

# *Three Scenarios for Higher Education: The California Case*

*By James Ogilvy*

**S**ince 1960 when the Master Plan for public higher education was initiated, California has operated a three-tier system of two-year community colleges, four-year state universities, and research universities. The promise of the Master Plan—to admit any student who can benefit from postsecondary education—has for the most part been met. But now, under the pressure of serious budget cuts, the promise is being broken for tens of thousands of students who are being turned away from full or cancelled courses.

This paper addresses public postsecondary education in California over the next 15 years. It's clear that the pattern of support for public higher education has to change. But how?

Perhaps an economic recovery will restore lagging tax revenues and cash will flow into education once again. Or perhaps new sources of revenue can be found to supplement student fees and tax dollars. Or perhaps technology will come to the rescue by reducing the costs and increasing the quality of learning. These are not the only possibilities confronting educational planners in California.

What will it mean to have a wholly new legislature now that term limitation has been voted into law? How will the further globalization of the economy affect education? How will the changing demographics of California influence the shape of higher education?

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There are many maybes in the future of education. This paper uses multiple scenarios as a way of sketching several possible futures.

**Basic Questions**

Given the seriousness of the current crisis it would seem irresponsible not to consider some radical alternatives to the current system of state support.

The current crisis offers an occasion for rethinking the basic structure of higher education. What is its mission? Whither higher education in the 21st Century? For what kind of world will tomorrow's students be educated? With what tools will they learn? And how will public postsecondary education be financed?

Answers to such basic questions tend to come in clusters of systematically interrelated policies. For example, if corporations pick up a bigger part of the bill for higher education, then they are bound to have a bigger role in setting the curriculum. If new technology and fiber optic highways pave the way toward more learning at home, then individuals will probably have more control over the content and pace of their learning.

Each of these alternatives—a bigger role for business, a bigger role for technology—comes laden with whole hosts of associated assumptions about funding, faculty, the needs of students, and public policy. These bundles of associated assumptions are part of what make up scenarios. In order to think our way out of the current fiscal crisis, we need to consider several alternative scenarios for the way higher education could be structured 10 to 15 years from now.

The use of alternative scenarios in strategic planning has been gaining currency in the business world over the past several decades. To develop a set of alternative scenarios for the future of higher education, the California Faculty Association, the Community College Association, and the National Education Association engaged the Global Business Network as consultants. GBN special-

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izes in assisting large organizations in the development of alternative scenarios for strategic planning.

### **The Problem and a Method for its Solution**

In 1991, for the first time in over 30 years, the states gave less money to higher education than in the preceding year. "As a percentage of overall state spending, the amount given to colleges and universities has been shrinking since 1982," reported *The New York Times*.

The California community college system is required by law to admit any student able to benefit from higher education. But, according to David Mertes, chancellor of the 107-campus system, "Students are coming in and finding they can't get the classes of their first choice, so they take something else. Or, in growing numbers, they can't find classes at all and they leave." Sixty of 71 community college districts exceeded their enrollment caps for 1991.

"You can translate that into 88,000 students in 107 colleges for which we're not being funded," Chancellor Mertes told the *San Francisco Chronicle*. Community college officials estimate that some 10,000 thousand students are cascading into the community college system as the result of fee hikes at the California State University system and the University of California system.

In 1991, the California State University system laid off 3,000 full-time and 2,000 part-time lecturers. Students were shocked to find 4,900 courses cancelled.

In a vain attempt to make ends meet in the University of California system, the regents of the University of California raised fees by 40 percent for 1991, following a 10 percent hike the previous year.

***As bad as the fiscal crisis may be,  
the problem facing planners of  
higher education in California  
runs deeper than money.***

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look to the past rather than toward the future, and, third, by the buffering of publicly supported services from the feedback of market forces. Each of these three points creates resistance to necessary change, and therefore deserves more detailed treatment.

*The Burden of Success*

There is a saying that nothing fails like success. Though the current crisis has wrung any residue of smugness out of California's faculty and educational administrators, there is nonetheless a strong temptation to wait for things to return to normal.

"Once the recession is over," speaks the voice of wishful thinking, or "once tax revenues pick up again" or "once there is enough money in the budget to pay for merit increases in salary, hire more faculty, and reopen temporarily closed classes," then life will return to normal and Californians will once again be proud of the best postsecondary educational system in the world. The sheer size, strength, and momentum of the California system makes it resistant to change.

California's share of undergraduate enrollments and Ph.D. degrees is disproportionately high compared to its share of the nation's population. And the picture would be even more remarkable in a global rather than a national perspective. Berkeley is one of the leading universities of Southeast Asia in that it enrolls so many students from Asian countries.

*Scholarship and the Future*

Unlike business leaders who are used to thinking about the future as a way to minimize their financial risks, academics (with some noticeable exceptions) are generally more preoccupied with passing on the past to successive generations of students.

It is no accident that the study of the future has no place in prestigious academic curricula. There is not a single book in the university library with a copyright of 1999 or 2003. Thus, it is perfectly understandable that academics tend toward cultural

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conservatism and resistance to institutional change, however liberal they may be politically or ideologically.

An occupational hazard among intellectuals, then, is the stereotypical tendency to back absentmindedly into the future. Ever since the pre-Socratic philosopher, Thales, first stumbled into a well because, as the story has it, he was so lost in thought, academics have been renowned for not focusing on the nitty-gritty of worldly affairs like “where will our funding come from if tax revenues decline?”

*Insulation from Market Forces*

Because it is state-supported, the educational system, like other public services, is somewhat insulated from market forces. It is far more difficult to shut down an unsuccessful college, especially in the public sector, than an unsuccessful business. Exceptions like the recent bankruptcy of the private University of Bridgeport prove the rule: the oddity of events at Bridgeport gained far more notoriety than any of hundreds of bankruptcies in the business world.

The power of these three forces may be so great that the most plausible scenario of all would contain little or no significant change in the fundamental structure and support of higher education in California. Down that road one can see further fee increases, more student demonstrations, a decline in the quality of education offered, and a trail of broken promises as more and more students find higher education simply unaffordable.

**Higher Education: A Pathway to Success**

Why do we need to solve the current problems in California's system of higher education?

At a minimum, and in the most materialist terms, California's economy is dependent on an educated work force. Several commissions and countless authors have pointed to the close connection between San Francisco Bay Area universities and the success of

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Silicon Valley.

Second, on a broader historical scale, the relative influence of different cultures can be correlated with the excellence of their universities. Consider Oxford and Cambridge, Heidelberg, the Sorbonne, Harvard and Yale, Tokyo University. World class cultures maintain and are sustained by world class universities.

Third, broad access to higher education through a system of two-year community colleges provides a pathway to success for individuals whose backgrounds might otherwise limit their achievement. Without the kind of access provided by the California Community College system, the American dream of equal opportunity would be foreclosed for many of California's less privileged students.

"Americans increasingly think a college degree is the ticket to a better life," reported the *Chronicle of Higher Education* in 1991, citing a Gallup Poll. "Seventy-three percent of those surveyed said it is very important to get a college degree, an increase of 15 percent over those surveyed five years ago."

Fourth, the future promises to punish ignorance even worse than the past. It is now commonplace to speak of a series of eras: the agricultural, the industrial, and the information era. We are now well into the information era. What the farm was to the agricultural era, and the factory to the industrial era, educational institutions will be to the information era, namely, the means of production and manipulation of the principal product of society.

