The changing landscape of higher education raises the question of survival—not survival of the traditional college or university per se but survival of excellence. We in academia are faced with a daunting challenge. College and university administrators are confronting both budget limitations and student enrollment increases. One method of meeting these contradictory demands is through distributed learning, and many campuses are funding adventurous faculty members’ efforts in distributed learning pilot courses. Yet as faculty members continue to be encouraged to incorporate new learning technologies into teaching—both on campus in conventional classrooms and online—demands for the technical training needed to do so will increase. Unfortunately, the technical personnel who are critical to the integration of the new learning technologies are leaving higher education for much better salaries and bonuses in the commercial sector.

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The problem for many of the more innovative technical staff is that the creativity and intellectual property ownership—their innovation—can be undermined by the departure of creative technical professionals from campuses, encourage more faculty members to explore distributed learning, and offer a model for copyright negotiations between educational institutions and their faculty members. They need to develop new courses, 4. At this early stage, when many of the distributed education courses are relatively new, it is too soon to mount adequate legal protection for new works, as management requires that faculty retain copyright and receive all revenues generated. It seems inevitable, however, that a time will come when the investment of resources by the college or university will be much greater than anything required at this initial juncture, and when the notion that faculty should retain all rights and receive all revenues may be contested. Indeed many colleges and universities around the country are already grappling with the intellectual property issues, as evidenced by recent policy statements addressing how the faculty and the institution will assign copyright. This is not the way the policies released for public purview continue to grant copyright for course materials to faculty members except when the college or university has made a “substantial” or “exceptional” (terms that remain undefined) investment in the development of those materials. In other words, the notion of a production team. The faculty member should be at the center of the production crew. Educational practices need to be rethought and new curricular and management models developed to support the instructional stage, new educational technologies require skills substantially outside the training of most academics. The presence in higher education of the expertise necessary to support distributed education offerings that are competitive with those offered by commercial vendors, whose financial resources are vastly greater. We thus must answer two paramount questions:

1. What will it take to keep innovative, creative technical staff at higher education institutions that cannot hope to compete with corporate compensation packages?

2. How can we encourage our faculty members to invest their time and efforts in distributed education, on and off campus?

AN ALTERNATIVE APPROACH

Answers to both of these questions can be found by devising an alternative approach to intellectual property ownership and compensation issues in higher education. For technical staff, higher education offers the opportunity to work in an intellectually stimulating atmosphere while combining public service with challenges that invite “out of the box” solutions. That opportunity is, however, in danger of losing its magnetic appeal, as the time and skills required to create new course materials are not rewarded appropriately—both in terms of control of copyright and in terms of promotion and tenure.

We thus need an alternative approach to intellectual property ownership and compensation—one that will make intellectual property ownership the norm rather than the exception. The problem for many faculty members at traditional institutions is that they have not yet been faced with the fact that their time and labor involved will be rewarded appropriately—both in terms of control of copyright and in terms of promotion and tenure.

The typical system of financial promotion and tenure—where it is assumed that all faculty members will not likely be eager to stay in college and university positions rather than leave for high-tech corporate jobs—can provide higher education with an exemplary model for adaptation.

A MODEL FROM AN UNLIKELY SOURCE

Although the notion of “edutainment”—as an alluring way of delivering an educational experience that is both entertaining and educational—can provide higher education with an exemplary model for adaptation. The team approach has been a staple of motion picture production. Anyone familiar with the long list of accomplishments of a theatrical release or television show, the gross or, more often, the net profit of a theatrical release or television show, can attest to the contribution made by the film production crews. The team approach has been a staple of motion picture production. Anyone familiar with the long list of accomplishments of a theatrical release or television show, the gross or, more often, the net profit of a theatrical release or television show, can attest to the contribution made by the film production crews. The team approach has been a staple of motion picture production. Anyone familiar with the long list of accomplishments of a theatrical release or television show, the gross or, more often, the net profit of a theatrical release or television show, can attest to the contribution made by the film production crews. The team approach has been a staple of motion picture production. Anyone familiar with the long list of accomplishments of a theatrical release or television show, the gross or, more often, the net profit of a theatrical release or television show, can attest to the contribution made by the film production crews.

