

Community College Faculty and Web-based Classes

by Vernon C. Smith and Gary Rhoades

Web-based, e-learning classes, by which we mean Internet or online classes that use a proprietary course management system such as Blackboard, are an increasingly prominent part of higher education, particularly in community colleges. In fact, more than three-quarters of community colleges now offer the same course in face-to-face and online modes.¹ And community colleges offer a higher proportion (44 percent) of distance learning courses than any other type of institution.² Whether in the community college setting or elsewhere, these new instructional technologies change both the way faculty work and how instruction is produced: In some cases, professors maintain their central role in instruction; in others they are part of a virtual assembly line, performing only a few of the several tasks involved in producing a class.

This article explores three models of how e-learning classes are produced in a large, metropolitan community college district. The term “e-learning” refers to a continuum of distributed learning courses that vary in the amount of synchronous and asynchronous contact, with hybrid/synchronous on one end and Web-based/asynchronous on the other. Different models of producing education can be used across the spectrum. Here, we concentrate on Web-based/asynchronous instruction, a specific type within the larger category of e-learning. To better understand the situation, we detail how the production of the classes is organized at a large, multi-campus district. All of the courses share a common curriculum course-bank with competency-based learning objectives and course outlines. Most colleges in the district offer many

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of the same Web-based courses. We focus on three courses—introductory English, introductory psychology, and introductory computer applications—offered in three colleges. All are high enrollment classes. We chose them because the Web-based format is most likely to be found in such high demand courses.

Although the classes are based on a district-wide curriculum, the process by which they are produced is quite different in the three colleges. We call one the *craft model*, where a single faculty member works largely on his or her own. The second is a *collegial model*, involving the collaborative efforts of small groups of faculty members. Finally, we identify a *virtual assembly line model* of various profes-

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rial and other employees performing separate tasks in producing a course. The latter model epitomizes the so-called “unbundling” of the faculty role, breaking it into various parts, each of which is performed by a different type of professional.³ In each model, we examine the tasks and processes involved in producing a class, including course design, content, development, delivery, grading, interaction, improvement, and student advising, as well as the roles of faculty members individually and collectively in those processes (see Table 1).

In the craft model of producing a Web-based class, which we found in the classes taught at Misty Mountain Community College (all institutions in this article are referred to using pseudonyms), one faculty member does it all. And there is a lot to do. Creating and teaching an e-learning course involves a demanding set of multiple tasks that here are all “bundled;” that is, integrated by one faculty member. That professor brings a lot of himself or herself into the class, making it a product distinctive to the person who crafted it. There is a pride of workmanship associated with e-learning classes in the craft model. The tasks involved can be identified and clustered around recognizable processes.

With respect to course design, the faculty member decides on the instructional strategies and methods that structure how teaching and learning are accomplished, based on the faculty member’s sense of how to teach and how students learn. At Misty Mountain, some professors used what they had done in face-to-face classrooms as a starting point for their Web-based course. Others looked to colleagues for design ideas. Still others relied on the course management system (CMS) to structure course design. Whatever they decided, the individual professor designed the course.

In the craft model, the individual faculty member decides what goes into the course. Determining and creating content is individualized. For example, although

Table 1: Models for Delivering E-learning Classes

Faculty Function	Craft	Collegial	Virtual Assembly Line
Design The selection of teaching and learning pedagogies, strategies, and methods	Single faculty member	Small groups of faculty	Instructional Design Team Instructional designers
Content The curriculum or subject matter, including objectives and expected learning outcomes	Single faculty member	Small groups of faculty	(SME) Subject Matter Expert Developers
Development The creation and placement of materials to be viewed digitally on the Internet	Single faculty member	Small groups of faculty Web designers Instructional technologists	Course Production Team Graphic designers Web designers Web programmers Assessment specialists Editors Proofreaders
Delivery The transmission of the developed course to students	Single faculty member CMS or Outside CMS	Small groups of faculty CMS	Course Operations Team CMS
Grading The evaluation and feedback of student assessments (quizzes, papers, exams, portfolios, etc.)	Single faculty member	Single faculty member* and groups of faculty	Part-time faculty
Interaction The communication, mediation, and motivation with students	Single faculty member Self-defined source of pride Rapid response	Single faculty member* After shared group discussion Rapid response	Part-time faculty Help desk triage Outsourced tutoring Prescribed response standards
Improvement The change process to improve course effectiveness, including its documentation	Single faculty member Ongoing improvements	Small groups of faculty Ongoing improvements	Instructional Design Team SME or developers Periodic improvements
Advising Answering curricular, programmatic, college, and other questions from students	Single faculty member	Single faculty member	Part-time faculty Advisement assisted
Level of Bundling	High	High to Moderate	Low
Type of Course	Handcrafted (my course)	Common (our course)	Cloned (institutional product)

