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ACADEMIC CAPITALISM and the NEW ECONOMY

Markets, State, and Higher Education

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FIGURES AND TABLES

Although copyright offices are not yet widely established, other organizations that deal with copyright in educational products have emerged interstitially. These are university organizations or offices that head distance education projects or for-profit educational arms, such as Columbia's Fathom and University of Maryland's UMUC. These organizations bring business practices and procedures into universities, although they are often removed from collective faculty authority. They create precedents and models for other market-oriented ventures. Regardless of whether they succeed or fail, they very often align colleges and universities with corporations dealing with educational products in the new economy.

Frequently, the distance education projects or for-profit arms are part of networks that intermediate among the public, private, and for-profit sectors that connect the new circuits of knowledge. Many on-line, distance education ventures are run through such networks, as we described with Columbia's Fathom. Another example is Knowledge Universe, an enterprise chaired by Michael Milken that is self-described as "the parent of a diverse group of operating companies with a common theme of building human capital by helping individuals and businesses to realize their full potential" (Knowledge Universe 2003). Among the companies in the Knowledge Universe group is UNext, which has affiliations with Carnegie-Mellon University, Columbia Business School, the London School of Economics and Political Science, Stanford University, and the University of Chicago Graduate School of Business through its on-line provider Cardean University (UNext 2003). Ironically, colleges and universities often see for-profits as competing with them, yet a number of the for-profits involved in distance education and on-line universities could not operate without college and university partners, which offer highly skilled, relatively low-cost content providers (Schiller 1998). Indeed, the line between public, private, and for-profit institutions is hard to draw in the case of for-profit arms of institutions of higher learning. Perhaps the common line that connects all of them is that they are able to ask (nontraditional) segments of the public to pay more for educational materials and curricula.

Although copyright policies parallel patent policies in some regards—for example, making the use of faculty time and institutional resources the basis of claims to institutional ownership—in other regards they differ—for example, faculty who copyright rather than patent are granted much more generous royalties. Because copyright policies potentially affect all faculty, they are likely to be more contested than patent policies.

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COPYRIGHTS PLAY OUT
Commodifying the Core Academic Function

In this chapter, we examine how intellectual property related to instructional materials and educational activities plays out in the work lives of faculty. Union contracts cover approximately 44 percent of full-time faculty in the United States, most of whom are located at two- or four-year institutions (Rhoades 1998, p. 9). The contracts provide a sense of how faculty at nonresearch colleges and universities intersect the academic capitalist knowledge/learning regime. Union contracts often have copyright as well as information technology clauses. Copyright clauses speak to ownership of intellectual property. Information technology clauses generally address distribution of profits based on courseware and other curricular materials as well as the use of these materials by full- and part-time faculty. Sometimes they even specify how use of technology-mediated products should be factored into faculty workload.

The theories we draw on are Rhoades's (1998a) work on the changing power relations within universities and our theory of academic capitalism. Rhoades's work suggests that managerial or support professionals are assuming greater control over or coproducing faculty work. The theory of academic capitalism suggests that the pursuit of external revenues creates webs of policies and procedures that call for greater use of and authority for managerial professionals. Information technology, as represented by on-line education, whether on campus or at a distance, calls for greater use of managerial or support professionals who work with faculty to coproduce educational services for new economy markets. Both faculty and administrators, whether senior or managerial, are increasingly concerned with the generation of external revenues, which push or pull them toward the academic capitalist knowledge/learning regime. Although all sincerely profess to be interested in creating "better" colleges and universities, their differing conceptions of "better" shapes how they approach copyright. Senior level administrators seek to enhance the annual operating budget of institutions. Managerial professionals are concerned with expanding and making permanent their professional positions and services. Faculty often tr

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to maintain their control of the curricula and expand their share of profits fr external revenues derived from intellectual property. The ways in which faculty senior administrators, and managerial or support professionals interact aroun the opportunities created by the academic capitalist knowledge/learning regim work to restructure higher education in ways that are both intentional an inadvertent.

The questions that arise when we ask how this plays out in collective faculty agreements and individually fall into two categories. The first are related t ownership of intellectual property: Do faculty attempt to profit from copy- righted instructional material? Do faculty try to protect values associated with the public good knowledge regime even though they may profit from intellec- tual property? If so, to what degree? The second have to do with on-line higher education: Do institutions attempt to expand on-line education to reach new student markets, and do they try to assert ownership over educational materi- als to enhance external revenues? Does expansion of on-line instruction call for greater reliance on support professionals? Do faculty try to seek a share of prof- its from on-line education? Do institutions or faculty try to protect values as- sociated with the public good knowledge regime as they develop e-education?

In the following pages we explore the complex collective stance of faculty with regard to the increased commodification of educational materials. We draw on several data sources: data developed by Lape (1992) and Packard (2002) in their analyses of copyright policies in research universities, data from the state system and institutional policies we analyzed in chapters 3 and 5, and data from a national sample of collective-bargaining agreements. The sample is found in the 2003 version of the Higher Education Contract Analysis System (HECAS), a CD-ROM database owned by the National Education Association (NEA), which has 435 collective-bargaining agreements, 113 in four-year insti- tutions and 322 in two-year institutions.[1] The contracts in the database are from local bargaining agents of the three major unions/associations, as well as some negotiated by independents. We also draw on earlier versions of this data- base to track patterns in the contracts over time (see Rhoades 1998a, 1999). In addition to the intellectual property policies, we draw on primary and sec- ondary materials from the national faculty associations and unions, the Ameri- can Association of University Professors (AAUP), the American Federation of Teachers (AFT), and the NEA. These enable us to consider not only the collec- tive professorial pursuit of ownership and profit from intellectual property but

1. A far greater number of campuses are covered because many of the agreements are for state systems of universities and municipal systems of community colleges.

to the official articulation of professional concerns about the use and control of copyrightable intellectual property.

Intellectual Property Issues Identified by Faculty Collective-Bargaining Negotiators

As colleges and universities expand their provision of distance-learning courses and programs to tap into new student markets and generate new rev- enues, and as institutions provide professors with the opportunity to develop and deliver them, important questions arise about who owns, receives proceeds from, and controls the use of these intellectual products created by faculty members. Interviews with two faculty negotiators, one from a university and one from a community college, reflect two important themes in regard to the commodification of education. First, faculty, like institutions, pursue owner- ship claims and the promise of revenues from copyrighted intellectual prod- ucts, and collectively have negotiated generous shares of income from intellec- tual property. Second, faculty sometimes negotiate peer-based quality control of their copyrighted materials.