Just as people had to come down off the farm to join the industrial society, so people are coming out of the factories to join the information society. But the price of entry is education. Neither illiterate farm workers nor minimally trained industrial workers can function successfully as producers or consumers of the best an information economy has to offer. A good education will be more critical to success in the future than it ever was in the past.

Whether we are concerned with the health of California's economy, the preeminence of the state's culture, the life opportuni-

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ties of California citizens, or the needs of the information age, there are plenty of answers to the question: *Why worry about higher education in California?* The problem is not that we lack answers, but that we have too many answers to this question.

Do we care more about open access or about the number of Nobel prizes earned by a research-oriented faculty? Do we care more about the politics of multiculturalism or about the economics of high technology? These are not easy choices to make. Consequently, there is a tendency not to make them, but instead to drift in the direction of equity by trying to be all things to all people.

These, then, are some of the barriers that stand in the way of change. How can a set of alternative scenarios overcome these barriers to change?

**Scenarios: What Are Scenarios . . . and What Are They Not?**

Scenarios are alternative environments in which today's decisions may be played out. They are not predictions. Nor are they strategies. Instead they are descriptions of different futures specifically designed to highlight the risks and opportunities involved in specific strategic issues. The point is not to gather evidence for some induction about a most probable future. The point is rather to entertain a number of different possibilities to better make reasoned choices among them. We can see in the present several trends that, moving on their current course, will change the shape of higher education in California over the next decade.

*Predetermined Elements*—Some trends are fairly certain. The demographics of multiculturalism are moving inexorably toward making everyone part of a minority. Sometime between 2000 and 2010, Anglos will cease to be a majority in California.

Second, there will be a quantum leap in the Latino influence on California's culture and politics. This influence will be felt first in K-12 schools.

These and other trends are among the predetermined elements

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that are bound to show up in almost any scenario of California's future.

*Uncertainties*—As important as the inevitabilities are several uncertainties. What will the job market look like in two decades? What will daily life look like in twenty years? What would you want your children to know that they cannot learn from you? It is possible to make some choices today that will shape the answers that the future gives to these questions.

Rather than try to predict the shape of higher education in California over the coming decades, this paper considers some alternative possibilities, the better to equip readers with tools for making informed and considered choices about higher education. The citizens of California and their elected representatives will make the choices that determine the future structure and financing of higher education in California.

In framing scenarios to inform choice, not just any stories will do, and many stories could be told. The method of scenario development is aimed toward selecting just those plots that will highlight the critical factors on which the future hinges. After considering the many interdependent variables that have an influence on the future, the method calls for selecting just a few as “driving trends” to determine the logics or plot lines of a small number of scenarios.

We now turn our discussion to a list of the key factors identified by the scenario development team (listed at the end of this article), and a brief analysis of those factors that were selected as the driving trends for the scenarios.

### **Key Factors and Driving Trends**

#### *Predetermined Elements: Economics*

There can be little doubt that economic factors drive all scenarios for the future of publicly supported higher education. A rising tide could raise all ships. A strong economy could plug all the holes in the

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higher education system, and a weak economy will make all problems worse.

But over the long term the uncertainties of growth and recession and the rhythms of business cycles tend to average out. Over the long term the economy will almost surely grow, but not enough to fund the currently anticipated need for resources for education.

*The Draconian Solution* is to take back the promise of the California Master Plan and restrict access. This is, in effect, what is happening now. With the recent fee hikes in the University of California and California State University systems, many who would have enrolled have not enrolled. There is an evident cascading of restricted access. The university system has become dramatically more expensive to students.

*Find more money in state budget.* At a time when spending on higher education is claiming a progressively smaller percentage of the state budget, one solution would be to reverse the declining trend and simply allocate a greater percentage of state revenues to education. But this solution flies in the face of several hard realities, particularly the exigencies imposed by the rising costs of health care, debt service, and crime prevention.

*The economy is not a driving trend peculiar to any single scenario.* Instead the economy is the tide on which all of our scenarios ride. At high tide all the scenarios get easier to manage, whatever their logic. At low tide all scenarios become more difficult to manage and all conflicts become more divisive.

The importance of the economy—though not its health—is, thus, a predetermined element for all scenarios: inescapable in its power to constrain educational opportunities, but also potentially generous in its ability to reward a well-educated work force.

*Predetermined Elements: Demographics*

A second predetermined element, equally influential in all scenarios, is demographics; more specifically, the politics of multi-

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culturalism. California is growing and California's ethnic mix is shifting.

Multiculturalism is a fact of life in California. In a very real sense, California has become the crucible of the future, for it is here more than anywhere else that the major cultures of the world are meeting, from east and west, from north and south. Pressed ever closer together in a multicultural society, we are discovering how far apart we still remain.

The crucible of multiculturalism is not the melting pot of old; it is more akin to a salad bowl. Races and cultures are not blending in a homogeneous mix. Instead, the lesson of the late twentieth century, from Lithuania to Yugoslavia, from Ireland to Sri Lanka, seems to be that blood runs deeper than politics. Political union is no guarantee of cultural collaboration. Los Angeles may be among the best models for the city of the future. But will it be a model to emulate or to avoid?

The question for California educators cannot be access versus quality, as if quality were attainable only in a system of limited access. The question is how to achieve quality *and* access for students of many different cultures.

Rather than remain locked in a stand-off between budget claims to fund computers for rich kids or remedial English for the children of immigrants, the future of California is likely to demonstrate the following message of multicultural politics: we won't get the money for high technology unless we make good on the claim of multiculturalism.

As Bell Atlantic's Chief Executive Raymond W. Smith has observed, far from being the competitive edge that many proclaim, Japan's homogeneous work force is an Achilles' heel. By contrast, he says, the diversity of America's labor pool is the key to beating the competition, provided U.S. education improves. Says Smith: "If you take a roomful of Carnegie-Mellon engineers like me, you're going to get a particular slant on solutions. But with a diverse group in terms of race, age, and sex, you'll get a much better array of options."

***Demographics play in every scenario. Multiculturalism is unavoidable as a problem and challenging as an opportunity.***

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Like the potential for an economically vicious or virtuous circle in all scenarios, the demographics of multiculturalism will also be at play in every scenario.

Multiculturalism is unavoidable as a problem, and challenging as an opportunity. Because neither of the predetermined elements—economics or demographics—plays a role in differentiating the scenarios from one another, they will not play prominent roles in the scenarios. But their significance demands further attention in the concluding section.

*Uncertainties*

In a world that is changing as fast as ours today, it should not be too surprising that there are many more uncertainties than there are predetermined elements.

What will the needs of the job market be between 2005 and 2050? Can anyone speak with any certainty to that question?

How will the politics of term limitation play out? Will a complete shuffle of legislators help or hurt the political process in general, higher education in particular?

What will be the impact on higher education of significant changes in K-12 education? And what if there is no improvement in K-12 education?

How far and in what ways will information technology evolve as a tool for education? And might the notion of literacy be expanded in a multi-media environment? What role will information technology play in the classroom? At home? Everywhere?

What role will corporate America play in the future of higher education? Its role is already larger than most imagine. Will it become larger? And how?

And what about the future of pedagogy? And the influence of an older student generation? And the need for continuing education? Will the nature of what we think of as education, as good education, as higher education, change?

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There is a problem with trying to consider all possibilities in all possible combinations. There are too many. But what are the right criteria for whittling the many down to a few, a manageably finite number, say three or four, that display in their individual uniqueness and in their relationships with one another something about the most fundamental factors affecting the future? We want a small set of big scenarios, not a big set of small scenarios. We want a few basic stories worked out in considerable depth and detail. So how do we decide which stories to tell?