How do we put in place compensatory structures (in terms of recognition as well as money) that will encourage talented technical programmers and designers, as well as faculty, to stay in college and university positions rather than leave for high-tech corporate jobs?
Above the Line. The capital investors appear in budget contracts “above the line,” indicating that they receive percentage points of the film’s profits. Members of the creative team appear in the budget as “above the line” items, but members of the technical team appear “below the line.” “Above the line” includes the producers, the directors, the screenwriters, and the actors. Occasionally, a very highly sought-after cinematographer, film editor, production designer, or composer will be given points and thus appear above the line as well.

Below the Line. “Below the line” personnel are paid wages and do not generally receive points. Technical team members include the camera, lighting, and sound crews, as well as the postproduction team of editors. “Below the line” also includes equipment and supplies, as well as laboratory processing costs.

Compensation in Lieu of Wages. In the case of independent films, which characteristically do not have sufficient funds to pay everyone, wages are deferred. In lieu of pay, “above the line” and also “below the line” personnel receive points. Since very few independent films ever make back their costs, let alone generate profits, this means that people often work on independent productions for a different kind of compensation: for artistic stimulation and challenge, for the opportunity to build a portfolio of work, or for the chance to participate in a system of barter in which personnel work in exchange for a similar arrangement on their own projects. This offers a promising parallel to creative in- structural designers and programmers engaged with online course development and will be addressed further below.

Sliding Scale/Participation Deal. Negotiated sliding scales are common in motion picture deals. A team member may accept monetary remuneration at a certain level, and if the picture or program grosses over a prescribed amount, the team member receives a negotiated percentage of that excess as well.

Project Model. Film production is based on a project model: personnel are involved until their role in the production is completed. Generally, this means that only the directors and the producers stay on the project until or throughout its theatrical release. In television, the notion of a finite project is less applicable to a series, which may run for many years.

Motion Picture Compensation: Credits

Theatrical Motion Picture Credits. Film credits are prescribed in terms of their wording, placement, and length of time on the screen. These terms are integrated into the final film release and do not change. This is analogous to a print publication in academia.

Television Series Credits. Television series use a different model. Producers are often the creators of a series idea and are frequently the original writers of the narratives. A case in point is Steven Bochco, who created the long-running series Hill Street Blues, L.A. Law, and NYPD Blue. Bochco was directly involved with the production of each episode until the series got established; he then left active involvement. However, every time an episode airs, Bochco gets a royalty payment. In addition, each episode runs with a “Created by Steven Bochco” credit, as well as his listing as executive producer. This serves two functions: (1) it permanently connects Bochco’s role to the series he originated, despite his lack of active engagement with continuing production, and (2) it helps ensure that new personnel keep the same quality and tone of the original show. In such a credit structure, it pays for people involved to have highly qualified people to keep the series going. This situation is analogous to an academic course that is taught on a continuing basis.

APPLICABILITY TO INTELLECTUAL PROPERTY OWNERSHIP AND COMPENSATION IN ACADEMIA

The Team Approach

The production team approach used in the motion picture industry closely depicts what is entailed in developing courses facilitated by new technologies. Most faculty cannot be, and do not want to be, expert at all the technical skills required for them to create online courses or course supplements. The design elements involved in integrating multimedia and screen layouts into course content demand creative expertise. Many uses of the Web by faculty today involve little more than mounting a course syllabus and reading list identical to the print versions, but as the Web incorporates more sophisticated multimedia and interactive elements—video, audio, and animation, as well as electronic discussion forums and communication channels—students’ expectations will rise accordingly. For-profit corporations are putting huge amounts of time and money into producing highly interactive, media-rich courses. Teams of people are needed to create, deliver, and maintain such courses.

