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Libraries as Convener, Enabler, Distributor, Advocate, and Archive in the Future Knowledge Economy

James G. Neal, University Librarian Emeritus, Columbia University

The following is a transcription of a live presentation at the 2016 Charleston Conference.

James Neal: It's an honor to be here at the Charleston Conference, and I was here several years ago to give a presentation, and I applaud the extraordinary people who have made this conference possible over many, many, many years.

I have noticed over the last several years that my presentations at professional meetings have become much more alarmist and much more strident. Maybe that's a reflection of retirement. I have subscribed to the Emerson adage that sometimes a scream is better than a thesis. Prognostic exercises offer opportunities to set aside reason, to avoid evidence, and to speculate with abandon. Library futures and perhaps publisher futures are particularly challenging to define as the community of interest is narrow, and the implications of error are modest. As Ken Kesey, author of *One Flew Over the Cuckoo's Nest*, once remarked, "You can count the seeds in the apple, but you cannot count the apples in the seed."

I went to Columbia in the fall of 2001, and I agreed to give a series of presentations to alumni groups around the mid-Atlantic region. That January I found myself driving down the New Jersey Turnpike in the snow to speak to the Eastern Pennsylvania Columbia Club. I went over the bridge, into the city, found the hotel, parked the car, went into the hotel, found the room. My talk was to begin at 8:00. By 8:15, there was only one person in the room. I suggested that I go ahead and give my talk and he said, "That's great." I was using slides, and I asked him if he would show them as I spoke. He did. I finished my talk, actually it was a really good one that night, and I asked if there were any questions, and he said, "No, I have no questions." So, I sat in the front row, and I said you know, I've got to get out of here. I've got to get back to New York. And he said "No, no, you're going to stay." I said "No, I've got lots of meetings in the morning, and you've got snow on the road, and I've got to get out of here." "No, no, no, you're going to stay." I said "You don't get it. I've got to get back to New York tonight!" He said, "No, no, no, you don't

get it. I'm the second speaker." So, I always love it when I'm the second speaker.

Libraries have entered a period of gross mutability, a state of constant change, of productive and powerful chaos, of hybrid strategies and maverick structures, of radical shifts in professional staffing, of massive leadership turnover, and of essential creativity in advancing our individual and our collective visions. There are, in my view, three essential elements. First, we must have hope. Believe in and aspire to expanding relevance and impact in the communities that we serve. Second, we must achieve power to have authority, influence, and respect. And third, we must focus less on ideas and more on action, getting things done. The two things we must advance are primal innovation, a basic commitment to risk and experimentation, and radical collaboration, deep and systemic partnerships. Renovation is grossly inadequate. Deconstruction is totally essential. This means redefining the physical, the "where," the expertise, the "who," and the intellectual, the "why?" Infrastructure of our libraries and understanding the psychology, the economics and the methodologies of progress. Progress. Samuel Butler tells us that all progress is based on a universal innate desire on the part of an organism to live beyond its means. George Santayana points out that those who speak of progress measure it by quantity and not by quality, and Khalil Gibran points the way progress lies not in enhancing what is but advancing toward what will be.

The library has always been a fundamental partner in the learning and research processes, but key changes in the information technology, economic, social, and political environments are challenging this relationship and raising critical questions about the value and impact of the library in the community. Do 20th century skills still matter? The work of information selection, acquisition and synthesis, the support provided for navigation, dissemination, interpretation, and understanding, the tools for use, application, and archiving of information—does the community still need the support in the ways that we as libraries have

provided them over the last 50 years? And do the new roles that libraries are advancing as aggressive consumers, intermediaries and aggregators, publishers and educators, research and development organizations, creative and maker spaces, entrepreneurs and policy advocates, do these present a refreshed opportunity for innovation and library centrality in the university and in the community? For me, it means that the library must be virtual, engaged with users in evermore rigorous and effective ways, in the classroom, in the laboratory, at the workplace, at the hospital bedside. We also must be virtuoso, smart but ready to learn, expert but always compassionate. And we must be virtuous, radically partnering and always working in the interest of our publics.

