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Collaborating to Support the Research Community: The Next Chapter

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The following is a lightly edited transcript of a live presentation given at the 2019 Charleston Conference. Video of the session is available at <https://youtu.be/MF3yDj-I9Mw>.

Cris Ferguson: Good morning, everyone. It is my pleasure to introduce today's plenary speaker. Kumsal Bayazit was appointed chief executive officer of Elsevier in February 2019. She has held multiple positions with RELX since 2004, most recently as the regional president, Europe, Middle East, and Africa at Reed Exhibitions. Before joining Reed Exhibitions in 2016, Kumsal was RELX's chief strategy officer responsible for driving strategic initiatives, technology, strategy, and portfolio management. Prior to that, she served in several operational and strategic roles with LEXIS-NEXIS. Kumsal also chairs the technology forum at RELX and is a nonexecutive director at LSL Property Services, PLC. Prior to joining RELX Group in 2004, Kumsal spent several years at Bain and Company at their New York, Los Angeles, Johannesburg, and Sydney offices. Kumsal earned an MBA from Harvard Business School and is a graduate of the University of California at Berkeley where she received a bachelor's degree in economics with honors. So, please join me in welcoming Kumsal Bayazit to the Charleston Conference stage.

Kumsal Bayazit: Thank you. Good morning, everyone, and thank you for having me here today. I have been looking forward to my trip to Charleston. I had heard wonderful things about the spirit of Charleston, and I got to witness that over the last couple of days. It was very kind of the organizers to invite me as I know it was not a popular decision with everybody and I genuinely appreciate being here today.

I believe in making progress by building bridges, finding common ground, and finding linkages. I grew up in Istanbul, a city that bridges the east and the west, and as a child I crossed that bridge that connects two continents every day as I lived on the Asian side but my school was on the European side. I'm familiar with the complexity of building bridges and welcomed the opportunity to do so at Elsevier. My hope and ambition for Elsevier is to work constructively with all the stakeholders in the ecosystem

of research, to tackle the grand challenges that our society faces, and to evolve our services for a better future.

With that in mind, I would like to cover the following today: first, I want to share my observations about the dynamic world of research after being in my role for almost nine months. Research across all disciplines has driven remarkable progress for society and we all aspire it to keep doing so. Second, I'd like to share what I learned from listening to the diverse perspectives of many research stakeholders that I've met while traveling around the world. At times I have been inspired and at times I have been surprised. It's clear that there are serious issues and I see today as an opportunity to start addressing them. To do that effectively we need to be able to converse openly and to confront elephants that may be in the room. By doing so I hope we can move beyond the past, build trust, and work for a better, frictionless future. And third, I look forward to the future. I am full of optimism about the opportunities to support research communities. I don't pretend to have all the answers to complex issues in the world of research, nor do I underestimate the size and the scope of the challenges before us. However, I am optimistic because so many people that I've met are smart, dedicated, and strongly committed to the shared mission of advancing societal progress through quality research. That commitment includes all publishers and it certainly includes Elsevier.

To kick off, let me reflect on **the tremendous progress that research and innovation have enabled across the world**. Since 1800, life expectancy at birth has increased from 31 to 72 years. The proportion of global population living in extreme poverty has decreased from 85% to 9% and literacy among adults has also increased from 10% to 86%. Over the last two decades, the number of people infected with HIV every year has halved. Access to electricity has increased from 72% to 85%, and the rate of vaccination among children has increased fourfold from 22% to 88%. And to add another example that's close to my heart, from 1970 to 2016 the percentage of women in the U.S. workforce moved from 36% to 47% and the percentage of women in STEM

improved from 7% to 25%, and now, unfortunately, you can see that there's been stagnation since the 1980s. So, while great progress has been made, we are not where we need to be in terms of gender representation in research. These massive societal advancements were made possible through the creation, sharing, and application of new knowledge by the global research community. I think we should all feel proud of the progress and our contributions and it gives me optimism and inspiration when I see how much progress has been made.

Now, there's a new set of grand challenges that the research community is addressing. The need to address global warming, to stop the pollution of our oceans, to ensure food and water security, to help people live longer and healthier lives, and to reduce social inequalities while also driving economic growth. What inspires me is the potential to collaborate on the next chapter of societal advancements that will come from the creation and application of new knowledge.