“Above the Line”

The motion picture industry’s division into creative, “above the line” teams and technical, “below the line” personnel and services can be applied to the development of distributed learning courses. In relation to ownership and compensation issues, faculty are in the “above the line” budget category, as is the college/university administration. If the institutional investment significantly exceeds the normal operating budget, the institution would also appear “above the line” in the status of the “investor” by providing the capital and the infrastructure that allowed the production of the material. All of these groups would receive “points” translated as royalties, from the course development. In some instances, as outlined below, some of the technical personnel may also be compensated “above the line.”

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EDUCATION Review (January/February 2001)
One critical issue raised here concerns the specifics of what is considered to be part of the institution's capital investment. As mentioned above, many intellectual property policies for distributed education are including the caveat that the institution will own courses when it has made a "substantial" or "exceptional" investment in their production. These undefined terms could pose serious problems for faculty creators of distributed learning materials. The capital investment by the college or university does not include the routine infrastructure necessary to the ongoing life of the institution or the faculty training needed for the use of new educational technologies. Faculty training would be included in the category of capital investment.

A second critical and potentially thorny issue surrounding the question of capital investment is the determination of which courses are suitable for developing for online distribution. Many institutions are working to establish a systematic way to decide what will be funded for development and what will not. The administration, in collaboration with faculty, may need to formulate criteria that can be agreed upon and applied to that decision-making process, especially if faculty enthusiasm for exploring online teaching and learning environments increases significantly.

**Below the Line**

Technical staff would generally fall into the "below the line" category, receiving set wages for the services they provide. Thus, technical staff work "for hire" in most of the services they offer. However, with course development and revision, some graphic design and specialized technical demands exceed the normal job requirement for technical staff and enter into a new creative arena that requires recognition and reward. In such cases, technical staff would move into the "above the line" category and, like faculty, would receive some kind of compensation beyond wages.

**Parallel between Television Series and Online Courses: Credits**

Television series offer the greatest potential as a model for academic compensation issues. Like a series, online courses have an extended lifetime. They may first be taught by the faculty creator and then by someone else. Throughout this time, the courses are usually revised repeatedly, with new material incorporated. The need for ongoing recognition of the scholarship involved in the creation and maintenance of a course could be met with an equivalent to the "created by" credit in television. Each time a course is offered online, the syllabus would include the originating faculty member's name in addition to the name of the current teacher. This would apply regardless of whether the originating faculty member remains at the institution.

Credit would also be given to everyone else on the "above the line" team. The "below the line" team members would be credited in the "trailling" credits. Giving credit to additional team members does not detract from the credit given to the faculty creators and leaders. It is common practice in research seminar presentations, for example, to include a slide naming the other members of the research team, including graduate students and technicians, and even to show their pictures. In addition, technical personnel may be sufficiently compensated by the recognition or "credits" given for their involvement in creating exceptional course materials. This recognition could be used in promotion reviews; it could also support requests by technical staff to focus their efforts on other creative endeavors that may not appear in their original job descriptions.

**Parallel between Television Series and Online Courses: Points**

The point system used in television series is another promising feature for academic compensation. Points can be negotiated with the institution and assigned to the faculty creator of the course and to those design and technical collaborators whose creative input is essential to the design and delivery of a course. Since points can be divided into micro-units (fractions of a percentage point), it is possible to distribute royalties in a manner that fairly and accurately reflects the involvement of key personnel. The normal technical support services would still be rewarded by conventional wages, but work exceeding the bounds of the job description would be recognized, by credit and/or by monetary reward.

**Sliding Scale/Participation Deal**

The sliding scale concept is also adaptable. A system of distribution could be established whereby a course offered to a certain number of distributed education students would meet one level of compensation for the institution and faculty and creative team; if the course is then offered to much larger numbers of students in much wider venues, the faculty member and creative team could negotiate to receive a higher percentage of the fees being paid. Similar steps on the scale would cover commercial sales of the course material.

