Abstract

The paper lists some important drivers of change in higher education: the Internet, rising fee levels, the growth of the private sector, and internationalisation. Taken together these trends may prove quite disruptive to higher education systems.

Technology is a major driver of change. The analogy of an ‘iron triangle’ is used to show that technology can achieve the revolution of making education simultaneously more accessible, less expensive and of higher quality.

The vital area of skills development is examined through two projects of the Commonwealth of Learning, Flexible Skills Development in Africa and Lifelong Learning for Farmers in India.

Finally the paper argues that Open Educational Resources have great potential for enabling open universities to expand their reach and lead millions of informal learners into formal study leading to certification.

Introduction

It is a pleasure to be at YCMOU again and an honour to be in such distinguished company. YCMOU is one of the great success stories of Indian higher education. As a former vice-chancellor – and I spent seventeen years in that job in Canada and the UK – I have a weakness for thinking that leadership is important in universities. YCMOU has had good leadership throughout its history and YCMOU staff members have responded that leadership with some great achievements.
I am very impressed by the focus that you are now putting on serving some of the humbler sectors of society under Professor Krishna Kumar’s leadership. This is exactly what an open university should be doing in the 21st century and I commend you for it.

This is my final visit to India as president of the Commonwealth of Learning and I am thrilled to be with so many friends who have been such splendid supporters of our work.

I thank you all for that encouragement. I am sure that you share my delight that my successor as President of COL is a woman from your country, India. Professor Asha Kanwar has done a superb job as Vice-President of COL since 2006. She has now been appointed President after a worldwide search that attracted a large and impressive field of candidates. I am very pleased to be leaving COL in such capable hands and I am sure you will give Professor Kanwar the same unstinting support that you have given to me.

This is a National Symposium on the Academia – Industry Interface. I have entitled this address Learning, Living and Working in the 21st Century. I shall touch on the topics of the symposium but range somewhat wider since I see this as something of a valedictory speech. I have made so many previous speeches about higher education in India that I have lost count – although they are all on the COL website.

I shall set the scene for this address before evoking some trends in higher education outside India and extracting some general principles from them. You know far more about the higher education scene in India than I do. It is far too complicated for anyone outside the country to follow properly unless they devote themselves to it full time – and even then you have to be located here to disentangle declarations of intent from the day-to-day reality.

This will lead me to argue for the importance of technology in meeting the challenges of contemporary higher education. Then I shall look at some of COL’s work in the area of skills development with groups that are not normally thought of as the clientele for higher education. This may resonate with YCMOU’s work.

Finally, I shall talk about Open Educational Resources and how they could change education.

Setting the Scene

To set the scene let me reflect on my title, Learning, Living and Working in the 21st Century. This symposium is primarily about the relationship between higher education and work. But remember that life is also for living.

There is an English expression ‘You Live and Learn’, which expresses the simple fact that life will teach you lessons every day whether you seek them or not.

When the UK Open University chose the motto for its formal crest it turned this expression around to ‘Learn and Live’. The idea is that by engaging in formal learning you can live more richly. You will still
continue to learn from the hard knocks of life, but you will have mental frameworks in which to insert your experiential learning.

I do not depreciate the importance of work. The Germans have an expression which says that happiness in life depends on having a good combination of love and work – Liebe und Arbeit. For most people work is the primary means by which they interact with the wider world and gain the fulfilment by making a contribution to humankind. That is why it is such a tragedy that hundreds of millions of people around the world – young and old – do not have work. That is why what YCMOU is doing, and the topic of this symposium are so important.

But let us not forget that there is more to life than work.

Next week my colleague Stamenka Uvalić-Trumbić and I will speak in Shanghai on the role of technology in teaching the visual arts. I know from my own experience of meeting thousands of UK Open University students that their lives have been immeasurably enriched by studying arts and the humanities and I am sure that YCMOU has the same experience.

With those caveats about an exclusive focus on work-related education let me say something about trends in higher education.

It is always risky to forecast changes in higher education, at least in the West, because universities have shown remarkable stability and resilience over centuries. Some of you will know this famous quotation from the report of the US Carnegie Commission over 40 years ago.

*Taking, as a starting point, 1530, when the Lutheran Church was founded, some 66 institutions that existed then still exist today in the Western World in recognizable form: the Catholic Church, the Lutheran Church, the parliaments of Iceland and the Isle of Man, and 62 universities.... They have experienced wars, revolutions, depressions, and industrial transformations, and have come out less changed than almost any other segment of their societies* (Carnegie Commission on Higher Education, 1968).

