

KEN: And this is also being broadcast via [? vivics ?] because CNN wanted a direct line. And they will be talking through interactively here also. This has just been raised all in the past couple of hours. So we just got the signal.

AUDIENCE: We had a film crew based here in Boston.

KEN: Well, we'll call him up, [? Leslee. ?].

AUDIENCE: [? Did you see the ?] film from Brookline?

VEST: This is on the record.

KEN: No comment on that. So the cast here is Chuck Vest, the president of MIT. Steve Lerman, who is the chairman of the faculty-- Prof. Lerman. Prof. Hal Abelson-- electrical engineering computer science-- who is one of the leading luminaries on this particular venture. And Dick Yue, the associate dean of engineering and professor of ocean engineering, who has been one of the key people in thinking this up.

Steve Lerman by the way is, civil engineering, and Dr. Vest is mechanical engineering-- just to complete the cycle. I'll turn it over to Dr. Vest.

VEST: Thank you. Thank you all for joining us here today. As president of MIT, I've come to expect top-level, innovative, and intellectually entrepreneurial ideas from the MIT community. When we established several months ago the council on educational technology at MIT, we charged a subgroup with coming up with a project that would reach beyond the boundaries of our campus, beyond our classrooms. And I have to tell you that we went into this expecting that something creative, and cutting edge, and challenging would emerge. Something that would be consistent with MIT'S mission.

But frankly, I assumed, and I think most people assumed that it would also be something that would be based on a revenue producing model. A project or program that would somehow take into account the power of the internet and its potential for new applications and education. But I must admit that OpenCourseWare is not exactly what I had expected. And it's not what anybody else expected either.

But it is very typical of our faculty to come up with something truly creative and different. Let me explain it. OpenCourseWare is a web-based program that will provide free access to primary materials for virtually every course at MIT.

Over the next 10 years detailed lecture notes, course outlines, problem sets, exams, and so forth for over 2000 MIT courses will be posted on the web, and made accessible to everybody worldwide for free. OpenCourseWare may seem a bit counter-intuitive in a market-driven world.

But it really is consistent with what I believe is the very best in MIT. It's great service orientation. It's innovative. It expresses our belief in the way that education can be advanced by constantly widening access to knowledge, and information, and by inspiring others to participate. Simply put, OpenCourseWare is a natural marriage of American higher education and the capabilities of the world wide web.

It's also very much an MIT kind of thing. Let me make just a few summary statements about its nature. OpenCourseWare, or OCW as we call it, combines two things. The traditional openness, and outreach, and democratizing influence of American education. And the ability of the world wide web-- the internet to make vast amounts of information instantly available.

OCW is firmly at the heart of MIT'S educational mission. MIT faculty have a deeply ingrained sense of service and mission. They like to work on big problems, and frankly they like to influence the world. There really is an incredible idealism in this faculty.

OCW will have a strong impact-- we believe on residential learning here at MIT-- as well as elsewhere. Let me be very clear. We are not providing an MIT education on the web. We are however providing core materials that are the infrastructure that undergirds that education.

A real education, in our view, involves interaction between people. It's the interaction between faculty and students in our classrooms, in our [? Living ?] Groups, in our laboratories that is the heart-- the real essence of an MIT education. We think that actually OpenCourseWare will make it possible for our faculty and faculty in other residential universities to concentrate even more on the actual human process of teaching. And the interactions between faculties and students, as I've said is the real core of learning.

A question I've been asked most today is, am I worried that the OpenCourseWare program will hurt MIT'S enrollment? I absolutely am confident the answer to that is no. In fact, I think by producing this worldwide window on MIT'S education-- what we teach, the way we think about them-- is a terrific magnetic good thing giving prospective students some insight into MIT.

How will OCW relate to revenue generating educational projects at MIT? I do believe that revenue generating distance education will have a role in the world, and will probably have some role here at MIT. It's clear to me that revenue generating areas are out there. For example, educating and training people in professions who have to keep updated in a very detailed way.

