whitepapers • Online conference panels
Conferences	• Face-to-face meetings • Conference booths	• Online/hybrid formats • Virtual conference sessions
Corporate Communications	• Face-to-face and online meetings	• Mostly online

3 What could author engagement look like in a low-touch economy?

By Clarinda Cerejo

In the wake of globalization over the last decade, EdTech and distance learning have certainly gained ground. Several studies have discussed how online learning, while offering obvious benefits of scale and convenience, can be just as effective as in-person learning. However, in general, online learning has been received with some scepticism and a negative bias, and has been seen at best as a means to bolster, but certainly not replace, traditional classroom learning.

The pandemic has proven the most unimaginable disruptor to the centuries old education sector. Schools and academic institutions globally, across the learning spectrum—elementary school to specialized technical post-graduate courses—are being forced to swiftly adapt and switch to digital formats, have redesigned their curricula, and are steadily working to optimize the effectiveness of online learning. In fact,

Clarinda Cerejo

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some news reports over the last couple months have made the bold prediction that online learning may be here to stay.

Responding to this opportunity, many publishers and societies have made considerable strides in author education. However, with the industry generally preferring a traditional approach, in-person workshops have been favored over online education models; instructor-led workshops, seminars, and certificate courses have become a regular feature in academic conferences.

In light of the pandemic, publishers who already had some digital elements in their author education strategy, such as webinars and e-learning modules, will have to ramp up these efforts, whereas those that primarily used classroom formats will have to pivot rapidly. While this seems like an obvious directional change prima facie, publishers and societies will find themselves in a dilemma: Author education and engagement, while critical to brand-building and author retention, might seem peripheral to publishers and societies when faced with the current crisis that requires them to rapidly innovate on more intrinsic areas such as their publication workflows. Yet, for many researchers who currently have more time on their hands because their labs are shut, this is the perfect time to upskill and seek out online learning for professional development. So, publishers, who strategically value author education, are unable to offer it when researchers need it the most!

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AS A WAY OUT OF THIS CONUNDRUM AND TO RETAIN THE MOMENTUM THEY HAD GOING PRE-COVID-19, IT WOULD BENEFIT PUBLISHERS TO PARTNER WITH EDUCATION EXPERTS LIKE R-UPSKILL, THE EDUCATION BRAND OF CACTUS COMMUNICATIONS, THAT HAS IN-DEPTH EXPERIENCE IN RESEARCHER EDUCATION IN ONLINE FORMATS SUCH AS WEBINARS AND STRUCTURED E-LEARNING COURSES.

As a way out of this conundrum and to retain the momentum they had going pre-COVID-19, it would benefit publishers to partner with education experts like R-Upskill, the education brand of Cactus Communications, that has in-depth experience in researcher education in online formats such as webinars and structured e-learning courses. This approach would save publishers the time and effort they would need to pivot completely to an online model of author education, allowing them to focus their efforts on strategic areas with more immediate returns, while rapidly capitalizing on the opportunity posed by the increased demand for online education.

It is clear that digital has become and will remain the primary and preferred channel for author education and outreach. Publishers that can respond quickly and intelligently to the new opportunities this future presents will have the upper hand.