This brings me to my two main theses for my presentation today. As we look out over the next decade, libraries will be increasingly defined as convener, enabler, distributor, advocate, and archive and less as infrastructure, platform, repository, and portal. I also propose that by 2026 there will be no information and no service industry targeting products to the library marketplace. Let me read that again. There will be no information and services industry targeting products to the library marketplace. Content and applications will be directed to the consumer. Open resources for learning, research, and recreation, and open source tools supporting individual and organizational productivity and innovation will be much more prevalent in the global economy. Self-publishing and niche technology development will dominate. Information policy wars will dictate national and global legal and legislative debates. Libraries must be effectively integrated into new creative environments. Libraries will systematically apply new knowledge to new resources to produce new goods and new services. That is we will be much more focused on developing the market. We will focus on managing the costs and increasing the benefits. That is, we will find ways to add value. We will think deliberately about existing challenges and unmet needs. That is, we will focus on solutions, market value solutions. We will understand the importance of achieving balance between evolutionary, that is, incremental change, and revolutionary, disruptive change. We will go through measured transformation.

What do I mean by transform? To change in composition or structure what we are and what we do. To change in outward appearance or form how we are viewed and how we are understood. To

change in character or condition, how we do it. Thomas Kuhn in *The Structure of Scientific Revolutions* reminds us that the transition from a paradigm in crisis to a new one from which a new tradition can emerge is far from a cumulative process. Karl Marx in his theory of epistemology, his theory of knowledge, talks about a pot of water over a flame, and intellectually we know that the temperature of that water is increasing, but only when it reaches a certain point, a boiling point, a tipping point, does a true transformation take place as the liquid turns to gas. The fundamental link between a cumulated, quantitative change and qualitative change.

I worked at Penn State University for seven years back in the '80s, and I remember a wonderful story about a physics professor at that university who decided to climb this mountain next to campus. We called it "Mt. Nittany," and he wanted to explore with the gods who lived on the top of that mountain whether the work that he'd been doing his entire life to discover a universal theory of matter would actually occur. He climbed to the mountain and confronted the gods with that question. "Will there be a universal theory of matter?" And God thought briefly and came back and said, "Yes, professor, there will be a universal theory of matter but not in your lifetime." Well, that was not too bad because all of his work was actually going to pay off into something important. Word circulated around campus about this faculty member's experience, and the president of that university decided that she also should climb to the top of that mountain and confront God with a problem had been plaguing her colleagues around the country for years. Reaching the top she asked the gods, "Will the cost of libraries and technology ever come under control at my university?" And the gods went off and thought and thought and thought and several days later came back and said, "Ms. President, yes. The costs of libraries and technology will come under control at your University but not in my lifetime."

Let's consider for a moment where libraries actually spend their money. There are four main buckets: Content, purchase or rental, technology (systems, applications, tools), staff expertise and space. Clearly, investment in most libraries, in my experience, is flowing from content to expanded investment in these other areas. Libraries are fundamentally rethinking space planning and identity. We are creating the trompe l'oeil library

with many of the superficial trappings of the traditional library, but with expanded understanding of user needs, user expectations and with technology as a catalyst, we are building learning spaces, social spaces, collaborative spaces, creative spaces, all defined by flexibility and adaptability. It's going to take more resources to do this well.

Libraries are experiencing a rapid shift in their staffing. We're seeing more professionals with more diverse academic and professional backgrounds. We are recruiting for a wide range of new professional assignments as the role and responsibilities of the library have expanded. We're seeing more messy and more fluid organizational structures which require a new style of leadership, and we are striving to build organizations characterized by diversity and inclusion to reflect more the communities that we serve. This means more competition for successful recruitment and retention of staff. It's going to take more resources to do that.

Libraries encompass and espouse technological change, often serving as the locus of early adoption in our communities. We have built digital libraries, recognizing that in doing so quality equals content plus functionality. It's not just providing the stuff. It's enabling people to use it and apply it in their work environments. Multimedia, integrated services, and applications are central to the digital future. We have been so focused on our library management systems. Yes, the need for inventory control persists, but many of us have created new discovery and access tools to support our users. We have built those front ends, but the real action is in new technologies and platforms, mobiles and tablets, cloud computing, Geo everything, personal web, artificial intelligence, linked data, big data, semantical ware applications, smart objects and smart spaces, open learning, games as learning tools, visualization and simulation, 3-D printing, augmented reality. It is going to take a lot more resources to incorporate these and future technologies into the information service programs of our libraries, but it's important to keep in mind as we do so: The early bird may get the worm, but it is the second mouse, the second mouse that gets the cheese.