Notwithstanding this cautionary note, it does seem likely that higher education in the 21st century will be different in many ways from what we knew in the 20th century – and that will be true all over the world.

**Drivers of Change**

Here are the main drivers of change.

*The Internet*

The first driver of change is the Internet. Online communications (ICTs) have disrupted many business models. When re-fuelling their vehicles, buying books or arranging travel, consumers are opting increasingly for self-service models made possible by ICTs. This trend is now impacting on universities.

*The cost of higher education*
The second force for change is a greater concern, across Western society at least, about the cost of higher education. President Obama mentioned it in his State of the Union address last month. Since 1986 college fees in the US there have risen by 467% compared to inflation of 107% in the economy overall. The impact of the post-2008 recession on household incomes is finally putting downward pressure on fees and creating incentives to offer less expensive options.

**Private higher education**

A third driver of change is the growth of private higher education, including institutions that operate for profit. Private provision is now the fastest growing sub-sector worldwide with some 30% of students enrolled in private higher education institutions globally. At the top of this chart is the Philippines with over 80% of enrolments in the private sector and Korea, Japan, Belgium, Indonesia, Columbia and your own India are at 60% or over.

A key feature of the private higher education sector is its diversity. Large private providers of distance education, such as the American Phoenix Online with over 100,000 students, are the exception rather than the rule. Most private institutions are relatively small and conduct teaching face to face, although this is changing fast as in the case of India’s Symbiosis Centre for Distance Learning, based here in Maharashtra, which is barely ten years old but now enrols 250,000 students in some 40 countries.

**Internationalisation**

Internationalisation, the fourth driver, has been a feature of universities from their earliest days. Xuanzang was one of many Chinese Buddhist scholars who studied in India in the 1st millennium at Nalanda University. This, the world’s first international university, is today being re-established by the governments of India and Bihar with foreign support.

Erasmus of Rotterdam, who studied at the University of Paris and also travelled to other European seats of learning, has given his name to the student exchanges that are helping to re-integrate academic Europe.

For most of the 20th century internationalisation referred primarily to students taking degree courses in other countries.

I was one of them when I did my doctorate at the University of Paris and experienced the famous events of 1968, but a more recent trend is to move the courses to the students’ home countries instead.

Numerous universities now offer their courses overseas by creating branch campuses. The Observatory on Borderless Higher Education reported that there were 200 degree-awarding international branch campuses in 2011 and the number was continuing to grow.

There has also been a steady growth in international distance learning. The founding document of my own organisation, the Commonwealth of Learning, declared in 1987 that:

“**Our long term aim is that any learner, anywhere in the Commonwealth, shall be able to study any distance teaching programme available from any bona fide college or university in the Commonwealth**”.
That aim was ahead of its time 25 years ago but is beginning to be achieved, thanks in part to the creation and re-purposing of Open Educational Resources (OER).

The disruption of higher education

These four drivers, operating in combination, are likely to recast the higher education systems of most countries. We can best understand their interplay by examining them individually. I shall report trends in the West and leave you to judge their validity in India.

Trends in eLearning

In his report 2011 Outlook for Online Learning and Distance Education, Bates (2011) identified three key trends in US higher education.

The first trend is the rapid growth of online learning. Enrolment in fully online (distance) courses in the USA expanded by 21% between 2009 and 2010 compared to a 2% expansion in campus-based enrolments.

Despite this growth, his second finding is institutional goals for online learning in public sector higher education lack ambition. He argues, as do I, that the intelligent use of technology could help higher education to accommodate more students, improve learning outcomes, provide more flexible access and do all this at less cost. Instead, he found that costs are rising because investment in technology and staff is increasing without replacing other activities. There is little evidence of improved learning outcomes and often a failure to meet best quality standards for online learning.

A third finding is that the US for-profit sector has a much higher proportion of the total online market (32%) than its share of the overall higher education market (7%). Seven of the ten US institutions with the highest online enrolments are for-profits. For-profits are better placed to expand online because they face less resistance from academic staff and need not worry about exploiting an earlier investment in campus facilities.

Furthermore, the for-profits adopt a team approach to the development of courses and student support, whereas most public institutions simply rely on individual academics to create and support online versions of their classroom courses.