This is not an easy question to answer in general. But experience in particular cases has shown that the most useful scenarios are those that revolve around issues that are critical to a specific decision at hand. So we prioritize our lists of key factors according to two criteria: First, how important is any given factor to the issue at hand, and, second, how uncertain? Certainties don't differentiate scenarios. Uncertainties do. As for which uncertainties, look for those that are most important to the issue at hand.

What is the issue at hand for this study? It is the uncertainty of support for public postsecondary education in California over the next 15 years. By "support" we mean more than just financial support; issues of status and prestige have a lot to do with who will become a teacher. When we focus on the uncertainty of support for public postsecondary education in California over the next 15 years, we want to consider not only the obvious—money—but also the intangible support of professional status and esteem.

### *Driving Trends*

Sifting through the uncertainties listed above, and after considerable discussion, the scenario team chose the question of information technology as one driving trend, the focus of one scenario (though present, of course, in the others). For the second scenario the relationship between education and the economy, corporations, and market dynamics is the organizing theme. In the third scenario a paradigm shift changes several fundamental

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assumptions about what constitutes a good education. The new thinking changes the structure and funding for higher education.

**The Information Revolution: Software Landing**

The much heralded but little understood information revolution involves more than substituting personal computers for cars at the ends of America's industrial assembly lines. It means substituting for those very assembly lines a new mode of production that relies less on the bending of metal into hard shapes and more on the bending of minds through entertainment, education, and a rich diet of symbolically mediated experiences.

The information revolution is changing the nature of the economy, but more than that, it is changing the way we think, and therefore the way we learn. More pictures, fewer words. Only a multi-media education can keep up with a multi-media environment. Just as *Sesame Street* marked an if-you-can't-beat-'em-join-'em rapprochement between educators and television, so Whittle's *Channel One* represents a rapprochement with commercial advertising. Education is joining the economy, like it or not, via the media.

In addition to the TV, the other new boxes in the classroom are, of course, computers. The trouble is that until recently there hasn't been enough good software to keep them running. But that is changing, and in this scenario the software changes a great deal.

Educational psychology, artificial intelligence, and computer programming will converge on new learning tools that are so far superior to anything in the past that students accomplish what by present standards would seem prodigious feats of learning.

A club may open up for people who know 20 or more languages. A few years later, in order to maintain some vestige of exclusivity, another club may open up for those who know 40. They have a newsletter where they print articles on the silly mistakes made by natural language translation programs.

Natural language translation turns out to be a much harder

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puzzle than early programmers had thought. Language's subtleties and ambiguities, so essential to poetry and humor, tend to escape computers that are programmed for literalism and clarity. Nonetheless, most electronic appliances can be activated by a command language of some 500-800 fairly basic words. Ease-of-use through voice command has a major influence on the evolution of information technology in the workplace and in the home. No longer held back by the barrier of a keyboard interface, suddenly everyone is in touch with artificial intelligence. The keyboard curtain drops and everyone is suddenly standing face to face across a medium of fiber-optic filaments and embedded ubiquitous intelligence.

*Embedded* means that stand-alone computers account for an ever smaller percentage of functional microchips. Instead, more and more appliances follow the route of today's cars by containing their own special applications computers to render them "smart"—a smart phone, a smart TV, smart doors, smart lights, even smart clothes that adjust their insulating capacity according to outside and inside temperatures.

*Ubiquitous* means that such intelligence is available almost everywhere. At Xerox PARC in Palo Alto, designers are already talking about the relative densities of different sizes of computers: micro-power every meter, mini-power every ten meters, macro-power every hundred meters in human environments.

*Intelligence.* The point of this world is not that there is more information. Sheer quantity is an industrial measure. The point is instead that this world is smarter. Stupid things don't happen as often to smart people. Traffic jams are a thing of the past given intelligent traffic management. People don't get lost anymore, since there are so many ways of tracking, paging, and showing the way. There are fewer confusions about reservations, or mistakes in billing, since there are so many automatic safeguards.

It's still some of the same old things one is doing: making reservations for dinner, travelling, balancing accounts. This world is not all that new. It is important to emphasize that what the

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information revolution is *not* about is some technology zoo of shiny trinkets with LED displays. Rather, as Paul Hawken points out in *The Next Economy*, it has more to do with an increase in the ratio of information to mass in every product and service in the economy—including education.

The importance of the information revolution is not dependent on the size of the computer industry. It is a matter of the increasing role information plays in every industry, every experience, even education.

In one sense this world will allow us to be a lot dumber. Its tools will be smart enough to make up for our stupidities. No more fumbling with little buttons on a VCR. Voice commands as vague as, "Will you tape tonight's rerun of *Cheers*," will do just fine.

When John Doe says to the ceiling, "Get Jane on the phone," the network will know that the Jane he means is Jane Doe, and it will know how to find her wherever she happens to be. This will create problems of privacy, and will create opportunities for filters that can screen out those calls one doesn't want to receive.

But these already shop-talk-worn examples of features of an intelligent telephone network are just examples, just fragments of a world that will contain dozens of information technologies unimagined today, just as the fax was, for the most part, unimagined in 1975.

The point is, *new technology will change how professors teach and do research and how students learn and where*. What are some of the key trends now emerging?

The fibering of America will mean that massive information resources will be available to almost anyone, almost anywhere, almost anytime. Telephone companies are already laying thousands of miles of fiber-optic lines. Tennessee is projected to be the first fully fibered state—by the end of the century. Between 2000 and 2020 the rest of the nation will be fully fibered. Consequently, bricks and mortar—campuses—will be less important as distance learning (at home and on the job)

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becomes more prevalent. Just as the health-care industry is witnessing a shift from in-patient to out-patient care, with fewer and shorter stays in hospitals, so education will shift toward an “out-student” model featuring self-paced, personalized instruction at sites of the student’s own choosing.

Because differentiation rather than standardization is at the heart of the information revolution, instructional software will be highly personalized. Rather than the same curriculum with the same pace for all, learning will occur in highly individualized ways. Intelligent diagnostics will identify the rate, level, and learning style of each student, and the pedagogical procedure of any given courseware will adjust accordingly.

The increasing availability of hypertext will encourage less linear, more associative patterns of thought and inquiry. A history lesson in hypertext will allow a student to “touch” an unknown word with a finger on a screen or a light-pen or mouse, and zoom in on a deeper explanation of, say, the Dreyfus affair. And one question can lead to another. Who *was* Major Esterhazy? Minds will wander, and so much the better. They will traverse more territory, and with a higher level of interest, than minds being led on forced marches down the linear corridors of many current textbooks.

The role of the teacher will change: from repository of expertise to guide to resources. Rather than playing the role of expert or know-it-all, the teacher will be a mediator between the student and resources that far exceed what any individual, even the most skilled or brilliant scholar, could know. Librarians are better models for this role than research scientists. The best professors will not be those who work only “at the cutting edge” but those who are good at managing the “interface” between each student and existing knowledge, whether or not they are also pushing out the frontiers of knowledge.

The role of institutions of higher learning will shift: from

***The best professors will not be those who work only “at the cutting edge” but those who are good at managing the “interface.”***

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providing a rite of passage (from ignorance to knowledge) toward providing skills with tools that will be used again and again. Credentialing for specific professions will be less important than re-educating and updating. Learning will be less like losing one's virginity—a one-time event, never to be repeated—and more like eating: a necessary, recurrent, and often enjoyable activity.

