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Op Ed — Inadvertent Innovation

by **Joseph J. Esposito** (Processed Media) <espositoj@gmail.com>

hen I was invited recently to moderate a panel on innovation at a publishers' trade conference, my thoughts immediately turned to Clayton Christensen and his much-cited book, The Innovator's Dilemma. 1 Christensen has achieved heroic status in some quarters, especially among people in the tech sector, who are keen to come up with the disruptive innovations that Christensen writes about. Indeed, for a period of time it seemed that you could not come across the word "innovation" anywhere without "disruptive" preceding it. It's easy to see why the tech guys like disruptive technology so much, as they have the lessons of successful disruptions all around them: CraigsList (farewell to newspapers), Amazon (good-bye, bookstores), Twitter (CNN news flashes), and so on. Of course, publishers and the academic community they serve may have a different idea about innovation, since the disruptive kind is generally pointed directly at them. The challenge then for established institutions is how to be innovative without being disruptively so. Alas, the people behind such emerging organizations as PLoS and MOOCs have a different idea.

If established publishers are going to learn from Christensen, they are more likely to reach for a later book, Seeing What's Next, which Christensen wrote with Erik Roth and Scott Anthony.2 Christensen et al set out to create a taxonomy of the different kinds of innovations and the responses to them, which includes making an innovation work for an established business. Some innovations, in other words, are sustaining innovations, not disruptive innovations. And in some instances a truly disruptive innovation gets co-opted by established organizations (that's the value of seeing what's next). Consider mobile phones, which would seem to be aimed at the heart of the old landline phone companies — except that the landline companies took over the wireless firms. We have met the enemy - and we bought them.

Innovation and Star Power

As much as I have benefited from Christensen's various analyses (some consultants make a living applying Christensen's ideas), I continue to be nagged by the feeling that innovation does not really have the star power that many claim. The innovator is thought to be a genius, a visionary. Perhaps the visionary looks like Tennyson with his beard of Biblical proportions or, better yet, like a new Hollywood icon of Moses (Keanu Reeves?) bringing back the sacred tablets from the mountaintop. Ah! To peer into the future! It's a great job — when it pays — but so many of the new things that we value seem to have come about by other means. So often innovation is a byproduct of something else.

I want to back up a minute to cover my flank. I am not denying that some people truly do have incredible foresight and are able to build new services well before others even imagine what they might be. On my personal wish list for being a fly on the wall is the conversation between Microsoft's cofounders, Paul Allen and Bill Gates, when Allen said to Gates, who was still tediously enrolled at Harvard, "What happens when the cost of computers goes to zero?" This is a reference to Moore's Law: as the cost of computing drops and the power of computers increases, at some point the cost of computers approximates zero. The answer to that question is that all the value moves from hardware to software. This gave rise to the underlying premise of Microsoft, a company that has changed the lives of everyone reading this essay. There definitely are big picture people out there; we can all create our own list. I will forebear taunting anyone with my own, though I will admit to having being astounded when I was first able to receive a package absolutely, positively overnight.

Incremental Changes

Many of the things in scholarly communications, on the other hand, begin with baby steps that only later are revealed to be the strides of a giant. When Paul Ginsparg wrote the first lines of code for arXiv, he was solving the tactical problem of getting access to material in high-energy physics more quickly than he could by waiting for publishers to release their materials or by waiting for colleagues at other institutions to mail articles to him. From arXiv to the Public Library of Science — and the entire open access movment. I don't want to put arXiv on the same level as the 7th Commandment, but in the world of scholarly communications, it ain't bad. I can think of no more influential action, and its enormous impact was not designed but emerged in time inadvertently.

Small changes in policy and activity can yield enormous changes in the larger ecosystem, and those changes may sometimes be unwelcome, at least to some. I doubt that there are many people in the music business, for example, who would not like to go back in time and refuse to switch from analog LPs to CDs. Com-



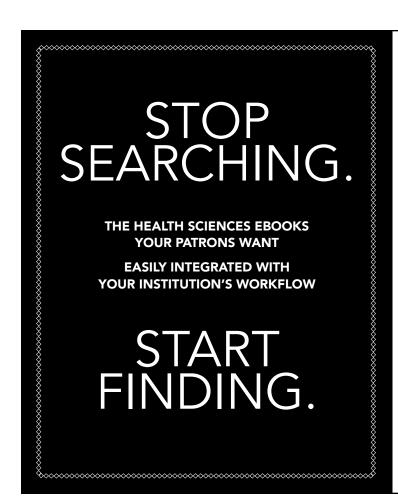
pact discs are digital; when they were introduced the promise to the music industry was that they would significantly reduce costs and enable a better toolset for audio production. Be careful what you wish for. That toolset was eventually to include Napster, which was made possible in part because the digital files on a CD could be ripped and uploaded over the Internet. Before Napster was founded I had some personal insight into this. I was running an early-stage Internet company called Tribal Voice which enabled file-sharing, but since this was still the era of low bandwidth and dial-up Internet connections, the files shared were small, mostly text. But then we discovered that our users were sharing music by secretly downloading files while at work, where corporate Internet connections made it possible to share copies of "Like a Rolling Stone" and "Uncle John's Band" in a few seconds. What would this lead to, I wondered. That was ten years before I first heard about BitTorrent.