I suspect there's a market for some institutions to provide courses in areas like the arts and humanities to retirees who are interested in going back, thinking, learning about new things. So I think in fact, there will be a market out there. There are a lot of opportunities undoubtedly in the long term to make money. But I want to be absolutely clear that there is no commercially available MIT degree. This is about something bigger.

What about other universities? What will their role likely be? I very much hope that MIT will be seen as a leader in this new world of education on the internet and the web. We very much hope that in the long run what we do will in fact inspire and draw other institutions to do the same. We'd be very delighted if over time we have a world wide web of knowledge that raises the quality of learning and ultimately the quality of life all around the globe. Thank you very much.

AUDIENCE: We'll take some questions from any of the panelists. [? Except we ?] might just talk about the roles of various panelists and to know what kind of areas that their expertise lends them to.

VEST: Sure. To my immediate left is Steve Lerman. As Ken said, a professor in civil engineering who is the elected chairman of the MIT faculty. Steve has been very engaged not only in the conceiving of OpenCourseWare. He's been a very key element of building consensus behind this around the faculty. And has a lot of experience in various forms of the use of the internet and learning.

Hal Abelson is a computer scientist. And if I might say so, really a world renowned educator and a very extremely innovative person. He, in essence, taught the world how to teach basic computer science. But also has been a very thoughtful member of the council, and indeed co-chair of the Council on educational technology that led to the conception of OCW.

But, in my book, the man of the hour is at the end of the table here-- the other end, Dick Yue. Dick is a professor of ocean engineering, also the associate dean of the School of Engineering. And Dick was the chair of the subgroup that really went through the very detailed study that ultimately led to the idea of OCW.

So I'm sure they all have lots to say. And if they run out I'll say some more.

AUDIENCE: I have a question. Probably a question [INAUDIBLE] if that's just reaction from the faculty. When you first conceived of this idea as a group and the word got out to the faculty what was their reaction?

YUE: When we first came up with the idea none of us were sure what the reaction might be. Since that time we've gone around and had numerous [? fora ?] where we had shared the idea, received questions and concerns. And I must say that, as you would expect with a diverse faculty of ours, we had a few number of faculty who had embraced it with enthusiasm.

Others who are rather cautious but accepting. And some minority, I would say, are faculty who are concerned about what we're doing. Whether we have indeed thought through all of the angles and possibly negative impact on a whole number of aspects. I mean, Prof. Chuck Vest mentioned about recruiting. Is one of them. Giving away something that might be profit generating is another one, and so forth.

VEST: I think-- and any of the rest of you can hop in-- there was some very interesting things to me as this group spread out. And they held, I think, on the order of 25 meetings around the campus to be sure that all faculty-- and some representative student groups had an opportunity to comment.

Biggest surprise to me was that the problem everybody anticipated, arguments over intellectual property, were just kind of in the noise level. There were few people who were concerned about that. It was not the major concern.

The concerns were actually quite wonderful things. They wanted to be sure that we were going to be able to do this at a quality level that MIT would be proud of on this scale. And they also wanted to be sure that we were going to be successful in providing the kind of hands on services to individual faculty members. That would make this a rather transparent and simple translation of their teaching materials to an appropriate platform to the web. Steve you want to comment any more?

LERMAN: Yeah, this was extensively discussed in many places. One of which was MIT's faculty policy committee. I chair that committee as chair of the faculty. And I think while everybody has some different views and takes on the details. I think what really excited the group-- and I would say with a virtually unanimous support from that body-- which is the senior faculty governance committee-- came from the broader vision that this resonated with what many of us believe is the core mission of the university.

The university isn't about selling courses for profit. I mean that's not what we exist for. That's not why we were created. And that's not why most of the faculty-- virtually all of the faculty-- have decided to become professors. It's very much about how do you disseminate and create human knowledge. And that, sort of, fundamental value aligned incredibly well with the concept of distributing this globally for free.

And that alignment-- forgetting all the details for a second which are serious and important-- was why there was tremendous enthusiasm in that group.