The lead faculty negotiator in a unionized research university (Wayne State) proudly spoke of the intellectual property provision he and his team had nego- tiated, which preserved faculty ownership of copyrighted educational materi- als. A key issue in many contracts is the use of institutional facilities. The more substantial the use, the greater the institution's claim to ownership, a significant point given that educational materials are increasingly produced with advanced information/media technologies. Yet the Wayne State provision specifies "sub- stantial use" in a way that is favorable to faculty, reducing the university's claims to ownership to include only cases in which a "work for hire" has specifically been commissioned to produce the course (Rhoades and Maitland 2000).

The lead negotiator at Mott Community College was also pleased with a sim- ilar feature of the provision he helped negotiate. "The most important language covered a deeply-held conviction; it was to retain ownership. So, the new lan- guage really protects that. It protects the intellectual property and the content of the course . . . We came to the table saying, we own it. The story we told was, a faculty member's ideas are their own . . . they are all that we have. Since the classical era, our ideas have been ours" (Rhoades and Maitland 2000, p. 30).

Beyond ownership, the negotiator at Wayne State referred to the generous shares of the proceeds from the faculty-created property that the contract pro- vided. A sliding scale for jointly created works and works for hire accorded fac- ulty members 90 percent of the revenue up to $50,000 and 75 percent after that

(considerably more generous than the split for patents, which was 50% after $100,000). On this point, the Mott faculty negotiator articulated a sentiment that speaks to our second theme—even as they participate in commodification and negotiate their share of the proceeds, many faculty are also deeply invested in the educational dimensions of their intellectual property. "I don't think revenue is the big issue. I hope not anyway. These courses are being developed to fit the needs of our students. Not for markets, or for making profits. I guess we are competing in some sense with some big private companies. But the courses should be geared to our students. Our first priority is our students, not to compete in markets . . . That's management's view, as well, thankfully, at least at the present. But we'll keep an eye on that . . . The minute you get into making a profit, to competing in the market, then you almost change yourself into something you are not" (Rhoades and Maitland 2000, p. 31).

Concerns about educational quality are particularly evident in questions about the control and use of educational materials created by faculty members. An important consideration for both faculty negotiators was who would control the assignment and future use of materials and courses. They expressed faculty's concern regarding scenarios in which a course might either be taught by an unqualified (often part-time) instructor who would deliver an inferior course or be taught in its current form in the future, long after it should have been revised and updated. The negotiator at Mott was proud of the clause that ensured that faculty members controlled course assignment (through veto rights) as well as the decision of whether and when to revise or replace a course.

As educational materials become increasingly commodified, many faculty participate in negotiating ownership and shares of the proceeds from the products they create. As both faculty negotiators indicated, their leverage in negotiations with institutions that wanted to expand distance-education activity was that faculty needed to be given more incentive to engage in such activity. Yet even as they are complicit in the commodification of educational materials (Rhoades 2002), faculty also create some alternatives to the pursuit of profit by developing contract clauses and association positions that address quality and faculty control, which can act as professionals' protection of the public good.

Collective Professorial Pursuit of Profit, Shares, and Ownership

Shares and Ownership

Collectively, faculty claim ownership and pursue their share of the proceeds from their copyrightable educational materials. The three major faculty unions and associations have taken a clear position claiming faculty ownership of such materials. The AAUP offers the following positions:

> [I]t has been the prevailing academic practice to treat the faculty member as the copyright owner of works that are created independently and at the faculty member's own initiative for traditional academic purposes. Examples include class notes and syllabi, books and articles, works of fiction and nonfiction, poems and dramatic works, musical and choreographic works, pictorial, graphic, and sculptural works, and educational software, commonly known as "courseware." This practice has been followed for the most part, regardless of the physical medium in which these "traditional academic works" appear, that is, whether on paper or in audiovisual or electronic form . . . this practice should therefore ordinarily apply to the development of courseware for use in programs of distance education. (AAUP 1999c)

An AFT position paper advises that: "Ownership of intellectual property should be the right of all academic employees and is key to controlling the quality and duplication of their work" (Strom 2002, p. 11). The NEA statement goes further:

> NEA believes that education employees should own the copyright to materials that they create in the course of their employment. Toward this end, the Copyright Act of 1976 should be amended to expressly recognize an appropriate "teacher's exception" to the "works made for hire" doctrine, pursuant to which works created by education employees in the course of their employment are owned by the employee. This exception should . . . reflect the unique practices and traditions of academia. In the interim—unless and until legislative action is taken—all issues relating to copyright ownership of materials created by education employees should be resolved through collective bargaining or other processes of bilateral decision-making between the employer and the affiliate. In the absence of special circumstances—under which it might be appropriate for the rights of ownership to be divided between the education employee and the employer, or to make some similar arrangement—such negotiated agreements should provide that copyright ownership vests in the education employee who creates the materials and that he or she has all of the legal rights that come with such ownership. (NEA 2003)

An analysis of the collective-bargaining agreements in the HECAS data set of institutions that have copyright clauses shows that a majority of the contracts mention either use or significant use of institutional resources as a factor affecting ownership claims. Almost one-quarter of the copyright clauses in two-year institutions' policies and over one-third in four-year institutions' indicate that faculty own copyright outright, even in cases in which institutional resources have been used. The overwhelming majority, over four-fifths, have language that recognizes faculty ownership if they produce the work independently, without significant use of institutional resources.[2]

Triton College provides an example of faculty successfully negotiating ownership rights even when there is substantial use of institutional resources.

2. In several cases, this varies from the provision regarding patents and inventions, which accords ownership to the institution when significant institutional resources are utilized.

"When there is College support, the College shall have sole ownership of recorded materials; the faculty member shall have sole ownership of written materials and inventions" (2000). Cloud County Community College offers creators blanket ownership rights:

> The Board of Trustees recognizes that it has certain proprietary rights to material, including publications, instructional material and devices, prepared by staff members on college time and with the use of Cloud County Community College facilities and/or equipment . . . The Board requires that development of material by staff members for the purpose of obtaining patents, distribution rights, monetary gain or copyrights, shall not infringe upon the responsibilities that the staff member has for the position held within the College. Therefore, the College shall have no interest in such materials prepared by staff members. However, material prepared by a staff member and covered by this policy must be made available to the College without charge. (2001)

Although such clauses are not the norm, they are important for two reasons. First, they point to the aggressiveness of faculty working collectively to maintain ownership claims over copyrightable works and their right to generate revenues from them even when these works are created with the support of the institution and essentially are publicly subsidized. Second, the clauses point to the possibility of faculty in less prestigious institutions occasionally negotiating more favorable intellectual property claims than are allowed faculty in more prestigious institutions.