Bates calls this the ‘Lone Ranger’ model and argues that it is less likely to produce sustainable online learning of quality than the team approach (Bates & Sangra, 2011).

Finally, Bates projects that over 80% of US students are expected to be taking courses online in 2014, up from 44% in 2009. The for-profit providers that are already well established in this delivery mode are likely to reap the advantage.

Bates concludes by saying: "If public institutions do not step up to the plate, then the corporate for-profit sector will" (Bates, 2011). This statement suggests that online learning could disrupt higher education systems.
Might they split over the coming years into a public sector focused on research and a private sector doing most of the teaching online?

Would this matter? Some governments would like to distinguish between research universities and teaching institutions. An extrapolation of these trends could make this wish come true, with the added difference that research would take place in public institutions while most teaching would be carried out by for-profit enterprises.

*Why does higher education cost so much?*

I turn now to the related issue of costs. US tuition fees have risen faster than inflation for several decades. The US is an extreme case but the debate there highlights some general principles. Other rich countries where fees used to be zero or nominal have either introduced or raised them. Sooner or later this will be an issue in India.

With their incomes stagnating, people in the US have begun to object to rising fee levels. This inspired two economists, Robert Archibald and David Feldman (2010), to try and justify high fees in their book *Why Does College Cost So Much?*

These economists make careful comparisons with the evolution of prices in a range of industries over half a century.

The prices of manufactures have gone down in real terms; those of many services, such as hair dressing, have stayed roughly constant; whereas the prices of personal services by professionals with high training requirements have risen.

They cite academics, dentists, horn players and stockbrokers as examples of such professionals.

Are such comparisons valid?

The link between the high prices of certain services and the cost of training the professionals who deliver them was labelled the ‘cost disease’ in the 1960s by William G. Bowen and W.J. Baumol in research on the economics of the performing arts (Baumol & Bowen, 1965). They argued that salaries in such areas are pushed up, even if productivity remains static, by productivity-linked salary increases in other sectors of the economy. Archibald and Feldman (2010) adopt this reasoning, dismissing summarily the possibility of increasing productivity in higher education with technology.

Bowen himself, however, is no longer so sure. In a foreword to Taylor Walsh’s book *Unlocking the Gates: How and Why Leading Universities are Opening Up Access to Their Courses*, he writes that he is rethinking his scepticism about the potential of new technologies to improve productivity in higher education (Bowen, 2011).

It is not surprising that the price of dentistry rises faster than inflation because, despite increasingly sophisticated equipment, it is a personal service with little scope for automation.

The case of horn players, as examples of orchestral musicians, is more debatable. They are rare and specialised professionals, but technology has increased their productivity dramatically because most
people now listen to them, with equal enjoyment and at much lower cost, on iPods and CDs instead of in concert halls.

The most interesting comparison is with stockbrokers. In the US their prices went up more rapidly than those of higher education until the 1980s and then fell steadily to a relatively much lower level. This was when brokerage services went online, giving individual punters more control.

Brokerage services are a better comparator for higher education.

Technology now allows institutions to deliver their programmes through media and to give students more control as distance learners. This can cut costs substantially without loss of effectiveness and the cost advantage of distance learning is increasing steadily.

*How does technology cut costs?*

How can technology cut costs? Many of you have heard me expound the Iron Triangle before, but I’m sure you would be disappointed if I didn’t do it again in this valedictory lecture!

Most governments want to widen access to education while improving its quality and reducing its cost. We can visualize this challenge as a triangle of vectors (Fig. 1-A), which makes the simple point that in conventional classroom teaching there is little scope to alter these vectors advantageously. Improving one vector worsens the others.

Pack more students into the class and quality will be perceived to suffer (Fig. 1-A1).

Improve quality by providing more learning materials or better teachers and the cost will go up (Fig. 1-A2).

Cost cutting may endanger both access and quality (Fig.1 A-3).

We call this the ‘iron triangle’ and it has constrained the expansion of education throughout history by creating in the public mind an insidious link between quality and exclusiveness. If this were the end of the story, Archibald and Feldman would be correct that the cost of higher education must rise inexorably.

However, technology is able to stretch this triangle to achieve, simultaneously, wider access, higher quality and lower cost (Fig. 1-B). Asian studies show that costs per learner in technology-based distance learning systems are a third of those for conventional learners (Dutt & Gaba, 2006).

