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WHAT'S FOR SALE THESE DAYS IN HIGHER EDUCATION: Two Stories

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I take as my text for these remarks the Gospel According to Derek Bok. Shortly after leaving the presidency of Harvard, Bok offered this advice to university presidents about what he saw as their hardest job in the years ahead. It is, he said, knowing what is for sale and what is not.

That question did not much trouble universities until quite recently, for the simple reason that, with the exception of admission to selective institutions and a number of credentials, what the university had for sale was not very much in demand. Following World War II, the government found value in university-based research, and most universities decided that the historic academic value of openness could be sold for classified research projects, and they made the deal. Also, the value of a college degree increased, and the more selective the institution, the greater was the increase and hence the price that the institution could charge.

But commercial application of discoveries was not a major preoccupation for universities, and those few well-known exceptions, such as Warferin and Gatorade, were envied but not much emulated. Indeed, until the 1980s and the passage of the Bayh-Dole Act, which enabled universities to patent inventions made with government research funding, few universities had any capacity to identify inventions made by their faculty and equally little capacity to evaluate those they did know about for their commercial potential, much less to exploit that potential.

Bayh-Dole raised the stakes substantially, but most universities were surprisingly slow to seize the opportunity it offered, and the patent and licensing business remained pretty much a boutique activity in all but a few places. Big "hits" were rare, and for many, the cost of engaging in the activity exceeded the revenue. The pattern of patent applications from universities is revealing. The top 100 research universities were awarded 177 patents in 1974, 408 in 1984, and 1486 in 1994. In 1997 an MIT survey showed more than 6000 patent applications from 158 universities. The roughly 3000 licenses granted by these universities produced about $500 million in royalty income.

The sudden explosion on the scene of biotechnology in the early 1980s, combined with the Bayh-Dole opportunity, produced the conditions we now see. Stanford and UCSF successfully patented and licensed the invention of recombinant DNA, and it became the most lucrative invention in the history of higher education. It is an interesting and quaint bit of history that Stanford's most eminent biologists, including two Nobel Laureates and one who was about to become one, opposed the university's plan to patent the invention. They feared that the intrusion of such openly commercial motives would induce scientists to withhold their work from colleagues in order to protect their priority position for any possible discoveries with commercial value. They feared, too, that the university's economic stake in the widespread exploitation of the invention would undermine the ability of university scientists to participate

in the then-heavy debate over whether the technology was safe to use. Neither of those concerns was foolish.

But in a phrase then much used in the recombinant DNA debate, the genie was out of the bottle. The race to riches was on, and within a few years all of the Stanford scientists who had opposed the patent had their own deals with the biotechnology companies that were the 1980s precursor of today's dot com epidemic. With a speed that belies the conventional view of universities as slow-moving organisms, there was suddenly a rash of deals between universities, their faculty and biotech, chemical and pharmaceutical companies. Universities were investing in the commercialization of the work of their own scientists against the advice of more sober critics like Derek Bok. (Before Bok left Harvard, that university had found a way to do what he had first prevented it from doing.)

It may seem, at first glance, that what happened with biotechnology was no different from what had happened in the computer and information sciences industry, where there was also an important university component. There is one major difference, however. It is that all parties had become incomparably more sophisticated. Just as XEROX allowed Apple to walk out the door with the keys to desk-top computing and never earned a penny from the inventions of its scientists at XEROX Park, so, too, did Stanford fail to recognize the potential economic value of the work its faculty and graduate students were doing in computer science, and allowed them to walk out the door with what later became billions of dollars of commercial value. That was not to happen with the biotechnology revolution. Over time, as we shall see, universities, faculty and corporations have become ever more ingenious in forging alliances that have substantial financial benefits to all. Whether they also benefit the academic enterprise is another matter which we will want to consider, as well.

Even more recently, another element has entered the picture. The enthusiasm for distance education, partly, but not entirely, offered through the internet, has begun to attach economic value to that part of a faculty member's work that in the past has been valued only in terms of salary or an occasional textbook. This is truly a new world of opportunities and problems, a world that gives the Bok question an even sharper edge than he could have known.

I want to approach these issues by telling you two stories. One of them is well known to you because it involves this university. The other is less well known, though it has been reported in the Wall Street Journal and in the educational press.

UNEXT.com

The first story involves a company called UNEXT.com. As it happens, this company is funded largely by money from Michael Milken, but this is not a story of the great crime that is said to lie behind every great fortune. As described in the *Chronicle of Higher Education*, "UNEXT.com has devised a business plan that aims to tap some of the biggest growth areas in higher education today: executive training, continuing education, and distance learning." It is focussed at the start on the international corporate market.