ABELSON: Yeah, and I think the other issue that people think about is this stimulates real reflection about what it is you're doing in the classroom. If I think about the materials that I teach from-- the raw materials as Chuck said, being available on the web-- forget about the rest of the world-- to the students in my class.

Then what is it that I'm doing with the time I spend with students in the class? How do I think about having a real personal interactive experience once I get beyond the idea that this stuff that's on the web page is what education's about? And you realize it's the raw materials but it's not the education.

YUE: I just want to also add that a very thoughtful line of discussion from faculty. There a lot of faculty concerned that OpenCourseWare will take energy away from many of the innovative things that they are already doing and plan to do. And OpenCourseWare is not displacing any of that activity. In fact, MIT is committed to-- continued to be a leader in educational innovations which are above and beyond OpenCourseWare.

VEST: Ken, maybe you oughta call on people.

AUDIENCE: Yeah, President Vest? What do you say to a parent who happens to have a 20-year-old? The tuition at this school was announced going up last month at-- I think it was 3.5%, 3.2%-- with room and board in September it's going to be about \$33,000.

VEST: Smallest increase since 1970.

AUDIENCE: [LAUGHS] Absolutely, however, this is freeware. At \$33,000 a year that's considerably less.

VEST: Suppose that you ask a similar question. Why don't we ban students from our libraries? Do we really want them in walking around, looking at all these textbooks and things? Shouldn't they wait till they pay their tuition in order to gain access? I really want to state again that an MIT education really comes from the interactions of faculty with students.

It comes from the interaction of students among themselves, learning from each other. It comes from the intensity of the classroom and laboratory experience. It comes from, particularly here at MIT, from a deep dedication to a lot of hands-on kind of learning.

That's the essence of our education. We've always proudly shared course notes-- mailing them around to colleagues in the country. We published textbooks. And I just think of this as kind of speeding that process up to internet time.

And if I can speak just a little bit personally. I did not go to MIT. I was an undergraduate at West Virginia University. I did my graduate work at the University of Michigan in Ann Arbor. And in both of those venues, in the 60s, I benefited enormously from what was going on here.

What is now known retrospectively as the engineering science revolution. Where the MIT faculty really conceived a new way of both conducting engineering education and practice. And the kind of textbooks-- the teachers that I had who had earned their PhD here, and then took these kinds of materials-- syllabi, problem sets, course notes-- took them to those institutions. Tailored them, and shaped them to their own use, and used them to teach people like me.

This really raised the level of engineering education all around the United States, and I just see this as a grand continuation of that tradition. And I heard Dick make some very interesting comments. He didn't grow up in West Virginia, but you might just say a bit about how you got introduced to the world.

YUE: I had the fortune of coming to MIT as a undergraduate student. But MIT's influence on my life started a lot earlier than that. I grew up in Hong Kong in middle school. And I remember I was a precocious kid, and I've exhausted most of the interesting books in my local library.

And my father was an engineer. When I was about 10 years old he brought home some, in fact, secondhand books in electrical engineering. I still remember vaguely how the book looks. And I was too young really to appreciate the content of the books. But I remember looking at them with admiration, recognizing the names of the professors from MIT.

And to make a long story short, here I am. And I think MIT's mission and goal was not just to students within its walls. But MIT has a role to students everywhere, perhaps beyond national boundaries and globally.

[? AUDIENCE: And if I ?] can make a follow up?

VEST: Sure.

AUDIENCE: This has been out for a couple of weeks now in the chronicles of higher education I understand. So has that wonderful school at A-Square, and Cal Tech, and Stanford, and-- dare I say-- Wharton, perhaps-- since you also do Sloan. Have they responded at all? Have you heard from your colleagues?

VEST: I haven't actually had any conversations with anyone at those institutions yet. And I don't know whether they read "The Chronicle" or what. Has anybody else talked to others at this point?

LERMAN: Only at the grassroots level, not at the senior administration level. I was out at Princeton for example, and one of the faculty there-- actually a well-known faculty member in economics was incredibly excited about this idea. Now, will Princeton [? also ?] do that? That's a separate question.