* This could, in some cases, be a part-time faculty member doing one of the sections of the course.

there were curriculum goals set by groups of professors at Misty Mountain College, faculty members acted as craftspersons, inserting much of themselves into the selection of texts and materials, and how these were organized and integrated into the course. If the course competencies are collectively identified and prescribed, the learning objectives for each class and the means for reaching them are as distinctive in the craft model as the faculty member/creator.

A key feature of course content relates to intellectual property issues of two sorts. First, the single faculty members handled intellectual property issues by finding sources, communicating with the publishers and owners or agents, and getting written permissions. They also looked for content in the public domain—in public digital repositories—or wrote the content themselves, tailoring it to the course needs. Second, the faculty member in this model laid claim to ownership and/or control of course content. Having played the central role in compiling and creating course context, the faculty member as craftsperson talked about the course as “theirs.” If it will be taught in the future, they wanted first right to teach it, and the right to revise and update class materials as necessary.

E-learning course development involves creating and housing course materials in a form that can be viewed and used on the Internet. At Misty Mountain, single faculty members created the Web pages, graphics, links, Java applets, and other features needed to place their course on the Internet. With improvements in technology, knowing how to code HTML is not necessary—most CMSs do that work for the professor. Nevertheless, faculty members at Misty Mountain pushed the CMS to its limits to ensure that the course maintained the look and feel they desired. Some hosted course materials outside the CMS, using other Internet resources. Despite the CMS’s standardization of instruction, professors customized course development.



In the craft model, the responsibility for ensuring that the course is transmitted to the students resides with the individual professor. Although course delivery is ideally an automated process through the CMS, there are many tasks involved in making technological systems integrate properly and additional steps needed when failures or mistakes happen. At Misty Mountain College, the professors handled these issues. For example, they handled logistics to ensure that once a student was registered in an e-learning course, the student information system data was transferred to the CMS (so that when students go to the course Web site, their usernames and passwords work). The faculty member ensured that the student

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could use the course's features and functions.

Although course grading can be automated through the CMS or other Web technologies, Misty Mountain professors emphasized individualized and formative feedback strategies—iterative processes aimed at improving learning. Sometimes they used multiple-choice or matching grading tools on the Web for foundational concepts, but they accorded greater time and weight on assignments, quizzes, papers, and exams that could not be computer graded and had to be done by the faculty member. Professors in the English, psychology, and computer applications courses all valued this task, despite the considerable time it involved. They emphasized learning as a process that could not be reduced to standardized assessments.

Another set of tasks involves communicating with, tutoring, and motivating students to increase learning and build social relationships. At Misty Mountain, professors encouraged multiple interactions: faculty/student, student/student, and student/subject matter. These were highly individualized processes. Each faculty member determined the type, amount, and means of interaction. One used synchronous instant messaging, specifying contact hours, whereas others used e-mail and/or threaded discussions asynchronously. In addition, communication tended to include but extend beyond the Internet (e.g., the phone was frequently used for student communication). Faculty members spoke with pride about their turnaround time in communicating with students; their personal standard—beyond any college norm—for answering e-mails and student questions was for them a sign of their commitment to their course and students. More than that, the Web-based interactions common to these courses introduced social-psychological dynamics that required professors to develop and refine skills associated with communicating in a new venue with new norms around personal disclosure and social intimacy.