The open universities have been exploiting this advantage for years. They enrol millions of students and some achieve impressive ratings for the quality of their teaching.

For example, the most recent national quality assessments for teaching in England put the UK Open University in fifth place out of a hundred institutions, one place above Oxford (Fig. 2). This is the most recent rankings table of teaching quality because after it was published the vice-chancellors of the elite UK universities went to see Prime Minister Blair and asked him to stop these assessments, because some of their universities did not show up very well. He bowed to the pressure!
I add that the UK Open University has also come top – and never lower than third – in annual national surveys of student satisfaction conducted with a large sample.

I know of two other distance-teaching universities, Athabasca University in Canada and Empire State College of the State University of New York, which also come top of student satisfaction rankings in their jurisdictions.

This revolution of providing high quality teaching to large numbers at low cost was originally achieved with traditional learning technologies (print, audio, video and stand-alone computers).

It was based on the principles of industrial production, which were identified two centuries ago by Adam Smith as division of labour, specialisation, economies of scale and the use of machines and media (Smith, 1776).

Today’s new generation of digital technology is characterised by the concepts of networks, connectedness, collaboration and community. As well as increasing economies of scale, since digital material costs almost nothing to distribute, this technology also speeds up and intensifies the interactions between students and their teachers.

More and more students are opting for this form of teaching and forecasts that digital technology would create a generation gap, with young ‘digital natives’ seeking online learning while older students avoided it, have been proved wrong.

Research on UK Open University students shows that although older and younger people use technology differently, there is no clear break between two separate populations (Jones & Hosein, 2010).

The research was conducted on 7,000 students aged between 21 and 100 with 2,000 between ages 60 and 69; 1,000 aged 70 and over; and, for comparison, four 1,000-member groups of students in their twenties, thirties, forties and fifties respectively. (I note in passing that only an open university could have students who are one hundred years old!) The results showed that while there are differences in the use of digital technology with age, the change is gradual from group to group. There is no coherent ‘net generation’.

One important discovery was a correlation – independent of age – between attitudes to technology and approaches to studying: “Those students who had more positive attitudes to technology were more likely to adopt a deep approach to studying, more likely to adopt a strategic approach to studying and less likely to adopt a surface approach to studying.”

This evidence that, at any age, a good attitude to technology correlates with good study habits is important in refuting the view that online learning tends to trivialise instruction. The intelligent use of technology can improve the quality of learning.

Let me add here, because it is important for this symposium, that for work-related learning, such as management training, people learn better if their study is combined with work where they can apply and test the concepts they are learning in their courses.

This seems obvious when I state it, and it explains why even very traditional universities are now offering programmes like MBAs at a distance. Clearly, this is a strength for open universities. And, of course, for
some of the sectors being served by YCMOU, such as the tuk-tuk drivers, part-time distance learning is not only the better option – it is the only option.

Changing corporate structures

A key question is whether these changes herald a new – and less costly – business model that will transform corporate structures in higher education as the for-profit sector expands.

However, I shall not address this question here because I confess that I don’t understand the situation regarding for-profit higher education in India. Some people tell me that for-profit education is not allowed in India. I do observe that some families and politicians seem to live very well off their non-profit educational foundations but I will attribute this situation to Indian exceptionalism and pass on to say a word about COL’s work in skills development.

COL and Skills Development

Much of COL’s work is related to skills development but I shall mention just two projects, Flexible Skills Development in Africa and Lifelong Learning for Farmers which originated here in India.

Flexible Skills Development

We refer to it as flexible skills development because we believe that existing approaches to skills development are too rigid and do not cater to lifelong learners or those working in the informal economy.

We have initiated this programme in sub-Saharan Africa where two-thirds of the population is under 25 years old and up to 90% of employment is in the informal economy (OECD 2009). COL’s Flexible Skills Development initiative promotes lifelong learning by supporting the expansion of skills training opportunities for people working in the informal economy, where there is a massive need for skills training.

The challenge is that in most African countries the formal Technical and Vocational Education and Training, or TVET, system has been losing its identity due to tight budgets, inadequate infrastructure and out-dated materials and pedagogy (UNESCO-UNEVOC 2009). Formal TVET institutions need to become more efficient and responsive to the demands of the labour market.