Turning now to my second section, what I've learned from listening to the diverse perspectives of many research stakeholders. Since joining Elsevier, I traveled around the world to hear from all our customers and our stakeholders in this remarkable interconnected and global research community. I've sought to understand its challenges and what we can do to help enable the next century of progress. I would like to share with you my takeaways from these conversations with different stakeholder groups before spending most of my time reflecting on discussions with the librarians who constitute most of today's audience.

Let's start with governments and funders. They want to protect the \$500 billion that they spend on research and development annually and keep growing that spending in line with the GDP at around 3% to 4% per year. That's because they have seen the return of this investment historically and see great potential to advance society and drive economic growth by addressing grand challenges. Grand challenges are interdisciplinary and global, so they are focused on finding new funding mechanisms that go beyond disciplinary and national borders. They also have to make choices about where to put their limited funding in placing bets across high-potential areas like artificial intelligence or sustainable power generation, and finally they would like to be able to demonstrate the impact of research on society more clearly so that citizens support R&D as an effective use of their tax dollars.

Research leaders, primarily heads of universities and research institutes, they need to make choices about where their institution is going to compete so that they can attract top researchers, collaborators, and funding both to build facilities and conduct high-impact research.

Researchers, and I've listened to many of them, they are highly motivated to solve problems that will benefit society and they are working extremely hard to win funding, to attract talent, and to find international, interdisciplinary, and commercial collaborators. Regardless of discipline, researchers stress the importance and intensity of data, which need to be both accessible and reusable. They are seeking help to document their methods, protocols, and data management plans to ensure that their work is reproducible, a key issue that's close to the hearts of many. And as research becomes more interdisciplinary, researchers want help to understand adjacent fields and to stay on top of the latest developments in areas that they may be less familiar with. For example, I met a very inspiring leading climate change researcher who developed the planetary boundaries framework. He works with economists and legal scholars and social science policy-related researchers who evaluate potential interventions such as carbon taxes, pollution controls, and legislation. And I heard many stories about the benefits of connecting the dots across disciplines that often happens through serendipity. I met a leading oncologist who was doing gene sequencing to find patterns in random occurrences and he was completely stuck in his research until through serendipity he ran into a colleague from the astronomy department at a cocktail party at his university. As they got to talking about his research, his astronomy colleague said, "That's kind of all I do now in astronomy. Can I take a look at your data sets?" And it was his colleague from astronomy that actually helped him crack the code on finding patterns in what seemed to be random occurrences.

In turning to my focus today, **I've had the pleasure of meeting with many librarians.** While you continue your critical role as guardians of the quality of knowledge and knowledge dissemination, the way you do this is also evolving and very much focused on delivering the mission of your institutions. You're enabling better data management and reproducibility. For example, you help researchers discover, manage, preserve, and disseminate data according to fair data principles. You are helping researchers and institutional leaders preserve and showcase their

intellectual outputs. For example, you're establishing and populating institutional repositories to capture data sets, theses, dissertations, and conference presentations, and you're helping evolve ways to assess the impact of research. You are advising on the use of metrics, data, and analytical tools to inform evaluation and tenure decisions and to help demonstrate societal impact, which can be controversial as there are many views on how to use metrics, and you're helping to set new standards of practice like the DORA principles, which in turn help drive constructive behaviors in research. In delivering on this important role, you're also deeply concerned about costs. A fundamental issue is that the library budgets have not kept pace with the 3% to 4% annual growth in R&D spending, which in turn drives the 4% annual growth in the volume of articles published. In fact, in North America, while the rate of knowledge creation has accelerated with the invention of the Internet and assessing quality has become more burdensome, the library budgets have decreased as a percentage of overall institutional budgets such that absolute library spending has not kept pace with R&D spending. You're also promoting, enabling open access in its many forms including by funding repositories and article publication charges and by creating your own journals and university presses. Before I look to the future, based on our understanding of where we are, I would like to take some time to talk about two important topics.