In the craft model, the individual faculty member makes constant changes in his or her courses, as appropriate. New lessons, content, and assignments, or

adjustments of any number of dimensions of the course take place through a trial and error process controlled by the professor. In some cases at Misty Mountain, the courses were modified and even radically changed at short notice if the professor felt that the course was not producing the desired learning outcomes. Changes were made frequently, based on the professor's knowledge and experience, for pedagogical, logistical, political, and cultural reasons.

The commitment of professors in the craft model to the distinctive qualities of their work, their courses, and the attendant pride and sense of ownership of

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the course are important in understanding the significance of intellectual property issues. The ability to control the revision and improvement of the course lies at the heart of the teaching and learning process and was highly valued by professors as an important capability.

A final process performed by faculty members in the craft model is student advising. General advising tasks have been unbundled in community colleges for a number of years, often being performed by staff hired as advisors in student service centers. But department and degree specific advising are still required for matters such as information about careers, transferability of courses within a major to a four-year institution, course substitutions, and the like. At Misty Mountain College, although there is a distance learning office that provides general information about programs and courses, students often contacted their professor about a range of matters—to better understand what the e-learning course is like, to determine when they can start the course or if the course is for them.

In short, the role of the professor in the craft model is highly bundled: The same faculty member performs all aspects of the e-learning production process. The outcome is a handcrafted class, valued in part for the people and relationships associated with it. Students experience a course that is unique in content, context, history, and workmanship. Faculty members refer to such courses as “my course,” which is precisely what they are, for they reflect the individual professor's character and passion. Each aspect and process of the course is custom fitted and handcrafted by one person.

The collegial model of producing a Web-based class, found at Marble Mountain Community College, starts with many craft-like production characteristics, but it also uses the professional and collegial relationships of faculty to accomplish the tasks. Often organized by department or by programs within departments,

professors work in small groups to create a class. A handful of faculty members in a management and business department produced a computer applications course. Similarly, professors in an English department produced the first year composition courses. Faculty members at Marble Mountain also worked through organizational structures that cut across departments—in campus e-learning or distance learning committees, for example. Further, faculty members worked through informal, collegial networks to develop a course. Faculty who were new to the online or CMS process worked with colleagues experienced in the use of these media. In various configurations at Marble Mountain, faculty groups of two to four members worked

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together in a think-tank mode to create a course. There was an open sharing of knowledge throughout each step of course production.

In the collegial model, then, faculty members' work is mostly bundled. Faculty members engage in all the tasks of course production, though with some involvement of other personnel. But there is also collegial organization, cooperation, and specialization in the production process. The outcome is a collectively crafted class, such as a survey course with variations depending upon the faculty member who teaches it. Students in different sections of the course have similar lessons, assignments, and exams, but there are also differences that depend on the particular faculty member teaching the course.

In the collegial model, different members of the faculty teams specialized in different aspects of course production. For example, in course design there was a collegial approach to researching and developing pedagogical strategies and technologies for the courses, yet certain faculty members of the group concentrated on instructional design. In developing the course content, there was a combination of collaboration and specialization. There was considerable collegial discussion of content. At the same time, different faculty members of the group designed lessons, assignments, and other course content, which were then shared with other professors for comment and improvement. One faculty member took responsibility for obtaining copyright permissions.

Three faculty members working on an introductory English course offer an example of specialization in regard to course development and course delivery. One of the professors served as the Web specialist. Two others focused on different aspects of course delivery. One became the expert on CMS logistics, the other focused on working with the student information system to facilitate the logistics of delivering

an online class. In the other classes, we also found one member of a group focusing on the HTML and Web design, and one concentrating on technical troubleshooting. These faculty members also interacted with Web designers and instructional technologists on campus, though it was often the lead person who did so. In course grading, there was further evidence of specialization and collegial sharing of knowledge. One faculty member at Marble Mountain Community College implemented student-testing software in his sections of a computer applications course. The bugs were worked out of the system and its effectiveness was demonstrated to other faculty members, who then adopted it in their sections of the e-learning course.

Subsequently, the group of collegial-model faculty members analyzed the effectiveness of the class and made suggestions for its improvement, collegially.