Our goal is to increase access to skills training for people working in the informal sector so they can improve their livelihoods. We are trying to improve training for the informal sector by working through the formal TVET system by focussing on 4 areas:

- policy development, strategic and capacity planning
- organisational development including quality improvement
- ICT infrastructure management
- Course design and delivery through educational media and ICT
Institutional managers, administrators and teaching staff are participating in a series of capacity building activities which include online training on the COL Moodle learning management system, workshops, institutional visits and experiential learning.

An online community of practice has been established on a social networking platform. Through this Community Learning Network, more than 300 members interact with each other, the COL Team and other TVET experts and are involved in discussion, collaboration and informal learning. It is a lifelong learning platform in its own right.

The TVET Institutes and polytechnics involved in the programme in six countries are engaged in various institutional development activities to help them establish an effective flexible and blended approach to TVET programme provision in their own local and national context.

Institutions have demonstrated a clear commitment to change. There is an acceptance of the principle of ‘National Challenges – Local Solutions’, and through this strategy change at the institutional level, national perspectives and policy are being examined and challenged to improve.

Given the high cost of Internet bandwidth, it is a significant technical challenge for most institutions to integrate ICT into learning and teaching.

Most do not have the expertise to produce coherent strategies for developing their ICT infrastructure. It is important to note that flexible approaches are not only about introducing eLearning – COL advocates the use of appropriate technology.

It is good to report that a significant number of teachers have improved their ability to develop curriculum and are now improving their teaching with media-enhanced curriculum components. Many also see that the use of ICT represents a personal opportunity, either through promotion, or the chance for entrepreneurial activities.

But it is not all rosy! One of the institutions chosen has not made any real progress with flexible skills development. This is most likely due to a change in institutional head since the activity began. Strong leadership and commitment from the Head of the institution is proving to be an important factor in the successful integration of ICT in TVET.

The move towards more flexible and blended approaches to skills development is a lengthy and challenging process involving continuing learning and effort to establish what works in each individual institutional context. It is too early to show whether more flexible approaches are impacting positively on access, efficiency or the quality of teaching and learning.

So, to sum up on Flexible Skills Development, COL has helped institutions to use the technology of open and distance learning in TVET. After one year we can see that these new approaches are being embedded in 10 of the 11 key African institutions. The most important developments thus far have been in strategic planning and policy frameworks and the management of technical infrastructure. There is evidence that a considerable attitudinal change has taken place amongst a critical mass of the staff and it is this which is carrying the institutions forward.
I now turn to the work of my colleague Dr. Balasubramanian Kodhandaraman who, very helpfully, insists that we simply call him ‘Bala’. His work involves skills development in the vital area of farming and agriculture. Here I shall try to summarize some sophisticated work and thinking, but a fuller version of Dr. Bala’s work is on our website.

Lifelong Learning for Farmers

The programme is called Lifelong Learning for Farmers and is based on the following assumptions.

First, farmers need to learn constantly as the physical environment in which they work is affected by climate change and the economic context is one of rapidly evolving markets. Yet at this time the conventional systems of agricultural extension created to help them are collapsing because governments are not investing in them. In some countries there is one extension officer to 25,000 farmers.

Second, although plenty of agricultural research is conducted, few of the results that might help them reach small farmers in the developing world.

Third the linkages between the various players in the rural value chain are weak, making it hard for farmers to take a holistic perspective in developing their livelihoods. This makes it difficult for them to test the feasibility, financial viability and community acceptability of ideas they might have for improving their incomes.

This is happening at a time when globalization is impacting on the rural economy as never before, yet farmers have little way of knowing who is determining the markets for their produce and of getting timely information about the changing quality standards that affect the market for their produce.

This is a major problem because there are many millions of farmers and pastoral families and millions more agricultural labourers whose situation is even more precarious.

So the bad news is that the conventional extension system, with its didactic mode of training, will not be able reach millions of farmers and agricultural labourers in time and space.

The good news is that the farming community, through its own community knowledge system and other forms of social capital, has evolved a learning process through self-directed personal-strategic learning. Today’s challenge, which is the focus of COL’s Lifelong Learning for Farmers or L3F initiative, is to enhance the scope of this personal-strategic learning using modern information and communication technology (ICT) and open and distance learning (ODL). This means that the objective of formal learning is to strengthen the self-directed learning.

This approach does not only involve the farmers but, vitally, also engages stakeholders such as the financial and marketing systems and communications providers, allowing them to adopt strategies which promote their business while improving the livelihoods of the farming community.