When a faculty member leaves one institution of higher learning to teach at another, who has access to the course materials created by the faculty member? The answer is simple if both the institution and the faculty member retain rights to offer the course. But, particularly as commercial partnerships and for-profit institutions enter the picture, this could be a difficult issue to resolve satisfactorily. In the interest of academic freedom and enrichment of teaching, faculty must be able to explore possibilities at other

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The advantage of the possibilities offered by the sliding scales is that both the institution and the faculty member retain access to the course. Because of the “Created by” credit given to the originating faculty member, that person continues to receive not only credit for creating the course but also applicable royalties generated at the originating institution. The college or university keeps the course listed in its catalogs and continues to generate its own revenue portion from the teaching of the course. In addition, the current instructors’ names now appear on the course syllabus as well.

If the current rate of attrition of technical staff numbers continues, faculty will soon find no one available to help them incorporate information technologies into their courses.

The media production model outlined here argues that the costs incurred to train faculty and provide necessary infrastructure should be categorized not as part of the institution’s capital investment but rather as operating overhead. Institutions of higher learning have always been obliged to provide their faculty with the means to teach, be it in terms of adequate training in pedagogical skills or in terms of necessary tools, such as classrooms, chalk, and blackboards. Since faculty training in the new technologies would represent significant costs on the part of the college or university, including these costs in calculations of institutional investments to be reimbursed by online course development would put faculty at an unwarranted disadvantage.

From a faculty perspective, the ownership and compensation issues addressed here could encourage greater participation in technologically enhanced course development. Though it could be argued that some of the current policies being forged benefit faculty more by not diluting their royalties or credits with the inclusion of technological consultants, such policies could prove ineffective. If the current rate of attrition of technical staff numbers continues, faculty will soon find no one available to help them incorporate information technologies into their courses. As has been expressed by Twigg’s online course ownership report, few online courses created in traditional institutions are likely to generate revenues beyond their costs. However, it is important to remember that money isn’t everything. As was mentioned above, talented people in the motion picture industry often forgo monetary compensation for the creative challenge of stimulating a studio from the ground up.

Notes
1. An invaluable analysis of the intellectual property issues can be found in Carol A. Twigg’s report for the Pew Learning and Technology Program: “Who Owns Online Courses and Course Materials?”
2. Most recently, such a policy agreed upon by Duke University was issued publicly and featured in the June 9, 2002, issue of CNI News/HIer Educa tion.
3. Twigg, “Who Owns Online Courses and Course Materials?”

CONCLUSIONS
Technical training and support are growing needs for both original and online integration of new learning technologies in higher education. Moreover, intensifying competition from the growing numbers of nontraditional institutions in the online distributed education arena demands that traditional institutions of higher education foster an environment in which the best faculty and the most innovative programmers and designers can come together to create curricula that utilize the rich academic tradition of institutions of higher learning as well as the full range of possibilities offered by information technology. Producing online courses and the originating institution would be compensated for its capital investment.

The advantage of the possibilities offered by the sliding scales is that both the institution and the faculty member retain access to the course. Because of the “Created by” credit given to the originating faculty member, that person continues to receive not only credit for creating the course but also applicable royalties generated at the originating institution. The college or university keeps the course listed in its catalogs and continues to generate its own revenue portion from the teaching of the course. In addition, the current instructors’ names now appear on the course syllabus as well.

Institutions without being penalized by loss of their course materials if they move. Further dialogue is needed on this subject, but again we can look to parallels with the broadcasting industry. The television series syndication model can be drawn on in this context. In television syndication, affiliated stations pay a licensing fee to the original networks and producers of the programs to re-run. A similar arrangement could be explored in the academic setting whereby the new institution to which a faculty member has moved could pay the faculty member’s previous institution a fee for the use of the online course. The faculty member would thus have continued access to the course materials that he or she created.