The first one is **open access** and it's a very important topic for us all. Elsevier fully supports open access. I want to be very clear. No one can dispute the beauty and vision of freely accessible, immediately available research content whether peer-reviewed, published articles or other scholarly work. I'm a UC Berkeley alumna, so these kind of values were instilled in me as a fresh new undergraduate on campus and as Elsevier CEO, I am committed to working with you and the rest of the global research community toward a more fully open access future. In fact, my professional background is applying technology to content to help professionals make better decisions. For example, working in the part of RELX that serves legal professionals, I've seen the powerful benefits of analytical services that are built on top of freely available content such as case law, statutes, or public records, which is why I'm excited about the potential to create value for researchers by applying text mining and artificial intelligence technologies to the entire corpus of peer-reviewed content. I understand and appreciate the role of open access in delivering that vision.

The question is not whether open access is desirable or beneficial. The question is how to get there. My takeaway from my discussions on the topic is that there are many points of view. Publishers are often blamed for not making enough progress, which I think is fair, but it would also be unfair not to recognize the lack of alignment within our communities about the best way forward, which is understandable as this is a multidimensional issue that requires substantial problem-solving and action to make progress. I'm a pragmatist and I commit to working pragmatically with libraries and other stakeholders to achieve shared open access goals. Part of this means acknowledging obstacles where they exist and discussing them openly and objectively so that we can find solutions to overcome them. If we don't, progress will continue to be slow. I feel optimistic, given the extent of commitment to make progress, and in that spirit, please allow me to share some of the obstacles that I have learned about in the last nine months in my conversations with various stakeholders.

The first obstacle is about differences in researchers' views. Some researchers are fully committed to open access and see it as a moral obligation. For other researchers, however, it is not their top priority. Researchers value academic freedom, including the freedom to publish in the journal of their choice. Elsevier has found that even where we experiment with workflows to opt authors into gold open access and cover their publication costs, researchers sometimes opt out of the default setting. This challenge should not be underestimated. We've all got work to do to get better adoption from researchers. Publishers and librarians can help find the right incentives and supporting frameworks to encourage adoption.

A second obstacle pertains to funding flows. Again, I'm talking primarily about gold open access, which at scale would require research-intensive institutions to pay proportionally more than today even if total system costs fall. We've seen this in a recent statement by U15, Germany's 15 most research-intensive universities. They are strongly committed to open access and support the deal negotiating team, but they are also clear that funding challenges need to be addressed, which might include funders and governments playing a role.

Third, we must confront the obstacle of predatory publishing. Research is widely trusted because articles have been through a rigorous, independently managed peer-review process. Many articles are

rejected. For example, Elsevier journals receive about 1.8 million submissions every year and yet we publish only a quarter of those. With gold open access, if a publisher accepts an article they get paid, and if they reject it, they do not. An unintended consequence of gold open access has been the rise of predatory publishers that unscrupulously accept submissions to get paid. We must make overt the serious risk of replicating the issues that fake news has wreaked on society, which could cause real harm as well as undermine today's high levels of trust in science. Elsevier will continue to be a leading publisher of open access articles.

As we talk to research stakeholders around the world, we find that **approaches vary widely to overcoming these obstacles and to achieve open access objectives**. Some opt for gold open access whereas others for green open access, that is, manuscript posting in repositories. There are also countries and institutions that indicate that open access is not a priority for them at this point in their evolution, even though they acknowledge the importance of its mission and benefits. Elsevier's approach is to work closely with those that we serve to help them achieve their goals, as they define them, wherever possible and sustainable.

Since I've joined Elsevier, we've announced many pilot deals, each with very different constructs such as in Norway, Hungary, France, and Poland. Each one is different because what each customer has asked for has been different and their starting points and circumstances are also different. Our goal is to meet customers' objectives, to understand what works, and to learn what is viable on a longer-term and larger-scale basis, and so long as we have permission from our customers, we will share the results of what we're learning to help inform ways forward and we will continue to provide open access publishing through the overwhelming majority of our journal portfolio and launch pure gold OA journals. The instances where we have found a way forward far outweigh the instances where we haven't yet, even though the latter gets far more media attention. We at Elsevier are very committed to continue having open and constructive dialogues to find paths forward and we should not underestimate the work and the time required to build these deals and paths.

To sum up on open access, we fully support it in its multiple forms. To achieve it we need to work together. That means acknowledging issues where they exist, being able to talk rationally about them,

and finding ways collectively to overcome them. Above all, this requires trust, and this brings me to what has surprised me.