In other cases, faculty have not retained ownership claims, but, as in the eighteen policies we examined in the previous chapter, they have negotiated substantial revenues from or generous shares of the proceeds. Some provisions identify a specific payment for developing materials. "Each professor/instructor who voluntarily agrees to develop a new or existing course for delivery via television (two-way interactive) shall be compensated $1500" (Glen Oaks Community College 1997). Other provisions identify shares from the proceeds of intellectual property. "Twenty-five percent of all net proceeds from the sale or licensing of college supported written materials will go to the college and 75 percent will be retained by the originating bargaining unit member. Seventy-five percent of all net proceeds from the sale or licensing of college supported recording materials and inventions will go to the college and 25 percent will be retained by the originating bargaining unit member" (Johnson County Community College 2003). Again, technology matters—the college's share of proceeds from recorded materials is greater than that from written ones.

Another mechanism by which faculty have collectively bargained for revenues from distance-education courses is evident in this clause about the re-

broadcasting of courses: "If the instructor who created and/or taught the course is unable or declines to administer the course, the sponsoring department may, by agreement with the Office of Telecourse Programs, recruit another instructor with appropriate expertise to administer the course, but the instructor who created and/or taught the course shall be paid a royalty of 10% of the total tuition received from all students based on the continuing education tuition rate, but not to include course fees" (Western Michigan University 2003). Essentially, there may be a bounty on distance students, for individual faculty as well as for institutions. Another type of bounty is evident in the contract of Chemeketa Community College: "Whenever the distance education class is significantly larger than common department practice, i.e., enrollment caps, the following guidelines shall be used when additional monetary compensation is given" (2003). The guidelines specify pay bonuses that accompany classes over the enrollment cap (e.g., for twice as many students the faculty member gets paid 100% more).

Unionized faculty have negotiated, with some success, to ensure that teaching courses at a distance is voluntary. They treat the teaching of such courses as an extra responsibility for which they should be paid, though almost always at a piece rate, rather than through prorating their salaries. As in the story of the two faculty negotiators, one of faculty's points of leverage is that institutions want to get more involved in distance education and faculty require an incentive to engage in this activity. That stance suggests faculty complicity in the pursuit of profits from educational activity and copyrightable educational materials.

It is very unusual for a contract to challenge the pursuit of academic capitalism in the new economy. Most of the current struggles are over who gets how much. As Rhoades (2002a, 42) notes, "The public is usually left out when the profits from academic intellectual property are divided." However, a few collective-bargaining agreements do offer alternatives to the academic capitalist knowledge/learning regime, including setting aside some monies for public good uses, discounting products that have been subsidized by public monies, and distributing all materials at cost (2002a). One exceptional piece of contract language offers the possibility of pursuing a path other than academic capitalism: "Any videotapes or audiotapes made of distance learning courses are for student use, and may not be used for any commercial purpose . . . Unless there is an extraordinary reason for preserving the tapes, all tapes of a given distance learning course will be destroyed within two weeks of the course completion" (Oakton Community College 2002). However, this is the exception that clarifies the rule of academic capitalism for faculty and institutions.

A final example of a contract provision underscores the complicity in com-

modification that is evident in much collective faculty behavior. Chemeketa Community College has a clause that expressly prohibits commercialization of video tapes or films. "All video tapes or films made by the College become its property with the restriction that they may not be sold or used for a commercial profit." However, reading further along, it is clear that the restriction is lifted if the creator can get a share of the proceeds. "Use for commercial profit in any form may be arranged through a negotiated agreement between the party or parties involved, or their designated agents, and the College" (2003). In other words, no profit-taking activity will be allowed unless the creator chooses to share in the revenues of that commercialization.

Professional Considerations of Quality Control

In various higher education settings faculty have articulated quality control concerns in regard to the commodification of educational products. Two sorts of policy provisions are particularly relevant to professional control and quality. One relates to *individuals'* creative control over how copyrightable works are used; the other relates to the faculty's *collective* control over disputes that arise over ownership and use of copyrightable works.

Lape states that "the most creative measures designed to protect the professor's interests are those which recognize the importance to the professor of control over dissemination of works whose copyright is claimed by the university" (1992, p. 262). In Packard's words, "some policies include provisions allowing professors to control dissemination and revision of their works and to determine whether and how long they are identified as a work's creator" (2002, p. 303). For example, the University of Washington's policy reads, "As long as the author or producer of such materials remains an employee of the University, the author may . . . request reasonable revisions of the materials prior to any instance of internal use" (Packard 2002, 141n). The University of Wisconsin's policy reads, "Copyrightable instructional materials shall not be altered or revised without consultation with the author" (Packard 2002, 141n). Yet only seven of the sixty-nine universities in Lape and Packard's studies had such policy language.

Collective faculty involvement in disputes about the ownership and use of intellectual products is also significant. A little less than half of the policies in Packard's study provide for a committee to review and make recommendations regarding any disputes over copyrightable intellectual property. All but three leave the final decision to the administration, which may be a party to the dispute. Yet collective professional quality control is particularly important in the case of educational products because this realm of activity tends to lie outside traditional academic structures—distance-education curriculum, for example,

generally is developed and approved outside standard academic governance mechanisms. As institutions increasingly emphasize the use of on-campus technology-mediated educational materials, the same point holds true—their development and approval lies outside academic peer review.

Historically, the curriculum has been seen as the purview of academics. Faculty unions and associations are clear in their positions on the quality issues discussed above. For example, "in the context of distance-education courseware, the faculty member should also be given rights in connection with its future uses, not only through compensation but also through the right of "first refusal" in making new versions or at least the right to be consulted in good faith on reuse and revisions" (AAUP 1999c). AAUP recommends that "the faculty member (or an appropriate faculty body) who teaches the course (or adopts a pre-existing course) for use in distance education shall exercise control over the future use, modification, and distribution of recorded instructional material and shall determine whether the material should be revised or withdrawn from use." Similarly, in its *Guidelines for Good Practice,* the AFT identifies fourteen benchmarks for distance education. One is that "faculty should retain creative control over use and re-use of materials" (AFT 2000). Further, the AAUP recommends the establishment of intellectual property committees, composed of faculty as well as administrators, to develop policy and resolve disputes (AAUP 1999b).