In order for today's educational establishment to get “from here to there,” a number of changes will have to take place during this scenario, several of which are beyond the control of today's educators. The politics and funding of fiber-optic highways require the cooperation of legislators and telephone companies. The development of educational software depends on the initiative and inventiveness of companies like Broderbund and Apple. The speed with which distance learning takes off is partly a function of the evolution of the “smart home,” fully wired for interactive, multi-media information services.

The technology of *The Information Revolution: Software Landing*, or something close to it, *will* be available sooner or later. Educators have a role to play in determining how soon; and the role they then play will be significantly influenced by other players in the game. The double-edged sword of corporate involvement in education is the subject of the next scenario.

As for opportunities, the concluding section on implications will spell out in greater detail the potential for closing the current funding gap by the use of information technology. For this is the ultimate hope of *Software Landing*: as in so many other industries, so in education, the application of new technology lowers costs and enhances productivity. More people learn more for less money.

#### *What the Future May Hold*

Assuming that something close to *Software Landing* in fact unfolds over the next 15 years, what would be its implications for faculty, for students, for staff, for the various branches of California's

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system of higher education? And finally, what are its implications for funding?

Among the most dramatic implications of this scenario would

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facilitator who knows how and where to find, how to interpret and skillfully apply information.

If distance learning takes place at home, on the job, or while travelling, residential campuses will become less centrally important to the system. Information technology will decentralize learning. One can imagine those remaining on campus as "the studio audience." The university will cease to be the only place where courses are given and will become more like the lot where courses are produced.

As the portrait of the latter days of this scenario becomes clearer and its implications more evident, some serious misgivings are bound to arise.

First, where is the human touch? Will social skills be neglected by individuals locked for hours to their private terminals? Will the two-way interaction of the small classroom or seminar be sacrificed to the one-way communication of the lecture if students are separated from teachers by the technology of distance learning?

Second, what will happen to those who resist the new technology? Many secretaries and stenographers resisted the advent of word-processors. Some who boycotted computers did so with good reason: their jobs disappeared. Will faculty resist the increases in productivity available through information technology? If a few star performers create the courseware used by millions, what will happen to the many who shine less brightly under the studio lights?

Third, where will the money come from to finance the up-links for high-tech educational networks? Today it costs approximately \$50,000 for each remote site to be linked together in an interactive educational network. Will the costs of educational studio technology break the bank?

Fourth, and even more important, will there be structural inequities in the availability of down-links? Will the poor get poorer because they cannot afford the technology they need to access the educational networks? Let us consider these misgivings one by one.

***Will ed tech enhance the opportunities of minorities because it's color-blind, or more adaptable to student learning styles?***

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*Technology unmediated by a human touch* is indeed a danger to this scenario. *Software Landing* may mean a hard landing for social skills. If the premise of this scenario is high-tech unmediated by human interaction, then the dangers of heading down this path may lead us to neglect the productivity improvements available through information and communications technology. Or, seizing upon what John Naisbitt has labelled the trend toward “hi-tech/hi-touch,” we may find ways to compensate for the apparent impersonality of high-technology. But that part of the story is saved for our third scenario. For now we must acknowledge that *Software Landing*, premised as it is on technology to the rescue, does not go far enough to compensate for the impersonality inherent in distance learning.

*A system that relies on a few studio stars* is a system, like show-biz, with a few big winners and a lot of losers eating their hearts out in low-paying jobs between casting calls. Neither the California Faculty Association nor the Community College Association nor the National Education Association are likely to accept the kind of employment terms offered by Actors' Equity.

*Perhaps the weakest link in the chain of coherence* holding this scenario together is the question—the uncertainty—will educational technology enhance the opportunities of minorities because it is color-blind, or, even better, more capable of adapting to different learning styles than today's teachers?—OR—will a greater dependence on technology further disadvantage minorities because (a) they cannot afford the down-links, or (b) the everyday lives of many disadvantaged students simply don't have a place where educational technology can fit in?

Surely it is easier to imagine higher penetration rates for educational terminals for students with their own homes and bedrooms than for students without homes, much less private bedrooms. There is thus a real danger of the split between haves and have-nots being widened by a technological wedge separating the knows from the know-nots.

So much, then, for the implications—the dangers, the opportuni-

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ties, the costs, and the uncertainties—that attach to *Software Landing*. On balance it is a plausible scenario, one that is driven in part by technological developments far beyond the control of educators alone, and therefore worth monitoring by educators lest they be swept along into a future not of their own making.

Only by looking ahead, by being alert to both the dangers and opportunities inherent in information technology, can we bend a scenario like *Software Landing* in a direction that improves education for all.

**Education Inc.: The University as a Business**

The logic of this scenario is centered around the relationship between education and the economy: the rewards and incentives at play, and the institutional structures that can help or inhibit the enrichment of education—and enrichment by education.

In order to think through this scenario in any depth, however, it should become clear that there are more possible models of university-corporate relationships than that of higher education's becoming a wholly owned subsidiary of corporate America.

One model would have the university becoming more of a business on its own. Changes in the 1986 tax law permit universities to benefit from the commercialization of federally funded research conducted in university laboratories. Institutions like the Massachusetts Institute of Technology have long depended heavily on corporations for support of their research laboratories; and corporations, for their part, have long depended on universities for out-sourcing some of their research and development. In the future, educational institutions may solve some of their financial woes by reaping substantial royalties from discoveries made in their laboratories.

The logic of the marketplace, like the logic of the information revolution, can reach into all aspects of education: supply-side, demand-side, and the structure and organization of institutions. Let

***Corporate America is no longer counting on higher education as its “supplier” for “human resources.”***

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us consider each in turn.

*Supply-side*

Who will do the educating and what will they teach? One of the most shocking revelations of recent years is the degree to which higher education has already been taken over by the private sector. It seems that almost every major research report going back to the 1983 Carnegie Commission Report quotes the figure \$30 billion as the annual price tag for corporate training programs—though that figure had risen to \$44 billion by 1989. The figures suggest that corporate America is no longer counting on public higher education as its “supplier” for “human resources,” but is instead “making” rather than “buying” its training.

If this trend continues—from already existing McDonalds University and Motorola University (See “Motorola U: When Training Becomes an Education” in *Harvard Business Review*, July-August, 1990) to IBM University and Ford University and more—then the corporate community will appear as a competitor rather than a supporter of existing institutions of higher education. There is another branch to this scenario, one in which existing institutions learn how to do a better job at meeting corporate America’s needs for an educated work force.

As new technology changes job requirements, community colleges have stepped up to the challenge of bringing high technology to the shop floor. According to John Holusha (“Businesses Go Back to School,” *New York Times*, Education Supplement, Fall 1991), “Nationally, about 50 community colleges have built technology centers to enhance local manufacturers.”

The California Community Colleges Economic Development Network (EDNet) has initiated close collaborations between high-tech employers and local community colleges. Long Beach City College, for example, has implemented computer control-based training in all of its automotive classes. Nissan agreed to designate the college as its Los Angeles-area apprenticeship program, and

***Whether industry makes or buys its training, it's clear that the logic of the marketplace is influencing the shape of curriculum.***

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donated vehicles, equipment and books worth \$200,000.

Centers for Applied Competitive Technologies (CACTs) have been set up at eight California community colleges, with 16 technology centers the long-range goal. As part of IBM's program to support computer integrated manufacturing (CIM) in higher education, IBM has donated hundreds of thousands of dollars worth of hardware and software to DeAnza College, El Camino College, and Sierra College—all participants in the CACT program.