I knew coming into this role that Elsevier had reputational challenges. But, in the last nine months **the thing that surprised me most pertains to trust**. As the CEO of Elsevier, I have had strikingly different experiences with different customers. Sometimes after entering a room, I almost get hugs from our customers. I met senior research leaders who are very proud of their work with our journals. I met customers who compliment us as being synonymous with quality, who appreciate high-quality standards and building trust in research. I met early career researchers who are grateful for the way we rejected their articles and constructively helped them move forward, and I have met institutional leaders who appreciate the insights from our analytics in their strategic decision-making, and librarians who have graciously worked in partnership with us through the years. I've been complimented on the dedication of our people to researchers and research. On other occasions, however, when I walk into the room the room is silent and sometimes I even get hostile stares. While lack of trust is not universal, it feels very important to me to address so I would like to spend time on it here.

As I've tried to understand the reasons, I've heard a lot about pricing, for example, that our journals had double-digit price increases in the 1980s and 1990s and that we still account for the largest portion of most libraries' content budgets. I've heard that our pricing is not regarded as transparent and that we are perceived to oppose open access or to be co-opting it, and we are accused of double dipping and are criticized for being a for-profit company with high margins. I highlight these points because I work hard to put myself in the shoes of our customers who are frustrated, and to see the world from their vantage point. Only if we do this can we support our customers effectively. At the same time, I would also like to give you the view from our vantage point, and of course you can choose to disagree with my perspective, but my hope is that **through better mutual understanding we can rebuild trust and move constructively forward from the past**.

I acknowledge that we have made missteps in the past. Elsevier did increase prices in the double digits in the 1980s and 1990s. Many libraries had to cancel journals as a result and there are still raw emotions about this. In 2002 we explicitly committed to

contain price increases and since then, for nearly two decades, our price increases have been the lowest in the industry. Nevertheless, we do still account for the largest share of most libraries' content budgets. From our perspective that's because we publish the largest share of articles, 18%, and account for the most citations, 26%, as a measure of quality. I do acknowledge that it makes it more challenging to fund other things, especially when there are budget constraints. As for transparency, variation in spending is rooted in the transition to the Big Deal and reflects the differences in the makeup of owned versus access-only content across institutions. I do acknowledge, however, that two decades after the creation of the Big Deal this seems anachronistic and that in practice it creates challenges. As for open access, we fully support it in many forms, not because we're trying to co-opt it, but because we are trying to meet the research community's needs. But it is true we were slow to act on open access. One thing I want to be clear about is that we do not double dip. We have a strict no double-dipping policy. Either an article is paid for by the author and is freely available or is freely available to read, or it is published for free by the author and is paid to be read.

Finally, we are a for-profit company but we are a responsible one. I'm proud to work for Elsevier and have been with its parent company, RELX, for over 15 years. We are strongly committed to corporate social responsibility. RELX recently ranked second in Standard & Poor's ranking of 1,200 companies for its environmental, social, and governance performance. RELX ranked second in the *Harvard Business Review* of environmental, social, and governance rankings, and RELX ranked fourth in the Responsibility 100 Index, a new sustainable development goals ranking of FTSE 100 companies. This independent recognition reflects our genuine commitment to do the right thing for the communities that we serve and for the world at large that I don't have time to cover in detail today. Those include focus support for the advance of UN sustainable development goals, such as our multiple efforts to achieve gender equality in research, climate research, and supporting early career researchers in developing countries.

To close out on the topic of trust, all companies have supporters and critics, as do we, but I have been genuinely saddened by the deep frustration of our critics. I'm sorry for causing this frustration and am fully committed to earning the trust of the research community by working through and solving as many of these issues as possible. I appreciate that this will

take time and will happen through our actions and not our words. In my short time leading the company, what I have seen is that where we build bridges through mutual engagement, commitment, openness, flexibility, and pragmatism, we also build trust and from there we can build the future.

So, let me now look to the future and how we hope to serve the research communities. As I reflect on everything I've said and what our shared contribution could be as we write the next chapter of research, I'm excited by the prospect of partnering with the librarian community. And I have to say, when we put together this slide, we have a millennial on the team and she didn't recognize this image, which made me very sad, so I'm going to make sure my 8- and 12-year-olds are very, very familiar with this incredibly important music and culture. But, let me just take a moment to imagine. Imagine how better insights could be generated if researchers were easily connected to potential collaborators in and outside of their disciplines or if access to content and data was seamless for researchers and machines. Imagine how much energy would be freed up if the friction surrounding grant applications were eliminated. Eighty percent of grant applications fail today, which loses huge amounts of precious time for both researchers and funders. And imagine if we can continue to support researchers so the reproducibility of research becomes a reality and not just an aspiration supported by a research information system of the future.