AUTHOR ENGAGEMENT IN A LOW-TOUCH ECONOMY
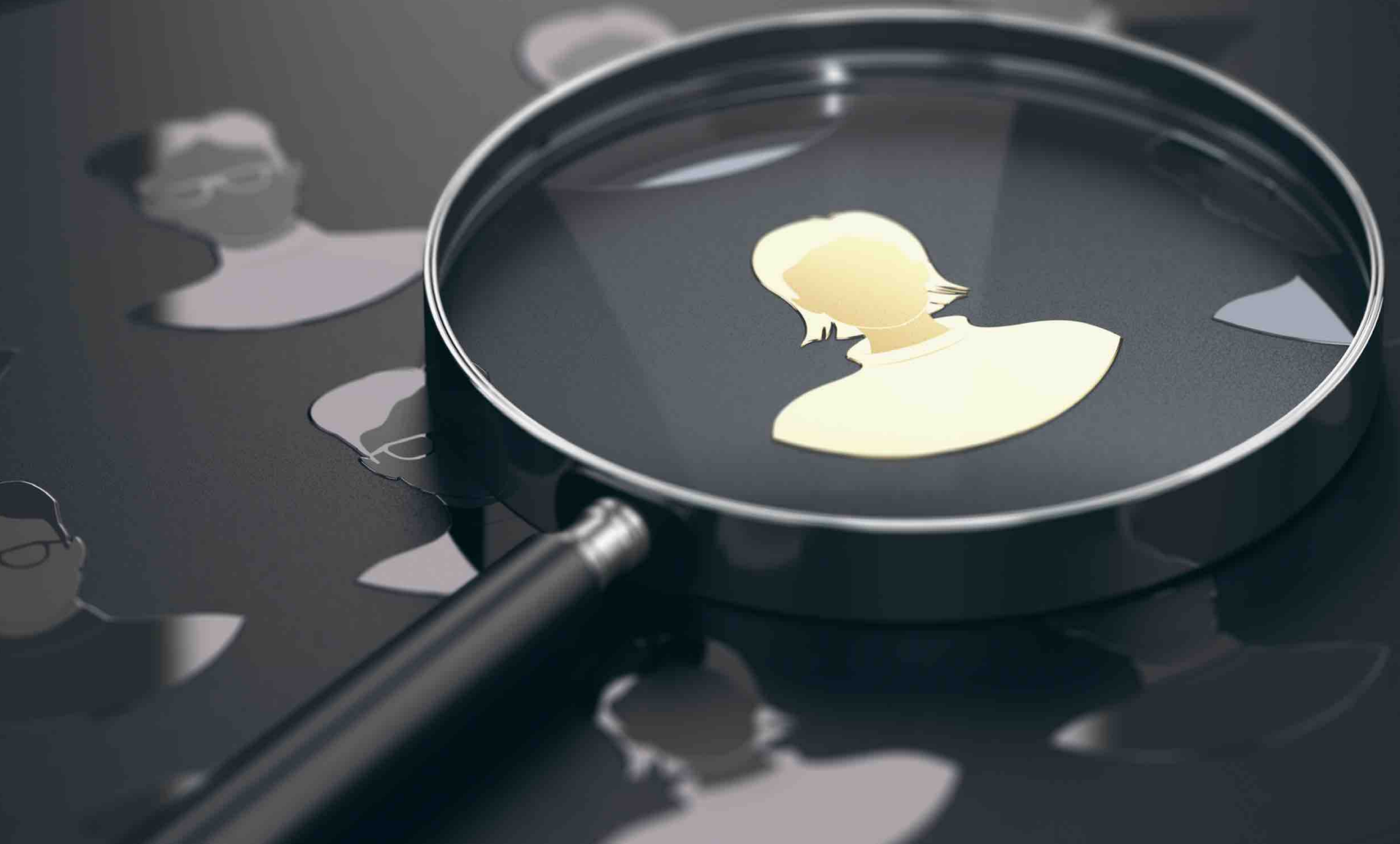
Traditional approach

Greater emphasis on in-person workshops, seminars, certificate courses

Low-touch economy

Webinars, e-learning modules, online courses

4 Will we soon witness the democratization of access to high-quality talent?

EVOLUTION OF GIG OPERATING MODELS

By Ashmita Das

Businesses have undergone a shock in the last eight months with the sudden and largescale shift to remote working. A silver lining to this change is that for many organizations, it has become much more viable to build a more dynamic and high-value workforce composed of remote consultants, freelancers, and contractors.

Agile talent. Gig economy. Liquid workforce. On-demand workers. Human Cloud. These terms all describe the approach by which organizations expand their workforce to include external talent that supplements and addresses skill gaps in their in-house workforce. The availability of an on-demand workforce allows employers to meet peak demand with a relatively small team of full-time employees. In a series of workshops with line managers and HR executives, over half the people described their organizations as moving slowly

Ashmita Das

Ashmita is the co-founder and CEO at Kolabtree—a CACTUS-incubated on-demand marketplace that connects scientists with businesses that need access to specialized skills. Previously, she has worked in thought leadership and product management roles where she initiated various new ideas and business concepts.