In practice the L3F initiative is being implemented Kenya, Uganda, Mauritius, Jamaica, Sri Lanka and India. Banks, universities and marketing agencies are the partners in the L3F initiative. Using Open and Distance Learning (ODL) and Information and Communication Technologies (ICT), the initiative aims to strengthen the learning process among the farmers and create linkages between various stakeholders. The
purpose is to provide opportunities for the farming communities to enhance their skill and knowledge in agriculture through self-directed lifelong learning.

L3F has had some very practical and beneficial results.

- Around 20,000 women and men in Asia and 4,000 women and men in Africa are involved in L3F through mobile phone and other multi-channel learning.
- The learning takes place in the context of self-help groups, women’s associations, and farmers association and strengthen community based knowledge system.
- There is evidence that mobilization and formal learning through ODL promote a self-sustained personal-strategic learning.
- ICTs such as mobile phones help in promoting structured audio-based ODL among semi-literate and illiterate population
- Such learning lead to better livelihoods and personal empowerment.
- Secondary stakeholders such as financial institutions and ICT companies are realizing that such lifelong learning among farmers will also help to promote their business interests. This helps scale up the initiative through replication.

I conclude on this project by noting that by engaging in lifelong learning many poor rural people, mostly women, have substantially improved their livelihoods.

What is required to make it work is, first, a strong process of community mobilisation to build on the social capital in place, and second a systematic process to raising that social capital into social learning capital.

COL’s aim in this is to show the secondary stakeholders: the banks, the mobile phone companies and the local educational institutions that this model can be successful for them too, giving them an incentive to promote its replication.

I am sure that Dr. Bala would be delighted to engage in dialogue with you about this model for increasing rural prosperity through learning.

Open Educational Resources

I shall end with some comments on a subject dear to my heart, Open Educational Resources.

Open Educational Resources, or OER, are materials used to support education that may be freely accessed, reused, modified and shared by anyone (Butcher, 2011). OER may well be the most radical technology-based tool poised to disrupt higher education.

COL and UNESCO recently published a Basic Guide to OER and Guidelines for OER in Higher Education, which you can download from our website.

Some institutions already have policies that encourage the use of OER so that teachers do not have to re-invent each of their courses from scratch.
For example, once Education professors at the Asia eUniversity have agreed on course outlines they do not develop any original learning materials because good quality OER for the topics they require are already on the web and they simply adapt them. Similarly, Canada’s Athabasca University will not approve development of a course until the proposing department has shown that it has done a thorough search for relevant openly licensed material that can be used as a starting point.

Open educational resources are unquestionably being used. Millions of students and informal learners access the OER put out by MIT, the UK Open University, the Open Courseware consortium and others to find good teaching. 32 Commonwealth small states work together within the Virtual University for Small States of the Commonwealth to develop OER that they can all adapt and use (West & Daniel, 2009). You have your own equivalents in India.

The UKOU’s OpenLearn site has 28 million users. Hundreds of courses, some 8,000 hours-worth of study, can be downloaded, some as interactive eBooks.

With 450,000 downloads per week, the UKOU alone accounts for 10% of all downloads from iTunesU and there is a worldwide viewing audience of hundreds of millions for OU/BBC TV programs.

UKOU Vice-Chancellor Martin Bean argues that universities should provide paths from this informal cloud of learning towards formal study for those who wish to take them (Bean, 2010).

The UKOU’s OpenLearn website, for example, is not just an OER repository but a hive of activity involving many groups of learners. Digital technology is breathing new life into the notion of a community of scholars and social software gives students the opportunity to create their own academic communities.

Conclusion

Let me conclude. Historically higher education has progressed by evolution rather than revolution.

That pattern will likely persist but we have argued that the steady expansion of online learning will disrupt current arrangements and practices. An ever growing proportion of higher education will be provided online in response to student demand for more convenient and personalised instruction and this will have a much broader impact, notably on the nature of academic work and the corporate structures of institutions.

Once higher education does most of its teaching online a new and much lower cost structure will emerge.

By the time this happens connectivity will be effectively global, which will make it possible to bring higher education to the billions at the bottom of the pyramid (Prahalad, 2004) for whom it is now only a faraway aspiration. YCMOU is in the vanguard of that development and I congratulate you.

Thank you.