Please allow me to share some of the things that we are tackling in collaboration with the research community to evolve toward a future vision. The first set of things are about how we continue to evolve scholarly communications globally. Imagine no friction in peer review. We will leverage technology to reduce friction in peer review processes while maintaining high standards of trust and integrity in all that we publish. We will continue to work with the community to evolve traditions around anonymity and credit in the review process. With our data science institute partners in the U.S. and in Europe, we are deploying machine learning to tackle plagiarism, fraudulent submissions, and manipulated citations and images, and we are also using artificial intelligence to improve authors' journals submission experiences including how we reject articles.

Imagine no friction between disciplines. We'll answer the call for researchers to eliminate friction between subject areas, supporting new areas

of interdisciplinary research such as *One Earth*, a journal from Cell Press about environmental grant challenges, and as research becomes more interdisciplinary we will develop advanced recommendation tools to seamlessly surface relevant content from adjacent fields that help researchers connect the dots across disciplines. And second, beyond our core publishing activities, we will further develop analytical tools to help all stakeholders in research and health that we serve.

Imagine no friction in resource allocation. We will collaborate with all relevant stakeholders to support their R&D investment decisions and help maximize the impact of their spending on society, thereby reducing friction in funding allocation. For example, this week in Ireland we are providing analytics at a national research summit of around 300 faculty and administrators to facilitate the nation's research strategy discussion. The analysis draws from our Topics of Prominence tool to identify hot areas of research where Ireland has distinctive capabilities.

Imagine no friction in data management. We will co-develop the next generation of tools for researchers, leveraging our 70+ partnerships with academic institutions around the world as we do so. As research becomes more data intensive, we will provide tools that enable researchers to document automatically their methods, protocols, and to implement data management plans according to fair data principles. And imagine easily demonstrating impact. As researchers increasingly need to demonstrate impact on society, we will move beyond publication and citation metrics to develop new indicators, collaborating with the International Center for the Study of Research that we launched this summer where experts from the community can set these standards. We will look to the community to set these standards.

And imagine inclusive and diverse research and research communities. We will systematically work on improving inclusion and diversity in research with a focus on eliminating obstacles preventing gender equality. We will deploy our analytics capabilities to measure progress. We will address participation issues to drive balance in our editorial board, conferences, and peer reviewers where we've already made really good progress but have a long way to go, and we want to increasingly find ways, working with

the community, to ensure gender is factored into the science. We're also launching an advisory board on inclusion and diversity with leading researchers providing guidance for us. In all of the above, we see librarians as key partners in moving to an ever more frictionless research information system. We will co-invest and partner with you where, in your judgment, it will help us go further and faster.

And imagine the possibilities of partnerships. An example of co-investment is the Research Data Management Librarian Academy, which we just launched. We co-developed it with the expert faculty librarians from eight academic institutions in the Northeast as a free, self-guided training program for librarians and researchers. It aligns with our mutual objective to support research as it becomes more data intensive. We will keep building out open access infrastructures like bepress's Digital Commons to enable institutions to publish, manage, and showcase the full spectrum of their research outputs beyond journal articles.

As we look to the future and to the vision of frictionless research, my own personal commitments to you are that we will work with all stakeholders collaboratively, productively, and pragmatically, with humility, to improve the value that we deliver to you, to sustain progress toward the vision of open science, which incorporates open access in its many forms as well as open data. We will innovate in partnership with the communities we serve. We will systematically work on inclusion and diversity with a particular focus on achieving gender balance in research and factor gender into the science, and continue to contribute as a responsible corporate citizen to the communities we serve, supporting the UN sustainable development goals.

And in closing, **I genuinely appreciate you including me in your conference.** Society faces tremendous challenges, the grand challenges that I have spoken about. It's the global research community that is going to solve these challenges, to deliver the next hundred years of societal benefits. I hope that we can move beyond the past, work together pragmatically in the present so that we can partner and work together on the future. By doing so we can maximize our impact in helping the research community do the work on which the future of our world depends. Thank you very much and I'll be very happy to take questions now. Thank you.