Thus, there was some overlap between the collegial and the craft models of production. In the collegial model, there was shared discussion, and shared understandings of general issues emerged. Then, individual faculty members translated those understandings into their classes in distinctive ways. In the case of course interaction, we found that even after groups had addressed the issue collegially, one faculty member created online community in her interactions with students—with real-time activities such as instant messaging or Web meetings—whereas another implemented asynchronous interactions with threaded discussions and bulletin board postings. As for student advising, it tended to be individualized to the particular professor, perhaps as an adaptation to student demand—students preferred getting advice from the professor from whom they were taking the class.

The process of course improvement again used elements of collegial and craft models. The content of the course was developed collegially and approved through a peer-review process. Subsequently, the group of faculty members analyzed the effectiveness of the class, and made suggestions for its improvement collegially. Throughout the course, however, individual faculty members also adapted and improved the course, as in the craft model.

In the collegial model, there was a moderate to high degree of bundling. Individual faculty members performed much of the work. Even when some aspects of the course were collectively determined, professors often adapted their sections of the e-learning course to their particular tastes and preferences. Nevertheless, there is a strong dimension of collegial interaction in this model, with groups of faculty involved in developing the course. This is so much the case that we can speak of a common, collegially developed course. Although individual faculty members do much of the work themselves, they also seek support and feedback from members of a faculty group, in which divisions of labor emerge, with different faculty taking the

lead in different tasks. The collective dimension is powerful in the collegial model. Faculty members talked about “our course” or “the course” that belonged not just to the individual but also to the colleagues who developed it together.

In the virtual assembly line model of producing an e-learning class, which we found at Thunder Mountain Community College, it was not one faculty member doing it all, but a standardized process of multiple players performing discrete tasks. The virtual assembly line model shows the extent to which faculty members’ work and role can be unbundled. This model relies on labor or technology substitutions to perform the tasks normally done by a full-time faculty member.⁴ Most

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tasks and processes become the domain of part-time faculty or managerial professionals; full-time faculty become not just “managed professionals,” but professionals who are pushed to the periphery of producing an e-learning class.⁵ The process is designed to produce neither handcrafted courses nor collegially created common courses with multiple sections. Rather, it is a process designed to maximize efficiencies and revenues, an “academic capitalist” strategy aimed at mass producing courses, in a new economy, virtual assembly line.⁶

On the virtual assembly line, course design is performed by instructional designers and instructional technologists, who are “experts” in pedagogy and learning, formerly faculty domains. These personnel report to administrators, not faculty. Thus, the production process is neither started nor designed by professors. At Thunder Mountain Community College, the course content section of the assembly line is handled by subject matter experts. Some are full-time faculty members, but many are part-time faculty members to whom the work is outsourced. On occasion the work was outsourced to people who do not have academic credentials at all but who do have practical work experience in the field. We also found it was common to purchase course content off-the-shelf, as course packs or online materials available from publishers and other e-learning providers. Copyright librarians obtained permissions and contacted owners and agents.

On the virtual assembly line, subject matter is very narrowly defined as easily recognizable content such as lessons or materials. Because the content is narrowly defined, so too is the role of subject matter expert. We found teams of content experts being used. Managers (not faculty members) assigned one expert for lessons, another for quizzes and assignments, and yet another for exams. In this model, the production of content is considered “work for hire”; the creators give up their intellectual property rights to their intellectual products.

In the virtual assembly line model, the production of a Web-based course involves a set of tasks performed by support professionals and staff who are in an organizational structure and report to supervisors distinct from the academic side of the college. Web designers create the code needed to place the materials on the Internet. Graphic designers create the attractive and interactive Web pages for the course. Assessment technology specialists input and organize test banks and quizzes to make use of the online assessment and grading tools. Editors and proofreaders correct text errors. It takes an estimated 18 people to design, build the content, and develop the course in only this component of the virtual assembly line.

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The next section of the virtual assembly line involves a course operation team that intersects with the CMS in arranging for the delivery of the course. Production encompasses a range of tasks undertaken by highly specialized teams and help desks to deal with technology and troubleshooting versus content or student complaints. Some aspects of technology assistance and tutoring have been outsourced to external providers to ensure round-the-clock availability to students. Other aspects are found in campus-based tutoring or learning centers. Finally, the point person delivering the course is generally a part-time faculty member. Thunder Mountain has 30 full-time and 955 adjunct faculty members, 538 of whom are distance instructors.