On either branch of this scenario—whether industry makes or buys its training, whether industry outsources its training or develops in-house education programs—it is clear that the logic of the marketplace is influencing the shape of the curriculum. This worries educators who are concerned about selling out to the interests of business.

*Demand Side*

The demand side of *Education Inc.* gains power over the supply-side by a structural change in the funding of higher education. Rather than passing tax dollars directly to colleges and universities, a referendum passed in 1996 dictates that funding credits for higher education shall go directly to students, who then “spend” those credits as they choose, wherever they choose, for whichever courses they choose.

Before its passage, this referendum is known as *The Bologna Referendum*, since this was how one of the first universities of Europe was financed—with students at Bologna hiring all and only those professors who gained and retained their approval. Shortly after its passage, the referendum comes to be known among less popular faculty as *the baloney referendum*.

When confronted with the compelling logic of market forces for change, some educators dust off the old chestnuts about students being too ignorant to know what they want. In an effort to dismiss the verdict of the marketplace, they try to discredit the legitimacy of the market metaphor for education. They say that students cannot

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***In addition to changes in the nature of both the supply and demand for education, there will be changes in educational structure.***

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“shop” because they do not know what they want to buy. They are there, precisely, to find out. But this argument turns out to be less forceful for college students than it is for K-12. College students, especially those beyond their teens, have a pretty good basis for knowing what they are looking for, and a good shopper’s nose for knowing where they can find it.

The changing demographics of age in the higher education student body has a profound effect on the funding of higher education. In 1974 only a third of college students were over 25. By 1990, 40 per cent were over 25. By 2000 fully fifty per cent of the college student body is over 25. Older students behave more like customers. They can take more responsibility for what they want, and can exercise more responsibility in paying for it.

*Restructuring: The Second Reformation*

In addition to changes in the nature of both the supply and demand for education, there will be changes in the structure of educational institutions. Call it an educational Perestroika.

Taking a very long view—as one must do to catch the momentum of the present toward a more distant future—it would seem that there is something like a second Reformation taking place. This reformation is separating the powers of State from Corporation and is shifting power away from political leaders and into the hands of corporate leaders. Students are catching the drift of the second Reformation. They see where the action is. They are consequently less interested in political ideology and more interested in the marketplace.

Just as a political logic replaced a religious logic, so now an economic logic is replacing, and will continue to displace, a political logic. This long-term historical shift will have profound effects on publicly supported higher education.

In this scenario the demand for marketable skills increases. Students insist on courses that will render them more capable as employees, entrepreneurs, and executives. If colleges cannot provide

***Students insist on courses that will prepare them as entrepreneurs. If colleges can't, then corporations will.***

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such courses, then corporations will.

As a reward for restructuring in a way that better matches supply to demand, public institutions of higher education find that they gain both customers and "investors." Both corporations and governments pay attention to what the market says about the goods being offered by different institutions.

By the end of this scenario, state universities would be known less for their athletic teams and Nobel laureates than for the financial accomplishments of their alumni. Measurements and indices of the sort that are now commonplace in business will have made their way into the educational marketplace.

For those institutions that successfully restructure to meet demand with supply, budget deficits will be a thing of the past. As Father Clarke, president of Regis University, put it, "We're not-for-profit; but we're not for loss either." (This remark was quoted in *The Wall Street Journal* in a front page article touting Father Clarke's success in serving the training needs of a local employer, Martin Marietta.)

*What the Future May Hold*

Like *Software Landing*, *Education Inc.* will have implications for faculty, students, staff, and for the structure of state supported higher education:

Consistent with the logic of a shift from central command and control toward more marketplace dynamics, there will be a devolution of authority from "upper management" toward "the shop floor"; from central capitals toward the provinces; from administrators' offices toward the classroom. Students will "shop" where they can get the most for their money. Colleges that can't compete will be shut down, not by political demonstrations but by economic failure.

If the state gives money to the consumer rather than to the provider of education, that will undermine the monopoly on

***Success in tomorrow's educational marketplace will be determined more by the students than by the teachers.***

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credentialing that universities now enjoy. As it is now, university administrators control the purse strings once the legislators have filled the purse. In *Education Inc.*, the value of a degree will rise and fall like the value of listed securities, and that value will depend less on rumored reputations and more on measured accomplishments of the graduates of different institutions.

As soon as students become "customers," then authority for the content of the curriculum will shift. Just as success in today's marketplace is determined more by consumers than producers, so success in the educational marketplace will be determined more by the students than by the teachers. Students will grade teachers by the allocation of their tuition dollars.

If librarians emerged as the staff heroes and heroines of *Software Landing*, then it is the career counselors and job placement officers who enjoy the greatest status hike in *Education Inc.* In order to smooth the currently rough transition from education to work, they come to have a far greater influence over the ongoing course of many students' educations, in many cases replacing faculty advisors.

Likewise the transition *into* higher education will look less like hurdles erected by admissions officers and more like marketing on the part of recruiters. Recruitment will rival job placement in importance as colleges seek the very best quality "raw materials." Seeking quantity as well as quality, colleges will compete ever more actively for students and their tuition dollars.

Given the commercial goals driving business, there is no doubt that the influence of the private sector will put *training* ahead of a less goal-oriented liberal education. The beneficiaries of this tendency will be the Community Colleges and the professional schools.

Universities will gain research dollars, but the budget is likely

***Paradigm shifts are difficult to comprehend because they change our ways of seeing and understanding everything around us.***

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to slant toward the *D* in R & D. So-called *basic research* is less likely to gain support from corporations interested in commercial applications of existing knowledge. The Council on Competitiveness has already pointed to the need for more attention to the transition from basic research to the successful commercialization of science. The United States is good at innovation; the Japanese seem to be better at those incremental changes that make for successful products. In *Education Inc.*, the pressure for competitiveness will lead to greater emphasis on commercial development rather than liberal education or basic research.

**A New Educational Order: Just Imagine It**

Just as each of the other scenarios follow a pervasive logic that supports major movements in education by major movements in the historical macro-environment, so this third scenario, too, exhibits a similar consistency.

The rationale guiding education in this third scenario is driven by a paradigm shift that is reflected in other parts of society, from concerns about the environment and worries about our decaying infrastructure to changes in the fundamental assumptions underlying many of the disciplines that make up a college curriculum.

Paradigm shifts are, in principle, difficult to comprehend at close range because they change our ways of seeing and understanding everything around us. Eli Whitney's cotton gin may have looked like an incremental improvement in agriculture. Who suspected that it heralded the advent of the industrial revolution, a transformation that would change a way of life centered around life on the farm?

Because paradigm shifts are, by definition, pervasive—not just a new discovery in a single field of inquiry, but a change in the pattern of discovery in all fields—they are necessarily infrequent and, for that reason, unfamiliar.

This third scenario requires the greatest stretch of imagination.

***If a paradigm is emerging at the leading edges of several academic disciplines, we can't expect to understand its ramifications now.***

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We must try to see higher education with new eyes. If a new paradigm is indeed emerging at the leading edges of several academic disciplines, we can hardly expect to understand all of its ramifications for the rest of life at this early date. Yet the work to be performed by scenarios is precisely to fill in the contours and work out the significances of what are now only first hints on the academic horizon.

One aspect of the new paradigm is a heightened appreciation for the systematic interconnectedness of things. In place of an analytic approach to problems that would simplify, divide, and conquer—through the establishment of separate academic departments and increasingly fine-grained divisions among areas of specialization—the new approach seeks to synthesize and accommodate to the real complexity of our human and natural environments. Systems and structures will receive the kind of attention once devoted to atoms and elements. How does a strong economy contribute to social welfare, which in turn contributes to the physical health of students, thereby enhancing their ability to learn?