[? AUDIENCE: That ?] was a--

LERMAN: That's a question of--

AUDIENCE: --followup to that.

LERMAN: --and the answer is, I don't know. And at some level, I think, the hope is that there will be in the longer run a growing trend in this direction. I think it's way too soon to know. I would not expect an institutional response from any of the other universities in a short time frame.

This is something that's going to have to grow on people. They will have to discuss it among their faculty-- with their administration-- and come to their own decision on whether this is a strategy they want to follow.

VEST: Just to follow up a little bit on that. First of all, I'd like to say that since this hit the front pages this morning my email has just been clogged. And so far we haven't received a single negative. They've just been wonderful, wonderful, positive reactions.

Some of those have been from individual faculty-- but just saying congratulations, great idea, appreciate your sharing, wonderful thing for the institution to do. We are very much wanting to be first out of the box on this. We hope there are going to be followers, but we very much wanted to be in the lead. And even today at MIT, I think, Hal estimated maybe 20% of the faculty already make many of the materials from their courses available. That goes on at a lot of universities.

What has really set this apart is its scope, and scale, its breadth, its depth. That it's going to cover everything we do in the institution. From the humanities, and arts and architecture through science and engineering, and humanities, and management. It's kind of that scope and institutional dedication to this that is quite unique at the moment.

And while we don't want to get into any of the technology of all this. This is also going to require that we do some very clever work in producing the kind of platforms that will index all this material, allow people to move through it easily. So there's a job to be done on a level that nobody else is doing yet. But I'd be awfully disappointed if we didn't get some followers in the long run.

AUDIENCE: Can you say what the timetable is for posting it, and will there be a prototype soon?

ABELSON: I don't want to promise-- I'm guessing late next fall or early next spring you'd see the first couple of courses up. But we're going to be experimenting at a wild rate at that point.

VEST: We do have a goal of getting 500 subjects up over two years.

LERMAN: I think the other thing is. One of the things we want to learn is what is the effective way to get high quality materials in an economically efficient way. One of the central issues about whether other universities will follow is, what's the cost? If this is always unprohibitively expensive then you won't see many followers. We believe that in it's initial phase it will be relatively expensive.

Because part of what we need to do is create an infrastructure, these tools, indexing systems, and the processes for creating these sites in large numbers. But the other goal is to create a much-- over time to evolve a very efficient way of doing this. So that we can do this without continuing very large influxes of money.

Now, with that said, this will in the long run become something that will take money even into a steady state. In the long run we see that as an institutional commitment. The faculty eventually sees that as something the Institution will take responsibility for. But again, it needs to be done effectively and efficiently. And we need to learn how to do that.

AUDIENCE: At the moment has there been funding pledged to the project?

VEST: We are in discussions with various private sources but we do not have firm commitments yet.

AUDIENCE: [INAUDIBLE]

VEST: Well, as Steve said, there are a lot of uncertainty and fuzziness yet in the cost. We estimate that during this initial two year period-- of putting up a minimum of 500 subjects, developing the infrastructure, providing the service base, and so forth-- we're guessing that somewhere around \$7.5 million to \$10 million a year. But there's a lot of uncertainty in those. And part of the work of the pilot project will be to him to refine those costs, and understand what it will really take to complete the entire project.

AUDIENCE: And just to follow up on that. If the university can't find outside funding is it going to pursue the project any way using internal funds?

VEST: We're going to find outside funding.

AUDIENCE: [LAUGHS]

Will there be advertising on the site?

VEST: No.

AUDIENCE: The private funders will do it for anything in return?

VEST: We believe that this will be funded in a philanthropic manner. You know, I was thinking a little bit about this, this morning. And thinking back into history. That when Andrew Carnegie decided he wanted to improve learning and quality of life across the United States. He didn't go out and found a for-profit correspondence school.