I recall the wonderful Mel Brooks film, "History of the World, Part 1." How many of you remember that film? Well, there's a great scene when Brooks, as Moses, is coming down the mountain carrying three

large stone tablets. "Children of Israel, I have 15 . . ." He suddenly trips, and one of the tablets crashes to the ground and falls apart. He picks himself up and proceeds down the mountain, "Children of Israel, I have 10 Commandments!" I think we all applaud the loss of those five additional rules, but allow me to provide some speculation as to what they might have been:

Thou shalt preserve the cultural and scientific record. Moses was really smart. We, libraries and publishers, we're in deep trouble. The world is producing vast amounts of digitized and born digital content. The volume, complexity, and dynamism of this information challenge forces us to think creatively about its capture, its organization, and its long-term preservation and usability. Internet pioneer Vint Cerf warns us about the risk of a digital Dark Age. If we do not develop the technologies, the tools, the financial resources, and the shared responsibilities to address the risks to our cultural, scientific, societal, and community records, we are in trouble. We have done a very modest job at best in preserving the analog record. We are failing in our management of the digitized records, including e-journals, e-books, e-media, and e-documents. And for born digital materials, although we see pockets of activity around the world, there are minimal sustained programs and investments being made. This is an issue of integrity. We must maintain human records as complete, unimpaired, and undivided as possible. The ability to consult the evidence and sources used by a researcher and author will be lost if those digital records are not available. If I can't look at the born digital sites and footnotes in your paper, then I have to question what you wrote and its accuracy and validity. The ability to research and investigate the history and current state of our world will be compromised if born digital materials are gone or changed. The ability to assess the sources of record will be very difficult if they are deposited and dispersed as they are into multiple and disparate sites. This is the challenge of repository chaos.

At the core of digital preservation, for me, there are four principles. We hold the content, the archive as repository because we cannot preserve what we have not collected. We must enable access, the repository as persistence over time, we must secure the content, the archive as curation, and we must take care of the content, the repository as steward. Born digital content comes in an ever-expanding array of forms and formats. Consider just the following examples, and

this is exhausting: Published and licensed works such as e-journals, e-books, e-videos, and e-audio from commercial and trade sources, from academic publishers, from the growing array of independent and small publishers and distributors and the revolution in self-publishing and self-distribution. Further, the output of e-government, online learning and training materials, research data from universities and corporations, social media and all of its wonderful expressions, electronic archives that come with personal papers and organizational records, including e-mails and manuscripts and business papers and financial information, websites and web documents, visual images, spatial data, longitudinal observations, software applications, both proprietary and open source, video games, medical data, with the inherited challenges of patient privacy, live feeds like RSS and news information from around the world, visualizations and simulations, interoperable metadata like MARC and BIBFRAME and schema.org and so on and so on and so on with so many new things that will grow in intensity and intricacy. The people who look to us to capture, organize, and preserve stuff are going to be really pissed because we have it taken control collectively to solve this problem.

Commandment number two: Thou shalt fight the information policy wars. We, libraries and publishers, must more rigorously represent and advance the public interest and needs of our users and readers in critical information policy areas. In national and global forums, we must embrace an expanded role in the legislative, legal, and political arenas, but too often I think we find ourselves in conflict with each other. Quentin Crisp, the British eccentric, was giving a talk in Northern Ireland, and he mentioned over the course of his talk that he was an atheist, and a woman popped up during the question period and said, "Mr. Crisp, can you tell me whether it is the God of the Protestants or the God of the Catholics in which you don't believe?" We need to have our act together. The policy areas of interest are numerous and complex and include intellectual freedom and concerns over censorship, privacy and civil liberties, government financial support for education and research programs, including library funding, access to government information, network neutrality and telecommunications policy, open access to research and educational context, and copyright and intellectual property. This is, as one presidential candidate might say, "Huuuge!" Copyright is a topic of particular concern. Broad exemptions for libraries

like fair use, though strengthened by recent court decisions, in particular limitations of the law which allow us to do such things as make copies for users and interlibrary loan and access for the print disabled and preservation, they're all under threat. There is increasing focus on international agreements and treaties that influence our national laws and may not support our historical principles. More and more of the publications and databases being provided by libraries are covered by the private law of contract and not by the public law of copyright. Technological controls and digital rights management systems are reducing the ability to apply fair use and other valuable exceptions in the law. How can we play a substantive political role in these information policy areas?