but inexorably toward employing agile talent to extend their capabilities in fast-moving strategic areas. The US workforce alone included 57 million freelance workers in 2019. Businesses using on-demand talent spent approximately $7.8 billion in 2018. The rise of online talent platforms like Upwork and Fiverr has made it standard for many businesses to supplement their regular or full-time employee pool with additional workers for software development, content creation, design, and marketing activities. More relevant to scholarly communications are platforms like Kolabtree and Kaggle, which offer highly specialized pools of talent for advanced and complex projects involving data science, scientific research, consulting, and scientific writing. Journals and publishers, for example, could turn to such platforms to identify skilled professionals for technical review and copyediting work.
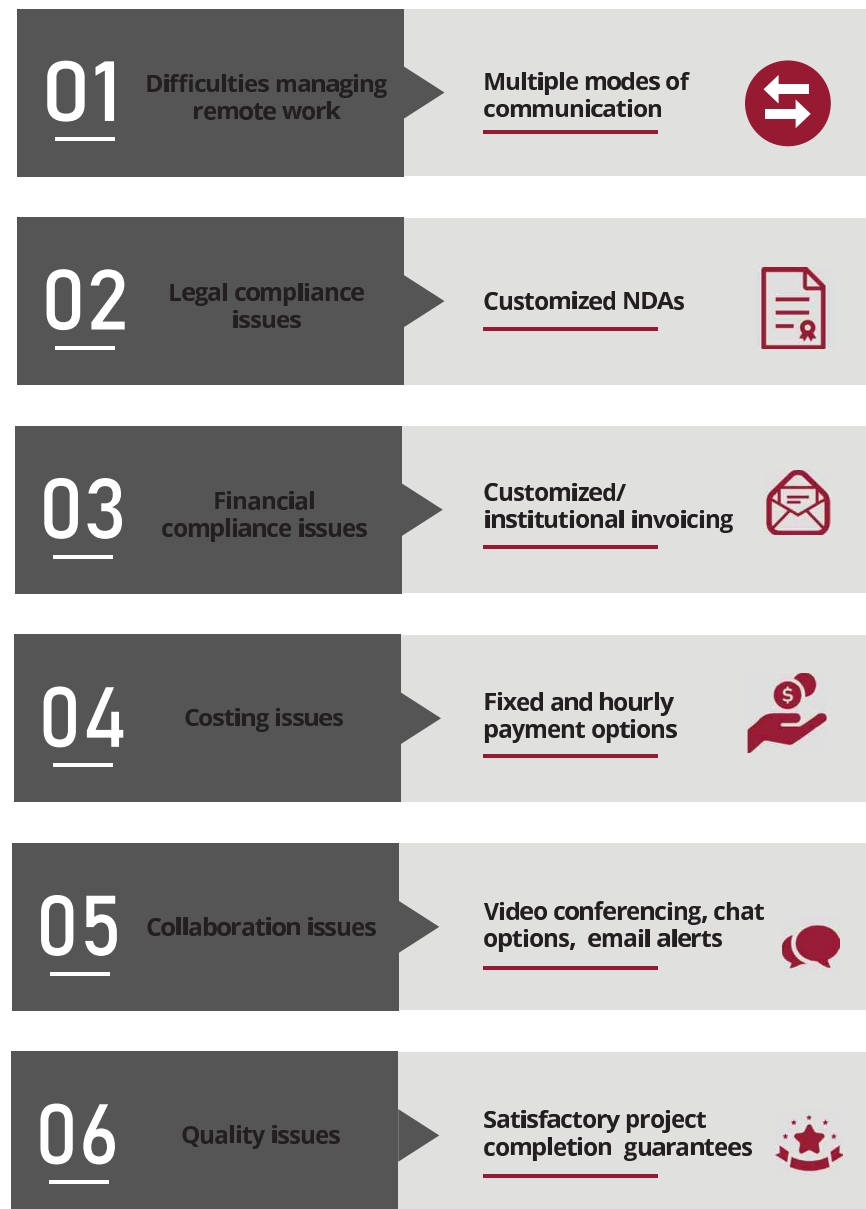
> ## THE AVAILABILITY OF AN ON-DEMAND WORKFORCE ALLOWS EMPLOYERS TO MEET PEAK DEMAND WITH A RELATIVELY SMALL TEAM OF FULL-TIME EMPLOYEES.

A large number of businesses have been unable to tap into the gig economy because they are not comfortable managing remote work, have to resolve legal and financial compliance issues for freelance and contract workers, do not have established processes to onboard temporary talent, and lack collaboration methods to integrate external workers with their full-time teams. However, the use of online talent platforms can help organizations reduce the time and effort needed to resolve these issues. For example, platforms such as Kolabtree offer options to include customized nondisclosure agreements (NDAs) and add multiple users to collaborate on a project to facilitate seamless communication with freelance experts. In addition, issues related to intellectual property for academia projects too can be tackled when working with platforms offering comprehensive privacy protection mandates.

In today's knowledge economy and rapidly shifting environment, businesses cannot afford to wait to capitalize on any talent that will help them innovate better and work faster. With the availability of platforms offering a wide range of talent on demand, small and medium businesses have

the same opportunities as large deep-pocket businesses to tap into highly skilled and knowledgeable professionals. The current surge in the acceptance and normalization of remote working practices will result in a paradigm change in talent acquisition, and online talent platforms will play a key role in the democratization of access to high-quality talent worldwide.

EVOLUTION OF GIG OPERATING MODELS

01 Difficulties managing remote work → **Multiple modes of communication**

02 Legal compliance issues → **Customized NDAs**

03 Financial compliance issues → **Customized/ institutional invoicing**

04 Costing issues → **Fixed and hourly payment options**

05 Collaboration issues → **Video conferencing, chat options, email alerts**

06 Quality issues → **Satisfactory project completion guarantees**

About CACTUS

Founded in 2002, Cactus Communications (cactusglobal.com) is a global scientific communications company that collaborates with researchers across academic disciplines, universities, publishers, societies, and life science organizations to accelerate research impact. CACTUS's portfolio of products and services meet a wide spectrum of research and publishing needs: Editage provides editorial and translation services and education and training solutions; Cactus Life Sciences helps pharma, biotech, and medical device organizations worldwide with content strategy, development, and dissemination; PubSURE is a publishing-oriented marketplace that uses AI and deep-learning technologies to connect researchers and journals across disciplines; and Impact Science offers high-engagement content solutions such as videos, infographics, and research stories as well as training and strategic solutions to help researchers, research groups, universities, funders, publishers, and societies achieve wider research impact. CACTUS also incubates seed and early stage startups that share its mission to solve global problems with science and technology solutions. It has offices in London, Princeton, Singapore, Beijing, Shanghai, Tokyo, Seoul, Aarhus, Bengaluru, Hyderabad, and Mumbai; a global workforce of over 3,000 experts; and customers from over 210 countries.

Our Brands

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