He created a system of libraries. And I think that-- I'd like to believe there's still enough idealism and enough recognition that this really ought to be the bedrock use of the capability of the internet and the World Wide Web in education. That I think it's an idea that will find patrons. And we're very confident about that.

AUDIENCE: Is there a [? naming ?] opportunity here?

VEST: Well, I hadn't even thought about that. The world wide web has already been named, so-- seriously, we like this OCW, OpenCourseWare. It really gives the spirit of it. And we've had a lot of discussion about the analogies between the early days in the development of broadly dispersed computing and the internet.

When everybody tried to keep all of their knowledge close at hand. And we had very tight proprietary systems. And pretty soon people learned that isn't what makes the world work. You open this infrastructure up, and then lots of bright, creative people write their own software for it, and so forth. And we think that's the kind of thing that should happen in education.

I don't know if this analogy makes complete sense to you, but I think there's a little bit of the flavor of what we observe in electronic commerce. What the public mostly talks about is the so-called business to consumer e-commerce. Selling things directly on the web.

And that's growing, but it's really still a very, very minor part at this point in time of commerce. But what has really transformed business and industry has been the business to business use. Where people share their capabilities around the net. And I think that's much more the model that's going to develop in higher education. In a sense we're betting on that.

AUDIENCE: So you see other schools offering the MIT introduction to engineering course for example?

VEST: Well again, I want to be very clear that it's not courses, per se, that we are putting up. I think much more likely is that professor X at School Y will like part of the way that Hal Abelson has structured his Introduction to computer programming. And may use directly parts of his notes. Or may like half of his syllabus and not the other half. [? Add ?] his or her own materials to it. I think will be a much more organic and dynamic activity.

LERMAN: And if I could add to that. I think the best way to think of it is we hope people-- is I hope people will adapt. I don't expect many people to adopt wholesale. Every university is different.

One of the places we hope to see adaptation of these materials, particularly is in developing countries. Many countries have populations that are much younger than ours. They have large numbers of young people. They are trying very hard to expand their higher education systems.

So as to build a more technologically sophisticated workforce. In order to do that they need to add faculty and whole institutions very quickly. We hope that these materials can inform their curricula. Many of these people have not had the opportunity of a higher education in a top flight-- you're either a top flight university in the developed world.

They can find these materials very useful. We hope some of it will be translated. That would be a wonderful thing if universities in other countries-- where they need to teach in other languages-- take our materials, translate them, and make them available for their students as they see appropriate.

There are tremendous opportunities for doing good around the world in helping these universities. And I personally would be very excited about that.

AUDIENCE: Does that mean that you're not retaining the copyright or is it public domain?

LERMAN: Our intent is to retain the copyright, but that's quite different from not allowing anyone to use it. One can retain the copyright and simply say, this is MIT copyrighted. But you are free to use it for all noncommercial research and education purposes.

AUDIENCE: And you can translate it?

LERMAN: And you can translate it. And so that's-- at least currently, the current thinking is that's what we would do. We would not relinquish the copyrights, but we would simply grant effective use rights to everybody.

We have done that in the past with software. There's a number of precedence at MIT for releasing software for world wide use but retaining the copyright.

AUDIENCE: Are there faculty members that are concerned that if their intellectual property is available for public use? And they have less of an income stream, for example. Writing a textbook and selling it on the market?

LERMAN: We've heard that. Dick, [? you and the ?] others may want to comment to that. The truth is as an economic enterprise very few textbooks are in fact worth doing. If people only wrote textbooks--

AUDIENCE: [LAUGHS]

VEST: --financially, right?

LERMAN: Financially! As an economic enterprise. If you looked at the hourly wage rates of most textbooks. There are exceptions, and we all know of the striking exceptions. But frankly, faculty, for the most part, don't write textbooks for the income stream. They do it for the glory, and for the good of the institution, and their own personal reputation. That won't change.

We certainly do expect that some faculty will not put their most recent materials on the site because they're writing a textbook. So I've taught courses where I distribute manuscript versions of my top chapters of a textbook on writing to my students. But I have a contract with a publisher, and eventually I'm going to publish it. And those probably would not show up in most cases.