Although the national faculty associations and unions specify that faculty should have final authority over technology-mediated curriculum, it is another matter to negotiate contract provisions that ensure quality and creative control. In some cases, local bargaining units have successfully negotiated some measure of creative control to faculty who develop curriculum. At the very least, faculty may have veto rights. "Tapes or other materials developed expressly for distance learning may not be reused without the instructor's written permission" (Minnesota State Colleges and Universities 1997). In other cases, provisions go beyond simple veto rights to identifying a committee that reviews disputes, thereby speaking to a more collective faculty control of educational quality matters.

> If, and when, the Office of Telecourse Programs wishes to re-use the course in its entirety, the following will apply: . . . the instructor who created and/or taught the course shall be notified and given first consideration to administer the rebroadcast of this course . . . If the instructor who created and/or taught the course deems the continued use of an electronically purveyed course to be detrimental to his/her personal or professional reputation, he/she may request that the course be reviewed by the Office of Telecourse Programs for either substantial revision or removal from circulation. If a decision is made to substantially revise a course, the instructor who created and/or taught the course shall have the first right to revise the course . . . An instructor may appeal any of the above decisions of the Office of Telecourse Programs to a

> review committee. The committee shall consist of two faculty members appointed by the Chapter and two members appointed by Western . . . The decision of the committee shall be final and cannot be grieved. (Western Michigan University 2003)

Such language is not the norm, but over one-fifth of contracts with copyright provisions afford faculty some measure of peer control over the use of the intellectual property. Most typical are provisions regarding a committee that makes decisions and adjudicates disputes, with faculty representation on the committee. In addition, individual faculty members are sometimes given veto rights over who will teach a course or whether the course will continue to be taught in the case of distance education and videotaped classes. In a few cases, the issue of use is a matter for grievance and arbitration.

In sum, our data speak to the complicit and multifaceted nature of faculty's position in relation to the commodification of copyrightable educational materials. Individually, some faculty members are aggressively pursuing profit-taking activity in copyrightable educational materials. Collectively, faculty representatives are articulating and negotiating claims to shares of the proceeds of copyrightable works. That negotiation is partly driven by the argument that if institutions want faculty to become more involved in developing copyrightable works that can be delivered in ways that may enhance institutional revenues, then there needs to be an economic incentive for the faculty-creators. Faculty are also collectively resisting institutional claims to own educational materials under an academic capitalist knowledge/learning regime. And faculty are collectively foregrounding significant considerations of educational quality and professional control as institutions become involved in academic capitalism in the new economy. Our data on professors point to the internally complex and conflicted nature of faculty's collective positions in regard to copyrightable intellectual products. In part, faculty are pursuing academic capitalism. At the same time, they are working to maintain professional autonomy and peer-defined quality control within increasingly capitalistic higher education enterprises. In short, even as faculty are complicit in academic capitalism they are also collectively working to mitigate its impact on professional autonomy and control, and on educational quality.

Technology, Property Ownership, and Access

Software nicely represents the ambiguous possibilities embedded in new technologies. It is a gray area in intellectual property policies: in some cases it is treated as patentable, in others as copyrightable, and in still other cases there is a separate policy for software. As Packard (2002, p. 312) notes, the variation may partly be a function of the different standards that apply to patents and

copyright: "Software has to be 'novel' to earn a patent, but copyright applies the moment the work is produced as long as a modicum of creativity is involved."

Generally, the type of protection sought for intellectual property depends on its use. If it is used for educational purposes, it tends to be treated under copyright policy. For example, BYU's policy states that "all computer software is included in technical works except that which is clearly developed for entertainment or for instructional purposes, e.g., electronic textbooks and textbook supplements, classroom and self-study tutorials" (2002). In addition to educational purposes, many colleges and universities see technology as a basis for generating new revenues by extending claims over faculty's intellectual property, reducing instructional costs by increasing productivity, and targeting new, more affluent student markets as an additional means of generating new (and maximizing existing) revenues.

When substantial use of institutional resources is involved in the production of works copyrighted by faculty, the employing institution frequently claims ownership of the materials produced. New technologies usually belong to universities, and their use by faculty is very often framed as substantial. The rationale for institutional claims on technology-mediated works is the high cost of technology and managerial/support professionals. For example, any creation of multimedia materials is likely to draw on "substantial" or "significant" university resources, including multimedia experts. (The Universities of California, Kentucky, Michigan, and Utah have policies with substantial use language.)

In explaining the timing of institutions' copyright policy development, Lape states that "the advent of new technology and an increased interest in commercialization of faculty works are the primary reasons presented" (1992, p. 254). Similarly, Daniel and Pauken write, "As universities recognize the potential revenues inherent in the newest categories of copyrightable works—computer programs and other computer and media-created materials—more and more have begun adopting copyright policies" (1999, p. 18).

Although not all universities claim ownership of such materials (e.g., Carnegie Mellon's policy claims software but not educational courseware "because of its role in furthering the primary educational mission of the university" [Packard 2002, 111n]), about half of the universities in Lape's (1992) and Packard's (2002) samples identify software as a work that is claimed by institutions. For example, the University of Cincinnati's policy reads as follows: "Specifically excluded from this list [of faculty-owned works] are audiovisual and computer materials including audio and video tapes, slides, and photographs, films, computer programs, and computer stored information."

Faculty unions are aware of the implications of advanced technologies for

ownership. In outlining the AFT's "Checklist for Collective Bargaining Negotiations," Strom states: "Bargain for ownership of as much of members' creative works as possible. However, within the realm of the evolving digital world where new questions of copyright ownership arise, recognize that faculty members will not necessarily own everything. Digital works may involve other creators and include substantial institutional support, which then complicates exclusive versus joint ownership" (2002, p. 12).

Along with ownership issues, distance-education technologies raise issues about which educational markets will be targeted. Although policy makers and institutional spokespersons often justify distance education because of its potential for providing greater accessibility to higher education, institutions pursuing the generation of external revenues may target those best able to pay. National data indicates that older students, students who are already employed, and students who have technology at home are more likely to take distance-education classes than are traditional age students (NCES 2000b).

Some unions have voiced concerns about compromising access through the increased used of distance education. The NEA's policy statement articulates this concern: "Although distance education can overcome physical and geographical barriers, its reliance on high level information technology has the potential to create new barriers based on economic and social status" (NEA 2003). One of the largest bargaining units in the country, the California Faculty Association (for the California State University System), has a contract clause speaking to technology and access, charging the Faculty Workload Committee, which focuses on issues surrounding the use of technology to deliver courses, to "evaluate and make recommendations on innovations in the delivery of education services that will increase student access to the CSU while maintaining high academic standards" (1998).