Inadvertence and Innovation

It's fun to think of how some tactical innovations later went on to lead to big things. Harry Hoffman was sitting at the Ingram Book Company many years ago, when he came up with the idea of putting all of the titles in Ingram's inventory onto microfiche. The aggregation of metadata into an ordering system created huge efficiencies for Ingram and the booksellers they served. But no one thought that that aggregation could be turned to face consumers until Jeff Bezos came along. Scholarly book publishers, to cite another example of the impact of Amazon, initially saw Amazon as just another bookstore for their print books, but over time they realized that **Amazon** was opening up new markets internationally, as a scholar in Brazil or Thailand could order English-language monographs over the Web. This in turn led to publishers changing their contracts to demand world rights for titles, something of increasing utility now that more of the books sold are offered digitally and can be "shipped" around the world literally at no cost. So from microfiche at **Ingram** to a wholesale revamping of intellectual property practices: who would have thunk it?

I first began to think of the role of inadvertence many years ago when I

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was working at Simon & Schuster. Among my responsibilities was the management of a venerable tax guide, J. K. Lasser's Your Income Tax. The book had first appeared in the 1930s and had become a perennial bestseller, selling around 700,000 net copies every year. The editors of the book liked to include copies of the IRS tax forms, but those forms were rarely ready when the book shipped around November 1 each year. So they included a coupon in the front for readers who wanted to have the tax forms mailed to them. Over the years the number of people who requested this form grew to over several hundred thousand each year.

It was not observed at the time that those recipients of the tax forms represented a highly significant business diversification. Started as a service to readers ("Buy our book and we will mail the tax forms to you for free"), the mailing of the forms gave rise to a marketing database. After years of sending out the tax forms, someone (Sam Meverson) got the idea ("A brainstorm! I had a brainstorm," he later told me) of selling the actual book through the mail. This was a huge success. Then came the idea years later (presumably another brainstorm) to sell updates on tax court rulings in the form of a newsletter. These updates got the attention of professional accountants, who began to purchase a special edition of the tax

guide, gussied up with citations to court cases, along with the newsletter. The J. K. Lasser Tax Institute went from being an inexpensive paperback consumer publication to a highly profitable professional information service. It was a journey of a thousand miles and it began with a single small step.

The Internal Physics of Luck

It would be very easy to dismiss this line of reasoning by pointing out, correctly, that accidents happen all the time, people get lucky, all technology builds on other technology, and that if you extended this argument to its logical outcome, every biologist would have to cite Adam and Eve whenever he or she wrote about genetics. Yes, serendipity is part of the fabric of our lives, but the challenge for people who study and wish to enhance innovation is how to manage it. It's one thing to say that people get lucky, another thing entirely to determine why it is that some people are luckier than others. When it comes to innovation, luck has its own internal physics.

When organizations build a product or service, they really create two things. First is a solution to a tactical problem — a way to reduce costs, for example. At the same time they also create tools and infrastructure to support that solution. Sometimes those tools and other infrastructure can later be deployed in new ways. When publishers first put journals into electronic form, I doubt anyone foresaw that this would lead to the development of large

aggregations, consortia purchasing, and remote access, all of which served to make academic libraries more valuable to their communities. Nor did anyone anticipate that digital delivery would lead to the capture of user activity, which now can be analyzed for patterns and used to make decisions on editorial policy and library collections. Many years ago Encyclopaedia Britannica put the text of the encyclopedia into digital form for the first time - many, many years ago, long before anyone was thinking about electronic publishing. The reason for this was cost reduction: it simply was less expensive to manipulate digital files of what was then a 32-volume work. But later those files and the tools created to manipulate them were critical in developing first a CD-ROM version of the encyclopedia and the subsequent Web version. Today's Britannica Online is a direct and inadvertent beneficiary of purely tactical decisions made in the early 1980s.

There are a number of assets now in existence whose future may not closely resemble the reason they were created in the first place. When I began to study patron-driven acquisitions a couple years ago, I was intrigued by all the data libraries had collected on circulation records. It was immediately apparent to me that this data, once it was fully anonymized, could be repackaged and sold to publishers who would like very much to know how their books circulate in libraries, a matter about which currently they have barely a clue. In

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the journal-publishing world more and more publishers are copying **PLoS** and creating Gold OA services. I wonder how many of these publishers realize that they are beginning to develop a database of a kind they never had before, a record of authors and their works and all the online activity that takes place when an author submits an article to a journal. It may be time to bring in database marketing experts to assess how that data is being stored, what other fields of information it would be useful to collect, and what new products and services could be derived from that database.