Three: Thou shalt be supportive of the needs of our users and our readers. We, libraries and publishers, are developing a more sustained and actionable understanding of our user communities. Who are our users? Probably much more diverse than we realize. Where do we intersect with our users? Way beyond the walls of our physical spaces. How do we know about our users? Current tools of measuring and surveying and observing and listening are probably inadequate. As the late newscaster Charles Kuralt once noted, "Thanks to the interstate highway system in the United States, I'm able to travel from New York to San Francisco and see absolutely nothing." The infrastructure is important but totally inadequate. Users want more and better content, but they want more and better access. They want convenience. They want new capabilities, the ability to manage costs, participation, and control over their own information environments and individual and organizational productivity. Users want technology and content ubiquity. They want web-based services with no lines and no limits to service. They want technological sandboxes, places for experimentation and fun, but also privacy spaces, places with protection and anonymity. They want support services, help when needed at appropriate levels of expertise. They want guidance to community resources and assistance with health issues and jobs and careers. Our users want us in the library to be authoritative and expert, trusted sources. They want us to be authenticated and secure, appropriate and pertinent, that is reputable and relevant. They want us to be accessible and omnipresent, that is always there, everywhere, when they need us. They want us to be at advocative, that is supportive of the diversity of

needs but also a voice of shared interest. They want us to be audacious and attentive, that is bold and innovative but not way out in front or too far behind where they are. How can we help users attain their goals, achieve well-being, realize benefits, move forward, make personal connections, participate fully, and have significant effect in the world through us, through libraries, through the content and tools that we work with publishers to provide to our communities? We don't draw a line between what we do in libraries and these truly human requirements and expectations.

Fourth: Thou shalt cooperate in more rigorous ways. Cooperation is part of the professional DNA of libraries, but we need to move from "Kumbaya" to a much more radical strategy for collaboration. We know how to collaborate on a significant scale in such areas as cataloging and interlibrary loan and document delivery and licensing of databases, for example, but we need a deeper integration of operations in areas of mass production where we have hopeless redundancy across the library community and early co-investment in new infrastructures and new initiatives, not building it only at the institutional level, and in a commitment to a shared network, a shared complementary network of centers of excellence. From the conditions of knowledge scarcity over the centuries to the oppression of knowledge overabundance in today's and tomorrow's library, cooperation has been and will become a much more constant for service, success and survival. The future health of the library will be increasingly defined not by sharing resources on the margin but by new and energetic relationships and combinations and in innovative entrepreneurial partnerships. The measure of success of collaboration must be quality, productivity, leadership, and transformation. We are at a period of what I call polygamy; of rampant partnering and combinations. We're marrying everybody in order to get the job done. We're moving into a period of what I call "parabiosis." Think of Siamese twins sharing body organs, body parts, body systems. Deep pairings of libraries and their resources. We're advancing toward a period of what I call "particularism," with powerful disciplinary service technology and workflow specializations across the library community. Let's remember that every snowflake in an avalanche pleads "not guilty." This is a shared responsibility.

Several years ago, I published a paper entitled "Symbiosis or Alienation: Advancing the University Press Research Library Relationship through Electronic Scholarly Communication." I believe the evidence, ideas, and strategies outlined in that article can be exported to the current and future working relationship among all types of publishers and all types of libraries. I called at that time for a shared plan for collaboration, joint publishing initiatives, shared information policy agenda and coordinated advocacy work, joint consultations with researchers and authors, continuing education and training programs, content licensing principles, technology and metadata standards, usability testing, research and development projects through grant funding, preservation and archiving cooperatives, the management of born digital scholarly works like research data. But we have made very little progress in building this partnership between the library and the publisher community. And it's almost like what the Episcopal Bishop said to the Baptist Minister, "Brother, we both serve the Lord. You in your way and I in His."