Not surprisingly, much if not most of the grading in a course produced in a virtual assembly line is objective and embedded in the CMS, in the form of built-in test banks and quizzes that can be graded by software. Content that cannot be computer graded is done by part-time faculty members or course graders who follow standardized grading criteria to ensure consistency. In addition, support professionals assist in the grading and assessment process by providing testing, proctoring, and other services at testing centers and distance learning offices.

On the virtual assembly line, communicating, motivating, and interacting with students is done largely by part-time faculty working with a help desk that performs triage. Rather than professors being interactive guides, facilitators, or consultants, in the virtual assembly line there is a more mechanized set of standards for communicating with students—and electronic monitoring and surveillance of the faculty member's performance to ensure adherence to these mandates. Designated part-time faculty members handle complaints and issues that fall outside of the norm. Any issues they cannot handle are reported to a manager or a designated full-time professor responsible for those courses. So, too, with student advising, which is also handled largely by part-time faculty members, whose activities are prescribed and coordinated with offices and personnel devoted to student advising.

At Thunder Mountain, an instructional design team has responsibility for course improvement. The team includes subject matter experts as well as instructional designers who review feedback on course usability, effectiveness, and student satisfaction. In contrast to the craft and collegial models, course improvement is part of a staged, discrete, programmed sequence, not an ongoing process.

In the virtual assembly line model of producing an e-learning class, the role of the faculty member is highly *unbundled*. A very large number of personnel are involved in the production process, most of them not full-time faculty. Indeed, full-time faculty members are but one group of players in teams that are involved

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in the discrete sequences of course production. The virtual assembly line produces a cloned course—a common survey course with variation intentionally minimized. There is extreme standardization in as many aspects of the course as possible. The discretion of part-time faculty and others to adapt the course to fit their own preferences or a particular class's distinctive needs is removed from the process. Those involved in the process refer to the finished course as a “product.” A product owned entirely by the institution, not by the course creators.

The three models of producing an e-learning class have significant implications for faculty members, particularly in their role as instructors. They also have implications for the part current and future faculty will play in the curriculum and for the academic freedom of those who historically have been central to the process of instruction.

The craft model involved professors developing a range of new skills with regard to technology, yet not being able to exercise power collectively over technology and the curriculum. Professors noted that new job descriptions include the need to use technologies to create e-learning courses. Many faculty members teaching Web-based classes in this model recounted their affinity for technologies and their desire to place their course online. They also spoke of the trials and tribulations of doing so, and often described being overwhelmed by the amount of work involved and lamenting the lack of time to learn or “play” with new technologies and teaching techniques. These professors expressed frustration at not being able to get the technologies they felt would best serve their students. They wanted more autonomy over the CMS and other information systems. Unfortunately, as individual craftspeople, they lacked the collective clout to exercise much influence over these issues.

In the collegial model, there was also a level of skill enhancement. Faculty spoke

of specializing and gaining greater expertise in aspects of the course production process. But there was a more manageable range of new skill development involved. Moreover, professors were not on their own in interacting with personnel and support structures on campus surrounding technology. Requesting resources and new technology tools were group activities, lending more leverage to the faculty. It is one thing to ask for a new software package as an individual faculty member. It is quite another to say that the campus e-learning committee has chosen a software package as the campus standard. Even though professors in this model expressed frustration about technologies such as the CMS not working, they were more effectively able to

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address their concerns as a group of faculty or a department, rather than a single voice.

As for the virtual assembly line model, despite the fact that the work of both full- and part-time faculty members was unbundled, they too had to develop a new range of skills and knowledge around the reshaped teaching and learning processes. For example, because pay for e-learning courses was done on a piece-rate basis and because e-learning courses lose between 20 to 50 percent—or higher—of the registered students, new skills and abilities were demanded of the faculty in terms of retaining students. And despite all the surrounding support personnel, instructors were a kind of first-responder to all sorts of issues that emerged. They needed to become generalists who know about various services, help desks, and college sites for online support. Professors needed to develop these new skills in a context in which their professional autonomy and academic freedom were severely restricted. Working on a virtual production line changed things, emphasizing the adaptation of education and professors to fit the mechanical mold.