However, the faculty associations, whether national or local, that voice concerns about access and quality also have negotiated faculty ownership of copyrighted intellectual property and incentives for faculty to participate in distance education, making faculty, like institutions, academic capitalists with interests in expanding lucrative markets. Although older, employed students may be diverse, they do not necessarily enrich the campus mix of students because they are, often by choice, at a distance.

Technology and Educational Quality

Distance-education technologies have created new markets on which (some) institutions and faculty are eager to capitalize as well as new opportunities for institutions to restructure faculty work and cut costs. Faculty salaries are the greatest single expense at most institutions. If managerial professionals become responsible for the supervision of distance education, faculty work can be "unbundled," parceled out to (possibly) less costly employees or part-time professional workers. As was the case with patents and copyrights, expanded managerial capacity is the key to market engagement, in this case through technology-mediated instruction. Managerial professionals supervise part-timers who deliver distance education and work with decreasing numbers of faculty to coproduce distance education.

Distance education is increasing rapidly. From 1995–1998 the number of institutions offering distance education increased from 33 to 44 percent; the number of such classes doubled (Lewis et al. 1999). Moreover, 29 percent of students who have taken courses on-line (about 8% of undergraduates and 12% of masters students have taken distance education classes) have done so in programs that were entirely on-line (NCES 2000).

Part of the strategy for using technologies to increase efficiency is to unbundle the faculty role (Paulson 2002). Rather than having one professor do all the work involved in developing and delivering curriculum, the process is overseen by managerial professionals and broken down into various discrete tasks, ranging from designing and delivering the class, evaluation, assessment of students, technical advising, academic advising, and more. If the professor has a role, it is as a "content specialist." Rio Salado Community College embodies one end of the unbundled continuum. It has fewer than twenty full-time faculty and over 600 part-timers. Not only at Rio Salado but also throughout U.S. higher education, where the proportion of full-time faculty has declined significantly, the corollary of institutions investing in technological resources for students is that they disinvest in full-time faculty.

Faculty unions resist the use of technology when it increases class size, reduces full-time faculty, and bypasses faculty involvement in curriculum. Unions frequently juxtapose quality-of-education arguments to cost-savings justifications for distance education.

> Distance education should be used only to improve the learning opportunities for students, improve the quality of instruction, and/or improve the effectiveness of education employees. Although distance education may inevitably have an impact on the location and nature of educational employment, it should not be used—in whole or in part, directly or indirectly—for the purpose of eliminating traditional education employee positions or reducing the hours or compensation of such employees. Nor should distance education be used solely for the purpose of reducing costs, if such use has an adverse effect on the economic security of education employees. (NEA 2003)

The AFT foregrounds academic versus economic considerations in course planning. "To ensure that academic decisions are made for academic reasons, a key characteristic of quality in distance education is ensuring that faculty are in

control of shaping and approving courses and integrating them into a coherent curriculum" (2001, p. 20). Through faculty unions, professors are trying to curtail the rise of managerial professionals whom senior administrators have hired to contain costs and to administer distance education.

Some local bargaining units have successfully translated quality concerns into contractual provisions. "The maximum class sizes for courses offered as distance learning shall be the same as those in the Master Course Table. The course maximum equals the total of all students enrolled at all sites" (Elgin Community College 2002). Most contracts that address this issue stipulate enrollment maximums for classes delivered with technology; many of these have additional remuneration attached to the larger class size. In other words, contract provisions are not grounded in an absolute commitment to particular class sizes simply in the interests of quality. Instead, these contracts are grounded in concerns that faculty not be overloaded with students. Faculty unions also initiate provisions that enable professors to get more pay from classes that exceed the limits. Indeed, many faculty members are committed individually to increasing their income through such "overload" work. This points again to the complexity of professors' position with regard to academic capitalism—they articulate quality concerns, but if the institution seeks revenue maximization through bigger classes, then professors ensure that they will benefit financially from the process.

Occasionally professors as a collectivity resist participation in academic capitalism. In February 2003 the Washington Federation of Teachers, representing faculty in the state's community colleges, announced a campaign to highlight the importance of class size and to build support for increased funding for public two-year colleges, which were overenrolled by several thousand students. Called the "Campaign to Protect Learning Quality" and begun at Seattle Community College, the initiative aims to convince instructors to refuse classroom overloads, thereby forcing the college to open new class sections. "When classes are chronically overloaded, we shortchange our students," says Lynne Dodson, president of the Seattle Community College Federation of Teachers. "There is less time for personal interaction with the instructor and less time that the instructor can spend on responding to individual assignments" (AFT 2000a).

A related issue surrounding instructional technology is the configuration of the faculty work force. As academic managers seek to expand part-time faculty, full-time positions are lost. Expanded managerial capacity to handle instructional technology allows more part-timers to be hired. Unbundling the faculty role, modularizing the curriculum, and delivering education through advanced technologies are all developments that make the use of part-time faculty more feasible.

Some contracts have language regarding instructional technology that protects the current workforce configuration. "Under no circumstances will audio or videotapes or computer programs be used to reduce the number of teaching positions existing at the College . . . exclusive of any one-semester only contracts" (Middlesex County College 2003). But it is uncommon to find such strong language in contracts.

Quality is not only about class size, it is about faculty control of the curriculum. In contrast to the "use" and "creative control" clauses discussed earlier, some clauses focus not on the individual creator's rights but rather on the collective faculty's responsibility for the curriculum, as a matter of ensuring quality. Two examples follow.

> No credit-bearing course taught by non-traditional methods (television, computer-aided instruction, videotape lecture, or any other electronic or other media) will be offered without the approval of the department members involved in teaching the subject area in consultation with the Department Chair. (Jackson Community College 2003)

> In approving distance education courses, the following criteria shall be applicable: (a) course approval through the traditional academic process; (b) a qualified instructor; (c) use of suitable technology as a substitute for the traditional classroom; (d) suitable opportunity for interaction between instructor and student. (Association of Pennsylvania State College and University Faculties 2002)

Although these are exceptions, they do speak to the aims of faculty unions and negotiators.

Over time, the percentage of collective-bargaining agreements with such clauses has increased. The percentage of HECAS agreements with technology clauses increased from a little over one-third in 1994 to about one-half in 2000. That speaks to the increased significance of this issue and perhaps the growing use of information technologies. However, many unionized institutions do not have clauses regarding technology.