#### *The Responsibility Revolution*

After weathering the long recession of the early nineties, chastened Americans in this third scenario are now ready to invest the dividend rather than spend it in a replay of the eighties.

Where to invest? Clearly the natural environment needs cleaning up. And the man-made environment—our infrastructure of roads and bridges—needs work. Most of all, it is the man-made environment of our inner cities that pulls educators down out of their ivory towers to wrestle with the slow rebuilding of the social, natural, and urban infrastructures.

But Americans are not content to throw money at existing educational institutions, nor, in this scenario, are they content to leave social policy and social welfare up to the private sector. A new vision is wanted, a paradigm change in the way social services in

***A new vision is wanted, a paradigm change in the way social services and higher education are conceived, delivered, and funded.***

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general, and higher education in particular, are conceived, delivered, and funded.

Not to trivialize the significant differences that distinguish the first and second scenarios from one another, it is nonetheless true that the logics of the first two scenarios both suggest alternative ways of closing the funding gap for delivering essentially the same service as is being delivered today.

Neither the technology fix nor the private funding fix need necessarily alter fundamentally our ideas about learning. They can be conceived in terms of incremental changes of degree toward the use of different tools to do the same old jobs, or a gradual relocation of those same old educational jobs from one set of institutions—publicly supported colleges—to another set of institutions—privately supported corporate training programs.

But the driving trends behind the first two scenarios, together with other changes in values, public opinion and social policy, may combine to create a major discontinuity in what constitutes higher education. The further evolution of both technological and economic trends, combined with a paradigm change sweeping across academic disciplines themselves, may add up to a revolution in the nature of higher education. Could so much change happen in just a few short decades?

*Revolutionary De-Maturing*

Though higher education may look like a “mature industry” not susceptible to significant innovation, the same was said of the shoe industry around 1970—before the introduction of Nike, Reebok, and Rockport—companies that succeeded in “de-maturing” the shoe industry and greatly expanding the demand for specialized shoes.

Just as the tumult of the 1960s would have seemed unlikely to most leaders of the 1950s, and the neo-conservatism of the 1970s and 1980s almost unthinkable to those growing up in the 1960s, so the 1990s could bring big surprises to those who thought that the 1980s might go on forever. In the *New Educational Order*, both the

***There's a realization, that whatever the limitations of government, the marketplace can't deliver all human goods.***

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context for high technology and the dynamics of the marketplace are pressed into the service of an increased concern for social justice and the quality of life.

The new mood has neither the self-righteousness of the 1960s, with its conviction that even the personal was political, nor the selfishness of the 1980s, when greed and narcissism seemed to justify any excesses the marketplace could dish up. Instead, there is a redrawing of the boundaries between the personal and the political, the private and the public.

There is a realization, that whatever the limitations of government might be, the marketplace cannot be trusted to deliver all human goods. Other lessons are not lost on Americans as the 1990s unfold. Europe prospers while Japan goes into decline. Policy makers attribute this shift in the global economy to the weakness of government in Japan compared to the strength of the public sector in Europe. There is a new appreciation for the importance of a strong public sector and its role in providing those public goods that cannot be purchased by individuals while shopping on a Saturday afternoon—a communications system, a transportation system, a health care system, an education system.

Just as Russians woke up in the 1980s to the realization that a centralized government was not the best mechanism for the creation and distribution of consumer goods, so Americans wake up in the 1990s to realize that marketplace competition is not the best medium for maintaining a telephone system or a health care system. The same follows for certain kinds of education. The marketplace is marvelous for allowing individual preferences the freedom to find satisfaction from particular consumer goods. But when it comes to social goods and general welfare, the new paradigmatic sensitivity to complex systems leads to a growing recognition of the need for public sector involvement in the development, regulation, and management of publicly funded systems for health, transportation, communication . . . and education.

After years of suffering jack-hammers tearing up the streets to

***There are certain inefficiencies involved in allowing private companies to compete in the construction of public infrastructure.***

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lay gas lines, then electric lines, then TV cables, then fiber-optic telephone lines, it occurs to more than a few people that there are certain inefficiencies involved in allowing private companies to compete in the construction of public infrastructure.

We decide we do not need seven regional telephone companies and three long-distance carriers competing inefficiently for our telephone traffic. National businesses want a one-stop shop for their ubiquitous local services. Local customers do not want a list of different companies sending them different bills at different rates for essentially the same services.

As many viewers become increasingly frustrated with the declining quality of their cable TV service during the mid-nineties, it becomes apparent that the telephone companies would be more reliable carriers for the next generation of high-definition TV. Throughout the nineties their network of fiber-optic cables spread across the entire country—systematic interconnection incarnate in millions of miles of glass fiber.

The idea is simple: extend Theodor Vail's idea of "universal service" to as many of the basic necessities as can be put through a single "pipe" into every home in the nation. Leave all the particular goods that can be handled by private enterprise to the dynamics of the marketplace. Freedom of choice and the anarchy of competition may be fine for all of the discretionary purchases that individuals may or may not wish to make. But universal needs should be satisfied as efficiently as possible by a Universal Utility that delivers basic services to every citizen in the nation.

*The New Social Contract*

On the eve of the new millennium there is intense debate over what amounts to a new social contract. The debate bears little resemblance to the old squabbles between liberal left and conservative right. Instead, the point is to distinguish as carefully as possible between public necessities and private liberties; between rights and responsibilities; between universal needs and particular privileges.

***In place of the founding fathers' concern over religious freedom, we now worry about the damage we are doing to Mother Earth.***

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This debate has some of the urgency and much of the passion of *The Federalist Papers*. But the context has changed: the economy is no longer agricultural, nor industrial, but information-based. To be a citizen is not to be a land-owner but a tele-communicator. Women count. The world is now our next door neighbor. In place of the founding fathers' concerns over religious freedom, we now listen to mothers' worries about the damage we are doing to Mother Earth.

The movement toward a new social contract is accelerated in California by a strong coalition of neo-liberal activists. They manage to unite a new generation of business leaders and limited-term politicians in a coalition government that approves the merger of Pac Tel and P G & E once it is apparent that savings can be achieved by getting rid of the inefficiencies and redundancies of parallel rights of way, parallel billing, and parallel service networks.

By the dawn of the new millennium, higher education takes place in a context very different from what most people were familiar with, even as recently as the early nineties. Every citizen of the United States now has health insurance and every home with a telephone and a TV is now (or is soon to be) served by a single "pipe" from the Universal Utility. The pipe has several channels: for gas, electricity, telephone service, cable TV, an energy monitoring system, and a broadband channel for interactive educational programming.

Unlike the one-way communications characteristic of distance learning in *Software Landing*, in this scenario the larger context of the new social contract with its emphasis on community dictates the accelerated development and application of interactive *groupware*: electronic seminars rather than electronic lectures.

Through the use of multiple windows on a single screen, an individual will be able to manage several electronic "conversations" simultaneously, much as one does in a seminar room or coffee shop. Several users will be able to share a single simulation—of an historical event, or a piece of equipment, or a surgical operation—so

***Several users will be able to share a single simulation—of an historical event, or a piece of equipment, or a surgical operation.***

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that the shared simulation will become a virtual classroom for students in different locations.

The logic of neo-liberalism drives the development of information technology and the involvement of the business community in a direction not evident in the earlier scenarios: toward a new pedagogy.