The fifth and final lost commandment: Thou shalt work together to improve knowledge creation, evaluation, distribution, use, and preservation. I don't know how He got that one on that tablet, but it was pretty long, right? For this commandment, I'm going to briefly focus on the scholarly communication process and the working relationship among researcher, publisher, and library. Researchers have the urge to share the results of their research through publication. This is the way they communicate with scholars and students around the world. It is part of the academic culture in which they have been raised. It is the way in which their ideas and contributions are preserved for future generations. It is their source of prestige, recognition, and remuneration. Researchers are telling us they need support in several critical areas. They are seeking assistance in navigating, analyzing, and synthesizing a literature they simply cannot keep up with, especially when they move into new and multidisciplinary fields. They want guidance on working in an open research environment with scholarly exchange that is continuous. They require more robust expertise databases, subject ontology's and researcher information systems. They expect more consultation and support with research data management, which they know is increasingly mandated. They want help with awareness and

integration of disparate sources and gray literature. They argue for an informational and partner model for library support. The library community has been standing on the side of the scholarly communication stage for decades. We've been screaming like a Greek chorus, "It costs too much! It takes too long! We give too much away, and nobody is listening to us!" But this is an important public policy issue. Scholarly communication embraces communities of creation, production, distribution, consumption, and use. The publisher community has largely controlled the production and distribution channels, while universities have funded the creation, consumption, and use. Libraries have long argued that we are choking on the proliferation, that we need to rethink the location of the quality marking, that a corporate economy has consumed what was a guild economy, that scholarly publishing is largely a dysfunctional monopolistic market, and that we are not able to advance new models of digital scholarship. We have bemoaned what Larry Lessig has described as the constraints on access to information: The market, that is the cost; the law, that is copyright ownership; the technology and the norms, the way we have always done it. We bring, I think, some sustained core interests, a more competitive market to reduce costs and increase innovation, easy distribution and reuse of publications for purposes of scholarship and learning, innovative applications of technology, quality assurance and integrity, and permanent archiving of the scholarly record. Open access flows out of the 1990s in the library community. I remember vividly at an Aero membership meeting Cliff Lynch throwing open the proverbial window and telling us, the directors in the room, that if we were mad as Hell, than we had better do something about it. And from there the philosophy, the strategy, and the practice of openness in the research library community was born, and the SPARC organization was launched. We now talk about open scholarship, open data, open source, open educational resources, and so on, but in spite of significant investment and federal mandates and new publisher policies and researcher commitment, open access remains very much a work in progress.

So where does this extended commentary take us? For me, it means that over the next decade we must forge a new economy for libraries and publishers. I went to a play recently in Manhattan called "Extinction." And there I learned that there are actually two types of extinction that biologists talk

about. First, there's terminal extinction where the species disappears. Second, there is phyletic extinction—who knew? Where a new species will evolve. I would argue we, me, must be committed to that phyletic extinction goal. Libraries must invest more resources in space, in innovative technologies, and in staff expertise while also assuming new responsibilities for such things as digital preservation, new services to scholars, research and development, and deeper involvement in learning. We also need to understand how to think about playing a larger role in the discovery space, and Anja (*Anja Smit, prior plenary speaker*) talked about that. We need to question: Should we? Do we want to? Our users will evaluate us not on the things that we can provide but by the things we can enable them to do and accomplish. Libraries increasingly do not and will not pay for content that is simply not used: Content and articles that are not read or cited and books that are super specialized and have narrowed scholarly interest. This is a flawed and unsustainable market. Go directly to the students and faculty and see if they're willing to purchase or pay-per-use even with university subsidies. Open content will be more available and accessible. It will not, in my view, displace commercial and scholarly publishers, but more and more higher education institutions and funding organizations by policy and by law will mandate openness. Digitized historical databases will be delivered through national and global platforms unless publishers can provide significant added value.

Albert Einstein, when he came to the United States, would never fly in a plane. That scares me that a physicist would not fly in a plane. So, he went often by train. On one such trip, the young attendant was coming around to collect the tickets. He came up to the seat where Einstein was sitting, and Einstein started to dig in his pockets and look for his ticket, and he said, "Oh, no!" He recognized who this guy was. "Dr. Einstein, please, you don't need to find your ticket. Don't worry about it. Just don't worry about it." But, Einstein persisted. He crawled on the floor. He lifted up the seat, and again the young man says, "Dr. Einstein, come on now. You don't need to find your ticket." Einstein whirls around, looks him in the eye and says, "Young man, it is no longer a matter of whether I can find my ticket. It is a matter of where I am going." So, my final point is we need to spend far less time looking for our tickets and spend a lot more time thinking about where we're going. Thank you very much.