Technology, Openness, and Academic Freedom

Instructional technologies offer the promise of enhancing freedom of expression and openness in the classroom. Some students, the argument goes, are not well served by face-to-face interaction, finding it inhibiting. By making expression anonymous, technology may increase the participation and learning of students who have not benefited from conventional classroom settings. The worldwide resources that technology makes available and brings into the classroom are also said to open students up to new possibilities.

However, there is another side to the introduction of new technologies in the classroom. The AAUP, long regarded as an association committed to protecting

professorial academic freedom, puts it this way. "Institutions of higher learning in particular should interpret and apply the law of copyright so as to encourage the discovery of new knowledge and its dissemination to students, to the profession, and to the public. This mission is reflected in the 1940 *Statement of Principles on Academic Freedom and Tenure:* Institutions of higher education are conducted for the common good and not to further the interest of either the individual teacher or the institution as a whole. The common good depends upon the free search for truth and its free exposition" (AAUP 1999c). Although technology has the potential to expand freedom of inquiry, it also has the potential to inhibit free expression within the classroom and on-line. The increased use of technology to enhance and deliver instruction offers many opportunities for surveillance of individual classrooms. The old technology, such as blackboards and overhead projectors, was not easy to monitor. In a technology-enhanced classroom in which a professor's notes and overheads, as well as students' comments, are on-line and on class websites, discourse is relatively easy to track. In a distance-education course, monitoring professor/student and student/student interactions is easily accomplished. From the standpoint of accountability, perhaps that is good. From the standpoint of professors seeking to protect their academic freedom, and of professors and students seeking to engage in free expression, however, monitoring can be problematic. The more open a classroom is to surveillance, the more the participants must wonder who is watching, and they may censor (or have censored) their participation accordingly.

New technologies afford managers (and others outside the institution) the opportunity to surveil and evaluate faculty work outside faculty peer evaluation. Most collective-bargaining agreements do not contain language about surveillance; that some do is significant. "Evaluation of the unit member shall not be accomplished through electronic monitoring or taping" (Cumberland County College 2003). "Evaluation of instructors is not allowed by any electronic means such as video tape. ITV instruction shall be evaluated by the procedures set forth herein for other non-ITV courses" (Dodge City Community College 2000).

Perhaps even more central to academic freedom are recent challenges to the right of academics to pursue knowledge, given the commercialization of software and the Digital Millennium Copyright Act's (DMCA) protection of proprietary rights. One well-known case is that of a Princeton University computer science professor, Edward Felten, who, in response to a public challenge by a music industry group, successfully cracked several watermark schemes designed to protect their products. When Felten indicated that he would be presenting a paper on his work at a professional meeting, the Recording Industry

Association of America (RIAA) threatened to sue under the DMCA. Although the RIAA later dropped its suit, Felton, supported by Princeton, filed a countersuit challenging the constitutionality of the DMCA (Foster 2001a), arguing that it abridged his first amendment rights. That suit was later dismissed by a U.S. district court judge.

At least three features of the story are interesting for our purposes. First, it points to the tension between commercialization and the free pursuit of knowledge. Second, it points to the tension between faculty and external, commercial entities. Third, the situation highlights the contested relationship between property rights and academic freedom within the academy. Felten was supported by various professors, by Princeton, and by organizations that advocate the free flow of information and pursuit of knowledge, such as the Electronic Frontier Foundation and Computer Professionals for Social Responsibility.

However, others within the academy support the protection of property rights, as evidenced in a related case. In *University City Studios, Inc., v. Eric Corley,* several movie studios sued a hacker for creating a software program that circumvents a scrambling system that protects DVDs. The suit invoked the DMCA's "anti-circumvention provision." Professor Felten signed a legal brief supporting the hacker, along with sixteen other university computer scientists, including David Touretzky of Carnegie-Mellon University. Yet one of Professor Touretzky's colleagues, Michael Shamos (a computer science professor, intellectual property lawyer, and codirector of the Institute for eCommerce) took a different position. Shamos testified in court on behalf of movie studios (Foster 2001b). The story shows a professoriat not only embedded in a web of relationships and interactions between higher education and external markets but also characterized by internal divisions regarding the pursuit of academic capitalism. It also shows how technology can serve to compromise rather than enhance openness and academic freedom.

In sum, national associations of faculty—the AAUP, the AFT, and the NEA—take the position that faculty are the legitimate owners of any copyrightable intellectual property that they create. Although a number of unionized institutions have bargained intellectual property clauses that provide for faculty ownership, most have not. Increasingly, institutional policies, on which nonunionized faculty offer advice and consent, claim ownership of faculty's intellectual property, especially when substantial institutional resources, usually information technology, are used. Although institutions may own intellectual property created by faculty, most are generous in sharing royalties with faculty, as demonstrated in chapter 5. The generous royalties often act as incentives for faculty to participate in technology-mediated instruction and development of

on-line educational materials and products. Organized faculty and institutions seek to capitalize on copyrighted intellectual property, faculty through holding title to and/or receiving royalty shares, institutions through generating external revenues from distance education as well as products and educational services copyrighted by faculty. The pursuit of profit and external revenues commits both faculty and institutions to the academic capitalist knowledge/learning regime.

For the most part, neither faculty nor institutions recognize the public as a partner in the creation of copyrighted intellectual property used for educational activities. Yet faculty in public institutions receive a high degree of public support because their salaries come from the state. Faculty in private institutions receive indirect subsidies through institutions' tax-exempt status, through federal and state student financial aid, which provides a part of private colleges and universities' annual operating budgets, and a variety of other public programs. As is the case with patents, the public pays for educational infrastructure, subsidizes the corporations that work with faculty and institutions to develop educational products from their intellectual property, and pays again when they or their children attend a higher education institution.

On-line education uses an array of copyrighted products developed by faculty or co-produced by faculty and institutions. According to the NCES (2000b) statistics quoted earlier, national data shows that institutions of higher education are rapidly expanding on-line education. (Some) faculty and (some) institutional administrators are eager to expand on-line education: faculty want to profit from overloads and any royalties from instructional materials, and institutional administrators hope to expand external revenues. The same data show that distance education reaches new markets. The majority of students served on-line are older, working students who have technology in their homes. Although these students are nontraditional, they are not necessarily the most needy students. By targeting working students able to afford higher education and negotiate aid and loan processes, on-line education may inadvertently divert resources for expanding access.