*The Pedagogy of the Neo-Liberal Paradigm*

One of the patron saints of the new pedagogy is Paulo Freire, a pioneer of educational reform whose Latin American origins lend a special power to his teachings among the growing Latino population in California. Freire's teaching starts from a kind of consciousness raising among small groups of students that is far more Socratic and participatory than the distance learning featured in *Software Landing*.

By the late 1990s, however, the Marxist dimension of Freire's classic *Pedagogy of the Oppressed* no longer sits well with people whose consciousness has risen in the context of a new economy. Instead the influence of another patron saint of the new pedagogy, Hernando de Soto, the Peruvian author of *The Other Path*, leads to the substitution of entrepreneurial activism in place of political revolution.

Freire's own process, when carried out with college students who still answer Astin's survey saying they want to become very well off financially, leads to a pedagogy based on "action research" into the causes of poverty among the least advantaged and most numerous of California's community college student body. If all things are systematically interconnected, then it will not do to pretend that education can cut itself off from daily life. The community becomes the textbook; its problems our homework.

Tens of thousands of community college students become directly involved in addressing problems of illiteracy, ill health, drug and alcohol dependency, crime and poverty. The nexus of issues that had once been separated under headings like sociology, public health,

***Issues that had once been separated under headings like sociology and business economics are the focus of a new curriculum.***

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and business economics are, by the turn of the century, the focus of a new curriculum.

The revolving door that joined colleges to corporations in *Education Inc.* now joins colleges to communities and small businesses. Learning in the community colleges is truly community-based. College has ceased to be a place to escape from the nitty-gritty to pursue “higher learning”; it has become instead a place to dive deeper into the reasons why the city is so often gritty.

Important change in the structure and funding of higher education comes from the freeing up of resources that had previously been spent on solving problems that are now directly addressed by educators and their students. This new strategy—which changes the relationship between higher education and the rest of society—was pioneered by educators like Marguerite Ross Barnett, the president of what had been called the University of Houston when she assumed leadership in 1990. Her leadership strategy was summarized in her *New York Times* obituary in 1992:

She had a reputation as a successful fund-raiser and a pragmatic academic who urged that urban universities play a dominant role in spurring economic growth and solving social problems in the same way that land-grant colleges of a century ago did in developing America’s agricultural economy. ‘What will characterize the superb 21st century university,’ she said at her inaugural in 1990, ‘will be its ability to manifest and focus areas of unquestioned institutional excellence on the challenging issues of the day.’

Her views were representative of a substantial shift in higher education as universities, once isolated from their locales, sought stronger connections to their surroundings. And in many ways, Dr. Barnett was seen as representing a new generation of education leader.

The new theory of knowledge supports a pedagogy that is always rooted somewhere—in the communities peculiar to each community

***Now it is the faculty—the faculty who are bringing their values to class, not to indoctrinate, but to challenge and inspire.***

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college. History teachers, now focus much of their research on the relationships between past, present, *and future*. English teachers teach different literatures as they relate to the lives of their students. Foreign languages gain a new importance as everyday tools of communication in an increasingly global economy.

Very little inquiry is disinterested anymore. Consequently, education is much more interesting than it used to be. The new paradigm is rooted in a new theory of knowledge, one that does not separate subject from object or facts from values. Instead, a scholarly appreciation for the systematic interconnectedness of subjects and objects, facts and values, makes it impossible for educators to claim the sort of institutional neutrality that college deans once brandished in the days when students demonstrated against the Vietnam war or apartheid in South Africa. Now it is the faculty who are dragging students out of their claims to neutrality (or apathy). Now the faculty are bringing their values to class, not to indoctrinate, but to challenge and inspire.

Only the best and the brightest can get teaching jobs in the twenty-first century. Given the added responsibilities that teachers have now that values as well as facts are fair game, communities are very careful about who gets to teach—not just the brightest, but the best.

Integrity and character are important issues among teachers to an extent unknown in the days when only politicians had to worry about their reputations. Here again it is the new appreciation for the interconnectedness of all things that forbids the compartmentalization of lives, just as it forbids the departmental dissection of a curriculum.

Privacy is permitted and respected; but if one's private life is so reckless that bad consequences spill over into public scandal, then there is no easy recourse to the right of individual liberty—whether defended from the left or the right. Responsibility is more highly prized than the right to recklessness.

***Sometimes radical change is more realistic than incremental improvements, neutralized by the perpetuation of the existing order.***

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*Continuing Education*

By the end of the scenario period the paradigm for higher education has shifted. Higher education is no longer an extension of secondary education. It no longer consists in the caging of aging adolescents in classrooms where professors share arcane knowledge about the increasingly specialized subjects of their research. Instead, the model is one of team teaching and team learning by responsible adults who won't waste their time or money on ineffective communicators.

When the student's time is valued, efficiency matters. In this scenario, a spreading outrage at the sense of wasted resources leads to concerns over our educational infrastructure. A new sense of responsibility replaces old short-term concerns.

Does a *New Educational Order* sound too utopian to be taken seriously? Not necessarily. The events in Eastern Europe show us that it can be morally irresponsible to concentrate only on worst case scenarios. Sometimes radical change is more realistic than incremental improvements that would be neutralized by the perpetuation of the existing order. Sometimes restructuring—Perestroika—is the most direct route from here to a better future.

How could so much social change take place in a few short years? Surely not by virtue of some new sense of duty or obligation to learn. No, this transformation follows the pleasure principle. The wedding of education, entertainment, and community makes learning the most enjoyable and gratifying activity available to most people. Commercial TV and all the skills of the dream merchants of Hollywood are put into the service of learning. Following decades of materialism, a country glutted on the glories of *having things* finds that the diminishing returns of materialism lead directly to greater returns from *knowing*.

The gratifications of knowing are enhanced by a paradigm shift that transforms knowledge from a passive, to a much more active—interactive—involvement with the world and with other

***From participatory knowledge it's  
then a short step to participatory  
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people. From participatory knowledge it is then a short step to participatory democracy: an active involvement in the civic life of the community. Where the old liberalism depended on a strong role for central government in setting policy, neo-liberalism substitutes local learning for centralized expertise. With the democratization of know-how and expertise, the decentralization of policy follows close behind. Site-based educational policy is a natural corollary of neo-liberalism and the new paradigm. If *Software Landing* made everywhere an Alexandria, the *New Educational Order* makes everywhere an Athens.

To those of us today who are still used to firm boundaries separating education from entertainment, the *New Educational Order* might sound impossibly utopian, as if vast numbers of people were to become intellectuals overnight. To appreciate the non-utopian plausibility of this scenario, it is necessary to assume that the distinction we take for granted between education and entertainment very nearly disappears.

Learning becomes enjoyable. Part of the joy of learning lies in the fact that it is no longer so purely cognitive. Instead, knowing is part of doing. History has less to do with memorizing dates than with making new history on the basis of a better understanding of past history. Sociology is about mending the social fabric. Reading and writing are not passive skills but active tools of communication. The community is our laboratory.

Of course, the very features of this scenario that promise new successes in education are also features that create new burdens for education. The new centrality of educational institutions, their immediate engagement with the principle problems of society, pose challenges to educators that they have not had to cope with in the past. Precisely to the extent that colleges accept these challenges, they render themselves vulnerable to disputes and constituencies that formerly remained outside the walls of academe.