VEST: There have been some experiments in which various presses, including our own, have put the content of newly published books on the web for free and sold the print book. And the general assessment is that the sales of the print book go up, not down. We're not too worried about that. But there are some individuals who will feel that way, and may choose not to participate in a particular course.

YUE: Speaking as a faculty person, all I want would be for my material to be broadly used by lots and lots of people, and be cited and attributed broadly, nationally. It would be, I think, most of the faculty's dream that this would be the case.

KEN: Any other questions?

[? AUDIENCE: Is there any problem [?] with new kinds of footnoting or new kinds of attribution? If they take half of Prof. Abelson's introduction to computing 101 and dump the other half. Would you [INAUDIBLE]?

ABELSON: That's a terrible problem with everything that's going on in the web. You're seeing the fragmentation of materials. And I don't know that OpenCourseWare has that problem in particular, but eventually the publishing world is going to have to solve that.

AUDIENCE: By offering these courses for free are you essentially giving up on the model that many universities are trying to make money off online distance learning courses?

ABELSON: I think it's really important to say the way we think of this is as a publication. We really don't think of it as distance learning or instruction. MIT will do some actual distance learning experiments. As Chuck said, probably around professional education.

We don't see MIT doing distance learning on a large scale at all because it is just not part of our charter. But OpenCourseWare really you should think of it as publication rather than instruction.

AUDIENCE: So major investments are purely altruistic purposes. I mean do you see the school benefiting in ways that maybe aren't purely altruistic?

VEST: I don't see any kind of financial benefits coming to us. I very much hope that this will be a great success, and that there will be a positive reputational reflection. As I said in my opening statement. There is both a lot of idealism in this faculty, and also a desire to influence the world.

And I think that's really at the heart of why the vast majority of the faculty have concluded that this is a good thing to do. We want to have a positive influence. It is in most dimensions an altruistic action.

ABELSON: But I think it's also true there are real benefits to MIT-- not financial benefits-- but in terms of strengthening our educational community. We went around and gave presentations in every department at MIT. And people would say things like, gee, I would really like to be able to see in detail what my colleagues right here in this department are doing.

And students are saying, gee, before I go major in a subject I would really like to be able to see what's in those courses. So there's a real benefit having this material available even openly across the MIT community. And part of what we hope OpenCourseWare will do is strengthen MIT itself as an educational community.

YUE: In conceiving of OpenCourseWare as a concept. The idea that it might very positively impact how we do our intellectual work on campus. And how we might impact our students-- the way they learn. Is very much an aspiration that's driving an idea like that. So it's not purely altruistic. It is an advance we hope in the way a university does intellectual business.

KEN: Other questions. We're running close to our anticipated 1:45 ending. Monica?

AUDIENCE: Is they're going to be a two-tiered system in that some of the materials will only be available online to enrolled students.

ABELSON: I think there has to be. There are a couple of things that we can't put up. So one thing that we cannot put up is anything that would infringe students' privacy.

So things like class lists or names of students. Or places where there's student work where we don't have their permission. That could not be part of the OpenCourseWare.

Another thing that we could not put up are third party materials where we have permission to distribute them on the MIT campus or the MIT web. Those are the two main things. That itself requires a two-tier system. As far as what else and the details. Well that's part of what we have to work out.

LERMAN: I think-- and I absolutely agree-- the third thing I heard when-- among the group that went around-- many faculty change their internal website for their own students extremely rapidly. They might do it three, four, five times a week. That's probably not what we want to have happen at OCW.

And most OCW users aren't going to want to know that the due date for problem set six changed from Wednesday to Friday. They just don't care. And so there's lots of reasons. And the two that Hal listed are probably more significant. But we heard many faculty who said, we really need an internal and external [? site. ?]

KEN: Other questions? Are there questions from [? any links? ?] No. Okay, well thank you very much. Appreciate your coming.

[SIDE CONVERSATION]