Although neither our data nor national statistics directly indicate an increase in managerial or support professionals in on-line endeavors, it seems likely that their numbers are growing. The AAUP, the NEA, and the AFT provide indirect evidence of the increase in managerial professionals. They have issued policy statements against unbundling, since it makes possible the restructuring of faculty work. Faculty organizations, whether national or local affiliates of nationals that bargain collectively, usually assume that they, not managerial professionals, should control the curricula because they have the specialized knowledge necessary to provide quality education. When digitized interactive information technology enabled electronic capture of that expertise, institutions argued against faculty control over curricula because it was cheaper to provide on-line education supported by managerial professionals. Neither faculty nor administrators provided a great deal of evidence for their claims. Yet both claimed their respective positions represented the public good. Faculty took the stance that as experts they should have control over on-line curricula, or institutions would use, reuse, and unsuitably alter educational materials so as to cut costs, serving students badly. Institutions claimed that faculty would use their control over curricula to ensure guildlike prerogatives that run up costs, and argued that on-line education, aided by expanded use of managerial professionals, would cut faculty costs, thereby serving students better. Both faculty and institutional administrators assumed that the students were the public, even though the number of students who were part of the taxpaying citizenry is relatively small. As is so often the case, deciding whether the public good is being protected depends on how the public is defined.

Open Source Approaches to Technology

While many institutions rushed to profit from on-line education, MIT chose another path, announcing an OpenCourseWare initiative in the spring of 2001. A brief review of this initiative enables us to see the complicated interplay of private and public interest in an academy embedded in networks of organizations and activities that connect the state, higher education, and private marketplaces.

As described by two MIT faculty members, one of whom served as chair of the initiative's management board, the original motivation was to generate revenue.

> The [planning] team, led by Dick Yue, associate dean of the School of Engineering, and assisted by a team of consultants from the firm Booz, Allen, and Hamilton, Inc., was 'to develop a recommendation to address how MIT can generate and offer [on-line educational] modules that provide the target market with a working understanding of current hot issues and emerging fields' . . . Befitting the excitement of the times, MIT's core team began with the idea of making its program generate revenue, that is, ensuring that it would be 'financially viable and sustainable'—although the question of whether it would be a for-profit endeavor was left open. (Lerman and Miyagawa 2002, p. 24)

After conducting studies, doing market research, and developing business plans, it became clear to the team, which had considered creating a for-profit arm of MIT, that it would take years before a sustainable on-line program could

be developed. Indeed, the co-chair of MIT's Council on Educational Tec
nology, which launched the planning team, said, "Our feeling about the fo
profit model is that not only are you not going to make money by selling high
education on-line, many universities are going to lose money hand over fi
("For the Record" 2002, p. 25). Only after determining that a revenue-generati
program was not viable did the planning team turn to alternative ideas. It w
seeking a unique strategy that would speak to MIT's sense of being a leader i
technology and higher education. Several team members came up with the ide
of making course materials publicly accessible on-line. Rather than postin
courses or course modules on the web, MIT would make available materia
such as syllabi, lecture notes, reading lists, and the like. MIT agreed that faculty
would retain ownership even when support staff and professionals working in
the OpenCourseWare project transformed those materials into a standard web
compatible format.

The initiative has encountered problems that have slowed its progress and
that challenge its viability as a model other institutions might adopt. The plan-
ning team estimates a cost of $85 million over ten years to put materials from
all 2,000 of MIT's courses on-line. Although MIT has received grants from var-
ious foundations to support the effort, it still committed $2 million of its own
to the project in its first two years. At present, materials from only thirty-eight
courses have been put on the web, and costs have exceeded expectations. "Col-
lecting permissions, paying royalties, and finding other materials to substitute
for copyrighted materials have turned out to be much bigger jobs than ex-
pected" (Olsen 2002, p. 3). The director of the Carnegie Foundation for the Ad-
vancement of Teaching's Knowledge Media Laboratory has referred to MIT's
project as an example of "intellectual philanthropy" (2002, p. 2). That definition
of the alternative path clarifies how marginal it is, and how it is available only
to the very wealthy, in the larger context of academic capitalism.

Conclusion

Information technology initiated new circuits of knowledge. Rather than in-
structional materials being confined to the classroom or circulated through
correspondence courses (Noble 2001), digital technologies made possible new
and (sometimes) interactive off-site modalities for instruction. For-profit
higher education institutions, such as the University of Phoenix, began to make
heavy use of distance education. However, the greatest growth occurred in pub-
lic and private nonprofit higher education. Very often these institutions part-
nered with private, for-profit corporations to establish distance-education pro-

ms, colleges, and universities (Schiller 1998). The formation of Cardean
iversity by the for-profit company UNext is an example of such an enter-
se. Cardean University, which offers an online MBA degree as well as profes-
nal development courses and corporate training, is supported by a consor-
m of well-known, private nonprofit business schools (Carnegie-Mellon
niversity, Columbia Business School, the London School of Economics and
olitical Science, Stanford University, and the University of Chicago Graduate
chool of Business). These new circuits of knowledge generate external rev-
nues for colleges and universities from the sale of educational products devel-
ped for on-line instruction and from new student markets.

In chapter 5, we discussed the interstitial emergence of copyright offices and
acilities as well as the development of networks that mediate between public
nd private sectors with regard to distance education. In this chapter, we want
o emphasize how expanded managerial capacity in the area of digital tech-
nologies is restructuring universities. These changes are not technologically de-
ermined. They would not occur without the active organization of managerial
or support professionals, senior administrators, and faculty, with each group
orking somewhat independently. To some degree, the groups are exercising dif-
ferent strategies to intersect the academic capitalist knowledge/learning regime
in ways that they see as best serving higher education and their own interests.

The push of resource constraint and the pull of external market opportuni-
ties turned senior administrators' attention to the possibilities the new tech-
nologies presented for containing labor costs and reaching new student mar-
kets. Consequently, senior administrators turned to hiring strategies in which
the overall number of faculty—whose salaries were traditionally the largest
single budget item of any college and university—were reduced and the num-
ber of managerial or support professionals increased. Information technology
offered an alternative to having one faculty member per class in real time. In-
stead, professors' course materials could be transmitted to multiple audiences
in a variety of formats and times. Interactivity, which was less possible with ear-
lier technologies, made on-line courses comparable to live classrooms. Interac-
tivity could be handled by less costly adjunct faculty or by managerial profes-
sionals. To senior administrators, the opportunities presented by the new
technologies were legitimated by their close fit with the labor structure of serv-
ices in the new economy: small numbers of highly trained and paid traditional
professionals, and larger numbers of support or managerial professionals, as is
the case in health care.