Investing in Capabilities

There is a moral to this story and that is: Don't just invest in your core business; invest in capabilities. Over time it may become more apparent what other uses these capabilities can

be put to. The corollary to this is that the common strategy to outsource everything that is not central to the business should be reviewed. Outsourcing may push away capabilities that will come to surprise us all in the years ahead. Now that we are seeing more and more publishers sending their production work to companies in India, I wonder how many of the executives of these companies recall that the first steps toward digital publishing strategies were taken by the very production departments that have now been outsourced. Should IT work be handled in-house or by vendors? That is a question whose answer varies day to day. When you outsource your software platform today, are you failing to invest in a capability you may need tomorrow?

There are no easy answers to how to spur innovation in an organization, but we have to be determined to look for innovation in unlikely places. Innovations are not always the work of the smartest people in the room; they

are not always prophetic in nature or grand in scope. Sometimes they are simply as clever as using a PDF to drive print-on-demand or capturing user names as **Sam Meyerson** did so many years ago. They spring from all corners of an organization and are no respecters of job title or rank. The innovative organization is simply one that makes things and then reflects on them. Rock stars need not apply.

Endnotes

- 1. Clayton M. Christensen, The Innovator's Dilemma: When New Technologies Cause Great Firms to Fail (Cambridge, MA: Harvard Business Review Press, 1997).
- 2. Clayton M. Christensen, Erik A. Roth, and Scott D. Anthony, Seeing What's Next: Using Theories of Innovation to Predict Industry Change (Cambridge, MA: Harvard Business Review Press, 2004).

Booklover — Bellow and "The Dean's December"

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"People can lose their lives in libraries. They ought to be warned." **Saul Bellow** quoted in **Steven Gilbar's** *The Reader's Quotation Book: A Literary Companion* published in 1990. I am one of those people who should have been warned. I have lost a good part of my life in libraries. It is one of my favorite places to be. Even when I travel, I will seek out a library. But I didn't check **Saul Bellow's** *The Dean's December* out from a library, I found it in a used bookstore. It has been sitting on the "to read" pile along with a few other Nobelists for awhile. Not sure what prompted me to pick this one from that pile, but I soon understood.

Saul Bellow, a Canadian/American of Jewish descent, won the Nobel Prize for Literature in 1976 on the heels of his literary success for the novel "Humboldt's Gift." The Nobel Committee described his writing as "the mixture of rich picaresque novel and subtle analysis of our culture, of entertaining adventure, drastic and tragic episodes in quick succession interspersed with philosophic conversation, all developed by a commentator with a witty tongue and penetrating insight into the outer and inner complications that drive us to act, or prevent us from acting, and

that can be called the dilemma of our age." The Dean's December was **Bellow's** first book published (1982) after receiving the honor and embodies all of this description for me. (It probably is a stretch for a picaresque novel defined as: "Of or relating to a genre of usually satiric

prose fiction originating in Spain and depicting in realistic, often humorous detail the adventures of a roguish hero of low social degree living by his or her wits in a corrupt society.")

The year that **Bellow** received his Nobel award was the same year I began my research career at the Medical University of South Carolina (MUSC). During my career at MUSC, I have had the added bonus of meeting people from numerous ethnic backgrounds and learning about their perspectives, their food, their culture, and their difficulty of living so far from their families. In *The Dean's December*, the character Albert Corde is a Dean at a Chicago University, and the story is centered around a December when he and his Romanian-born astrophysicist wife, Minnia, need to return to Bucharest, Romania to deal with the crisis surrounding Minnia's dying mother. I have been a part of this story with too many of my friends, listening to their heartache as relatives were sick or dying. I almost put the book down, but Bellow's word craft quickly engaged me and I was following him to Romania in the bitter of December. By Chapter 4....

"Each of the long days in Minna's room was a succession of curi-

ous states. The first was the state of rising, pulling on your Chicago socks and sweaters (good cashmere, but thinning at the heels and elbows), assembling a dean who was less and less a dean within. The room was dark, the cold mortifying. The toilet, located in a small cell apart from the bathroom, was Gothic. The toilet paper was rough. A long aeruginous pipe only gave an empty croak when you pulled the chain. No water above. You poured from one of the buckets into the bowl. Corde himself took charge and filled them when the water was running.... All this was like old times in the States, before the age of full convenience. It took you back.

On the dining room table, Turkish coffee was ready in a long-handled brass pitcher, lots of chicory, together with boiled milk, grilled bread in place of toast, brown marmalade with shreds of orange in it — ersatz, but the best that conscientious Tanti Gigi could furnish.... Kindly acquaintances did the errands. Aged women rose at four to stand in line for a few eggs, a small ration of sausages, three or four spotted pears. Corde had seen the shops and the produce, the gloomy queues — brown, gray, black, mud colors, and an atmosphere of compulsory exercise in the prison yard. The kindly ladies were certainly buying on the black market.... Corde ate grapes and tangerines and other black market luxuries. From time to time he was served meat. It was the general opinion of the ladies that there should be good things in the house of death. Especially for people from the blessed world outside, foreigners who took steaks and tangerines for granted '

December in Romania in the house of the dying is depressing. Yet **Bellow's** words make you want to stay until the dead were buried, December had passed, the appointment for the telescope on Mount Palomar was set for Minna, and "The weather was bright, keen blue, an afternoon of January thaw."