If higher education were to enter the *New Educational Order*, then teachers and administrators must be prepared for more

***By playing out the distinct logics of three different scenarios, we gain a sense of trade-offs that are implicit in different policies.***

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interaction with the world. *Those who can, will do and teach.*

Students will find themselves more actively engaged in remaking the world. The practice of education will have less to do with passing on the past than with creating a new future. While this vision may have immense appeal to those who would like to see learning assume a more central role in our society, the demands it will place on educators should not be underestimated.

### **Wrapping it up**

Scenarios do not of themselves dictate a strategy for solving problems. But the range of issues covered in the previous scenarios, and the inter-relationships exposed by their contrasts, suggest certain patterns that planners can recognize. By playing out the distinct logics of three different scenarios, we gain a sense for certain trade-offs that are implicit in different policies.

In the first scenario we see the potential for cutting costs by improving productivity through the application of new information technology. In thinking through this scenario, however, it becomes clear that distance learning runs the risk of being insufficiently interactive for the students, and too heavily based on a star system for most faculty.

The second scenario closes the funding gap by raising revenues by better serving the interests of American business. Powerful forces in the environment—privatization, the Second Reformation—suggest that the commercial logic of the marketplace is bound to have a greater influence on educational institutions. Despite the obvious benefits of the revenues that can derive from closer relations with the corporate community, misgivings are likely to arise when it comes to giving greater weight to training rather than education, or to commercial development rather than basic research.

The third scenario assumes as much technology as the first, except with a greater emphasis on interactive groupware rather than one-way distance learning. The third scenario also assumes the

***Distance learning, like communications technology, can flourish only if its tools are as easy to use as the telephone or TV.***

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active involvement of the business sector, only the revolving door between the private sector and higher learning opens onto small community-based businesses rather than to large corporations. Finally, the third scenario assumes a more activist—or interactivist—involvement in issues of social justice and community welfare. Here the danger is that we are asking educators to do more than they are prepared to do: become philosopher-kings-and-queens.

*For Students*

The stresses evident in higher education today will not be relieved by incremental reforms. Unless there is fundamental change, students will face increased fees and/or decreased course offerings.

If the future cleaves closest to *Software Landing*, students will need to be computer literate, though computer literacy will be far less daunting in the future than it is today. If anything like *Software Landing*, actually comes to pass, information and communications technology will have become far more user friendly. Distance learning can flourish only if its tools are as common and as easy to use as the telephone or TV.

If the future is closer to *Education Inc.*, then students will have to look longer and harder to find courses that are *not* career-oriented. Medieval history may become a luxury available at only a few private colleges and universities. The ideal of the well-rounded liberal arts education may shape the curriculum at a few private colleges, but public higher education in *Education Inc.* will turn the well-rounded liberal arts education into an anachronism.

If the future is closest to the *New Educational Order*, students will find themselves growing up faster than they do today. No longer will the groves of academe be at a distance from the street. The ivory tower will offer no respite from the problems of society. Reality will prove to be a harsh and difficult text. There is therefore reason to wonder whether students trying to escape the ghetto through higher education will be pleased to find themselves sent straight back to the

***The “star system” will have few winners and many losers if education emulates the entertainment media in employment practices.***

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ghetto for their first academic assignment. The students of the sixties called for “relevance” in higher education. The students of the nineties and the new millennium may wish that the *New Educational Order* were less relevant and more remote from society’s problems.

In all of our scenarios the student body is almost certain to be older and more culturally diverse. Continuing education, whether on campus or through distance learning, will increase, multiculturalism will prevail. There is no turning back the clock on migration. North America will not send home her immigrants the way some European nations have tried to send home their southern European and non-European guest-workers.

*For Faculty*

Unless there is fundamental change, faculty will see lower salaries and/or increased work loads, and ever more meetings to bring about the changes that would kick off one or another alternative scenario.

If the future cleaves closest to *Software Landing*, the faculty will have to master the new tools of educational technology. Like workers in other industries revolutionized by technological innovation, some will benefit from higher productivity, others will lose if they fail to keep up with their own learning. There is a significant danger in this scenario that a “star system” will make for a few big winners and a lot of losers if education comes to emulate the entertainment media in its employment practices.

If the future is closer to *Education Inc.*, then faculty will need to be more aware of the *marketability* of the skills they are offering their students. The gulf between business and education will be bridged, and the bridge will have a revolving door encouraging two-way traffic between the commercial and academic environments. This could mean an end to tenure in the academic world, or the beginning of sabbaticals in the business world. It is hard to know just what shape a closer relationship between business and acade-

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nia will take, but clearly in *Education Inc.* the disdain for commerce among many of today's faculty will no longer be affordable.

In the *New Educational Order*, faculty will be hard pressed to defend the relevance and usefulness of their favorite fields of study. Though hardly comparable to the cultural revolution that put Chinese intellectuals into the rice paddies, the paradigm shift underlying the *New Educational Order* will put faculty on the front lines in the fight against injustice, poverty, and other social ills.

In each of our scenarios it seems clear that faculty will need to become somewhat more technologically adept, more culturally tolerant, and more aware of events in the economic and social environment, particularly as they impinge on the politics of higher education. The job of teaching is not likely to get any easier, but the rewards may be greater if one or another scenario succeeds in breaking the current deadlock on funding. Particularly in the third scenario, but for some in the other scenarios as well, there are grounds for hope that professors will become the high priests and priestesses of an information society.

*For Staff*

Unless there is fundamental change in higher education, non-teaching staff will continue to suffer the cuts that recently have become commonplace. Whether rightly or wrongly accused, non-tenured staff are perceived as part of the problem rather than part of the solution when administrators fail to make ends meet in the budget process.

If the future cleaves closest to *Software Landing*, librarians will gain status as management of information systems (MIS) personnel. Admissions officers and career counselors will gain greater prestige in *Education Inc.*. In the *New Educational Order* we can expect campus security and the dean's office to look more like a full-fledged local police precinct and judiciary system. As learning moves off-campus, new kinds of trouble will move on-campus.

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*For Administrators, Politicians, and Citizens*

For the rest of us who are not directly engaged in teaching and learning, there are decisions to be made that will affect our taxes in the short term, the health of our economy in the medium term, and our quality of life in the longer term. The danger is that we sacrifice the long term benefits to our reluctance to bear the short term costs.

Administrators, legislators, and other leaders need to remind the rest of the citizenry of the benefits that will accrue from a strong educational system. Precisely to the extent that the groves of academe stand at a distance from the rest of society, it is too easy for the rest of us to forget the importance of what happens behind those (sometimes) ivied walls.

Individuals may have a vivid sense of the value of their own academic credentials, but society at large is less sure about the collective benefits of a better educated citizenry. It is this argument for the aggregate effect that is hard to make in a history that happens just once. But this is why today, standing in our single present, it is worth looking down at least three separate paths, three future histories, three alternative scenarios for the future of higher education.

**A Final Note**

Once again, scenarios by themselves do not solve problems. But they do highlight some of the challenges and opportunities. The preceding scenarios are intended to assist planners in breaking out of a "business as usual" mode of following the present's momentum into the future.

The momentum of the present leads toward increasing deficits and declining quality. The citizens of California have some hard choices to make: what price will we pay for better education, more social justice, and a stronger economy? How much can we depend on technology? Do we dare offer business a stronger hand? Are we

prepared to politicize our universities? These are among the hard questions posed by a long look into the future of higher education in California.

By articulating some alternatives, we hope to have furthered the debate toward finding answers to these questions. Choices must be made. By expanding the range of possible choices, alternative scenarios can help clarify the consequences. But the choice, in the end, belongs to Californians. Higher education must change. That said, what tradeoffs are we willing to make for which rewards?

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