However, the higher educational labor structure differs from that of other
service sectors and the manufacturing sector, which have cut many midlevel

managers, in that it has greatly expanded its managerial or support profes-
als. Moreover, such professionals do not necessarily contribute to the flexib
of the higher educational labor force. Often, especially in public institutio
managerial or support professionals are permanent employees. Senior adm
istrators may prefer them to faculty for several reasons: the managerial pro
sionals are directly responsible to administrators; they do not have the guild
prerogatives of faculty, for example, tenure, self-governance, and peer-evaluat
and, in the short run, they are probably less costly than faculty.[3]

The managerial or support professionals generally worked with faculty
create digital instructional technologies and were housed in a variety of or
ganizational contexts: media centers, teaching centers, distance education cen
ters, and computing centers. Like technology licensing officials, they quickl
formed their own professional associations. These are a form of interstitial or
ganization, in that they depend on the time and dues made possible by the
members' college or university positions. Among the professional associations
and consortia involved in digital instructional technologies are the National
Learning Infrastructure Initiative (NLII), which is part of EDUCAUSE, the As-
sociation for the Advancement of Computing in Education (AACE), the
American Distance Education Consortium (ADEC), the New Media Consor-
tium (NMC), and the Consortium of College and University Media Centers
(CCUMC). As educational technologists professionalized, they asked adminis-
trators for amenities like those faculty enjoy—funds to attend conferences for
professional development, budgets for new equipment and technologies, and
increased support staff.

Most importantly, managerial or support technologists made the case that
they coproduced instruction with faculty. Historically, what differentiated fac-
ulty from managerial professionals was that managerial professionals did not
regularly teach. Even if they held PhDs and occasionally offered courses, they
had no authority over the curricula. When they coproduced instructional ma-
terials with faculty, managerial professionals moved closer to the educational
function of higher education.

Over time, this expanded capacity was somewhat centralized through posi-
tions such as chief information officer (CIO), a position not widely available

3. National data systems have not yet caught up with the changes in the higher education labor force, so managerial or support professionals are an undifferentiated category, making it difficult to calculate cost savings. Both technology licensing staff and computer repair persons are included in the category. However, when a position is permanent, salaries usually increase more regularly than they do for contingent workers, raising questions about the long-term cost savings of hiring managerial or support professionals.

a decade ago, and distance-education officer. These offices engaged the
ket in several ways. The extent to which campuses were "wired" was a mar-
ng device to attract traditional students to campuses. Distance education
ned up new student markets that could increase enrollment without ex-
ding facilities, relying on "clicks not bricks" to hybridize the educational en-
nment beyond the physical campus. These offices could be involved in sell-
courseware—and various other copyrighted educational materials not
kaged as curricula leading to a degree—in a range of external markets.

Faculty had to position themselves in regard to the new technologies embed-
d in the academic capitalist knowledge/learning regime. National organiza-
ons of unionized faculty are clear that faculty should own copyrightable in-
llectual property, ranging from books and creative works to courseware and
ducational materials. Some unionized faculty in the two- and four-year col-
ges used their collective power to bargain the right to hold title to copyrighted
ourseware and educational materials and to receive overload pay when they
each larger numbers of students through distance education. Because admin-
trators want to expand on-line education, copyright policies usually provide
generous royalties to faculty, even when the college or university owns the copy-
right and faculty have made substantial use of institutional resources. Because
faculty want to share in the profits created from their educational labors, they
participate in consolidating the academic capitalist knowledge/learning regime.

Some collective-bargaining agreements point to ways in which the academic
capitalist knowledge/learning regime retains aspects of the public good knowl-
edge regime. These include setting aside some monies from royalties or exter-
nal revenues from distance education for public good uses, discounting prod-
ucts that have been subsidized by public monies, and distributing all materials
at cost (Rhoades 2002b). Although such agreements are small in number, they
demonstrate that organized faculty could expand collective-bargaining provi-
sions to accommodate both profit and the public good.

Ironically, the greater faculty's collective success in negotiating ownership of
copyrightable intellectual property and increased pay for participating in dis-
tance education, the wider the range of faculty rewards and the less cohesive the
collectivity. Not all faculty pursue ownership of copyrightable intellectual prop-
erty. Those who do may increase their pay significantly, creating differentiation
among salaries. Historically, less prestigious institutions have had relatively un-
differentiated salaries, which fostered faculty solidarity and facilitated union-
ization. The pursuit of profits based on intellectual property may weaken that
solidarity and undercut the unions that have successfully bargained for faculty
ownership.

As managerial capacity increases and managerial professionals work with faculty to coproduce products based on information technology and geared to new student markets, the traditional role of faculty in colleges and universities is restructured. Faculty are not the only professionals responsible for education. Rather, they are content specialists in teams of managerial professionals that produce instruction for an academic capitalist knowledge/learning regime.

ACADEMIC CAPITALISM AT THE DEPARTMENT LEVEL

ACADEMIC DEPARTMENTS ARE INCREASINGLY being treated by college and university central administrators as cost centers and revenue production units (Whalen 1991). For example, science and engineering departments may be characterized, and may characterize themselves, as being "productive" of revenue and as "subsidizing" units that do not generate external monies (Gumport 1993). In this context we might expect departments to increasingly orient themselves towards activities and markets that they hope will generate revenues. The primary questions that frame this chapter are: How and to what extent are academic departments, as the basic providers and producers of education and research, collectively undertaking entrepreneurial initiatives? Has entrepreneurial culture moved from the periphery of institutions, where Clark (1998) located it, into the academic heartland? To what extent are departments engaging in academic capitalism in the new economy?

Theory and Method

In *Academic Capitalism* Slaughter and Leslie made the case that around 1980 "to maintain and expand resources faculty had to compete increasingly for external dollars that were tied to market-related research, which was referred to variously as applied, commercial, strategic, and targeted research, whether these moneys were in the form of research grants and contracts, service contracts, partnerships with industry and government, technology transfer, or the recruitment of more and higher fee-paying students" (1997, p. 8). Increased competition for external revenues directed institutional expenditures and faculty activity away from instruction.

Although faculty had long engaged in federal research grant and contract activity, Slaughter and Leslie identified the 1980s as a turning point in the pattern of universities' revenue streams. At research universities, funding from the states diminished dramatically as a share of institutions' operating budgets,