It would be hard to construct a sentence that contained more modish buzz words in higher education than does that one. But this is serious business, big business. According to the *Chronicle*, "the Deerfield, Il UNEXT.com plans to develop a series of business-oriented courses, sell them to multi-national and overseas corporations, and then have the corporation deliver the courses to their employers worldwide via the internet and more traditional materials, such as books." That last is an especially nice touch.

Now UNEXT, even with Milken millions, would have scant hope of success in this venture if it simply went out and hired some competent people--of whom there are many--to develop these materials. Like TV or Hollywood, they needed "bankable stars" to make it work. Or to put it another way, they needed to buy brand recognition as the easiest way to creating it. They knew where to look to find what they needed. Contracts have so far been signed with the Business Schools at Columbia, Stanford, University of Chicago, and the London School of Economics, with Carnegie-Mellon in the works and others to follow.

Each participating institution has been guaranteed a stream of royalties that would amount to a minimum of $20 million over 5-8 years. In exchange, faculty of these schools create course materials and their

universities agree to the use of their logos in hawking the company's wares. Is this a great country, or what?

It appears from the news reports that only at the University of Chicago did faculty raise serious questions about the propriety of these arrangements. For one thing, university statutes prohibit the use of the university's name for product endorsement. Oh, well.

For another, while no professor will be compelled to participate, the university will consider participation in this work as part of a faculty member's teaching responsibilities, for which they will be paid or get released time, or, one suspects, some of each, depending on the value of the product.

All of the money goes to the university, not the faculty, except as additional compensation is negotiated. That, according to David Brady, Associate Business Dean at Stanford, is what appeals so much to the signatory institutions. He rightly points out that universities make money off patents, but missed out on textbooks. Distance learning opens new opportunities and "universities want something out of it...It's their way of getting a piece of the action." Those of you who know Dave Brady will recognize his characteristically disarming candor.

What are we to make of this? I confess to some confusion. We have grown accustomed to thinking about university-business relationships in the context of research, not teaching. The heart of that connection has been in the inventions and other discoveries that emerge, not as the object of the research, but as its by-product. Teaching, however, is the product, not the by-product. It is what faculty are hired to do, and they are hired to do it with the students who enroll in their institutions. This new relationship turns the traditional understandings upside down. If I understand it correctly, faculty will be paid more to do less of what they usually do with their students, so that they can do more of it with students they don't know and will never meet.

From the universities' point-of-view, I suppose the argument is that it is precisely because it is teaching that is involved, and because faculty are paid to teach, that any residual value that resides in their teaching output belongs to the university. But what will happen to faculty who decide that they don't want to play? It would be an imprudent tenure-seeking assistant professor who made that decision, and that should be troubling in itself. And what of the more senior person who feels that a better deal is available elsewhere, and decides to sell his services to another buyer? Do his colleagues and his Dean simply smile and wish him luck, or is this financial conflict played out in internal decisions about resource allocation? Surely no administration would consider such financially painful disloyalty as a breach of collegiality and attempt to exact retribution, would it?. Well, perhaps not in most cases.

The institutional interest in the UNEXT deal and the many others that will follow is clear enough. Rather than allow faculty to take the value they can produce by their teaching in this new market, they will claim ownership of it, as they do with patents, and sell it to the highest bidder. Who can blame them for thinking in this way? Who is not made uneasy by it?

UC Berkeley-Novartis

My second story is known to all of you because it took place on this campus. It is the story of the Novartis contract with the Department of Plant and Microbial Biology in the School of Natural Resources. Since it is a local story, I don't need to explain it in any detail. I will just remind you that Novartis, a Swiss pharmaceutical company with a large American presence, contracted with the University to pay $25 million in support of the department's research for a period of five years. In exchange, the company will have two seats on a five person grants committee that will decide which research to fund, and it will obviously have close and ready access to participating faculty and their students. But the real payoff is that the company will have the ability to vet all inventions (except those that are the product of research funded by other corporations) emerging from the work of the faculty, whether or not that work was funded by Novartis, and will have right of first refusal to licenses on a fraction of those patents equal to the percentage of the Department's total research funding that is represented by Novartis's money.

There are elements of this arrangement that are not new at all. For example, Harvard, Washington University, MIT, and others have entered into large multi-year contracts involving the work of a given

department or area. This arrangement is different, though, in that the funding party essentially buys rights to the best of the work done in the department whether or not its funds paid for the work. Kingman Brewster once said that the government liked to pay for the button but act as if it had bought the coat. In this case, the company does not claim the whole coat, only the parts that keep you warm.