The cloned course created in the virtual assembly line reflects a process in which the end product and the purposes of education are commodified and reduced to an issue of efficiency so the institution can generate revenue. The teaching and learning process is subordinated to mechanized and standardized efficiencies. A course produced in the virtual assembly line, versus through a craft or collegial model, is highly scaleable. Once an e-learning class is created, it can be replicated at a very low cost, since it depends less on more expensive full-time faculty. The faculty role is highly unbundled, marginalizing the faculty, and transforming the type of expertise that is expected and needed. One faculty member commented that when teaching courses online, it was more like being a grader

than a teacher. Unbundling enhances managerial control over course production, particularly in regard to the heavily used part-time faculty members who often don't have professional conditions of employment and are less likely to have and exercise professional rights such as academic freedom.

In some cases, institutions may move through the three stages we've identified in a progression (or regression) over time. But it need not be that way. Indeed, this was not the case for our three colleges. All three colleges started their Web-based courses at more or less the same time. Marble Mountain was the first to offer English courses online, with Thunder Mountain close behind. Misty Mountain offered English

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about two years later. Computer courses followed a similar order, though there is disagreement among faculty over which campus was the first. Psychology was offered at Misty Mountain, then Thunder Mountain, and then Marble Mountain. In other words, it is not necessarily a historical, evolutionary trajectory.

In our cases, the key to the pattern of development seemed to lie in the assumptions and motivations associated with academic capitalism, the organizing unit, and the values associated with unbundling the faculty's work. The organizational unit at the department level was critical, as was the issue of whether there was a centralized unit early on that supported virtual assembly line course production.

Thunder Mountain moved through the craft to virtual assembly line over several years. Essentially, the distance learning department was no longer separate. It was absorbed by the college—so that the mission and functions were supported across the college—and not housed in a single department or unit. Misty Mountain, by contrast, is still in the craft stage. While there is a coordinating body of faculty and administration, the impetus and control of how courses are produced is found in each academic department. Marble Mountain is still in the collegial stage with characteristics of the craft stage, again, determined mostly by the academic department. English has done some collegial course production, but the courses are rebundled back to craft production by the individual faculty members. Computers and business started out with craft, moved to collegial, and is now looking at offering an associate of arts degree, but still with the collegial model of production in mind. And though there were attempts to create one by the academic dean (who just left for a college presidency), no coordinating structure ever emerged across academic departments.

It is up to professors, then, in their academic departments and colleges, and in their collective bargaining units, to shape the model by which instructional tech-

nologies will be used and how instructional delivery will be organized. In each of the three models we have detailed, evolving instructional technologies changed the work of professors and instruction is produced. New demands are being placed on faculty members to develop new expertise. In the craft and collegial models, professors maintain a central role in defining courses and shaping the educational process. And they maintain a sense of ownership, control, and academic freedom in regard to the curriculum. In the virtual assembly line model, though, professors—especially full-time faculty members—are pushed to the margins, becoming isolated parts of a course production line with narrowly defined expertise and narrowly delimited discretion in regard to the curriculum. Courses become products, part of an efficiency-oriented system of delivering educational services in an economic exchange.

In our view, the patterns of craft and collegial control models offer the possibility of adapting to the new world of instructional technology while maintaining important professional elements of the old world: professors exercising central responsibility for orienting academic teaching and learning processes in ways that prioritize broader educational purposes over narrower economic ones of maximizing efficiencies. **nea**

ENDNOTES

- ¹ Sloan Consortium, *Growing by Degrees*, 2005.
- ² NCES, *Distance education at degree granting postsecondary institutions*, 2003.
- ³ The term *unbundling* was first used by Wang, 1975; see also Troutt, 1979; and Paulson, 2002.
- ⁴ Twigg, *Is Technology a Silver Bullet?* *Educom Review*, 1996.
- ⁵ Rhoades, *Managed Professionals*, 1998.
- ⁶ Slaughter and Rhoades, *Academic Capitalism and the New Economy*, 2004.

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