I am not alarmed by this arrangement, but I am concerned. I am not alarmed because the University has done a reasonably good job within the four corners of the contract. The permitted publication delays for patent purposes are limited, and while ninety days is at the far end of acceptable, it is not a terrible delay. The difficult issue of the use of proprietary data remains difficult. Fair warning is given that a university cannot promise to keep secrets, so any material that should be kept secret should be kept away from the university. On the other hand, however, any faculty wishing to use the company's proprietary genetic data bases must sign an agreement to maintain the confidentially of the data and not to publish anything that would breech confidentially without the permission of the company. The company agrees not to withhold permission unreasonably, but even a bad lawyer could drive a truck through that language. On all of the standard issues that arise in these relationships, the university has been sensitive and thoughtful. Note that I refer here only to contractual language. What happens day-to-day may well be different and can't be known until there is actual experience to evaluate. But I don't know what can be done about that fact of human behavior.

I should say here, and perhaps I should have said earlier, that I don't believe that there is good money and bad money. There is only money used for good purposes and under carefully drawn conditions and money that does not meet those conditions. In that regard, money from business is no different than money from government. What is different is that the values that drive business are different from those that animate a university, while on the whole, and with some egregious exceptions, the government has accepted the universities' values and framed its major programs to honor them. I'm not sure that can be said for business. The differences are fundamental ones, not easily reconciled. The time horizons are different, the concern for confidentiality of data and conclusions can be exactly opposite in the worst cases, and the bases on which decisions about what research is the most promising may be quite different. This is not a contest between good and evil; rather it is, or can be, a clash of conflicting values, each set of which is appropriate for the party that holds it, but inappropriate for the other.

There are other reasons for concern, if not alarm. First I fear that the U.C.- Novartis agreement is at the least another step into admitting an outside entity into fundamental academic decision processes--in this case, decisions about the direction of research for an entire unit of the university. More likely, it points the way to even more ingenious agreements that are quite likely to be made in universities that are far less scrupulous than this one. In that sense, this agreement gives prestigious sanction to others that will follow.

Second, as in the case of UNEXT, I think this agreement raises questions about the kinds of pressures that may be brought on faculty, especially younger ones, to bring their research under this agreement. I am sure that the department has no such intentions, but I am equally sure that it is not inconceivable.

Third, I am greatly concerned that arrangements of this kind represent another step away from peer review as the basis for research support in this country. I worry less about attacks on peer review from those who think they should be getting more than I do about self-inflicted wounds from those who should know better. We have under this agreement a distinguished department that has in substantial measure relieved its faculty of the responsibility of competing for funding. Instead, a non-trivial fraction of funded research will be the product of inside decisions, subject to all of the forces that affect all other departmental decisions. The attraction of such an arrangement is obvious, and in the short run, there will be no noticeable difference; in the longer run, it would not be surprising to see a certain laziness creeping in. The informed judgement of qualified professionals who are not immediate colleagues, and that are rendered in competition with other applicants, has kept American science at the cutting edge for fifty years. Someone should be worried about, and guarding against, anything that weakens that tradition. If our leading universities will not, I don't know who will.

I will end where I began, with the question "What's for sale and what isn't?" A casual observer could be forgiven for thinking that anything that has a price is for sale. Certainly, our athletic teams have become walking billboards for competing athletic equipment companies, and if your campus has been bought by

Coke, don't waste your time looking for a Pepsi, or vice versa. But those are trivial, if lucrative examples. What we need to be concerned about are the institution's core activities, teaching and research. From what I have said so far, you will not be surprised to learn that I admit to some troubled confusion. I have no doubt that we will see more corporate involvement in teaching and research, by which I mean that universities will, increasingly sell or rent to corporations those activities to which a dollar value can be attached that is agreeable to both sides. The financial pressures on universities and the value of what they do, as perceived by widening sectors of business make that close to inevitable.

I am not opposed to universities making money; it is almost always turned to good purpose. Nor am I opposed to making accommodations around the margins in order to get that money. For example, brief delays in the publication of results in order to protect a patent position seem to me acceptable, so long as the investigator is free to publish where and how he wants when that period is over. To be perfectly candid, however, I am dubious that many universities can be trusted to know the difference between what is marginal and what is central. Faculty want money for their research, and deans and presidents want them to have it. I have long been struck by the unwillingness of otherwise intelligent and highly ethical people to question the terms on which good fortune comes their way. I will close by saying I hope I am wrong about that.
